

DISSERTATION

ANALYZING THE RELATIONSHIP OF STRENGTHS TO PERSONALITY
PREFERENCES AND VOCATIONAL INTERESTS UTILIZING CLIFTON
STRENGTHSFINDER, MYERS-BRIGGS TYPE INDICATOR, AND STRONG
INTEREST INVENTORY

Submitted by

Paulette M. Schenck

School of Education

In partial fulfillment of the requirements

For the Degree of Doctor of Philosophy

Colorado State University

Fort Collins, Colorado

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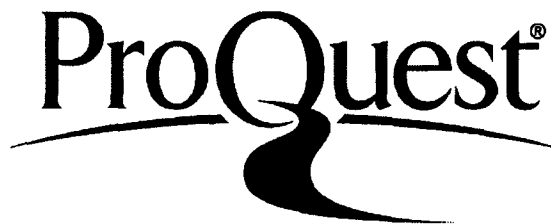
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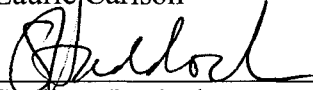
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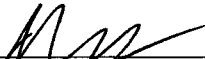
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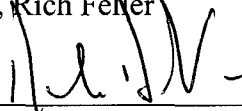
Shelley Haddock



David Most



Advisor, Rich Feller



Interim Director, Dale Devoe

ABSTRACT OF DISSERTATION

ANALYZING THE RELATIONSHIP OF STRENGTHS TO PERSONALITY PREFERENCES AND VOCATIONAL INTERESTS UTILIZING CLIFTON STRENGTHSFINDER, MYERS-BRIGGS TYPE INDICATOR, AND STRONG INTEREST INVENTORY

Throughout the history of vocational psychology, career counselors have constantly searched for, devised, and implemented practices and techniques to best prepare clients for the world of work. The purpose of this study was to explore the relationship between strengths to personality preference and vocational interests utilizing the Myers-Briggs Type Indicator (CPP, 2003), Strong Interest Inventory (CPP, 2005), and the Clifton StrengthsFinder (Gallop, 2005) with 164 graduate students from two academic programs in an effort to expand career counseling knowledge and practice.

Multiple interactions were observed between strengths and personality preferences. All (100%) of those with Communication and Woo as one of their top five strengths were Extravert. This same pattern occurred between Analytical and Significance with Sensing, Analytical with Thinking, and Discipline and Significance with Judging. Traits appearing with strengths 90 to 99% of the time included Extravert with Activator, Feeling with Empathy, and Judging with Consistency.

One strength was totally (100%) associated with a mental function (Analytical and Sensing-Thinking); however, several had no association. This same pattern of connections and non-connections occurred between other strengths and personality types.

In comparing strengths by top ten percent occurrence (90-100%) with the top clarity category, significant differences occurred. For example, while 100% of certain traits were paired with particular strengths by occurrence, these traits did not always have very clear clarity. This disparity suggests the relationship between personality traits and strengths may be more complex than just occurrence or clarity alone would indicate.

The relationship between strengths and vocational interests was less defined. With few exceptions, all vocational interest-strength combination means were within one standard deviation. This lack of discernible interaction between vocational interests and strengths perhaps suggests that strengths can be applied across vocational endeavors, rather than being attracted to particular activities; supporting the notion that strengths are not field specific and can be applied across multiple life roles.

Differences were further observed between two additional variables of gender and academic program. Some strengths were common between genders and academic programs but rankings often differed, while others were unique to the individual categories.

Paulette M. Schenck
School of Education
Colorado State University
Fort Collins, CO 80523
Fall 2009

DEDICATION

More than a friend, more than a partner, with whom every day is an adventure

I hereby dedicate this dissertation to my husband

Theron “Ted” Schenck

and to

Paul and Shirley Burkey, my parents.

ACKNOWLEDGEMENT

There is a proverb that when the student is ready, a teacher appears. This has certainly been the case for me. Throughout my life I have been blessed with generous, supportive, and encouraging mentors and guides who have open the doors of possibilities for me and, at times, given me the gentle nudge to walk through those portals, even when I did not know I could. While I do not want to have an Oscar-moment here of thanking a cast of thousands, I do wish to take this opportunity to recognize key people who have truly impacted my life.

I know I would not be in this position today were it not for Sydney Ayotte, who was the first to ask when (not if) I was going to work on my masters, followed years later posing the same question about beginning my doctorate. Syd is a *grower* of people and literally is the epicenter of my professional life. In addition to my personal growth, from Syd I learned how to support colleagues and students, develop and organize a program, and to do so with grace, humor, and style! I also learned to love exceptional food.

At a later junction in my life came a new guru, Christine Jensen. Master facilitator, original thinker, big-picture conceptualizer—the list can go on but she, like Syd, is a force of nature. I found it possible to even be erudite while breathing in Chris's rarified air! While Syd is a grower, Chris is a connector and initiator. She connects ideas and people and resources in unique combinations, often at such a quick pace that it is only in retrospect you can realize all that has been accomplished under her guidance and leadership. From Chris I learned to think, imagine, and formulate; that impediments are

just another name for challenges, and important things are possible with the right philosophy and initiative. I also learned to enjoy Scrabble.

When I moved with my husband to a remote community in Southeast Alaska, I never imagined the effect that would have on my life. It was in Sitka that I embarked on my school counseling adventure. At the helm of this experience was Rod Poole, school counselor extraordinaire, from whom I learned professional standards, ethics, and practice; the importance of camaraderie, and that school counseling is more than a job, it is a calling. I also learned a silly joke is the perfect ending to a stressful day.

From the staff and students of Sitka High School, I learned the importance of community and that teamwork extends beyond achieving tasks. My experience there was a reminder of the joy of synergy, when the combination of the whole is greater than the sum of its parts.

A new master, Rich Feller, is now part of my life. Because of Rich, I have started and now nearing completion of my doctorate. I met Rich in Alaska while attending one of his workshops and reconnected many years later in Colorado. He, like my previous tutors, has the ability to make the impossible possible, to breakdown internal barriers, and under his influence, do things that had not been previously considered. From Rich I have learned to say yes to opportunities and that generosity is a force multiplier.

Finally, great thanks are extended to my other committee members (Laurie Carlson, Shelley Haddock, and David Most), under whose tutelage this study has been defined, refined, and brought to conclusion. I have learned much by your guidance and example.

I have been incredibly fortunate in my life to have worked with the best of the best. From them I have learned much and in an effort to thank them for their many gifts, I am now entering a new profession of counselor education—to pass on those gifts, to “pay it forward” to the next generation of counselors.

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CHAPTER I: INTRODUCTION

As the world of work radically changes, career counselors are confronted with the challenge of how to best advise and prepare their clients for this transforming vocational landscape. A standard career counseling practice to date includes the use of assessments to gain insight into personal interests and skills. Traditionally these assessments mainly focused on vocational interests, skills, and abilities. Recently, however, career theorists and vocational psychologists have come to recognize a vast array of influences on career selection beyond vocational interests. As a result, in an effort to improve career counseling practice, the use of other types of assessment, such as personality, has gained credibility, often in combination with vocational interest surveys.

Background and Overview

The Changing World of Work

The world of work is experiencing fundamental, far-reaching, deep-seated changes on all levels—new players, new playing field, new processes, and a new game (Friedman, 2005).

Globalization. Globalization is “not just some passing trend. It is the overarching international system shaping the domestic politics and foreign relations of virtually every country and we need to understand it as such” (Friedman, 1999, p. 7). This change is so pervasive that “we are not talking about new skills or competencies required for the new workplace. We are talking about a totally new way of relating to the world” (Hall &

Mirvis, 1996, p. 36). Nationally, it can be viewed as the “sharpening of international competition that is more often seen as a threat to the U.S. jobs and wages, and so as a leading cause of inequality in the United States” (Head, 2003, p. 3).

Through converging technologies (computerization, miniaturization, digitization, satellite communication, fiber optics, and the Internet) previously unthinkable work configurations are now possible such as open-sourcing, outsourcing, offshoring, supply-chaining, insourcing, and in-forming (Friedman, 2005). These new configurations have direct and varied impact on daily work. The number of production-type work is shrinking in the United States and transferring to other countries (Holland, 1996). Once discrete occupational titles now have undistinguished meanings as flexible work situations absorb multiple roles (Day & Rounds, 1997). Stable full-time work and job security are becoming a thing of the past (Day & Rounds, 1997; Holland, 1996) causing future careers to be defined by a set of activities rather than consistent settings or occupational titles (Day & Rounds, 1997). All of these affect the world of work in different ways: changing the mix of jobs, changing the types of needed skills (Cascio, 2000), and changing the mindset required of its workers (Pink, 2005).

These transformations are also affecting how organizational capital is now defined in terms of financial assets versus intellectual capital. This is an important growing distinction because “money talks but it doesn’t think” (Cascio, 2000, p. 6). Intellectual capital exists on three levels: human capital (knowledge, skill, and capabilities of individuals), structural capital (everything that remains when employees go home such as databases, customer files, and software manuals) and customer capital (relationships with whom organizations do business in the marketplace, including

suppliers). Stated in another way, intellectual capital now consists of individuals, the products they provide, and the relationships they create and maintain—all of which are affected by the developing global economy.

This new workplace will be “more dynamic and less patient with workers unable to quickly add value” (Feller, 2003, p. 263). Workers will be expected to be competent in numerous skills including communication, math, technology, self management, problem-solving, decision-making (Feller, 2003); occupational preparation (Carnevale & Desrochers, 2003); and being able to apply what they have learned and quickly learn new skills, and possess high prose, documents, and quantitative (math) workplace literacy skills (Daggett, 2003). Employees, in addition, will be expected to perform these skills at levels previously limited to senior administrators (Carnevale & Desrochers, 2003).

In this new environment, employees are becoming knowledge brokers as information emerges as the “most important raw material people need to do their jobs” (Cascio, 2000, p. 11). Knowledge work will involve ongoing interdependent project work among specialists and professionals (Saveri & Falcon, 2000).

The challenge for those who rely on knowledge to do their job is how to transmit that new knowledge and how to accumulate wisdom rapidly. Future job selection will be based not only on what employees bring to the position but also what employees can learn from the position. A job then becomes an opportunity to learn new skills that can be peddled elsewhere in the market place (Working Scared, 1993). This transition is creating new categories of employees—the knowledge nomads and the nervously employed (Feller & Whichard, 2005).

Finally, the responsibility of keeping these skills current and obtaining new skills will move from the employer to the worker (Feller, 2003), causing employees to become self-reliant as they manage “the evolution of their own careers” (Saveri & Falcon, 2000, p. 49). Self managed careers will require a broader sense of self-knowledge beyond awareness of skills and abilities. It will require a deep understanding of personal values, strengths, and personality traits.

Aging workforce. While technology rewrites employment scripts, a second influence is altering the workplace—the aging workforce. With extended lifespans, changing attitudes towards retirement and, in some cases, economic necessities, middle-aged and older adults are working longer (Milletti, 1984; Rockwell, Hood, & Lee, 1980). Surveys indicate that a majority of retirees continue to work beyond their retirement, whether in paid or volunteer positions, often in fields closely related to their previous careers (Holland, 1996). By 2010, the number of workers aged 16-24 will be about the same as workers who are 55 years old or older (Saveri & Falcon, 2000).

As current workers stay on their jobs longer, other impacts take form. Intergenerational workplace issues may make managing and working across different age cohorts challenging with wide differences in work style, sense of timing and pace, and meaning in work (Saveri & Falcon, 2000). In addition, “with job security for the long term becoming obsolete, age discrimination is more likely” (Anderson & Vandehey, 2006, p. 105).

Changing location of work. Another player in the modern employment drama is the changing location of work. Not only is work itself changing, where that work is done is also shifting. With growing outsourcing, preferred job choices may no longer be

available in certain localities, thus, necessitating either moving to new locations or selecting local jobs among previously unconsidered occupations. The location of co-workers is also changing. Teams are no longer confined by organizational or geographical boundaries and their services may be delivered to customers in remote areas (Saveri & Falcon, 2000).

Given all these transformations, Saveri and Falcon (2000) predict six key trends in the changing workforce: an intergenerational workforce will create challenges and opportunities, demographic diversity will change homogeneous workforce majority, women will pioneer cutting-edge work alternatives, youth culture will transform the nature of organizational work, labor mobility will contribute to nonlinear career paths, and global work will become a local experience. These will be the result of further expansion of globalization and detraditionalization (changing traditions around the world) (Hansen, 2000). As individuals experience change, they will alter society as they learn to use new information to see their world differently (Giddens, 1991).

Unchanging function of work. Yet, in the midst of all this chaotic reformation of today's workplace, the function of work itself remains relatively stable. Beyond providing a living, work is a "major element in defining personal identity" (Amundson & Borgen, 1982, p. 562). In a survey asking if people had enough resources to live would they still work, 69% responded yes in 1973. This response has remained stable over twenty years later with 68% responding yes in 1996 (Cascio, 2000). The most common reason given for working was the feeling of accomplishment it gives.

Emerging career counselor role. This, then, is the challenge and the crisis of today's career counselors—how to best prepare and advise clients for the traditional role

of work in a non-traditional non-defined future vocational setting. Subsequent questions quickly follow regarding which means, in the form of practice and assessments, will most effectively support this purpose. Most traditional career programs treat clients and their careers “with too small a perspective” when, rather, programs are needed that will treat clients and their careers “holistically and honor their complexity” (McDonald & Hutcheson, 2005, p. iii); viewing life as a career rather than limiting career to vocational pursuits (Miller-Tiedeman, 1987).

History of Career Development and Vocational Assessments

Formal career counseling has passed its centennial anniversary. The first vocational guidance program began in 1888 in San Francisco in Cogswell High School. The roots of career development, however, formally emerged with the work of Frank Parsons in 1909 (Brown, 2002). Parsons (1909) believed wise vocational choice consisted of three factors: a clear understanding of personal aptitudes, abilities, interests, ambitions, resources, limitations, and knowledge of their causes; a knowledge of the requirements, conditions of success, advantages and disadvantages, compensation, opportunities, and prospects in different lines of work; and a true understanding of the interactions between these two groups. This philosophy developed into the trait-and-factor theory which concentrated on qualities of different occupations and the types of people who successfully filled them (Savickas, 2002).

The main thrust of the trait-and-factor theory was identifying stable traits and personality types that differentiated people in a meaningful way relative to occupational requirements. After World War II, increased attention was focused on workplace knowledge and identifying salient traits necessary for specific occupations. At the same

time, vocational assessments were expanded to include interests, specific aptitudes, and personality (Brown, 2002).

While still a predominant influence in career development, the trait-and-factor theory is not without its limitations. It provides answers to only a small fraction of questions brought to career counselors. It does not help career counselors

understand the emotional and skill acquisition tasks required for a job search. It does not inform about overcoming job related phobias, does not address problems associated with handling sexual harassment, job burnout, the constantly changing employment environment, dual career families. . .all of this, plus much more, [which] is involved in career counseling (Krumboltz, 1994, p. 16).

The trait-and-factor theory is also flawed because of its norming population—white, middle-class heterosexual men. In the process of determining the “best fit” between individuals and appropriate occupations, it often fails to describe women’s career choices and the role of gender, race, class, and sexual orientation in career selection (Fitzgerald & Betz, 1994).

By the 1950s the impact of person-centered psychology filtered into career counseling. Starting with Carl Rogers (1951), career counselors began to concentrate not as much on personal traits and their most advantageous fit into particular occupations, but rather on the processes that build and develop individuals’ careers throughout their life course (Savickas, 2002). Rogers was followed by a series of career theorists including Donald Super’s theory of career choice in 1953, David Tiedeman’s individual perspective in 1963, Krumboltz’s social learning theory of career decision making in 1979, and Gottfredson’s theory of occupational aspirations in 1981 (Brown, 2000). By 1994, Lent, Brown, and Hackett published their model of career decision making based on the social cognitive theory of Bandura (1986).

The emergence of positive psychology and its parallel success movement in career counseling continues the tradition of developments in personal psychology affecting comparable advancements in career counseling. Positive psychology focuses on “subjective experiences: well-being, contentment, and satisfaction (in the past); hope and optimism (for the future); and flow and happiness (in the present)” (Seligman & Csikszentmihalyi, 2000, p. 5). Rather than studying what went wrong, as in the previous medical model of psychology, positive psychology looks to what is working, switching the concentration from illness to wellness. In a similar fashion, the success movement in career counseling focuses is on developing strengths rather than correcting weaknesses (Buckingham & Clifton, 2001), which empower individuals to higher levels of excellence to reach their full potential (Clifton & Anderson, 2002).

Differing Philosophical Perspectives Related to Careers

Career theories spring from two different philosophical perspectives: logical positivism and social constructivism (Brown, 2002). Logical positivism is founded in the principle of rational proofs from empirical bases. Assumptions of logical positivism are that people can be studied separately from their environments, they can be subdivided into categories for study, human behavior can be objectively observed and measured, human behavior operates in a lawful and linear cause-and-effect fashion, and the environments in which people operate can be considered neutral and relatively unimportant.

Social constructivism, on the other hand, believes people construct their own reality rather than being passive recipients and that meaning cannot be empirically determined (Brown, 2002). The tenets of social constructivism are that all aspects of the

universe are interconnected, there are no absolutes, human functioning cannot be reduced to laws and principles, human behavior cannot be inferred from cause and effect and can only be understood in the context in which it occurs, and individuals define themselves and their environments through understanding and experiencing these environments.

Vocational assessments reflect these differing philosophies. They can be separated into two very broad categories: formal and informal. Either category can be used to measure or determine personality traits, interests, skills, abilities, and values.

Formal assessments, following logical positivism ideology, may either be timed or non-timed standardized tests and inventories. The hallmark of formal assessments is the scientific rigor to which they have been subjected to determine their validity, reliability, fairness to diversity, and comparison. Examples of formal assessments are the Career Maturity Inventory, Career Occupational Preference Survey, Harrington-O'Shea Career Decision Making System, Self-Directed Search, General Aptitude Test Battery, and Strong Interest Inventory (Niles & Harris-Bowlsbey, 2002).

Informal assessments, more closely following the precepts of social constructivism, do not require such scientific scrutiny. Examples of informal assessments include checklists of items that may be related to preferred work settings, job characteristics, work tasks, values, games, career fantasies, forced-choice activities, card sorts, structured interviews (Niles & Harris-Bowlsbey, 2002), life lines, autobiographies, and genograms (Walsh & Osipow, 1995). These can be completed in several formats: individually by the client such as on-line assessments, administered one-on-one with client and counselor or in groups with a career counselor. The Real Game Series (Real Game, 2000) is an example of an informal group game.

Role of Vocational Assessments

The use of assessments has been a key element of career counseling from its inception (Dillon & Weissman, 1987). Initially assessments formally measured personal traits and systematically matched individuals into fitting occupations (Savickas, 2002). With the appearance of postmodern theorists, career counselors are now compelled to consider other strategies (Brown, 2002). As vocational choice moves from an event to a lifelong process (Healy & Woodward, 1998), career counselors are starting to integrate “concepts, old and new, as they work with clients and constructs to map career behaviors and goals” (Chartrand, Borgen, Betz, & Donnay, 2002, p. 169).

Personality assessments as career selection resources. Personality is defined as the “global concept that includes all physical, mental, emotional, and social characteristics that make the person unique” (Gladding, 2001, p. 91). Personality traits have a strong genetic basis, develop early in life, and remain relatively stable throughout the lifespan (Wiggins & Trapnell, 1997). These traits influence behavior patterns that can facilitate or impede career development and job search activities (Reed, Bruch, & Haase, 2004). Because of this, as early as 1983 Pinkney asserted almost any approach to career counseling needed to have a self-awareness component.

Personality assessments are important in the career choice process because they “can help clarify not only the *what* of vocational preferences and choice but also the *how* of vocational adjustment” (Waller, Lykken, & Tellegen, 1995, p. 257). Understanding personality types helps clients in several ways by providing confidence in their own direction, helping to reveal areas where they can become excellent, reducing guilt for not being able to do everything well in life, and identifying personal values (Kennedy &

Kennedy, 2004). Personality assessments can also be a response to the current fluid occupational market requirements of job seekers needing to have more self-knowledge and personal awareness in order to remain competitive (Waterman, 2000). Examples of personality assessments are Myers-Briggs Type Indicator and Personal Career Development Profile (Niles & Harris-Bowlsbey, 2002).

Interest assessments as career selection resources. An early definition of vocational interests included an individual's "drives, aspirations, daydreams, ambitions, pleasures and satisfactions" (Strong, 1943, p. 4). Strong (1955) later identified four qualities (persistent attention, liking, direction, and activity) and two characteristics (intensity and duration) to vocational interests. A more current view describes vocational interests as reflecting "motivation, self-confidence, behavioral style, and personality" (Spokane & Decker, 1999, p. 213). Interests are critical in vocational selections because they serve as a "guide for exploration; that is, individuals may explore means of manifesting or expressing their interests in various domains of life experiences, including the work domain" (Blustein & Flum, 1999, p. 350). Examples of interest inventories include Career Occupational Preference Survey, Jackson Vocational Interest Survey, Kuder Occupational Interest Survey, and the Unisex Edition of the ACT Interest Inventory (Niles & Harris-Bowlsbey, 2002).

Relationship between Vocational Interests and Personality Assessments

There is a long-running discussion about the relationship between vocational and personality assessments. The discussion ranges from vocational interests are expressions of personality, to there is an overlap between vocational and personality assessments but

the nature of the relationship is unknown, to vocational assessments are distinct and totally separate from personality assessments.

Vocational interests are expressions of personality. As early as 1957, Super saw no practical difference between personality traits and vocational preferences. Holland (1973) concurred with this viewpoint, stating vocational interests were “simply another aspect of personality” (p. 7). Later in 1999 Holland reaffirmed vocational interests could be “interpreted as signs of personality” (p. 97). Spokane and Decker (1999) stated “it is increasingly apparent that interests, personality, self-efficacy, and other variants of personality and vocational self-concept may be facets of a unified set of complex underlying traits” (p. 230). Savickas (1999) considered general interests as “coexist[ing] with many other general interests as part of an individual’s personality pattern” (p. 34). Spokane, Lucetta, and Richwine (2002) considered interests and personality as “simply two duplicative aspects of the same individual. Depending on the perspective from which one views the individual, one is simply examining the same individual’s makeup from a different direction” (p. 401).

Overlap exists between vocational interests and personality. Hansen (1984) suggested a pattern of correlations between vocational interests and personality appeared to be meaningful and systematic. In a meta-analysis, a number of writers suggested the “convergence between constructs such as interests and personality may be much greater than many of us have thought previously” (Larson, Rottinghaus, & Borgen, 2002, p. 218) and understanding “their overlap and distinctness is critical to advancing theory and practice in vocational psychology” (Larson et al., 2002, p. 219).

Vocational interests are distinct from personality. In the same meta-analysis, however, Larson and colleagues (2002) concluded vocational interests are distinct from personality. Others state the correlation between vocational preference and personality interest is so minor it is difficult to establish a strong relationship between the two (Gottfredson, Jones, & Holland, 1993; Hansen, 1984; Larson et al., 2002). This confusion may exist because some vocational interests and personality inventories share common language (Blake & Sackett, 1999), assessment contents may overlap rather than having a substantive relationship (Costa, McCrae, & Holland, 1984), or it is difficult to discern due to the “disorganized condition of the personality literature” (Blake & Sackett, 1999, p. 251). Crites (1999) asserts vocational interests are “not aptitudes, not achievement, not skills, not personality, not career maturity but preferences for different life activities” (p. 163-164).

Whatever the nature of the relationship between interest and personality assessments, it is often helpful to use them in conjunction with each other in order to gain broad information to assist clients in career development. Costa and colleagues (1984) considered the use of a second instrument as “always useful as a check” (p. 398). Two instruments can offer not only confirmation of each other but also extended information. Perhaps Strong (1943) said it most succinctly, “the more one handles such cases, the more loath one becomes to base guidance upon only one score” (p. 53).

New time, new assessments. As career psychology reflects on how to best prepare clients for the emerging world of work, “it may be impossible to construct a new counseling framework if [career counselors] insist on using only the tools of the old

model” (Gelatt, 1989, p. 252). This new view of decision-making may include new assessments or using old and new assessments in new configurations.

Statement of Purpose

Research, in general, is conducted either to fill a void or extend existing knowledge, replicate previous studies with new populations or in new settings, examine a problem that has not been studied or has been understudied, inform practice, or give a voice to people who have not been heard, silenced, or rejected in society (Creswell, 2002). The purpose of this study was to extend existing knowledge of commonly used career assessments, examine a relatively new assessment that has not been studied to date in terms of career counseling and, in the process, inform practice.

Implementing multiple measurements in career counseling has spawned a wide array of research to identify commonalities and dissimilarities between various assessments. The purpose of this study was to enhance this body of knowledge by exploring the relationship between strengths and personality preferences, and strengths and vocational interests using three assessments: Clifton StrengthsFinder (Gallop, 2005), a relative new measure of personal strengths, originally used in business and team-building settings, which is now being applied to career choice; Myers-Briggs Type Indicator (MBTI) (CPP, 2003), the preeminent personality profile assessment; and Strong Interest Inventory (SII) (CPP, 2005), the touchstone of vocational interest surveys. In addition, the relationship between strengths to gender and academic program were considered.

Research Questions

The research questions driving this study regarding the relationship between strengths and personality preferences, vocational interests, gender, and academic program utilizing Clifton StrengthsFinder (Gallop, 2005), Myers Briggs Type Indicator (MBTI) (CPP, 2003), and Strong Interest Inventory (SII) (CPP, 2005) were:

1. What is the relationship between personality preference types and strengths?
2. What is the relationship between vocational interests and strengths?
3. What is the relationship between gender and strengths?
4. What is the relationship between two academic programs (Counseling and Career Development or Organizational Performance and Change) and strengths?

Definition of Terms

For mutual understanding, and to avoid misinterpretation in this research, the following definition of terms has been provided:

Abilities: attributes of individuals revealed by differences in the levels of task difficulty (Gottfredson, 2003).

Agency: capacity for self direction (Richardson, 1998).

Assessment: a process of understanding and helping people cope with problem, a method of acquiring a sample of behavior under controlled conditions (Walsh & Betz, 1990).

Authenticity: alignment between one's underlying character and externally visible statements and actions (Han, 2005).

Career: the development of vocational behavior over time (Savickas, 2002).

Career adaptability: readiness to cope with the predictable tasks of preparing for and participating in the work role and the unpredictable adjustments prompted by changes in the work and working conditions (Savickas, 1997); a style of engagement, a way of being in the world that is proactive, flexible, and creative in responding to both predictable career consequences and chance events (Lapan, 2004).

Career choice: a lifelong process, not an event (Strong, 1955).

Career coaching: assisting individuals who encounter problems adjusting to occupational positions to learn better adaptive mechanisms and cope with organizational culture utilizing mentoring, rehearsing, and training (Savickas, 1994).

Career counseling: a process facilitating self-reflection and cognitive restructuring in clients who need to mature and deepen their personalities through self reflection and discussion of their subjective careers (Savickas, 1994); a purposeful relationship between a counselor and employment-bound client that facilitates self-clarification, evaluation of available opportunities, decision making, planning, and action by the client (Herr, 1995).

Career education: a process assisting individuals who encounter difficulties in enacting their subjective career intentions (career self) through objective vocational behavior (vocational self) (Savickas, 1994).

Career development: a process of choosing, entering, adjusting to, and advancing in an occupation; a lifelong process that affects other life roles (Herr, 1995); a lifelong process of skill acquisition and career building through a continuum of learning, development, and mastery (Jarvis & Keeley, 2003).

Career exploration: a behavioral system that functions to help the individual learn about and develop skills relating to the external world (Parkes, Stevenson-Hinde, & Marris, 1991); a process wherein individuals seek out information about themselves and the educational and vocational environment as a means of fostering progress in career development (Blustein, 1992).

Career guidance: corresponds to the vocational self; helps individuals who are undecided to articulate their behavior repertoire and then translate that into vocational choices (Savickas, 1994).

Career indecision: various interrelated components affecting career choice including lacking career-related information, needing more career-related information, trait indecision, disagreement with others about career decisions, identity diffusion, and choice anxiety (Kelly & Lee, 2002).

Career interests: propensity to attend to and be stirred by a certain object; characteristics include persistent attention, liking of object, direction, activity, intensity, and duration (Strong, 1955).

Chance factors: those elements contributing to a vocational choice that have no predictable relationship to it; for example, economic situation, unexpected personal events, and unexpected information (Mitchell, Levin, & Krumboltz, 1999).

Goals: determination to engage in a particular behavior or activity or to affect a particular future outcome (Albert & Luzzo, 1999).

Interests: what people want to do, their drives, aspirations, daydreams, ambitions, pleasures and satisfaction (Strong, 1943); state of consciousness characterized by a readiness to respond, selective attention, impulse to do something, anticipation of future

satisfaction, and goal-based course of action; closest to the surface of personality and are the least stable (Savickas, 1999); reflection of motivation, self-confidence, behavioral style and personality (Spokane & Decker, 1999); a guide for exploration to various domains of life experience, including work (Bluestein & Flum, 1999).

Job: something one does to earn money, requires little involvement beyond one's physical and mental presence (Michelozzi, 2000).

Knowledge: consists of facts and lessons learned (Clifton & Anderson, 2002); two types include factual (content) and experiential (things individuals pick up along the way). Experiential knowledge can be practical and conceptual (Buckingham & Clifton, 2001).

Knowledge workers: people who get paid for putting to work what is learned in school rather than for their physical strength or manual skill; ability to acquire and apply theoretical and analytical knowledge in the workplace (Pink, 2005).

Life experiences: a collection of highly valuable assets to use in the next career stage (McDonald & Hutcheson, 2005).

Life theme: lifelong process of psychological selection, centered on the preferential replication of optimal experience and associated activities (Massimini & Fave, 2000).

Logical positivism: philosophical belief that knowledge is based on logical proofs and empirical bases. Assumptions include people can be studied separately from their environment, they can be subdivided into categories for study, human behavior can be objectively observed and measured, humans behave in a linear fashion, cause and effect

can be inferred, and environments in which people operate can be considered neutral (Brown, 2002).

Narrative: the fundamental aspect of human knowing, a process of experiencing the complexity of space and time, condensing meaning in a language of particulars (Goncalves, 1997).

Passionate calling: when people feel like something is perfectly suited to them, makes they feel passionate about work and eager to go to work each day, and fits with their overarching goals, values, and purpose in life, whether this be spiritual or secular (Frisch, 2006).

Personality: global concept that includes all physical, mental, emotional, and social characteristics that make people unique (Gladding, 2001); habitual patterns and qualities of behavior as expressed by physical and mental activities and attitudes (Carter & Izumo, 2001).

Planned happenstance: conceptual framework extending career counseling to include the creating and transforming of unplanned events into opportunities of learning (Mitchell, Levin, & Krumboltz, 1999).

Positive psychology: the study and promotion of human happiness, strengths, and a better quality of life for all (Frisch, 2006).

Self concept: one's view of oneself, both public and private self, including appearance, abilities, personality, gender, values, and place in society (Gottfredson, 2002).

Self-efficacy: people's judgment about their capabilities to organize and execute courses of action required to attain designated types of performance (Bandura, 1986); the

degree to which individuals feel confident about their abilities to perform tasks as informed by personal and vicarious experiences and exposure (Constantine, Wallace, & Kindaichi, 2005).

Self knowledge: one's core beliefs, values, and perceived attributes (Blustein, 1994).

Skills: the ability to perform specific steps of an activity (Clifton & Anderson, 2002).

Social constructivism: philosophical belief that people actively construct their own reality. Assumptions include: there are no absolutes, all aspects of the universe are interconnected, it is impossible to separate people from their environment, human behavior can only be understood in the context in which it occurs, and individuals define themselves as they participate in their environment (Brown, 2002).

Strengths: the ability to provide consistent, near-perfect performances in a given activity (Clifton & Anderson, 2002; Buckingham & Clifton, 2001).

Talent: a naturally recurring pattern of thought, feeling, or behavior that can be productively applied (Clifton & Anderson, 2002); an apparently natural power or gift in learning or doing (Carter & Izumo, 2001).

Traditional work: permanent, year-round, full-time, outside-the-home employment arrangement that is the basis of nearly all American labor laws and social assumptions (Pink, 2001).

Traits: behavioral patterns that facilitate or impede career development and job search activities (Reed, Bruch, & Haase, 2004); have a strong genetic basis, develop early in life, and remain relatively stable throughout the lifespan (Wiggins & Trapnell, 1997); a

homogeneous group of specific interests that form a consistent, persistent, and stable dispositional response tendency, which increases one's readiness to attend to and act upon a particular group of environmental stimuli (Savickas, 1999).

Values: guiding principles of life that influence decisions and goals and can be ordered by relative importance (Guterman & Karp, 2000); close to reflecting a philosophy of life (Savickas, 1999).

Vocational identity: possession of a clear and stable picture of one's goals, interests, and talents (Holland, 1992).

Vocational interests: not aptitudes, not achievement, not skills, not personality, not career maturity but rather preferences for different life activities (Crites, 1999).

Vocational self-concept: conception of self-perceived attributes that an individual considers relevant to work roles (Savickas, 2002).

Work: synonymous with employment which is the basic source of status, social identity and income (Watts, 1996).

Work values: values that individuals believe should be satisfied as a result of their participation in the work role such as financial prosperity, altruism, achievement, and responsibility (Brown, 2002).

Study Limitations

The three career assessments considered in this study utilize self-reporting formats. This format has some disadvantages. Questions or statements in self-reporting surveys are typically either *free response* (respondent is free to choose any of a number of options) or *forced choice* (respondent is forced to choose answer to two choices)

(Campbell, 2002). Examples of free response are Likert scales and multiple responses on individual items. Forced response does not allow the respondent to either like or dislike both options. Strong Interest Inventory (CPP, 2005), Myers-Briggs Type Indicator (CPP, 2003), and Clifton StrengthsFinder (Gallop, 2005) use forced choice.

In addition, because this study will utilize a convenience sample, results may not be representative of a general population. Participants are from two graduate academic programs within one university (Counseling and Career Development or Organizational Performance and Change). As a result it is not known if similar results would be found in the general population with mixed academic focus or from disparate geographical regions.

Need/Significance for Study

There is a debate whether vocational and personality assessments are measuring the same thing. Research reveals that while there are correlations between these types of assessments, a strong direct or causal relationship has yet to be established. Continued research in the relationship between assessments furthers theory and practice of vocational psychology.

The findings of this study will deepen and expand career counselors' understanding of the relationship between strengths and personality preferences and strengths and vocational interests using two standard career assessments, Myers-Briggs Type Indicator (CPP, 2003) and Strong Interest Inventory (CPP, 2005), with an assessment new to career counseling, Clifton StrengthsFinder (Gallop, 2005). This

knowledge can impact the quality of career advising as well as serve as a basis for selection of career assessment, and combinations in which assessments might be given.

Researcher's Perspective

I first became involved in career counseling as a high school counselor in a remote rural Alaskan community. The base of my school counseling quickly took a career focus when I observed the impact on students who could envision themselves in any occupation. Whether or not they remained with this particular choice did not appear to be critical. The mere act of visualizing a vocational self-identity clarified a variety of decisions for students including course selection, extracurricular participation, internships, volunteer and community experiences, part-time job selection, post-secondary educational preferences, and long-range life planning.

This insight continued to develop as I worked with students in other subsequent professional settings as university program advisor, counselor educator, university registrar, and assistant director of a university-based career center. In these roles, I was daily made aware of the inadequacies of traditional career assessments used in isolation to help prepare students for today's and tomorrow's world of work. While these assessments still have value, there is much they do not address. A growing frustration with the limitations of these assessments led to an emerging interest and curiosity in the use of other assessment choices and combinations to offer and promote broader personal and vocational insights. All of these experiences ignite and keep the fires the passion of career counseling glowing within me today.

At the same time, I have always been fascinated with strengths: how to recognize them, how to develop them, how to nurture them in students, how to use them in team settings, and how to manage for them. While I observed the positive differences I felt when I was able to operate within my own strengths, I was amazed about the difference, both in terms of team cohesiveness and productivity, when strengths were applied at the team level.

This study provided an opportunity to merge these two passions: career counseling and strengths identification, development, and management. Throughout my professional reading, although many current resources are available about using strengths to achieve excellence, there is a lack of study in the area of using strengths in career selection or the relationship between strengths and personality preferences or strengths and vocational interests. It was the intention of this study to begin filling this void.

CHAPTER II – LITERATURE REVIEW

Introduction

Career development is a complex process because it deals with varying interactions between two oscillating entities—changing individuals in multiple changing contexts (Vondracek, Lerner, & Schulenbert, 1983). It is further complicated because counselors “must possess all the skills of other counselors and, in addition, know employment trends, methods of preparing for various work roles, career assessment techniques, and methods for changing work-related behavior, emotions, and cognitions” (Krumboltz, 1996, p. 59).

As a result of career counseling’s dual focus—one eye on the client and one eye on the employment horizon—this section will explore elements of the multifaceted career development process in two parts. Part one will examine the role of career theory in a dynamic workplace, influences in career selection, career decision-making models, and use of assessments in vocational decision-making. Part two will investigate the roller-coaster nature of today’s ever-changing work landscape, new employability skills necessary to successfully trek this vocational terrain, and challenges to the profession of career counseling to help clients prepare for the brave new employment world of today’s global economy.

Part One: The Client

Role of Career Development and Career Theory in a Dynamic Workplace

Brief History of Career Development

The first vocational guidance program began in 1888 in San Francisco in Cogswell High School. The roots of career development, however, formally emerged with the work of Frank Parsons in 1909 (Brown, 2002). Parsons (1909) developed a three-pronged career decision model, later called the trait-and factor theory, which included clear self knowledge; awareness of work requirements, and a true understanding of the interactions between these two groups. The main thrust of the trait-and-factor theory was identifying stable traits and personality types that differentiated people in a meaningful way relative to occupational requirements. After World War II, increased attention was focused on workplace knowledge, identifying salient traits necessary for specific occupations, as well as expanding personal assessments to include interests, specific aptitudes, and personality (Brown, 2002).

Developments in personal psychology have been reflected in parallel advancements in career counseling theory. Starting with Carl Rogers (1951), the impact of person-centered psychology filtered into career counseling (Savickas, 2002). Career counselors began to concentrate not so much on personal traits and their most advantageous fit into particular occupations, but rather on the processes that build and develop an individual's career through the life course. Rogers was followed by a series of career theorists including Super, Tiedeman, and Gottfredson.

Social Learning Theory of Career Decision Making

Krumboltz applied Bandura's (1986) social theory to career behaviors. According to Krumboltz' social learning theory

humans are born with differing characteristics and predispositions at a given time and place to parents not of their own choosing. They grow up in an environment

where innumerable unpredictable events occur that provide opportunities for learning for both a positive and negative nature (Mitchell, Levin, & Krumboltz, 1999, p. 117).

The consequences of these learning experiences are “synthesized by each individual . . . [and] guide each person’s thinking about appropriate career decisions and actions” (Krumboltz, 1996, p. 60). As a result, individuals are unique because they have different experiences and different perceptions based on previous learning (Anderson & Vandehy, 2006); all of which need to be “taken into account in order to adequately conceptualize a person’s development” (Vondracek, Lerner, & Schlenberg, 1983, p. 181).

The counselor’s role according to this theory is to facilitate learning of skills, interests, beliefs, values, work habits, and “personal qualities that enable each client to create a satisfying life in a constantly changing work environment” (Mitchell, Levin, & Krumboltz, 1999, p. 117).

Constructivism and Career Development Theory

Sexton (1997) contended there have been three “eras of knowing” (p. 6). The first, premodern thinking, was influenced by religious or rational philosophy and exemplified by dualism, idealism, and rationalism.

The second era, modern thinking, was influenced by the scientific method of empiricism, objective truth, validity, and logical positivism. The microscope, symbol of this era, aptly reflecting this period’s goal of making accurate predictions based on cause and effect relations (Rigazio-Digilio, 1997). These conceptual models used to explain psychological events, however, differed significantly from culture to culture and were rarely universal (Sexton, 1997).

The third era of knowing, postmodern thinking, was identified with constructivism and exemplified by participatory epistemology and constructive reality (Sexton, 1997). The symbol of this era was the holograph reflecting various perspectives (Rigazio-Digilio, 1997). With constructivism, there is no single scientific order. Rather the “individual is an active agent seeking order and meaning in social context” (Mahoney, 1996, p. 5). This knowledge, therefore, allows for multiple interpretations (Goncalves, 1997). Under constructivism, if “reality exists at all, it has meaning only after it is perceived” (Hayes & Oppenheim, 1997, p. 33).

Similar to social learning theory, constructivism thus combines the influence of learning within a social context with the added proactive stance of constructing a life within that social context. No longer are individuals seen as “passive vessels responding to stimuli; rather individuals are now viewed as decision makers, with choices, preferences, and the possibility of becoming masterful and efficacious” (Clifton & Harter, 2003, p. 113).

Composing a life: Principles and assumptions of constructivism. Central in the theme of constructivism is that humans are “more than passive entities controlled by external environmental determinants” (Lapan, 2004, p. 27). They construct meaning about themselves in the world in which they live through a process of “making common, of sharing, and exchanging” (Gonclaves, 1997, p. xv).

Several principles guide constructivism (Hayes & Oppenheim, 1997). The first is that development is contextual. Knowledge takes place in the interaction between individuals and their surroundings. In this social context, “higher cortical functions takes place not in the space between the ears but in the sphere of the community” (Gordon &

Efran, 1997, p. 102). Knowledge is relational, acquiring meaning “not from its referential base, but from its social practice” (Sexton & Griffin, 1997, p. 253).

Within the constructivist perspective, individuals are considered producers of their own development. Through organization and adaptation, knowledge is related to contextual events, reality is multiformed with limitless interpretations, language constitutes reality, and meaning-making is a self evolution process where each developmental stage is “more differentiated, comprehensive and integrated structure than the one before it” (Hayes & Oppenheim, 1997, p. 24).

From the constructionist viewpoint, people and collective systems co-construct unique world views and any “meaning a person or family derives from experiences are primarily filtered through [this] world-view” (Rigazio-Digilio, 1997, p. 84). Change occurs in a nonhierarchical, non-recursive manner where numerous life trajectories and shifts in meaning cannot be fully predicted or controlled.

Any kind of developmental impasses reflect incongruities between the individual’s worldview and contextual demands. Those adaptive individuals and families with a rich repertoire of thoughts, feelings, and behaviors will be able to respond and act on their environment from various orientations (Rigazio-Digilio, 1997). Those without a congruent world-view or skills to deal with their environment may experience developmental challenges.

Types of constructivism. There are three types of constructivism: critical, radical, and social (Hayes & Oppenheim, 1997). Critical constructivism argues that individuals live in an unknowable but inescapable real world. They cannot choose to be self-sufficient but must co-create their self-concept through interdependence with their social

and physical environment. Radical constructivism also believes there is no reality that extends beyond individuals' own experiences and that the world is absolutely unknowable beyond their own systems of knowing. In radical constructivism, however, individuals are completely self-organizing and have choice with whom they choose to interact in the process of creating reality. Social constructivism takes radical constructivism beyond the individual, believing social processes, products and, ultimately, culture are created and implemented through the interactions of human activity (Wentworth & Wentworth, 1997). Career development can be viewed from any of these viewpoints.

Role of language in constructivism. It is through language that meaning is constructed (Goncalves, 1997). Discourse provides categories and terms that become the basis for understanding the world which becomes the "basis for what is heard, not heard, what is said, what is not said" (Sexton & Griffin, 1997, pp. 253-254).

One way in which language organizes our world is through the use of labels. Labels allow us to "conceptualize a past, a present, and a future as well as to discern patterns of causality" (Gordon & Efran, 1997, p. 104). There are three kinds of labels (Chase, 1938). There are labels for common objects such as *dog* or *chair*. There is little difficulty interpreting this type of label. There are also labels for clusters or collections of things such as *mankind*, *Germany*, or *the court*. These labels are of a higher order of abstraction and misinterpretation regarding their meaning is widespread. The final type of label is for qualities such as *freedom*, *individualism*, or *truth*. With these labels there are no references in the real world. These labels are the domain of philosophy, politics, and economics.

Vocational terms can be any of these three types of labels. In career development, the creation of labels such as personality traits, vocational interests, and career families is critical in establishing a common language for discourse between the counselor and client as well as helping the client formulate concepts and issues during the career development process. It is through the use of these labels that vocational knowledge is created and understood.

Construction of the possible self through agency and empowerment. Through constructivism individuals establish meaning about their environment and themselves, as they are and as they could be. This future self, a possible self, is rooted in the ideas individuals have about themselves, their future, and what they might want to become. Possible selves become the cognitive bridge from the present to a future, specifying plans and framing behavior to guide subsequent courses of action (Markus & Nurius, 1986). The collection of these choices becomes life themes (Massimini & Fave, 2000) or, in terms of work histories, unique career fingerprints (Hall & Mirvis, 1996).

Whether the vision of the possible self becomes a reality is influenced by agency and empowerment. Agency is the individual's capacity for self-direction (Richardson, 1998), including the ability to "make decisions, act in his or her own best interests, be assertive, and exercise control over career and work situations" (Lapan, 2004, p. 8). When agency is "embedded in social context, it becomes empowerment" (Richardson, 1998, p. 5). Three components of empowerment include individuals being actively and continuously involved in goal identification, motivated to realize their unique potential, and able to attain resources from their environment to achieve their goals (Lapan, 2004).

Constructivism and career development. Since constructivism “focuses attention on facilitation of the personal qualities of flexibility, open-mindedness, self-empowerment, and tolerance for diversity” (Sexton & Griffin, 1997, p. 251), it is particularly suited as a theoretical basis for career development in today’s fluid job market. Just as in social constructivism, individuals are the main authors of their vocational self in career constructive theory. Careers are viewed not as a collection of work experiences but rather

the patterning of these experiences into a cohesive whole that produces a meaningful story. Herein, career denotes a subjective construction that imposes personal meaning on past memories, present experiences, and future aspirations by weaving them into a life theme that patterns one’s worklife. Thus, the subjective career that guides, regulates, and sustains vocational behavior emerges from an active process of making meaning, not discovering preexisting facts” (Savickas, 2006b, p. 2)

In this model, “the personally determined career must be conceived as a career in being, not as a career in existence” (Tiedeman, 1972, p. 165). Careers do not unfold as much as they are continuously constructed through individuals’ vocational behavior and occupational experiences. Career traits are not considered static, but rather “more verb than noun” (Savickas, 2006a, p. 4). Through a series of choices and experiences, individuals begin to develop their own career reality and identity, much like a quilter constructing a quilt. The quilter selects and connects pieces together to create a whole much like the individual creates a life “weaving together the personal, the professional, and the practical” (Hansen, 1997, p. 12).

Discernment is a critical component of constructing a life, personal or vocational, through which individuals examine whose life is being constructed—the life individuals envision for themselves or a life others create for them.

A few lucky people discover this secret early in life, but most of us are caught in a kind of psychological wrestling match, torn between what we think we *can* do, what we (or others) feel we *ought* to do, and what we think we *want* to do (Tieger & Barron-Tieger, 2000, p. 5).

Discernment requires that individuals ask two critical questions: “what is right for me?” and “where am I willing to be led?” (Levoy, 1997, p. 7). By treading the path between these two questions, individuals determine if their calling is authentic. As individuals incorporate knowledge and awareness of their skills, knowledge, abilities, values, experiences and motivation, they literally create “new aspects of self in relation to their career. In this way, career growth is one type of self-actualization or self-fulfillment” (Hall & Mirvis, 1996, p. 25).

Influences on Career Selection

As part of constructivist theory, “the process of career choice is so deeply imbedded in cultural and economic factors that it is unreasonable to try to develop a theory of vocational development without including these variables” (Osipow, 1973, p. 293). With constructivism it becomes impossible to “separate the decision from the decider” (Gelatt, 1989, p. 255). As such, reality is as much in the *eye* of the beholder (what observers see) as well as in the *I* of the beholder (how observers see through their personal lens) (Gelatt, 1991).

Just as with personal issues, career matters are inextricably bound to multiple psychosocial factors. The “identity of each individual includes internalized messages affected by societal factors” (Anderson & Vandehey, 2006, p. 124), such as age, gender, socioeconomic status (SES), race, ethnicity, cultural background, and family influences.

The following will explore the role of affect, cognition, personal identification, self-efficacy, gender, and family and cultural influence as well as vocational interests and abilities in making career choices.

Role of Affect and Cognition in Career Choice

There are differing viewpoints regarding the role of affect and cognition in the career selection process. Brown, George-Curran, and Smith (2003) contend affect and cognition taken together constitute a “critical determinant in career choice and behavior” (p. 379). On the other hand, Ackerman and Heggestad (1997) suggest broad cognitive abilities tend not to influence vocational interests. Whether a major influence or not, emotion and intelligence are at least a consideration in career choice.

Emotion motivates and energizes action (Brown, George-Curran, & Smith, 2003). Those with higher emotional intelligence report greater confidence in career decisions while those with lower emotional intelligence are less aware of how to use their emotions to guide their actions, often resulting in uncommitted career choices. Once on the job, how people manage their emotions and the emotions of others can significantly affect job satisfaction.

Cognitive abilities are not about the amount of knowledge already gained but the ability to gain new knowledge (Gottfredson, 2003). Carroll (1993) suggests there are three levels of vocational intelligence. Level I deals with specific basic learning abilities such as reading decoding, listening ability, language comprehension, quantitative reasoning, and expressing fluency. Level II is comprised of verbal skills, memory, broad visual perception, and general learning. Level III involves general mental ability or intelligence. Level III vocational intelligence is related to the job level an individual

masters and Level II abilities relate more to suitability of different fields at various echelons (such as skilled versus professional activities). Career counseling may address any of these three levels of vocational cognitive ability.

Relationship between Personal Identification and Career Choice

There is a long history (Berdie, 1944) acknowledging the connection between personality and vocational interests although differing perspectives exist on the nature and sequence of this relationship. Some propose interests and personality are present at birth (Betsworth, Rouchard, Cooper, Grotevant, Hansen, Scarr, & Weinbert, 1994). Others suggest personality precedes vocational interests (Lent, Brown, & Hackett, 1994). Whatever the arrangement, personality awareness is generally accepted as a “critical component of career development” (Apostal & Marks, 1990, p. 811).

Individuals with a clear sense of identity are more likely to find and tend to be more persistent in finding work that is consistent with their personal characteristics. Conversely, those without a clear sense of self tend to have a work history that can be characterized with “incompatible choices, frequent job changes, and diverse set of successive jobs” (Holland, 1996, p. 403).

Identity can be described in various terms such as *self-concept*, *self-image*, and *sense of self*. The distinction between identity and self esteem is that “identity is descriptive, indicating perceptions of one’s personal qualities, while self-esteem is evaluative, indicating the value one attaches to one’s personal qualities” (Hall & Mirvis, 1996, p. 25)

Role of Self-Efficacy and Vocational Choice

Self-efficacy is the belief of individuals in their ability to manage their own functioning and exercise control over events that affect their lives (Bandura, 1997). It is the mediator between ability and career aspirations (Nauta, Epperson, & Kahn, 1998; Chartrand et al., 2002). Both interests and self-efficacy are necessary to pursue a career (Betz, Brogan, & Harmon, 1996) and to maintain persistence during the career selection process (Betz, 1999; Chartrand, Brogen, Betz, & Donnay, 2002).

There are four sources of self efficacy: performance accomplishment (personal mastery and experience), vicarious experience (learned from modeled behavior), verbal persuasion (social influence and encouragement), and psychological status (emotional arousal and the role of fear) (Chartrand et al., 2002). Vocational self-efficacy is gained through progressive mastery of occupational activities which create vocational interests.

One component of self-efficacy is expectations (Lapan, 2004). Self-efficacy expectations are individuals' beliefs about the expected outcomes as a consequence or likelihood of what will happen should they take certain courses of action. Positive and desirous expected outcomes support and encourage the individual to take action. Negative outcome expectations do the opposite, becoming barriers to action.

Outcomes can be physical (such as money), social (such as approval or disapproval from significant others), and self-evaluative (such as self satisfaction) (Lapan, 2004). Outcome expectations are affected by four different perspectives: outcomes are perceived as positive or negative; locus of control (ability to manage the outcome) is viewed as either within the individual or others; the importance of the outcome to the individual; and if outcome will be realized in the present or distant future.

Self-efficacy can also vary based on gender differences (Carr & Jessup, 1997; Dweck, Davidson, Nelson, & Enna, 1978; Eccles & Jacobs, 1986; Fennema & Sherman, 1977). Men seem to be more likely to attribute success to ability and failure to lack of effort. On the other hand, women may be more likely to attribute successes to effort or luck and failure to a lack of ability.

Knowledge about levels of interest and confidence is helpful for career counselors in formulating specific career counseling approaches to meet the needs of their clients (Chartrand et al., 2002). Career options that contain both high interest and high confidence are good options to pursue. High interest and low confidence careers are still good options if confidence can be improved. Low interest and high confidence careers are good to explore if interests can be improved. Low interest and low confidence careers are not likely to be good options. Confidence can be increased through classes, workshops, community education, and skill building activities. Interest can be increased through workshops and informational interviews, especially with people of the same gender and ethnicity.

Vocational interest and confidence can be affected by traditional attitudes about gender-specific careers. In a study of 715 college students, Rottinghaus, Betz, and Borgen (2003) compared results of Expanded Skills Confidence Inventory with Strong Interest Inventory's general occupational themes (GOT) and basis interest scales (BIS). They found high confidence (self-efficacy) and low interest patterns occurred more frequently with gender-stereotypic areas and the opposite (high interest and low confidence) occurred more in non-traditional gender areas.

Role of Abilities, Interests, and Achievement in Career Selection

Strong in 1943 describes the relationship between abilities, interests, and achievement to that of a boat, motor, and rudder. The motor (abilities) determines how fast the boat (career development) can go, the rudder (interests) determines the direction, and achievement determines the distance traveled. Of these three, interests were considered the strongest predictor of career selection (Berdi, 1944). Interests and abilities continue to be the fundamental dimensions of career assessment (Chartrand et al., 2002).

Five factors influence the formation of vocational interests: genetic influences, unique environmental experiences, self-efficacy expectations, personality development, and aptitudes (Lapan, 2004). Genetic factors, including physical abilities and temperament, predispose individuals to gravitate and respond to certain stimuli and not to others. The largest variance in vocational interests is explained by environmental experiences unique to the individual (Krumboltz, 1996). In environments where talents and interests cannot be developed, vocational interests may be circumscribed and discouraged from expression. Environment was found to be a factor in variances between interest in 59% of teaching and social services, 65% of interest in merchandising, 71% of interest in sales, and 68% in business management (Lapan, 2004).

Vocational interests are relatively constant over time and become even more stable with age (Holland, 1996). They tend to stabilize around physical and intellectual maturity and become more realistic as individuals actually approach employment (Berdi, 1944).

Gender Influences on Career Selection

As early as 1942, Miles determined there were major differences in career selection based on gender. Gender still remains the second most constraining factor in occupational decision-making process for reasons other than discrimination; due partially to women's orientation to other life roles, primarily concerning family roles (Brown, 2002; Carter & Cook, 1992). This situation is not limited to the United States. Women in Israel, Germany, and Japan assigned a lower importance to the centrality of work in their lives than men (Harpaz & Fu, 1997).

Most disturbing is that gifted women in particular often fail to pursue occupations at levels commensurate with their intellectual abilities (Kerr & Maresh, 1992). As the general distribution of ability is similar for women and men, the expectation would predict a similar distribution of occupational levels among women and men in the workplace. The reality is quite different, due to

persistent underutilization of women's abilities and widespread ghettoization in traditionally female, low-level occupations. Such occupational tracking implicates societal factors such as discrimination, sexual harassment, the motherhood mandate, gender role socialization, work-home conflict, and other barriers that limit women's choices and severely compromise optimal [career] fit. (Fitzgerald, Fassinger, & Betz, 1995, p. 82).

Globalization may have a positive impact on women in the workplace. Women are the fastest growing groups of new entrants into the labor force. They will account for 63% of all new workers between 2001 and 2010 (Saveri & Falcon, 2000). Women business owners now account for more than one-third of all businesses in the United States and this trend is expected to grow (Saveri & Falcon, 2000). Entrepreneurship may

present an answer for many professional women leaving the corporate world seeking to build their own environments and cultures.

Extrinsic Influences on Career Selection

Career selection is not only influenced by intrinsic stimuli (interests, personality, emotions, intelligence). It can also be swayed by extrinsic factors including family and culture.

Family influence on career selection. Parents can have a strong impact on children's vocational choices. This influence may increase as grown children actually start working (Berdi, 1944). Also, the more limited ability the child has, the greater the family influence in career choice (Gottfredson, 2003).

Parents facilitate adolescent career development in a variety of ways: skill acquisition, acquisition of specific values or beliefs, protection from unwanted experiences, increasing independent thinking or action, decreasing sex-role stereotyping, moderation of parent-child relationships, facilitation of human relationships, enhancement of character development, and development of personal responsibility (Young & Friesen, 1992). This influence can be enhanced when parents are personally involved in school-based activities (Grolnick & Slowiaczek, 1994).

Perhaps the strongest career influence parents exert on their children is through communication, especially in regards to quantity, quality, proximity, and importance attached to the conversations (Paa & McWhirter, 2000). In a study of high school juniors, students reported they talked to their mothers (81%) and fathers (62%) regarding careers. Peers were a close second (80%) (Otto, 2000). In the same study, mothers (75%) were considered the most helpful to talk to about careers followed by fathers (55%), other

adult relatives (54%), friends (53%), and adult friends (51%). In another study, high school students reported same-sex parents had the most effect on their career expectations (Paa & McWhirter, 2000). Whatever the nature of the influence, parents will continue to have a primary influence “over peers, educators, counselors and other professionals—of serving as a continual, and perhaps more stable, resource for their children over the life span” (Trusty, 1998, p. 260).

Cultural influence on career selection. Cultural values influence “how individuals mentally organize their world of work and their place in it” (Hansen, Scullard, & Haviland, 2000, p. 160). In South Africa, there is a common value called *ubuntu* which is expressed as “as person is a person because of people” (du Toit & de Bruin, 2002, p. 74). This collectivist view of putting the needs of the group over individual needs extends to career choice. Culture may also affect which job categories are considered. In a 1992 study (Church, Teresa, Rosebrook, & Szendre), Hispanic women indicated they would avoid careers where men have been traditionally employed, thus, eliminating viable vocational options.

Job Search Process

Vocational choice is a “process not an event” (Healy & Woodward, 1998, p. 2). It is often stressful because work is so closely aligned with personal identity and self-esteem (Amundson & Borgen, 1982). It is further complicated by personality variables which can impact which approaches to the job search are utilized (Reed, Bruch, & Haase, 2004). In addition, job searches are affected if the process is voluntary or non-voluntary

due to termination or loss of a position through such events like company closure or downsizing.

Voluntary Job Search

The job search process can be viewed from three different perspectives: big picture, best bets, and alternative plans (Gottfredson, 2003). Big pictures are overall broad views and understandings of the world of work. Best bets are more detailed explorations about requirements for possible occupations including education, training, certifications, skills, knowledge, and abilities. Alternative plans are “back up” strategies if more ambitious occupational plans become unrealistic. Voluntary job searches will be influenced as individuals consider all three of consideration levels.

Non-voluntary Job Search

The dynamics of non-voluntary unemployment encompass attitudes regarding both the job loss and the subsequent job search. With a non-voluntary job loss, the search for new employment may have heavy emotional undertones (Amundson & Borgen, 1982). Losing a job entails a grieving process (denial, anger, bargaining, depression, and acceptance) during which individuals may feel powerless. The resulting job search pattern for the non-voluntary unemployed individual may resemble the stages of burnout: initial enthusiasm, stagnation, frustration, and ultimately apathy if not successful.

Perosa and Perosa (1997) identified seven stages of emotional responses due to job changes: shock and immobilization, elation and despair; minimization and denial (person feels some frustration, depression, or anxiety but these feelings are minimized); self doubt and depression (these feelings start during Stage Two but become more intense in this stage); letting go; testing options and alternatives; searching for meaning

(identifying strengths, determining how to implement changes, identifying risks individuals are willing and not willing to take); and internalization and renewal (individuals assume new realities and incorporate these into self concept). Non-voluntary job searches often experience all of these stages. Voluntary job searchers may begin with the second stage. It is helpful for counselors to determine what stage the client may be in and adjust counseling techniques to meet the issues of each particular stage.

Obstacles to the Job Search

Job search barriers can be internal, such as anxiety and reluctance to change, or external such as an unfavorable economic climate. Sometimes these barriers are “badly tangled misconceptions, some are deeply rooted fears. The two are related—like any prejudice, misconceptions get fabricated and sustained by fears” (Bronson, 2003, p. xviii).

Healy and Woodward (1998) identified twelve obstacles to vocational change: reluctance to change, too many external demands, internal psychological problems, inconsistent or unclear direction from career assessments, inadequate career information, insufficient networks, lack of resolve in decision-making process, reduced economic opportunities, lack of finances for study or business venture, unrealistic aspirations, inability to form working relationship with career counselor, and lack of support from significant others.

Barriers can exist within the job search process itself (Gati, Krauss, & Osipow, 1996). It can be due to several factors including a lack of motivation to engage in the process, irrational beliefs about the process (believing there is only one correct career for the individual), lack of information about the steps in making career choice, lack of self-

information, lack of information about occupational alternatives, lack of information about careers, and employment information is inconsistent or contradictory (interests and preferences are contradictory to each other).

Job search barriers may be tied to other personal factors (Lapan, 2004). People with low self-efficacy may not believe in their ability to make good decisions. Community realities such as long-term joblessness in economically depressed areas can lower efficacy expectations about possible employment.

Mid-career changes. Mid-career changes offer unique challenges. After years of being successful and understanding one set of job competencies, being told new skills must be developed can strain a worker's self-esteem and confidence as well as affect more severe realities of permanent loss of income, possessions, and status (Nussbaum, Palmer, Cuneo, & Carlson, 1992). This is further impacted if retirement and health care benefits are jeopardized, making the requirement for change appear as a "cruel betrayal of trust" (Hall & Mirvis, 1996, p. 23).

It is during these periods of transitions, planned or unforeseen, that individuals feel most vulnerable and least in control (Cabral & Salomone, 1990). The ability to successfully cope will depend upon the transition's timing, source, and duration; and individuals' ego strength, options and support systems (Schlossberg, 1985).

Decision-Making Models

The decision-making process has two aspects: the consideration phase (deciding) and the action phase (decided). Both are necessary.

When people fail to exercise their capacities for tentativeness and reflection in goal pursuit they fail to express the full range of their humanness. They act

without thinking. When people fail to exercise the capacities for commitment and implementation, they are impotent. They think but do not act. To be both human and potent, people must develop capacity to integrate thought and action (Dudley & Tiedeman, 1977, p. 259).

In terms of career development, this is a necessary life-long skill because career decision-making is a dynamic, not a static one-time-only process (Tinsley, 2000).

Many career decision-making models exist to assist individuals in their job search and job selection process.

Trait and Factor Approach

Frank Parsons in his initial work at the beginning of the twentieth century created a process that was later to be called the trait and factor approach. The counselor's role in this process is to assist clients to better understand themselves, better understand the world of work, and assist them in the decision-making process where intersects occur between self and occupations (Lapan, 2004).

While still a prominent influence in career development, the trait-and-factor theory is not without its limitations. It provides only a small fraction of questions brought to career counselors (Krumboltz, 1994). It is further flawed because of its initial norming population—white middle-class heterosexual men. While making the “best fit” between individuals and appropriate occupations it often fails to describe women's career choices and the role of gender, race, class, and sexual orientation in career selection (Fitzgerald & Betz, 1994).

Person-Environment Fit

John Holland (1959, 1966, 1973, 1985, 1992) believed that to a large degree career interests were an expression of personality. In order to understand the relationship between personality and environment interactions, he created a model to identify personal

interests and work environments. He believed that individuals tended to be more satisfied and performed better in work environments that matched or were more congruent with their personality types (Niles & Harris-Bowlsbey, 2002). Holland's theory is based on four assumptions:

1. In our culture, most persons can be categorized as one of six types: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional.
2. There are six kinds of work environments: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional.
3. People search for environments that will let them exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles.
4. A person's behavior is determined by an interaction between his personality and the characteristics of his environment (Holland, 1973, pp. 2-4).

This theory, often referred to as the RIASEC Model for the first letters of each characteristic (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional), is most often depicted as a hexagon. The arrangement of characteristics around the hexagon is intentional. The placement shows the relationship between each characteristic. Letters next to each other on the hexagon are more consistent with each other than letters across or opposite from each other.

In addition to congruence and consistency, Holland's theory included considerations about differentiation. Differentiation is the degree to which individuals are clear about their work environment preferences. People who were undifferentiated, or had low awareness of preferences, often had difficulty making career decisions (Niles & Harris-Bowlsbey, 2002).

Career Fit

Given the complexity of today's job market other career fits beyond trait and factor or person and environment may be necessary when considering new positions

including technical, personal, management, and organization (Lock & Hogan, 2000). Technical fit looks specifically at the technological expertise required for a position and the individual's ability to meet that requirement. Personal fit considers how the person will interact in the workplace, get along with others, perform under the workplace stressors, and the motivation and capabilities to learn and expand current skills and abilities. Management fit considers the dominant management style used at the new position and the individual's ability to thrive under that style. Organizational fit considers organizational behaviors, values, and goals as they compare to and are compatible with those of the individual.

Tinsley (2000) points out two other general considerations about career fit: the relation between what an employee desires (preferences and values) and what a job can actually supply (benefits and reinforcers); and the relation between abilities the individual possesses (aptitudes or intelligence) and the demands of the work environment (work load and task requirements). Tinsley concurs with Holland in that the closer the fit between individuals and their work environment, the more vocational outcomes will be enhanced such as job performance, satisfaction, commitment, and morale.

Information Style Model

Johnson (1978) developed a decision-making model which incorporated two different dimensions: spontaneous to systematic information gathering and internal (think to talk) to external (talk to think) information analyzing. The information-gathering phase, whether spontaneous or systematic, had five qualities: goal orientation, choosing among alternatives, thought patterns, speed to commitment to new ideas, and reaction to

events. The combination of these two dimensions created four decision-making styles: spontaneous-internal, spontaneous-external, systematic-internal, and systematic-external.

Individuals with dominant external style were more likely to benefit from active assessment tools and discussions about interests, abilities, and job characteristics. Dominant internal information gathering preferences were likely to benefit from traditional interest inventories and take-home assessments. Spontaneous individuals were encouraged to try out career options through internships and volunteer activities. Systematic information gathering individuals benefited from exploring career options through research and informational interviews (Hardin & Leong, 2004).

Other Career Decision-Making Models

Current literature contains many other career decision-making models. Han (2005) outlined four strategies to increase vocational success: finding oneself; running towards oneself; paying the rent first, conquering the world later; and becoming the big fish by mastering the little pond. The first step (finding oneself) is a combination of identifying personal abilities and abilities along with a clearer understanding of the changing world of work. Step Two (running toward oneself) encourages people to embrace and develop their unique strengths. Step Three (paying the rent first) recognizes that people may not find the job of their dreams immediately. Han suggested getting into the job market to make a living while still keeping a focus on vocational dreams and developing several coping mechanisms to make this happen. These included developing and immersing in a supportive community, pushing oneself beyond his or her comfort zone, and using insecurities and inexperience as motivational fuel. The final step (being a

big fish in a little pond) encourages people to build a foundation of success by mastering small tasks before moving to more challenging tasks.

Boldt (1993) suggested five areas to consider while creating a career life: vision questing (imagining how the world could be and compare this to how the world is); clarifying values (identifying what is important); pointing to purposes (what is the person's life purpose, where can the individual make a difference); targeting talents (recognizing what a person loves to do and is naturally good at doing as well as how to best use these talents in service of the person's vision, values, and purposes); and marketing mission objectives (what outcomes does the person want to achieve and what must be done to achieve these outcomes).

Peterson (1995) suggests there are four stages of career decision, whether one is just entering the job market or changing careers: self exploration, occupational exploration, goal setting and decision-making, and implementation of the decision.

Harris-Tuck, Price, and Robertson (2000) used the analogy of a kaleidoscope with career decision-making. They viewed career development as a combination of several elements that can come together in various patterns including core focus, values, preferences (personality type), interests (vocational), skills, and talents.

Collins (2001) proposed there are three circles of influence in work life. Moving from good to great includes deeply understanding each circle and looking for intersections where these circles overlap. The first circle is knowing where and where not one's talents exist, determining where the individual can be the "best in the world" (p. 118). The next circle is looking for places where the individual can make the greatest

impact; “what drives [his or her] economic engine” (p. 118). The final circle is understanding where the individual’s deep passions exist.

Non-Rational Decision-Making

The models described above use a rational systematic approach to decision-making; however some believe “the rational model simply does not fit reality or human capacity” (Phillips, 1994, p. 156). Numerous studies (Hart, Rayner, & Christensen, 1971; Phillips, 1994; Roe & Baruch, 1967) confirm people often do not employ rational, systematic, comprehensive, and methodical means in making career decisions. Instead of gathering “information about themselves and occupational options, integrate the information, and evaluate it to make decisions” (Betsworth & Hansen, 1996, p. 91), people may gather some information and use shortcuts involving emotion and intuition when making career decisions (Hall, 1996); sometimes selecting options that are good enough rather than optimally good (Phillips, 1994).

Problem with today’s information. One of the barriers in making rational decisions is due to current problems with information: obsolete information, information overload, and non-existent objective information (Gelatt & Gelatt, 2003). In this rapidly changing world, facts quickly can become obsolete thereby making it difficult to make decisions based on accurate data. At the same time a paradox can occur that with more information comes more uncertainty as characterized by the educators’ dilemma of realizing the more they know, the more they realize what they do not know. With today’s technology, vast amounts of information are available that may exceed the person’s capacity to process causing information overload. Finally, there is no such thing as

objective information since “the sender and receiver are very likely to modify information” (Gelatt, 1989, p. 252).

One role of career counseling is still to assist clients getting information. An important aspect of this, however, is not just a collection of the facts themselves but rather “understanding the clients’ attitude about these facts and how they are arranged and rearranged in the client’s mind to formulate choice” (Gelatt, 1989, pp. 255-256).

Gelatt and Gelatt (2003) offer the following guidelines for dealing with the vagaries of today’s job market which they have termed *positive uncertainty*: regarding information—treat facts with imagination but do not imagine facts; process—know what you want and believe but do not be sure; and choice—be rational unless there is a good reason not to be.

Planned happenstance. The whole notion of using non-rational elements in selecting jobs has led to the study of chance and its impact on career selection (Mitchell, Levin, & Krumboltz, 1999). One of the branches of this, planned happenstance, not only considers the impact of chance events but also the management of creating and responding quickly and decisively to these unpredictable events.

Planned happenstance theory may be considered an amendment and expansion of social learning theory of career decision-making. It is defined as the “conceptual framework extending career counseling to include the creating and transforming of unplanned events of learning. The goal of planned happenstance interventions is to assist clients to generate, recognize, and incorporate chance events into their career development” (Mitchell, Levin, & Krumboltz, 1999, p. 117).

The two major components of planned happenstance theory include the exploration to generate chance opportunities and the skills necessary to enable people to seize these opportunities when they occur (Mitchell, Levin, & Krumboltz, 1999). Chance can operate on a continuum from

events or encounters that are totally unforeseen (a natural disaster, the sudden death of a spouse, or a conversation on an airplane, for instance), to those that are at least in part in the control of the individual (overhearing information concerning a job opportunity during a meeting of a professional organization or deciding to enter graduate school in a newly emerging field after learning of that field through one's mentor) (Cabral & Salomone, 1990, p. 3).

Reactions to these chance events can vary. One individual may see the event as a catalyst for change, another will consider the event but decide not to alter his or her career, and a third will not even recognize that the event has occurred (Cabral & Salomone, 1990). These differences may be due to "one's preparedness and receptivity to possibilities" (Mitchell, Levin, & Krumboltz, 1999, p. 118). Responses may also vary based on educational levels. In a study of 60 men (Hart, Rayner, & Christensen, 1971) determined subjects at the professional level were more apt to consider planning and preparation when considering occupations; whereas, subjects at the skilled or unskilled level more often cited chance and unplanned events as influential in entering occupations.

Other influences of taking advantage of chance events include level of intuition, locus of control (external loci of control are less likely to be proactive when change event occur), personal empowerment, and self concept. A well-developed self-concept "enables a person to process unforeseen information. . . [where] such information could be confusing to a person with an ill-defined sense of self" (Cabral & Salomone, 1990, p. 5). Strong self concept is linked to developed awareness of personal strengths, skills, abilities, values, and interests.

Chance event categories. In a 1996 study, Betsworth and Hansen surveyed 237 older adults and found nearly two-thirds of the participants believed their careers were influenced by serendipitous events (defined in this study as events that were not planned or predictable but that had a significant influence on their careers). After analyzing descriptions of these events, eleven categories emerged. They are, listed in order of importance, professional or personal connections, unexpected advancement (as a result of a resignation, firing, or death of the previous worker), right place/right time, influences of marriage and family, encouragement of others, influence of previous work/volunteer experiences, military experiences, temporary position became permanent, obstacles to original career (hindered pursuing original career plans and encouraged alternative considerations), influence of historical events (many of the participants would have been in their twenties during World War II), and unexpected exposure to interest areas.

Chance versus creating potential for opportunities. There is a critical difference between “someone who passively relies on luck to solve problems and someone who is actively searching while remaining open to new and unexpected opportunities” (Mitchell, Levin, & Krumboltz, 1999, p. 117). In the Betsworth and Hansen (1996) study, participants often overlooked steps they consciously took to get to know significant people or actions they took to be in the right place at the right time. This is a common occurrence for people to not realize how their prior planning affects the type and occurrence of chance which may occur (Hart, Rayner, & Christensen, 1971). Rather than “planning as though the future can be known, the plan is to be open to the unpredictable” (Anderson & Vandehey, 2006, p. 109).

The counselor's role in this model is to help clients develop the skills necessary to seize unexpected opportunities through curiosity, persistence, flexibility, optimism, and risk-taking (Mitchell, Levin, & Krumboltz, 1999). Keys to satisfying career development are "an awareness of internal priorities, a sensitivity to external events and encounters (planned and unforeseen), and an ability to evaluate and act on options when faced with potential change" (Cabral & Salomone, 1990, p. 6)

Use of Assessments in Career Selection Process

While varying in details, a common theme through all the decision making models is self knowledge, the "personal compass [that] gives direction in one's life" (Hall & Mirvis, 1996, p. 24). Understanding self can involve several dimensions: personality (personality traits), likes and dislikes (vocational interests), and talents and abilities (Carter & Izumo, 2001). In order to respond to today's multiple life roles and technological revolution, career counselors are creatively integrating "concepts, old and new, as they work with clients and constructs to map career behaviors and goals" (Chartrand et al., 2002, p. 169).

Part of this process often includes the use of assessments to determine vocational interests and personality preferences. In addition to providing helpful information for the counselor, assessments may fulfill the needs of two types of clients: the test-savvy client who may demand assessments and the reluctant referred client for whom assessments are a primary means of getting workable information (Pinkney, 1983).

Vocational Assessments as Career Selection Tools

Vocational assessments typically measure occupational and work environment interests as well as skills (Krumboltz, 1996). Skill surveys are often self-report and reflect clients' view of their skill level. Interest surveys, however, can be a reflection not only of preferred areas of focus but also experiences garnered to date by the client. Clients may have limited interests because they have had relatively little opportunity to learn about alternative activities. As such, interest inventories can be used to assess current interests and identify areas of interest clients may want to develop in the future. Examples of vocational interest assessments are Holland's Personality Type Model, Strong Interest Inventory, and the Campbell Interest Skill Survey.

Holland's RIASEC model. Holland's theory is the "preeminent model in vocational psychology" (Larson, Rottinghaus, & Borgen, 2002, p. 218). It is viewed as "exceptional among career development theories" because of its "simplicity, face validity, organizational framework, vocabulary, and translatability to practice" (Rayman & Atanasoff, 1999, p. 114).

Holland's model incorporates six personality types: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C) (RIASEC). These characterize patterns of interest, competencies, and behavior (Gottfredson & Richards, 1999) as well as describing work environments. Where there is a good fit between personality characteristics and work environments, individuals typically feel more "successful, satisfied, and lead a productive work life" (Rayman & Atanasoff, 1999, pp. 115-116).

Part of the genius of Holland's model is its use of a hexagon to show the components of the model as well as their relationship to each other (Campbell, 2002). Traits next to each other and alternate pairs formed by internal triangles are more correlated with each other than those opposite from each other. The hexagon, by its shape, embodies these three different relationships: adjacent, alternate, and opposite (Rounds, Tracey, & Hubert, 1992). While some empirical studies have yielded more than six vocational types (Blake & Sackett, 1999), Holland's RIASEC model remains a vocational standard (Campbell, 2002) and "still the only game in town" in the field of career counseling (Gottfredson & Richards, 1999, p. 71).

The RIASEC model, however, is not without its critics. Prediger (1982) suggested Holland's six constructs could be better understood and explained using two dichotomous dimensions (data-ideas and people-things). Tinsley (2000) proposed that while the hexagon shape was easily understood, it had the unexpected consequence of oversimplifying person-environment fit. In addition, the construct of congruence has been found "to be, at best, a weak predictor of job satisfaction, achievement, stability in a career, absenteeism, and job performance" (Lapan, 2004, p. 74), explaining approximately only five percent of the variance in job satisfaction (Spokane, Meir, & Catalano, 2000). Finally, Holland's theory does not take into account the interactive changes "occurring within individuals and contexts over time or of the process underlying those changes" (Vondracek, Lerner, & Schluenberg, 1983, p. 190).

Strong Interest Inventory (SII). The Strong Interest Inventory (SII) (CPP, 2005) is the grandfather of vocational interest surveys and still the most well known of career interest surveys (Bubbenzer, Zimpher, & Mahrie, 1990). The initial survey, Strong

Vocational Interest Blank, was published by founder E. K. Strong, Jr., in 1927. In 1972, the Strong vocational survey merged with the work of David Campbell to form the Strong-Campbell Interest Inventory (SCII). This collaboration continued until 1983 (Campbell, 2002).

SII (CPP, 2005) has undergone multiple revisions since its inception to ensure currency including the addition of General Occupational Themes, Basic Interest Scales, and most recently Personal Style Scales (Chartrand et al., 2002). The General Occupation Themes (GOT), based on Holland's RIASEC model, were added to SII in 1972. Basic Interest Scales (BIS) were added by Campbell to the Strong inventory in 1968. These scales are in the middle between GOTs and occupational scales (Day & Rounds, 1997). The newest addition, Personal Style Scales (PSS), was added in 1994. PSS measure four preferences: work style, learning environment, leadership style, and risk taking/adventure. Of all the SII scales, PSS are the most closely aligned with personality dimensions (Donnay & Bergen, 1996).

Campbell Interest Skills Survey (CISS). Campbell continued his work in vocational assessment after separating from Strong in the 1980s and developed his own evaluation called the Campbell Interest Skills Survey (CISS). CISS also utilizes Holland's RIASEC model but Campbell renamed the categories because he believed the original titles were often confusing for clients. He separated Realistic into two separate categories: Producing (dealing with mechanical, agricultural, and construction activities) and Adventuring (dealing with police, military, and athletic activities) (Campbell, 2002).

The CISS categories are: Influencing (former Enterprising), Organizing (former Conventional), Helping (former Social), Creating (former Artistic), Analyzing (former Investigative), Producing (former Realistic), and Adventuring (former Realistic).

Personality Assessments as Career Selection Tools

Personality traits have a strong genetic basis, develop early in life, and remain relatively stable throughout the lifespan (Wiggins & Trapnell, 1997). These traits influence behavior patterns that can either facilitate or impede career development and job search activities (Reed, Bruch, & Haase, 2004). Because of this, Pinkney (1983) asserted almost any approach to career counseling needed to have a self-awareness component. As such, career counseling can become a self-growth process as well as a vocational process.

Personality assessments can also be a response to the current fluid job market where job seekers need to have more self-knowledge and personal awareness in order to remain competitive (Kennedy & Kennedy, 2004). Understanding personality types helps clients in several ways: provides confidence in one's own direction, helps to reveal areas where one can become excellent, reduces guilt for not being able to do everything well in life, and identifies one's values. Examples of personality assessments are the Big Factor Models (Big Five or Big Three), and Myers-Briggs Type Indicator.

Big-Factor Models. The initial *big factor* personality model had three components: Neuroticism, Extraversion, and Openness (Gottfredson, Jones, & Holland, 1993). This was later replaced with the Big Five Model (Extraversion, Likeability or Agreeableness, Control or Conscientiousness, Neuroticism, and Intellectance or Openness) (Costa & McCrae, 1985).

Neuroticism is the general tendency to experience negative feelings such as fear, sadness, anger, and hostility. Those with high neuroticism tendencies tend to be impulsive and less able to cope with stress. Extraversion relates to sociability. Those with high extraversion tendencies are sociable, assertive, talkative, cheerful, energetic, and optimistic. Openness relates to being intellectually curious, creative, and attentive to inner feelings. Conscientiousness relates to personal competence, dutifulness, organized behavior, and persistence. Those with high conscientiousness tendencies are achievement oriented, punctual, goal-driven, and disciplined. Agreeableness related to interpersonal tendencies of being altruistic, sympathetic, and trusting (Reed, Bruch, & Haase, 2004).

Reed and colleagues (2004) looked at each of these traits and related them to the career exploration process with the following results. Conscientiousness and Extraversion positively correlated and Neuroticism inversely correlated supporting self-efficacy and greater career search activities. High Openness resulted in less engagement with information gathering activities (perhaps because these are concrete activities and not the creative activities high Openness people like) and greater self-exploration regarding personal interests and abilities related to careers. High Neuroticism led to greater self-exploration regarding careers, perhaps because of feelings of inadequacy. Agreeableness had no correlation with specific career exploration behaviors.

Myers-Briggs Type Indicator (MBTI). MBTI (CPP, 2003) is one of the most popular and widely used personality instruments by organizations and career counselors (Boyle, 1995; Gardner & Martinko, 1996; Hammer & Kummerow, 1997; Jackson, Parker, & Diboye, 1996; Quenk, 2000; Thompson & Ackerman, 1994).

Mother and daughter team, Katharine Cook Briggs and Isabel Briggs Myers, developed MBTI (CPP, 2003) to make Carl Jung's theory of psychological types understandable and useful in everyday life. It has been used in many areas including self-understanding, stress management, team building, organizational development, understanding learning styles, and preferred communication styles (Kennedy & Kennedy, 2004). In relation to career development, the MBTI enables individuals to look at themselves in relation to others, their work, and their overall preferred working environment (Hirsh, 1991). This philosophy is reflected in the MBTI mission statement "whatever the circumstances of your life, understanding of type can make your perceptions clearer, your judgments sounder, and your life closer to your heart's desire" (Myers, n.d.). MBTI (CPP, 2003) identifies four basic personality domains with two dichotomous traits for each domain: energizing (Extravert versus Introvert), attending (Sensing versus Intuitive), deciding (Thinking versus Feeling) and living (Judging versus Perceiving) (Kennedy & Kennedy, 2004).

Personality preferences have direct implications in career development (Hirsch, 1991). Extraverts tend to have larger network of friends, associates and acquaintances. They utilize their verbal abilities to identify their strengths, aspirations and desires. Taken to extreme, they may be too verbal and not listen well. Introverts approach the job search process very thoughtfully and methodically, especially with application preparation and written documentation. They may have a tendency to spend more time thinking about the job than acting and may appear unassertive.

Sensing people are realistic, thorough, and systematic in their job search but may be reluctant to try something new (Hirsch, 1991). Intuitive people recognize potentials

and possibilities, locating resources, and representing themselves well in interviews.

They may have problems responding to factual questions and tend to procrastinate.

Thinking people make decisions grounded in objective analysis but may not be aware of impact of their decision on others (Hirsch, 1991). Feeling people will place a high priority on their values, can read overall organizational climate readily, and project personable caring nature. They may not appear to be analytical or able to make difficult decision and tend to take job rejection on a personal level.

Judging people will use organized step-by-step approach to job search and may limit options in order to make quick decisions (Hirsch, 1991). Perceptive people are spontaneous and flexible but may have difficulty making decisions.

Strengths Assessments as Career Selection Tools

As part of the success movement, a new category of self-knowledge is strengths or talents. Neither the relationship between strengths and vocational interests or personality preferences has yet to be determined; nor if strengths are another feature of vocational interests or another aspect of personality. Until then, they may be considered a distinct category of career selection tools. One assessment identifying personal strengths is Clifton StrengthsFinder (Gallop, 2005).

The Clifton StrengthsFinder (CSF) (Gallop, 2005), developed by the Gallup Organization, is an

online measure of personal talent that identifies areas where an individual's greatest potential for building strengths exist. The 180-item pairs were based on the theory and research foundation associated with semi-structured personal interviews that has been used by...Gallup for over 30 years (Lopez, Hodges, & Harter, 2005, p. 2).

The initial purpose of developing this instrument was to identify ways positive outcomes could be enhanced in work and academic settings. Today, CSF is available in 17 languages and, as of April 2004, over a million workers and students worldwide had completed the assessment.

CSF (Gallop, 2005) was founded on the work of Donald Clifton. Clifton based his “research and practice related to success on one simple question, ‘What would happen if we studied what is right with people?’ . . . He believed that talents could be operationalized, studied, and capitalized upon in work and academic settings” (Lopez, Hodges, & Harter, 2005, p. 3). He also believed talents are naturally reoccurring patterns that could be observed in life experiences. To go about studying strengths, Clifton and associates examined the roles of various jobs, visited the job sites or academic settings, identified outstanding performers in these roles, and interviewed them. These interviews were refined and subsequently administered by Gallup analysts to more than two million individuals.

With this huge database, researchers began to analyze the information. Multiple samples were studied regarding measuring themes and consistency and stability of theme scores. Numerous sets of items were pilot tested. Items with the

strongest psychometric properties (including item correlation to theme) were retained. In a follow-up study of 601,049 respondents, the average item-to-proposed theme correlation was 6.6 times larger than the average item correlation to other themes. . . In 1999, a 35-theme version of Clifton StrengthsFinder was launched. After several months of data were collected, reseachers. . . decided on the 180 item pairs (360 items, 256 of which are scored) and the 34-theme version that currently is available. Since 1999, some theme names have changed, but the theme descriptions and 180 item pairs have not changed (Lopez, Hodges, & Harter, 2005, p. 5).

The thirty-four strength themes are Achiever, Activator, Adaptability, Analytical, Arranger, Belief, Command, Communication, Competition, Connectedness, Consistency, Context, Deliberative, Developer, Discipline, Empathy, Focus, Futuristic, Harmony, Ideation, Includer, Individualization, Input, Intellection, Learner, Maximizer, Positivity, Relator, Responsibility, Restorative, Self-Assurance, Significance, Strategic, and Woo (see Table 5 for a description of Clifton's 34 strengths).

Initially applied in business and team building situations (Clifton & Anderson, 2002), the use of the CSF (Gallop, 2005) in higher education has exploded over the past few years (Janowski, 2006). In a recent study, the use of CSF along with additional advising was shown to increase student persistence from the first to second year of college (Swanson, 2006). Advantages were not limited to students. Tyler (2006) determined strengths-based training increased engagement for both students and teachers.

Strengths-based instruction was shown to increase performance and learning (Cantwell, 2005). In a study of 55 incoming college freshmen in an introductory public speaking class, those students receiving strengths-based instruction had higher academic engagement, academic performance (based on video-taped speeches), and academic learning (based on course exams) than the traditional-teaching control group.

These same trends have been replicated at the secondary level. In a study of 527 high school students, a six-week strengths-based program increased academic expectancy, academic efficacy, positive academic behaviors, and extrinsic motivation levels (Austin, 2005). Also, encouragingly, ninth grade females in the strengths-based training demonstrated significant positive results in self image.

Advantages and Disadvantages of Using Assessments

There are many advantages and disadvantages of using assessments. These can stem from the assessments' organization, format, and content.

Self-Reporting Skills Surveys

The majority of vocational interest and personal assessments utilize self-reporting formats. While easy to administer, this design has disadvantages (Campbell, 2002). Questions or statements in self-reporting surveys are typically either free response (respondent is free to choose any of a number of options) or forced choice (respondent is forced to choose one answer from two choices). Examples of free response are Likert scales and multiple responses on individual items. Forced response does not allow respondents to either like or dislike both options, sometimes frustrating the respondents to the extent of they decide not to complete the assessment.

Another limitation of self-reporting surveys is the accuracy of reporting personal skills and abilities. Recent studies have shown 25% of employed adults report they are in the top 10% of any given skill (Campbell, 2002). In a study of students, the association between self-rated abilities and measured interests was “frequently stronger than the association between self-rated abilities and measured abilities suggesting that students perception of their abilities were based more upon interests than upon actual ability” (Swanson, 1993, p. 51).

Despite these shortcomings, there are advantages using self-reported skills (Campbell, 2002). Skills can be measured in the same manner as interests and, as such, can be related to occupational choices. Skill measures are sensible and useful as early as high school. Standardized measurements of self-reported skills appear to track some

combination of actual skills and self-confidence to carry out skills. Despite the fact employed adults may overestimate their skill level, the extremes of radical over- and under-reporting of skills tend to cancel out each other (usually the top and lowest five percent of test results) (Campbell, 2002).

Advantages and Disadvantages of Specific Assessments

Strong Interest Inventory (SII). SII (CPP, 2005) is considered a valuable counseling tool for career exploration and a number of factors contribute to its frequent use: counselor comfort with SII, broad awareness by career clients, excellent reliability and validity, and simplicity of its approach to career counseling (Pinkney, 1983).

While still the vocational assessment standard, the SII (CPP, 2005) is showing some chinks in its armor regarding age, ethnicity, and gender bias. Differences are reported between student and professional responses. A high level interest for students may appear to be as average level interest for professionals, the norming group (Fouad, 2002).

Numerous studies have identified differences in responses from United States white majority studies and international and United States ethnic minority samples (Carter & Swanson, 1990; Chu, 1975; Dagenais, 1987; du Toit & de Bruin, 2002; Kaufman, Ford-Richards, & McLean, 1998; Sue & Kirk, 1972; Tracey & Rounds, 1993). Some differences with international samples may be due to the different cultural perspectives. All of the items on SII (CPP, 2005) are individualistic in nature, focusing on individual activities and interests as compared to a collectivist perspective that favors decisions based on group needs. These different cultural viewpoints may result in

different responses on various SII dimensions. As such, differences between ethnic groups were greater than those determined by age and gender (Fouad, 2002).

For many years Strong had two versions of its assessment based on gender. These versions were combined in but two scales based on gender remained in the assessment report. This now has merged into one reported scale. Despite these modifications, differences in responses based on gender continue to be reported (Day & Rounds 1997).

Myers-Briggs Type Indicator (MBT). MBTI (CPP, 2003) offers many advantages (Pinkney, 1983). It generates a picture that both clients and career counselors can discuss for accuracy. It provides insights regarding past behavior and is predictive of environments and activities that may provide career satisfaction. It offers awareness of personal preferences regarding how clients get energized, take in information, make decisions, and respond to daily experiences. It also offers the opportunity for career counselors to move out of their roles of advice-givers and experts to that of joint discovery along with the client.

Limitations also exist for MBTI (CPP, 2003) (Kennedy & Kennedy, 2004). It often takes time to translate type information into career possibilities. As such, a thorough knowledge of MBTI is required of career counselors before interpreting results with clients. Clients seeking specific job titles may be uncomfortable with the non-direct interpretive approach of MBTI as a career assessment tool. Clients may feel MBTI gives more psychological information than they were prepared to discuss with a career counselor (Pinkney, 1983). Clients may not pursue career options that appear opposite their type despite their possible advantage of offering different skills than co-workers of a new work group.

Clifton StrengthsFinder (CSF). CSF (Gallop, 2005) offers many advantages including its huge database, ease of administration, quick results, and extensive support material. As a Gallup product, it is subjected to continuous scrutiny and adjustments. While numerous studies have shown positive effects with the use of strengths-based programs in educational settings (Austin, 2005; Cantwell, 2005; Swanson, 2006; Tyler, 2006) and business settings (Buckingham, 2007; Buckingham & Clifton, 2001), little research is available on the influence of strengths in the job selection or career decision-making process.

Debate Regarding Relationship between Vocational and Personality Inventories

There is a long-running discussion about the relationship between vocational interests and personality inventories. The discussion ranges on a continuum from vocational interests are personality inventories, to there is some overlap between vocational and personality assessments but the nature of the relationship is unknown, to vocational assessments are distinct and totally separate from personality inventories.

Vocational Interests Are Expressions of Personality

Spokane and Decker (1999) stated “it is increasingly apparent that interests, personality, self-efficacy, and other variants of personality and vocational self-concept may be facets of a unified set of complex underlying traits” (p. 230). This notion was further supported in findings of a meta-analysis (Larson, Rottinghaus, & Borgen, 2002) in which a number of writers suggested the “convergence between constructs such as interests and personality may be much greater than many of us have thought previously” (p. 218).

Vocational Interests Are Distinct From Personality

The same meta-analysis (Larson et al., 2002), however, concluded vocational interests are also distinct from personality. Others state the correlation between vocational preference and personality interest is so minor it is difficult to establish a strong relationship between the two (Gottfredson et al., 1993; Hansen, 1984; Larson et al., 2002). This confusion may exist because some vocational interests and personality inventories share common language (Blake & Sackett, 1999), assessment contents may overlap rather than having a substantive relationship (Costa, 1984), or it is difficult to discern due to the “disorganized condition of the personality literature” (Blake & Sackett, 1999, p. 251). Whatever the state of the relationship, existent or not, Hansen (1984) suggests a pattern of correlations between vocational interests and personality appears to be meaningful and systematic.

Blending Different Assessments for Career Counseling

In order to gain broad information to assist clients in career development, the use of a second instrument is “always useful as a check” (Costa et al., 1984, p. 398). Two instruments can offer not only confirmation of each other but also extended information (Costa et al., 1984). Perhaps Strong (1943) said it most succinctly “the more one handles such cases, the more loath one becomes to base guidance upon only one score” (p. 53). Vocational interests and personality mutually influence each other. Understanding “their overlap and distinctness is critical to advancing theory and practice in vocational psychology” (Larson et al. 2002, p. 219). The following describes various studies comparing occupational and personality assessments.

Holland's RIASEC and Five-Factor Model

Numerous studies have been conducted comparing Holland's RIASEC model to the Five-Factor Model (Costa & McCrae, 1992; Gottfredson et al., 1993; Larson & Borgen, 2000; Larson et al., 2002). Blake and Sackett (1999) thought these two assessments "complement each other quite well" and are useful to understand the relationships among the variables both within and between their various domains (p. 270).

In a study with gifted adolescents (Larson & Borgen, 2002), Extraversion was related to Enterprising and Social, Agreeableness to Social, and Openness to Artistic and Investigative. There was a stronger relationship with Extraversion and Openness with adolescents than had previously been shown with studies of adults. Costa and McCrae (1992) found similar but slightly different relationships: Extraversion was related to Enterprising and Social, Openness was related to Artistic, and Agreeableness was related to Social. A study of 725 United States Navy trainees found similar results with some modifications. Extraversion was related to Social and Enterprising. Openness was related to Investigative and Artistic. A new finding was Control being related to Convention (Gottfredson et al., 1993).

A meta-analysis of 24 different studies (Larsen et al., 2002) revealed while some correlation between the assessments exists, the overlap was minimal. Realistic showed little overlap with any of the Big Five Factors. Neuroticism appears largely to be independent of vocational interests. There was a moderate correlation between Openness and Artistic, and Extraversion and Enterprising. There was even less relationship between Openness and Investigative and Extraversion and Social.

Openness was shown to be the most prominent predictor for both interests and self-efficacy (Chartrand et al., 2002) and experience (Costa, McCrae, & Holland, 1984).

Clifton StrengthsFinder and Five-Factor Model

Harter and Hodges (2005), in a study of 297 undergraduate business students, explored the relationship between Clifton StrengthsFinder (CSF) (Gallop, 2005) and the Five-Factor Model of personality. Scores ranged from -.50 (Intellectance/Openness to Experience with Consistency) to .83 (Extraversion with Woo). Statistically significant correlations were found between Discipline and Conscientiousness ($r = .81$), Woo and Extraversion ($r = .83$), Ideation and Intellectance ($r = .70$), and Positivity and Agreeableness ($r = .58$).

Myers Briggs Type Indicator and Strong Interest Inventory

Many studies have investigated the relationship between personality and vocational interests using Myers Briggs Type Indicator (MBTI) (CPP, 2003) and Strong Interest Inventory (SII) (CPP, 2005) and recommended using both together (Harmon, Hansen, Borgen, & Hammer, 1994; Healy, 2000; Katz, Joyner, & Seaman, 1999; Myers & McCaulley, 1985).

Hammer and Kummerow (1997) suggested that MBTI and SII offer unique but complementary information. One study of 400 incoming freshmen supports this recommendation (Pulver, 2004). MBTI alone predicted 35% of chosen academic majors. SII alone predicted 54% academic majors. MBTI and SII together predicted 65% academic majors.

In a study of 423 undergraduate students (Miller, 2002) taking a general career course in which taking MBTI and SII was required, the dichotomous domains of

Sensing/Intuition, Thinking/Feeling, and Perceiving/Judging were compared with the SII six general occupational themes (Realistic, Investigative, Artistic, Social, Enterprising, and Enterprising). The following correlations were found: Sensing was positively correlated with Realistic and Conventional; Intuition was positively correlated with Artistic and negatively with Realistic and Conventional; Feeling was positively correlated with Social and negatively with Realistic; and Judging was positively related with Social and negatively related with Realistic.

These results varied somewhat from an earlier study (Dillon & Weissman, 1987) comparing personality and Holland's vocational code using MBTI and Strong-Campbell Interest Inventory. This study found Extraversion significantly correlated with Social and Enterprising for men and women and Conventional for men; Sensing correlated with Conventional for men and women and Realistic for men; Intuition correlated with Artistic for men and women and Investigative and Social for women; Thinking correlated with Realistic for men and Investigative and Enterprising for women; Feeling correlated with Artistic and Social for men; Judging correlated with Conventional for men and women; and Perceiving correlated with Artistic for men and women and Social for women.

Hammer and Kummerow (1997), in a large study of 757 adults and college students determined opposite preferences on the MBTI scales tended to correlate with diametrically opposite themes on the Holland hexagon: Extraversion moderately correlated with Social and Enterprising; Intuition with Artistic, Sensing with Conventional; Thinking with Realistic; Feeling with Artistic and Social; Perceiving with Artistic; and Judging with Conventional.

Correlations have been found among MBTI traits and SII personal style scales. In a study of 357 people from three sample groups, differences did occur between sample groups and gender but some correlations did emerge (Tuel, 1997). High Extravert and high Feelings were associated with high scores on the Work Scale (likes to work with others). Women with high Perceiving and men with high Feeling were associated with high scores in Learning Environment (liking academic settings). High Extravert and high Intuition were associated with high scores in Leadership (enjoying taking on leadership roles). High Perceiving and high Extravert was associated with high Risk Taking scores (willing to take risks). When considering type, ENFJ (Extravert, Intuition, Feeling, Judging) was associated with high Work (likes to work with others), high Learning Environment (likes academic settings), and high Risk Taking (willing to take risks). Female INT (Introvert, Intuition, Thinking) were associated with low Work (likes to work alone), high Leadership (willing to take leadership role) and high Risk Taking (willing to take risks). The most variation between scores based on gender occurred on the Leadership and Risk Taking scales.

Part Two: Dynamic World of Work and Its Impact on Career Development

Changes that have recently occurred in the global workplace have gone beyond a movement to more of a revolution. To determine requirements necessary to meet the challenges of this global economy “we are not talking simply about new skills or competencies. . .we are talking about a totally new way of relating to the world” (Hall & Mirvis, 1996, p. 36).

World of Work: Its Shifting Landscape Yet Unchanging Function

Every few hundred years in Western civilization, “a sharp transformation or divide, lasting about fifty years, creates a very different world” (Howard, 1995, p. 515). When such massive change occurs, it tends to affect everything in its path including how individuals relate to each other to how they earn their living (Head, 2003). Howard (1995) believes we are now in the middle of such a transformation which, if it follows previous trends, will be complete in 2010 through 2020. Until that time, we have “not yet a new world order, just a new world disorder” (Howard, 1995, p. 515).

Friedman (1999) in *The Lexus and the Olive Tree* started to describe this change as globalization. He contended globalization was “not a phenomenon...not just some passing trend. It is the overarching international system shaping the domestic politics and foreign relations of virtually every country” (p. 7). Just eight years later, *Time* magazine reported “after its first lap, globalization gets really interesting” as foreign companies invaded the most hallowed American institutions, the fast food industry. Here

the stuff you invented—in this culinary case, fast-food hamburgers, fried chicken, pizza, doughnuts—gets sent out into the world, is replicated by other countries and then comes back to you all crazied up, like a giant game of telephone (Stein, 2007, p. 1).

As Gibson said, “the future is already here; it’s just unevenly distributed” (Bolles, 2006, p. 50).

Perhaps the strangest example of globalization comes from James MacPherson, editor of the *Pasadena Now* newspaper, who hired two reporters in India to work on local Pasadena, California, news (Martin, 2007). Background story information is electronically forwarded to the Indian reporters who write stories that are resent to MacPherson for editing. The term “ghost writing” may gain new significance when

writers are continents away from the stories about which they are reporting. This same example gives further evidence of the truly international nature of today's global workforce—one of the two Indian national reporters MacPherson hired is a graduate of the University of California Berkeley's School of Journalism.

This rapid explosion of change has fostered a wild and bumpy vocational ride as labor markets attempt to redefine themselves. Converging technologies such as computerization, miniaturization, digitization, satellite communication, fiber optics, and the Internet have made possible previously unthinkable work configurations of open-sourcing, outsourcing, offshoring, supply-chaining, insourcing, and in-forming (Friedman, 2005).

At the same time, the life expectancy for many businesses has radically shrunk. For example, Netscape was formed in 1994, went public in 1995, was purchased and assumed into their operations by American Online in 1999—life span, four years (Pink, 2001). The life expectancy for employees to remain with one employer is plummeting as well. The 1998 California Twenty-First Century Workforce Project (Ruzek, Bloor, Anderson, & Ngo, 1999) reported 45 percent of California's adult population had worked at their current job less than two years and two out of three workers did not hold traditional jobs as defined as “permanent, year-round, full-time, outside-of-the-home employment” (Pink, 2001, p. 46).

Yet, midst all this transformation of today's workplace, the function of work itself remains the same. Not only has it been a defining element of civilization throughout the ages in which work is “an integral part of daily existence” (Rifkin, 1995, p. 3), it also

defines the individual. As early as 1923, Kahlil Gibran in *The Prophet* discussed the essence of work.

Always you have been told that work is a curse and labour (sic) a misfortune. But I say to you that when you work you fulfil (sic) a part of the earth's furthest dream, assigned to you when that dream was born. And in keeping yourself with labour (sic) you are in truth loving life, and to love life through labour (sic) is to be intimate with life's inmost secret (1986, p. 25-26).

This same thought is continued with modern authors. Beyond providing a living, work is a major element in defining personal identity (Hall & Mirvis, 1996); "a guiding image or a concept of a personal path, a personal significance, a personal continuity and meaning in the order of things" (Carlson, 1988, p. 186). Through work "basic needs such as safety, belonging, self-esteem, and self-actualization can be realized" (Amundson & Borgen, 1982, p. 562). In terms of human development, work provides the outer form of something intensely private, it is the bridge between public and private (Savickas, 2006a); "a way not only to make money but also to make meaning" (Pink, 2001, p. 53). As Studs Terkel declared "work is a search for daily meaning as well as daily bread, for recognition as well as cash, for astonishment rather than torpor; for a sort of living rather than a Monday through Friday sort of dying" (Frisch, 2006, p. 237).

This same consideration is extended to careers. The career "as we once knew it—as a series of upward moves with steadily increasing income, power, status, and security—has died. . . [yet] career as a series of lifelong work-related experiences and personal learnings, it will never die" (Hall, 1996, p. 1).

Today's Workplace Realities

In 1991, then United States Secretary of Labor Robert Reich suggested the world of work was reorganizing into three different categories: routine production, in-person

services, and symbolic-analytic services. Whether this has happened as he envisioned is debatable but other observable shifts have occurred. The numbers of production-type work is shrinking in the United States and transferring to other countries (Holland, 1996). Once discrete occupational titles now have undistinguished meanings as flexible work situations absorb multiple roles (Day & Rounds, 1997). Among this flexibility, the focus and definition of occupation is changing where “job seekers no longer think in terms of one career path nor one job family” (Lock & Hogan, 2000, p. 412). Stable full-time work and job security is becoming a thing of the past (Day & Rounds, 1997; Holland, 1996). Even those who “continue to wear the same professional label survive only because they have altered what they do” where “being effective . . . means that one has relearned one’s craft more than once” (Bateson, 1989, p. 9).

Future careers may be defined by a set of activities rather than a consistent setting or occupational title (Day & Rounds, 1997). This absence of well-defined jobs can have serious implications. Industrial psychology relies on job analyses to determine human resource activities such as recruiting, selection and placement, training and development, performance, and compensation; all difficult to conduct with fluid job descriptions.

Today’s human resource dilemma can be described by a series of questions:

How can you perform a job analysis if there is no job? How can you select or train people for invisible work? How can you coordinate or appraise the performance of workers you can’t observe? How can you validate selection or training systems if you can’t measure performance? (Howard, 1995, p. 524).

Flexible job descriptions are making it difficult to comply with federal employment guidelines. When companies use certain job descriptions for hiring and setting initial salaries but ignore them for guiding work activities, they become possibly liable for misrepresentation (Bridges, 1994).

The composition of the workforce is also changing. With extended lifespans, changing attitudes towards retirement, and in some cases economic necessities, middle-aged and older adults are working longer (Costa, McCrae, & Holland, 1984; Milletti, 1984; Rockwell, Hood, & Lee, 1980). Surveys indicated that a majority of retirees continue to work beyond their retirement in paid or volunteer positions in fields closely related to their previous careers (Holland, 1996). This aspect of the working population faces unique challenges, including increased potential for agism (Anderson & Vandehey, 2006), as older workers adapt their working selves in this new workplace during what is now being called their “second act” (Hyatt, 2006; Thigpen, 2006).

In this work world, constancy is an illusion and can only be visible in retrospect; or, stated another way, “today even the status quo is in a state of flux” (Gellatt, 1989, p. 252). Jobs, rather than being a “stopping place in life” are now evaluated as being “a good place from which to go as well as a good place to remain” (Bateson, 1989, p. 14).

This gypsy-like attitude is a reality of today’s restructured workforce. Many organizations are arranging classes of workers into a shamrock formation: one group (leaf) full-time employees, a second part-time workers; and a third contract or contingent workers, the fastest growing segment of the U.S. population (Hall & Mirvis, 1996). On the downside, this situation is creating a new class of throw-away workers—employees who are let go, without any sense of corporate responsibility, when their labor is no longer needed (Watts, 1996; Davenport, 1995).

In this temporary-as-the-new-permanent atmosphere, companies can only offer any of their workers the following:

We can’t promise you how long we’ll be in business. We can’t promise you that we won’t be acquired. We can’t promise that there’ll be room for promotion. We

can't promise that your jobs will exist when you reach retirement age. We can't promise that the money will be available for your pension. We can't expect your undying loyalty, and we aren't sure we want it (Hall & Mirvis, 1996, p. 20).

The "traditional career contract has been dead since the 1980s although we have only faced reality and tolled the death knell in the last few years" (Hall & Mirvis, 1996, p. 19). A new social contract of work is emerging in the swirl of this vocational upheaval. The previous contract stated that for an employee's loyalty, an organization would offer security. The new social contract states the employee will provide talent (in terms of products, services, and advice) in exchange for opportunity (money, learning, and connections) (Pink, 2001). Hall and Mirvis (1996) refer to this as a shift from a relational contract based on long-term mutual commitment and trust to a transactional contract based on shorter-term exchange of benefits. In a relational contract, value was placed on a "reciprocal, mutually beneficial, interdependent connection" (p. 17); whereas the value in a transactional contract is placed on the utilities of entities exchanged rather than the relationship.

This evolution can be seen through the shifting terms now used to describe today's workforce—the word *family*, as in the IBM family, is now often replaced with *team*; connoting a change from a one-big-happy-group-all-together-who-care-about-each-other concept to a temporary "small number of people with complementary skills who are committed to a common purpose" (Katzenbach & Smith, 1993, p. 45). Today's work teams come together to achieve an objective and disband once that mission is accomplished.

Job loyalties in this new social work contract are also transforming. In the previous contract employee loyalties were vertical; loyalty flowed up from the employee

to higher institutional authority figure(s) and to the organization itself. New employee loyalties are now more horizontal and reciprocal with “allegiances to teams, colleagues, ex-colleagues, clients, customers, industries, professions, family, and friends” (Pink, 2001, p. 102).

Even the concept of work time and space is changing to flextime and flexspace (Mirvis & Hall, 1996). The traditional nine-to-five Monday through Friday format is blurring where work can be done at discretion of the worker as long as deadlines are met. The advantage of this new “work week” is workers control their own hours; disadvantages include murky time boundaries and never being truly “off work” (Pink, 2001). The concept of location of work is expanding as more and more work is conducted in mobile offices and by telecommuting (Howard, 1995). No longer tied to a specific locality, electronic communications now make it possible for teams to be made up of people throughout the world who work together yet may never meet face-to-face.

Given all this instability, it is not surprising that the timeline for traditional views of career development is fluctuating as well. Super’s career stages (growth, exploration, establishment, maintenance, and disengagement) (Super, Savickas, & Super, 1996), rather than occurring once and sequentially over a lifetime may now occur and reoccur in a series of mini-stages as individuals move in and out of various job roles. Midcareer may no longer be tied to chronological age but “career age, where perhaps five years in a given specialty may be midlife for that area. Thus, the half-life of a career stage [may] be driven by the half-life of the competency field of that career work” (Hall & Mirvis, 1996, p. 33).

Finally, the responsibility of career development is evolving putting the individual at the center of the career “locus of responsibility...thereby, radically diminishing the responsibility of the employing organization, occupation, or profession for the well-being of workers” (Richardson, 1998, pp. 4-5). This *protean career* (Hall & Mirvis, 1996), now “owned by the individual” (Watts, 1996, p. 44), requires greater degrees of self-direction than ever before. In this arrangement, the career goal is not only to be employed but, equally important, be employable. Employability entails continuous education, often at the initiative and responsibility of the individual (Mirvis & Hall, 1996) and the ability to be flexible and adaptable (Altman & Post, 1996).

The Upside of Change

While often painful, change is also life-giving. Belgian physicist Ilya Prigogine was awarded the Nobel Prize for his work on dissipative structures. In this theory, Prigogine contends friction is a fundamental property of nature and nothing grows without it. Any structure “whether at the molecular, chemical, physical, social, or psychological level—that is insulated from disturbance is also protected from change. It becomes stagnant” (Levoy, 1997, p. 8). It is humans’ capacity for being shaken up that is the key to growth.

Unplanned events can be viewed as “not only inevitable, they are often desirable” (Mitchell, Levin, & Krumboltz, 1999, p. 118). Often it takes a challenging push to discover new talents or develop new skills. In “hard times people usually changed the course of their life; in good times, they frequently only *talked* about change. Hard times forced them to overcome the doubts that normally gave them pause” (Bronson, 2003, p. xv). In this process people were likely to “stumble into a better life” and discover in

themselves “gifts they rarely realized they had” (Bronson, 2003, p. xv). At the expense of insecurity, uncertainty, stress, and social friction, those who successfully transition to the new world work order can experience greater challenge, creativity, flexibility, control, and interrelatedness (Howard, 1995).

New Age Requires New Skills

In many ways, the restructuring of the new world of work is a double-edged sword—creating possibilities on one hand and eliminating prospects on the other. The future world of work offers

exciting opportunities to meet the needs of the higher levels of Maslow’s hierarchy—social, esteem, self actualization—at the expense of meeting needs at the lower level—security and safety. It will not be a world for the timid, insecure, or low-skilled, but for capable risk takers who thrive on challenges and responsibilities. Security will come not in preplanned career paths but in developing competencies (Howard, 1995, p. 543).

Through technology, many tasks of a process can be brought together and performed in their entirety by a single worker (Head, 2003). As a result, a new set of skills and mindsets of its workers will be required. “Creators and empathizers, pattern recognizers, and meaning makers...will now reap society’s richest rewards and share its greatest joy” (Pink, 2005, p. 1). These include the abilities of abstraction, system thinking, experimentation, and collaboration (Feller & Whichard, 2005). Workers will need to be able to detect patterns and “combine seemingly unrelated ideas into a novel invention” (Pink, 2005, p. 52). As contract workers or free agents (Pink, 2001), they will need the additional skills of being comfortable with ambiguity, committed to lifelong learning, able to neutralize stress, remain mobile, yearn for adventure, embrace entrepreneurship, and be able to strategize (Feller & Whichard, 2005).

Conceptual workers will need to balance high tech with high touch (Pink, 2005). More people are now holding jobs involving human contact. These workers “must influence, affect, or satisfy other people, often in direct interactions in which they look customers in the eye or listen to their voices. These employees are performing emotional work, not just technical work” (Kantor, 1997, p. 14). The quality of the emotional experience in these exchanges will determine organizational success (Head, 2003).

With increased people interaction high touch skills, by necessity, will include expanded team relational skills of communication, group effectiveness, interpersonal skills, negotiation abilities, conflict resolution skills, comfort with ethnic and cultural diversity, adaptability with different worldviews, and ability to collaborate (Howard, 1995). As teams come together they will face the dichotomous challenge where “being with different people can stimulate creativity but may not be as enjoyable. . . [and] selection of similar members . . . can facilitate collaboration but may not assure heterogeneity” (Howard, 1995, p. 531).

Conceptual workers will need to be “occupational generalists to enter the workforce and become occupational specialists once in the job” (Fouad & Zao, 2000, p. 405). This combination of generalist/specialist is required because adaptive organizations will need specialists with additional competencies. Specialization “provides depth of expertise, but organizational flexibility requires each worker to expand in outlook, assume additional roles, and exercise a broader array of skills” (Howard, 1995, p. 519). Once employed, workers will need to be productively competitive where “a strong taste for being the best in their given fields [is] . . . translated into raw drive” (Han, 2005, p. 113).

Successful leaders in the Conceptual Age stand out for knowing how to be themselves and translate that knowledge into productive work (Han, 2005). Their decision-making ability is unique because of

their clarity of self-knowledge—their understanding of their own wants and needs; their tendency to act decisively once decisions are made; and their tendency to conduct internal dialogues, continually assimilating new information and ideas that they find in wider worlds—in other words, their capacity for change (Han, 2005, pp. 28-29).

In a work world in flux, the ability of adapt and quickly adjust becomes essential. Valliant (2000) determined stable work adjustments may be more important to client's mental health and happiness than almost anything else, including problems in childhood. Career adaptability is viewed as

a style of engagement, a way of being in the world, that is proactive, flexible, and creative in responding to both the predictable career sequences and the chance events that challenge individuals in a pluralist democracy and global economy (Lapan, 2004, p. 5).

With each successful navigated change in the sea of vocational uncertainty, the individual becomes stronger like the samurai sword that gains strength as each layer of tempered metal that is folded over and over. Along with strength through experience, fluidity and discontinuity are central aspects of adaptability to the point when the individual can say, "I know how to pack my bags and how to unpack them, how to discover myself as a part of a new community" (Bateson, 1989, p. 8).

The challenge to career counseling is how to advise and prepare those currently in and those entering this constantly changing world of work.

Positive Psychology and the Success Movement

Just as with previous eras, the current societal fluctuations are mirrored by changes in psychology. Positive psychology, the most recent psychological development to influence current views of career development, has spawned the correspondent success movement in career planning.

Positive Psychology

Traditionally psychology was based on a medical model where mental conditions were described in terms of illnesses (as in mental illness) with pathological symptoms that needed to be treated. Health, from this perspective, was viewed as an absence of symptoms. This approach was due in part to human nature's natural tendencies to see things in a negative fashion (Seligman, Rashid, & Parks, 2006), but it was also due to historic events. In 1946 with the formation of the Veterans Administration, "thousands of psychologists found out that they could make a living treating mental illness" and with the formation of the National Institute of Mental Health in 1947, academics "could get grants if their research was about pathology" (Seligman & Csikszentmihalyi, 2000, p. 6).

However, starting in the 1950s a radical shift occurred in the study of psychology (Frisch, 2006). A realization started that positive feelings like happiness and joy were independent of negative feelings like depression and anxiety—just because one does not feel bad does not mean one feels good. Rather than treating mental illness, the focus switched to promoting mental health. In order to do this, research began to focus on what worked rather than what went wrong, on conditions that fostered health rather than what caused illness.

At the same time, Maslow's (1954) hierarchy of needs was gaining popularity across the United States. Suddenly it seemed the whole country "became motivated by higher needs for social support, belongingness, love, self-esteem, and respect for others" (Frisch, 2006, p. 16).

The desired outcomes of positive psychology are happiness and well-being (Seligman, 2003). These can exist on several levels. The

subjective level is about valued subjective experiences: well-being, contentment, and satisfaction (in the past); hope and optimism (for the future); and flow and happiness (in the present). At the individual level, it is about positive individual traits: the capacity for love and vocation, courage, interpersonal skill, aesthetic sensibility, perseverance, forgiveness, originality, future mindedness, spirituality, high talent, and wisdom. At the group level, it is about the civic virtues and institutions that move individuals toward better citizenship: responsibility, nurturance, altruism, civility, moderation, tolerance, and work ethic. (Seligman & Csikszentmihalyi, 2000, p. 5)

Positive psychology and work. Work and well-being are closely connected (Diener & Seligman, 2004). Work is considered essential for happiness because it structures our day, provides social contact with others, is a means for achieving respect, and is a source of engagement that is challenging and meaningful. At times, when work is closely aligned with individuals' skills and interests, being engaged in it can be described as a being *in the flow*. Flow activities are those in which people get involved so deeply that nothing else matters. It is the type of activity where individuals lose a sense of time. Flow activities require individuals' total attention, are challenging, require their maximum skills but do not exceed their capabilities, and are something that individuals are intrinsically motivated to do. Flow, even though it is nonemotional and nonconscious (Peterson, Park & Seligman, 2005), becomes the "Holy Grail of happiness because...as

long as you keep raising the challenges to fit your skill level, it never stops working” (Frisch, 2006, pp. 236-237).

In the 16 areas of life that constitute a person’s overall quality of life (Frisch, 2006), work is listed specifically as one of the sixteen items, and indirectly in eleven of the other 15 (self-esteem, goals and values, money or standard of living, recreation, learning, creativity, helping, friends, home, neighborhood, and community). Work can be elevated to a *passionate calling* when individuals feel it is “perfectly suited to them, makes them feel passionate about work and eager to go to work each day, and fits with their overarching goals and values and purpose in life” (Frisch, 2006, p. 239).

Positive psychology and resilience. Not only may work affect positive emotions, positive emotions may affect work through their link with resilience. In a post-September 11, 2001, study (Fredrickson, Tugade, Waugh, & Larkin, 2003), 47 college students who had participated in a study on emotions between March and June of 2001, were contacted again on September 20 and retested. Post-crisis measures were compared with pre-crisis measures. People scoring high on trait resilience (low neuroticism, high extraversion, and high openness) were more likely to find more positive meaning within the problems they faced as a result of the September 11 attacks. They endured fewer depressive symptoms and experienced positive emotions more frequently following the attack.

In another study (Tugade & Fredrickson, 2004), college students were presented with numerous challenging situations. Those with higher positive emotions were more resilient physiologically, as determined by various measures of heart rate, and recovered more quickly to stressful situations. This finding may be especially important in examining the health-promoting qualities associated with positive emotions.

In a dynamic workplace, the ability to be positive about the future and respond proactively, both emotionally and physiologically, to stressful workplace conditions may be as valuable as technical and job-specific skills.

Positive psychology and the success or strengths movement. Just as with previous personal psychology developments affecting career theory, the tenets of positive psychology have filtered down to the business world spawning the career strengths or success movement where “excellence is not the opposite of failure, and that, as such, you will learn little about excellence from studying failure” (Buckingham, 2007, p. 5).

Talents and strengths. At the basis of this movement is the identification and application of talents and strengths or as Peter Drucker said “success in the Knowledge Economy comes to those who do two things: identify and articulate their talents, and place themselves in positions to use them” (McDonald & Hutcheson, 2005, p. i).

Talents are viewed as naturally recurring specific patterns of thought, feeling, or behavior that can be productively applied (Clifton & Anderson, 2002). Talents are “hard-wired into us. We don’t learn them and we can’t ignore them. They are just a part of who we are” (McDonald & Hutcheson, 2005, p. ii). In addition to being innate, they tend to remain stable over time (McDonald & Hutcheson, 2005). Yet, paradoxically, they are not always easily recognized.

Our natural talents underlie every job, role or career we undertake throughout our lives. Yet, the objective information about what we naturally do easily and what is intrinsically difficult is almost unknown to the vast majority of us as we make critical decisions (McDonald & Hutcheson, 2005, p. 74).

Drucker described it as “most people think they know what they are good at. They are usually wrong” (McDonald & Hutcheson, 2005, p. i).

Talents often go unrecognized because they are something individuals have always had and have used almost effortlessly. Because “talents are naturally recurring patterns, they are automatic, almost like breathing” (Clifton & Anderson, 2002, p. 6). As a result, the inability to identify talents can take a “this is not special, anyone can do it” attitude. In fact, often when people are asked to name their best skill, “they will name something that was particularly difficult for them to learn” (McDonald & Hutcheson, 2005, p. 104).

Not surprisingly, there is a connection between talent and achievement. Talents empower individuals to move to higher levels of excellence and, in the process, making it possible to fulfill the potentials unique to all individuals. Top achievers are able to do this by recognizing and developing their talents, applying these talents in roles that best suit them, and finding ways to apply talents to achieve tasks through consciously selecting venues to use talents or adapting and inventing new ways to apply talents (Clifton & Anderson, 2002).

Strengths are defined as the ability to provide consistent, near-perfect performances in a given activity (Clifton & Anderson, 2002). They begin with talent and develop when that talent has been refined with knowledge, skills, and experiences. Raw talent is “like diamonds in the rough whereas strengths are like diamonds that show their brilliance after they have been carefully cut and polished” (Clifton & Anderson, 2002, p. 8). Strengths “are not simply positive; they constitute concrete, potent, and enduring evidence of self-worth” (Dodgson & Wood, 1998, p. 193).

While intelligent, highly motivated people can accomplish things for which they have little or no talent, they rarely find happiness or satisfaction in completing those tasks

(McDonald & Hutcheson, 2005). Just like flow activities in positive psychology, people who operate within their strengths report feeling joy and experiencing positive psychological rewards (Clifton & Anderson, 2002).

Strengths and persistent happiness. In a study of 411 adults (Seligman, Steen, Park, & Peterson, 2005), participants were given one of six exercises that they were to implement daily for a week. Participants were tested for general well-being before starting the exercise; during the week of implementing the exercise; and one week, one month, three months, and six months after completing the exercise.

The six exercises were Gratitude Visit (send a letter of gratitude to someone who was kind to them but had never been thanked), Three Good Things In Life (write down every night for a week three things that went well each day and their causes); You Are At Your Best (write down a time when they were at their best and then reflect on personal strengths displayed in the story – do daily for a week); Using Signature Strengths in a New Way (use one of top five strengths in a new and different way each day for a week); Identifying Signature Strengths (after identifying signature strengths, use them more often during the week), and a placebo control exercise of journaling about early memories.

While minimal effects were seen initially with each of the activities, the gratitude visit caused increased happiness for one month. The study groups using signature strengths in a new way and identifying three good things daily showed increased happiness six months after the week-long implementation.

Managing weaknesses, developing strengths. Previously, managers have hired candidates based their skills, knowledge, and experience. This has not always achieved

expected positive results. As the strength movement develops, managers are realizing “talents can explain why, all other factors being equal, some people excel in a role and some struggle” (Buckingham, 2007, p. 73). This has major implications regarding training.

Skills, knowledge, and talents are distinct elements of a person’s performance. The distinction among the three is that skills and knowledge can easily be taught, whereas talents cannot. Combined in the same person, they create an enormously potent compound. But you must never confuse talents with skills and knowledge. If you do, you may waste a great deal of time and money trying to teach something that is fundamentally unteachable (Buckingham, 2007, p. 83).

Great managers hire for talent and let employees become more of who they already are.

Yet, in schools and places of work individuals are still encouraged to identify, analyze, and correct their weaknesses in order to advance. This advice is “well intended but misguided. Faults and failings deserve study but they reveal little about strengths” (Buckingham & Clifton, 2001, p. 3). A concerted focus on weaknesses is pointless because

there is no alchemy for weaknesses. They can be removed but they cannot be transformed into strengths. The goal, therefore, is to manage weaknesses so the strengths can be freed to develop and become so powerful they make the weaknesses irrelevant (Clifton & Nelson, 1992, p. 73).

Top achievers understand this and leverage their strengths by not being afraid “to develop lopsided capabilities, if that imbalance results in a competitive advantage” (Han, 2005, p. 21).

Just having talent does not insure success. Although individuals are born with talents, what they do with them will vary. Even though these talents cannot be changed, they can be channeled (McCrae, Costa, Ostendorf, Angleitner, Hrebickova, Avia, Sanz, & Sanches-Bernardos, 2000). How these are channeled is often influenced by subjective

factors like interests, values, family of origin, and goals (McDonald & Hutcheson, 2005). They can also be channeled as part of a developmental model. “Psychotherapy has long been where you go to talk about your troubles. . .we suggest that psychotherapy of the future may also be where you go to talk about your strengths” (Seligman, Steen, Park, & Peterson, 2005, p. 421)—a possible goal for career counseling as well.

Adapting the Counselor Role to Meet Changing Work Place Needs

As the 21st century begins, career professionals are at a “crossroads with respect to the direction and influence of their profession of the world job marketplace” (Lock & Hogan, 2000, p. 416). The same forces that are shaking up the world of work are now also destabilizing career counseling structures. Career counselors need to be in the “vanguard of understanding these forces and adapting creatively to them” (Watts, 1996, p. 42).

Part of this charge is understanding the dual aspect of the foundation of career counseling.

Because career counseling is, at its heart, concerned with helping individuals, its theoretical base tends, understandably, to be psychological. It is, however, a deeply sociopolitical activity. It operates at the interface between personal and societal needs, between individual aspirations and opportunity structures, between private and public identities. A broader and more dynamic theoretical base is needed if career counseling is to find and deliver the new role that is now demanded of it (Watts, 1996, p. 42).

As such, the focus of a career counselor must clearly be on the client while at the same time always keeping an eye on the work place horizon.

Client Focused

From a constructivist perspective, individuals are the architects of their career self. As such the counseling role in the guidance process is shifting from therapist to anthropologist, where the counselor “explores the [client] and his or her world as it is, without presuppositions...not as some image cloned from the therapist’s own values or from cultural stereotypes” (Wentworth & Wentworth, 1997, p. 55). Counselors facilitate and promote individuals to develop their career investigative skills as they explore their own career interests and expand awareness of workplace realities and requirements (Forster, 1997).

In this model career interests and choice are understood to be socially constructed. Meanings can then vary depending on the “particular social space occupied [by the client] in society” (Sexton & Griffin, 1997, p. 251). Career interests will no longer have universal meaning, nor will development “proceed in a universalistic stage-like manner—especially in the portion of life after childhood” (Vondracek, Lerner, & Schulenberg, 1983, p. 182). Shifts in meaning may occur in nonlinear fashion and cannot be fully predicted nor controlled by either the client or the counselor. Because “each person’s responses trigger reaction from others, creating a complex chain of transformations...it is difficult to predict in advance which suggestions, interventions, or interpretations will prove fruitful” (Gordon & Efran, 1997, p. 105).

This shift extends to the use of assessments as well. While assessments are still useful in providing exposure to job titles and work possibilities (Mitchell, Levin, & Krumboltz, 1996), choosing occupations has become too complex to be decided on the results of a single interest inventory (Anderson & Vandehey, 2006). Rather than giving

assessments to determine a single vocational answer, counselors now offer assessments as a basis to gain insights. The focus swings from answers to what insights testers receive from the assessment results. Testers, thus, becomes participatory in the process, rather than passive receivers of information, as they use information gained from assessments to construct self knowledge (Sexton, 1997).

Counselor responsibilities in a constructivist framework include understanding clients are their own meaning-makers, forming cooperative relationships and alliances with clients, identifying interventions that can stimulate clients to be more self-empowering, assisting clients to articulate and evaluate the network of constructions and meanings relevant to their vocational decisions, and helping clients make valued and supportive social realities (Peavy, 1994).

Peavy (1994) recommends counselors keeping four dimensions in mind while working with clients:

how can I form a *cooperative alliance* with this client (relationship factor); how can I encourage the *empowerment* of this client (agency factor); how can I help this client *elaborate and evaluate his or her constructions and meanings* germane to this decision (meaning-making factor); and how can I help this client to *reconstruct and negotiate* personality meaningful and socially supportable realities negotiation factor (p. 34).

Workplace Focused

Given all the changes to the work place and requirements of the workers to fill these new positions, traditional approaches to career counseling may no longer be adequate (Anderson & Vandehey, 2006; Tieger & Barron-Tieger, 2000). Trends like changes in technology, a more holistic approach to career counseling, online availability of career assessments, and employer participation in career assessments “should prompt

career assessment professionals to rethink their approach to their profession” (Lock & Hogan, 2000, p. 411).

Traditional career programs designed to help clients to identify the name of a future occupation may have too narrow perspective to adequately address the complexity of today’s job requirements (McDonald & Hutcheson, 2005; Mitchell, Levin, & Krumboltz, 1999). The traditional metaphoric counseling image of a microscope, looking at certain aspects of clients in great detail, is now morphing to the broader image of a holograph, viewing clients more holistically (Rigazio-Gigilio, 1997).

As counselors help clients to develop into the persons they want to be rather than to encourage them to “adhere to a linear continuum of developmental tasks” (Savickas, 1997, p. 254), they will need to integrate “new rules, consider new foundations, and constantly assess the gaps between what is needed and what is available” (Feller, 1996, p. 19). Instead of vocational matchmakers, career counselors need to assume the roles of educators and facilitators of the learning process (Mitchell, Levin, & Krumboltz, 1999).

Part of the learning process may be teaching job-entry as well as job-seeking and job-specific skills. Because of the anticipated shortened longevity with any position, counselors can assist clients to be more prepared for the free agent (Pink, 2001) nature of today’s workforce by coaching and training clients in interpersonal communications, networking, and building social and professional support systems (Cabral & Salomone, 1990).

Use of Assessments in Today's Global Workplace

Occupational roles are changing to such an extent that some argue the traditional occupational prediction paradigm is becoming obsolete (Zytowski, 2001). Fouad and Zao (2000) suggest the traditional person-environment fit “has shifted to identifying multiple individual factors to fit with multiple environments over time” (p. 404).

The idea that one assessment can offer enough insights about the broadening aspects of career development is also being challenged. Indeed, “no gold standard exists for vocational interest measurement” (Savickas, Taber, & Spokane, 2002, p. 182).

Looking at one or two dimensions of people may be too small a perspective to develop a career plan (McDonald & Hutcheson, 2005). Rather, multiple assessments may be necessary since using one inventory may ignore information critical to the clients' career decision making. In addition counselors “should consider having available several interest inventories from which to select the most appropriate one to administer to each client rather than routinely giving the same inventory to every client” (Savickas, Taber, & Spokane, 2002, p. 180).

Improvements in technology, enhanced access to information, changes in the job market, movement to multiple careers, greater sophistication of job seekers, and increased emphasis by employers on career assessment all indicate the need to expand traditional views of career assessments. New data also indicate the need to access more than the traditional catalog of individual skills, abilities, and interests (Lock & Hogan, 2000, p. 411).

Finally, as the tenure with single organizations is shrinking and people are moving across jobs and job families with more frequency, people may need to be assessed “early, often, and late in their careers” (Lock & Hogan, 2000, p. 412). Just as career development is considered an ongoing process, the use of assessments throughout this process may also be indicated.

Summary

The world of work is radically changing yet the role and importance of work remains unchanged. These conditions pose challenges to career counselors to update traditional counseling techniques to meet today's job seeking requirements.

Career choice is influenced by intrinsic factors like affect, emotional intelligence, cognition, self-efficacy, self identification, interests, abilities, gender, and age; and extrinsic factors like family, school, and culture. The job search process is further affected whether that search is voluntary or non-voluntary due to unwanted job loss.

A common career counseling strategy involves the use of various vocational and interest assessments. There is a debate whether vocational and personality assessments are measuring the same thing. Research reveals that while there are correlations between these types of assessments, a strong direct or causal relationship has yet to be established. Continued research in the relationship between assessments furthers theory and practice of vocational psychology.

With globalization, workers will need a new set of skills and abilities to meet the challenges of this emerging workplace. In addition, new career development skills will be required as the responsibility for career shifts from the employer to the employee. While always a critical component of career development, self awareness (including knowledge of one's interests, skills, abilities, beliefs, values, and now strengths) is gaining importance. The use of assessments will continue to support and expand self-awareness but the types of assessments or combinations of assessments may vary to meet current needs.

Finally, as work roles change throughout a life career, the need for career counseling is transitioning from an one-time event to life-long support. Within this context, the role of career counselor is expanding from advisor to facilitator and educator to meet changing personal and work developmental needs.

CHAPTER III – METHODOLOGY

Introduction

This chapter includes a short introduction restating the research questions, an overview of today's challenges to career counseling, a description of the research design, a description of the subjects, and a description of the procedures used to collect and analyze data for this study.

As the world of work radically changes, career counselors are confronted with the challenge of how best to advise and prepare their clients for this transforming employment landscape. A standard career counseling practice has been the use of assessments to gain insight into client's interests and skills. Traditionally these assessments mainly focused on vocational interests. Recently, however, career theorists and vocational psychologists have come to recognize a vast array of influences on career selection beyond vocational interests. As a result, the use of personality assessments has gained credibility in career counseling, often in combination with vocational interest surveys.

With the emerging influence of positive psychology, the corresponding success movements in business, and strengths-based initiatives in education, a third focus in career counseling of considering talents and strengths is gaining awareness. Initially used in business settings for identifying talent to increase productivity and employee morale (Schreiner, 2005) and increasing positive student climate and student engagement in educational settings (Austin, 2005; Cantwell, 2005; Swanson, 2006; Tyler, 2006),

research is now turning to the relationship between talents and strengths in employment selection, satisfaction, and achievement. No research, however, has been conducted to date regarding the relationship between talents and strengths to personality preferences and vocational interests.

The purpose of this study was to examine this relationship utilizing three assessments: Clifton StrengthsFinder (CSF) (Gallup , 2005), Myers-Briggs Type Indicator (MBTI) (CPP, 2003), and Strong Interest Inventory (SII) (CPP, 2005). In addition, gender and two academic programs (Counseling and Career Development or Organization Performance and Change) were considered to explore the relationship between strengths to gender and academic programs.

Research Approach and Rationale

The purpose for conducting research is to “(a) increase knowledge within the discipline, and (b) increase knowledge within oneself as a professional consumer of research” (Gliner & Morgan, 2000, p. 5). The overall task of research is to discover relationships among variables (Spatz, 2001), and express those relationships in such a way as to make the information “easier to assimilate” (Agresti & Finlay, 1997, p. 35) through summarizing and describing the data.

This exploratory study utilized a convenience sample and three instruments: Clifton StrengthsFinder (Gallop, 2005), Myers-Briggs Type Indicator (CPP, 2003), and Strong Interest Inventory (CPP, 2005). The purpose of this research was to study the relationship between strengths to personality preferences and vocational interests using two standard career counseling assessments with a relatively new assessment to this field.

Secondly, this study explored the relationship between strengths to gender and academic program. Descriptive analysis was implemented to explain these relationships in terms of frequencies, means, standard deviations, and range of scores.

Research Questions

The research questions driving this study were:

1. What is the relationship between personality preferences and strengths?
2. What is the relationship between vocational interests and strengths?
3. What is the relationship between gender and strengths?
4. What is the relationship between academic programs (Counseling and Career Development or Organizational Performance and Change) and strengths?

Validity and Reliability of Instruments Used

Whenever an assessment is used, it is appropriate to examine the reliability and validity of that instrument. The following is an overview of the reliability and validity of the instruments used in this study.

Myers-Briggs Type Indicator (MBTI)

Reliability of MBTI. Reliability is considered in two ways: internal consistency reliability (how consistently respondents answer the items on a given scale; the higher the number the more consistent the responses) and retest reliability (an estimate how stable a characteristic is over time, the higher the number the more consistent the responses over time) (Gliner & Morgan, 2000). Various samples were considered to determine internal consistency reliability including the MBTI (CPP, 2003) national sample, universities, and businesses. Scores were analyzed by dichotomous pairs: Extraversion (E) or Introversion

(I); Sensing (S) or Intuition (N); Thinking (T) or Feeling (F); and Judging (J) or Perceiving (P).

Results for internal consistency of the dichotomous pairs from all of these samples ranged from: E-I (.89 to .95); S-N (.86 to .95); T-F (.86 to .93); and J-P (.88 to .94) (Myers, McCaulley, Quenk, & Hammer, 2003). There was no significant difference based on gender (widest range in any sample group was .93 for males and .94 for females) or age (widest range occurred for J-P of .94 for 18-21 age group to .90 for older than 70). There were somewhat larger variations based on ethnic groups. In the national sample, the largest variation occurred on the T-F scale between African American (.84) and Latino/Latina/Hispanic (.94). Regarding college students the largest spread occurred on the E-I scale between African American (.91) and Latino/Latina/Hispanics (.84) (Myers et al., 2003).

Test-retest reliability for MBTI (CPP, 2003) considers the likelihood on a retest a person will have the same type as the previous test or choose the same traits on the four dichotomous domains. Using three different samples and retesting after a period of four weeks from initial testing, the percentage of choosing the same pole on the four dichotomous domains ranged from a low of .83 (T-F scale) to a high of .97 (S-N scale) (Myers et al., 2003). In the combined sample 65% chose the same four traits, 28% chose three of the same traits, 6% chose two of the same traits, and 1% chose only one of the same traits (Myers et al., 2003).

Validity of MBTI. One way to determine validity of an assessment is to compare its results to results of similar aspects of other assessments. The following is a description of two such comparisons. In a study of two different college groups ($N =$

245), MBTI (CPP, 2003) was compared to the Strong Interest Inventory (SII) (CPP, 2005) General Occupational Themes (GOT). Significant correlations ($p < .01$) between these two were similar in both samples include Intuition with Artistic (.52 and .42), Extraversion (.26 and .21) and Feeling (.34 and .24) with Social; and Sensing (.33 and .37) and Judging (.20 and .21) with Conventional (Myers et al., 2003).

In another study ($N = 245$) comparing MBTI (CPP, 2003) with the Skills Confidence Inventory (Betz, Borgen, & Harmon, 1996) showed similar results. Significant correlations ($p < .01$) occurred between Intuition with Artistic (.47); Extraversion (.34) and Feeling (.20) with Social; and Sensing with Conventional (.20) (Myers et al., 2003). Differences included: Perceiving with Realistic (.27) (one of the college groups in previous study also had a significant correlation with Perceiving (.20) but not the other group so it was not reported); Thinking with Investigative (.23); Perceiving with Artistic (.29); Extraversion (.37) and Thinking (.20) with Enterprising; and Thinking with Conventional (.26) (Myers et al., 2003).

In looking at eight different MBTI (CPP, 2003) studies that compared self-assessments (participants guessing their types before taking MBTI) with actual MBTI results, agreement between self-assessment and MBTI results ranged from .53 (sample of community adults) to .85 (another sample of community adults) (Myers et al., 2003).

Strong Interest Inventory (SII)

This study utilized the SII (CPP, 2005) General Occupational Themes (GOT) subtests to determine vocational interests because after numerous studies, GOTs were determined to provide the best inventory measures of the Holland RIASEC (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional) hexagon of vocational

interests (Tracey & Rounds, 1993). As such, the information provided here will be specifically related to the validity and reliability of SII's GOT.

Reliability of SII. In a study of 18,951 men and women from the SII (CPP, 2005) general reference sample, the median Cronbach's alpha for internal consistency was .91 (ranging from .90 for Social, Enterprising, and Conventional to .94 for Artistic) (Donnay, Morris, Schaubhut, & Thompson, 2005). The test-retest scores remained very consistent both in terms of correlation scores and high and low themes. In a short interval (two to seven months), the median correlation was .85, ranging from the lowest of .84 for Artistic to the highest of .89 for Realistic. After a longer interval (eight to twenty-three months) the median was .84, ranging from the lowest of .80 for Artistic to the highest of .92 for Realistic (Donnay et al., 2005).

Validity of SII. In a 1985 study, 97 women and men were given both the SII (CPP, 2005) and Vocational Preference Inventory Scale (Holland, 1978). Both had the same RIASEC (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional) scales. The correlation between the results regarding the scales ranged from .72 (Social) to .79 (Enterprising), indicating that the assessments were measuring the same thing (Hansen & Campbell, 1985). A more recent study (Savickas, Taber, & Spokane, 2002) compared the results of five different assessments taken by 118 participants showing SII GOTs were related to other interest inventories measuring similar constructs.

Clifton StrengthsFinder (CSF)

Reliability of CSF. In a study of 256 Gallup associates, the internal consistency of the Clifton StrengthsFinder (CSF) (Gallop, 2005) 34 strengths ranged from .55 (Restorative) to .81 (Woo), with a mean of .71 and median of .73 (Lopez, Hodges, &

Harter, 2005). In a June 2000 test-retest study with 706 Gallup associates, the average correlation over a 17 month period was .74. This is consistent with a previous study conducted in the 1990s with 300 consumers during a three week interval where the average correlation was .76 (Lopez, Hodges, & Harter, 2005).

Validity of CSF. In analyzing information from the CSF (Gallop, 2005) database of 601, 049 for item-cross total correlations (determining item to theme validity) ranged from .01 for Harmony and .17 for Learner, Relator, and Strategic (Lopez, Hodges, & Harter, 2005).

Regarding validity between assessments, Harter and Hodges (2003) compared the results of 297 participants who took both CSF (Gallop, 2005) and the five-factor model of personality. The significant correlations between each of the five factors and CSF included Extraversion with Woo (.83), Agreeableness with Positivity (.58), Conscientiousness with Discipline (.81), and Intellectence and Ideation (.70).

Data Analysis and Form of Results

Research Design

The purpose of this study was to expand the body of knowledge of career counseling by examining the relationship between strengths to personality preferences and vocational interests using two of the most frequently used vocational instruments career counseling assessments, Myers-Briggs Type Indicator (MBTI) (CPP, 2003) and Strong Interest Inventory (SII) (CPP, 2005), with a relatively new assessment to career counseling, Clifton StrengthsFinder (CSF) (Gallop, 2005). In addition two other variables, gender and academic program, were examined to determine their relationship to strengths.

This exploratory non-experimental study utilized archival data. Descriptive analysis was conducted using the Statistical Package for the Social Sciences (SPSS) (see Table 1 for listing of possible responses).

Table 1
Variables and Possible Responses

Variable	Possible Responses
Myers-Briggs Type Indicator - Traits	Extravert (E) or Introvert (I), Sensing (S) or Intuitive (N), Thinking (T) or Feeling (F), and Judging (J) or Perceiving (P)
Myers-Briggs Type Indicator – Mental Functions	Sensing-Thinking (ST), Sensing-Feeling (SF), Intuitive-Thinking (NT), and Intuitive-Feeling (NF)
Myers-Briggs Type Indicator – Attitude Functions	Extravert-Judging (EJ), Extravert-Perceiving (EP), Introvert-Judging (IJ), and Introvert-Perceiving (IP)
Myers-Briggs Type Indicator – Types	ISTJ, ISTP, ESTP, ESTJ, ISFJ, ISFP, ESFP, ESFJ, INFJ, INFP, ENFP, ENFJ, INTJ, INTP, ENTP, and ENTJ
Strong Interest Inventory General Occupational Themes	Realistic, Investigative, Artistic, Social, Enterprising, and Conventional
Clifton StrengthsFinder Strengths	Achiever, Activator, Adaptability, Analytical, Arranger, Belief, Command, Communication, Competition, Connectedness, Consistency, Context, Deliberative, Developer, Discipline, Empathy, Focus, Futuristic, Harmony, Ideation, Includer, Individualization, Input, Intellection, Learner, Maximizer, Positivity, Relator, Responsibility, Restorative, Self-Assurance, Significance, Strategic, and Woo.
Gender	Female and Male
Academic Programs	Counseling and Career Development (CCD) and Organizational Performance and Change (OPC)

Personality preferences. There are differing views on the proper way to consider personality preferences. Some (Honaker, 2001; Miller, 2002; Pulver, 2004; Tuel, 1997) believe it is appropriate to consider personality preferences by traits using the four dichotomous domains: energizing (Extraversion-Introversion), gathering information (Sensing-Intuition), making decisions (Thinking-Feeling), and approaching life (Judging-Perceiving). Others believe the more accurate way of approaching personality preferences is by type (all four traits considered as a whole, such as ENFJ).

Jung, Myers, and Briggs were constantly attentive to the dynamic character of personality types they were describing. The richness, depth, and breadth of their descriptive systems result from the dynamic interplay of the functions and attitudes inherent in each type. It is important to bear this in mind in applying MBTI theory and interpreting the MBTI personality inventory (Myers & McCaulley, 1998, p. 23).

When people first are introduced to MBTI (CPP, 2003), they often hear discussions regarding the four trait dichotomies (Extravert – Introvert, Sensing – Intuition, Thinking – Feeling, and Judging – Perceiving). While this is helpful and interesting “many people stop at this level of understanding. In doing so they miss the broader implications and applications that are intrinsic to the dynamic character of the MBTI” (Myers, McCaulley, Quenk, & Hammer, 2003, p. 23). The interplay between traits when viewed holistically as type is often more than the sum of individual characteristics of each trait. Thus, a deeper understanding of personality through MBTI is gained and contingent on an understanding the 16 types (J. Grutter, personal communication, April 25, 2007). As such, researchers “are implored to make more use of ...[MBTI] types in their research” (Hammer, 1996, p. 50).

A third approach to understanding personality is to examine the combination of personality preferences by mental and attitude functions (Myers et al., 2003). Mental.

functions consider the interaction between traits of the Attending (Sensing-Intuition) and Deciding domains (Thinking-Feeling). These domains consider how people take in information (Attending) and make decisions (Deciding). Attitude functions consider the interaction between traits of the Energizing (Extravert-Introvert) and Living (Judging-Perceiving) domains. These consider the sources of people's energy (Energizing) and how they interact with world (Living). Of these, "Isabel Myers considered the columns of the type table [mental functions] the most important...where career choices are concerned" (Myers et al., 2003, p. 40).

A final methodology of considering personality was clarity. Clarity utilizes four categories (Slight, Moderate, Clear, and Very Clear) to indicate how closely testers respond by trait to those in MBTI's (CPP, 2003) the national representative sample (Myers et al., 2003). Clarity categories are based on the raw points for each of the higher personality dichotomous traits (four in total) (see Table 14). While not an indication of trait potency (an Extravert with a Slight clarity may be as strong of an Extravert as one with a Clear clarity categorization), it does indicate how closely testers align themselves as having qualities of the traits. Using clarity provided this study another measure to explore how strengths interacted with personality preferences.

This study approached the examination of the interaction between strengths and personality preferences in four ways. It considered strengths to personality traits (E-I, S-N, T-F, J-P), strengths to mental (ST, SF, NF, NT) and attitude (IJ, IP, EP, EJ) functions, and strengths to the types (ISTJ, ISTP, ESTP, ESTJ, ISFJ, ISFP, ESFP, ESFJ, INFJ, INFP, ENFP, ENFJ, INTJ, INTP, ENTP, ENTJ). A final review examined trait clarity when strengths were present.

Vocational interests. This study approached the examination of the interaction between strengths and vocational interests by utilizing SII's (CPP, 2005) General Occupational Themes (GOT) (Donnay et al., 2005). Each participant received standard scores ($M=50$, $SD = 10$) for each GOT (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional). Means and standard deviations for each GOT were assessed when a strength was present, and again when the strength was not present.

In addition to receiving mean scores for each GOT, testers also received interpretive comments (Donnay et al., 2005). Interpretive comments, similar to MBTI's clarity categories, are given in five categories (Very Little, Little, Moderate, High, and Very High) (see Table 18). They indicate how similarly testers answered questions to SII's national representative sample, both in terms of likes and dislikes.

In this study, the relationship between strengths and vocational interests was examined in two ways: first, by observing the means and standard deviations for each GOT by each strength, both present and not present; and finally, by comparing the interpretive comments for each GOT by each strength.

Participants and Sites

This study's sample was comprised of students enrolled in an introductory graduate course from a Western university. Archival data were collected from two different campuses over a three-year period. Participants were enrolled in one of two academic programs, either the Masters of Education in Counseling and Career Development (majoring in career, school or community counseling) or the Masters of Education in Organizational Performance and Change (see Table 2 for participant distribution).

Table 2.

Participant Distribution by Gender and Academic Program

Academic Program	Gender				Total	
	Male		Female		N	%
	N	%	N	%	N	%
Counseling and Career Development	6	3.66	59	35.98	65	39.63
Organizational Performance and Change	28	17.07	71	79.27	99	60.37
<i>Total</i>	34	20.73	130	79.27	164	100.00

Data Collection, Instruments, and Procedures

Data were retrieved from an archival database of career assessment results and transferred into the Statistical Package for the Social Sciences (SPSS) program for analysis. In order to maintain complete subject confidentiality, no data other than gender, academic program, and assessment results were considered for analysis and only this information was included in the research results.

Measure Instruments

Three assessments were utilized in this study: Myers Briggs Type Indicator (MBTI) (CPP, 2003) (traits, mental and attitude functions, types, and clarity); Strong Interest Inventory (SII) (CPP, 2005) General Occupational Themes (GOT) (GOT and interpretive comments), and Clifton StrengthsFinder (CSF) (Gallop, 2005) strengths. See Appendix Tables W, X, Y, Z and AA for response descriptions.

Preparing Data

Personality traits. Raw point data were available for each subject for one of each of the four personality traits dichotomous pairs (Extravert or Introvert, Sensing or Intuitive, Thinking or Feeling, and Judging or Perceiving) (Myers et al, 2003). No manipulation of these scores was necessary. This information was entered into data system for each subject as preferred personality traits.

Personality mental and attitude functions. A new variable was created for mental functions and attitude functions. Mental functions are a combination of traits from the Attending (Extravert-Introvert) and Deciding (Thinking-Feeling) domains. Attitude functions are a combination of traits from the Energizing (Extravert-Introvert) and Living (Judging-Perceiving) domains. Data from preferred personality traits was synthesized to reflect each possible personality trait combination for mental and attitude functions.

New variables for mental and attitude functions were created in the following format. For mental functions, those subjects with Sensing and Thinking as their preferred personality traits were given a value of 1; those with Sensing-Feeling a value of 2; those with Intuitive-Thinking a value of 3; and those with Intuitive-Feeling a value of 4.

Attitude functions were assigned the same way with those subjects with Extravert and Judging as preferred personality traits were given a value of 5; those with Extravert-Perceiving a value of 6, those with Introvert-Judging a value of 7; and those with Introvert-Perceiving a value of 8.

This nominal information was entered into data system for each subject as mental function variables and attitude function variables.

Personality types. Data from preferred personality traits were synthesized to create a new variable for personality type. Type is the combination of preferred traits from all four domains (Energizing, Attending, Deciding, and Living). Values were assigned in a similar fashion as those for mental and attitude functions. For example, subjects with Introversion, Sensing, Thinking, and Judging as their preferred personality traits are considered the ISTJ type and given a value of 1. Numerical values were assigned to each subject for one of the 16 possible personality types (for example, ISTJ = 1, ISTP = 2, ESTP = 3, and so forth) based on their preferred personality traits. This nominal information was entered into the database for each subject under the variable of personality type.

Personality clarity. Clarity is determined by the raw point score for each personality trait (Myers et al., 2003) (see Table 14 for conversion table of raw points to personality clarity categories). Clarity of traits was determined by comparing the raw point mean for each trait-strength combination against clarity conversion scale (see Table 8) to ascertain the clarity category.

Data regarding personality. Data were reviewed and converted by the process stated above until all participants were assigned a nominal value for their mental function, attitude function, and personality type based on their preferred personality traits.

Vocational interests. Each subject had standard scores ($M = 50$, $SD = 10$) for each of the six Strong Interest Inventory (SII) (CPP, 2005) General Occupational Themes (GOT) (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional). No manipulation of these scores was necessary. These data were entered in the database for each GOT per subject.

Interpretive comments for vocational interests. Interpretive comments are based on the standard scores for each GOT and determined on a gender specific scale (different range of scores for men and women) (Grutter & Hammer, 2005) (see Table 18). A new variable, Gender-GOT, was created for each GOT. Using crosstabs, data was sorted by combinations of gender and GOT; for example Male-Realistic and Female-Realistic. Interpretive comments will be based on means of each gender-GOT combination when strengths are present and not present.

Strengths. Data from Clifton StrengthsFinder (CSF) (Gallop, 2005) results were available for all subjects regarding their top five strengths out of 34 possible strengths. In this study, each strength was considered a dichotomous variable (either the strength was one of the top five strengths for each subject or not). As a result, there were 34 new variables (one per strength). Values were assigned for each strength variable per subject of either 1 if the strength was one of the subject's top five strengths or 0 if the strength was not (strengths were present or not present). These nominal values (1 or 0) were entered for all 34 strengths per subject and added to the database under the heading of individual strengths.

Gender and academic program. Dichotomous variables for gender and academic program were created in a similar fashion. Gender (Female = 1, Male = 0) and academic program (Counseling and Career Development = 1, Organizational Performance and Change = 0) nominal values were entered for each subject and added to the database for gender and academic program.

Analyzing Data

Each subject had responses for four preferred personality traits (one of the dichotomous pairs from each of the four personality domains), one personality mental function out of four possibilities, one personality attitude function out of four possibilities, one personality type out of a possible 16 types, five strengths out of a possible 34 strengths, six general occupational themes (GOT) (one for each GOT), one gender, and one academic program.

Descriptive analysis (frequency, mean, standard deviation, and range) was used to show the relationship between strengths to personality preferences, vocational interests, gender, and academic program.

Given the sample size ($N = 164$), it was expected some personality types and strengths would have low or no responses. Low numbers in certain types was also anticipated since the sample consisted of students from two specific academic programs (Counseling and Career Development or Organizational Performance and Change). Personality and vocational theories suggest clusters of personality preferences and vocational interests would surround these academic programs and their corresponding occupations (Chartrand, Strong, & Weitzman, 1995; Holland 1985). This study anticipated the same disproportionate distribution of strengths would also occur.

Strengths and personality preferences. Data for each of the eight possible personality traits were reported as raw points. Data for each trait were sorted by strengths using crosstabs. Descriptive analysis (frequency, mean, standard deviation, and range) were then applied to show the relationship strengths and personality traits.

This was not the case in exploring the relationship between strengths and mental functions, attitude functions, and personality type. Because mental function, attitude function, and type were all nominal data, frequency and percentage of occurrence was used to describe the relationship between these and strengths. This was determined by sorting data using crosstabs for each category by each strength and analyzing occurrence patterns.

Strengths and gender and academic program. In a similar fashion, frequency and percentage of occurrence was used to describe the relationship between strengths and the two dichotomous nominal variables of gender and academic programs.

Vocational interests and strengths. Subjects had standard scores for each of the six GOT (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional). Using crosstabs to sort GOT data with strengths, an analysis was conducted to determine the mean and standard deviation for each GOT when a strength was present (strength value equals 1) and when a strength was not present (strength value equals 0).

Summary

A long-standing discussion continues whether vocational and personality assessments are measuring the same thing. Research reveals that while there are correlations between these types of assessments, a strong direct or causal relationship has yet to be established. This study considered the new variable of strengths and its relationship to personality preferences and vocational interests. Additional analysis was conducted determine the relationship between strengths to gender and academic program.

CHAPTER IV – RESULTS

Introduction

This chapter includes a short introduction restating the research questions, an overview of the research design, and the results of this study.

With the backdrop of today's changing employment trends, economic uncertainties, and evolution of vocational theory to include aspects of positive psychology, career counselors are looking to new ways to assist their clients. The purpose of this study was to describe the relationship between a relatively new career assessment measuring personal strengths, Clifton Strengths Finder (CSF) (Gallop, 2005), with two traditional career assessments: Myers Briggs Type Indicator (MBTI) (CPP 2003) (measuring personality preferences) and Strong Interest Inventory (SII) (CPP, 2005) (measuring vocational interests).

Research Questions

The research questions driving this study were:

1. What is the relationship between personality preferences and strengths?
2. What is the relationship between vocational interests and strengths?
3. What is the relationship between gender and strengths?
4. What is the relationship between academic programs (Counseling and Career Development or Organizational Performance and Change) and strengths?

Research Design

The purpose of this study was to expand the body of knowledge of career counseling by examining the relationship of strengths to personality preferences and vocational interests using two of the most frequently used career counseling assessments, Myers-Briggs Type Indicator (MBTI) (CPP, 2003) and Strong Interest Inventory (SII) (CPP, 2005), with a relatively new assessment to career counseling, Clifton StrengthsFinder (CSF) (Gallop, 2005). In addition two other variables, gender and academic program, were examined in regards to their relationship with strengths. This exploratory non-experimental study utilized archival data. Descriptive analysis was conducted using the Statistical Package for the Social Sciences (SPSS).

Sample Description

This non-randomized research study of 164 graduate students from two academic programs, Counseling and Career Development (CCD) and Organizational Performance and Change (OPC) (see Table 2). OPC was the larger group ($n = 99$, 60.37%) compared to CCD ($n = 65$, 39.63%). In both groups, women ($n = 130$; OPC $n^{\text{Female}} = 71$ or 71.72%; CCD $n^{\text{Female}} = 59$ or 90.76%) far outnumbered men ($n = 34$; OPC $n^{\text{Male}} = 28$ or 28.28%; CCD $n^{\text{Male}} = 6$ or 9.23%). Even though the sample size for males was small, their results are reported in this study.

Distribution of Strengths

Clifton StrengthsFinder (CSF) (Gallop, 2005) reports results in terms of 34 possible strengths (see Appendix Table AA). In this study, 164 test-takers received a prioritized list of their top five out of a possible 34 strengths ($n = 820$). Since numerical

data were not provided to indicate potency of these strengths, the results were nominative.

Sample distribution of strengths was wide spread across the 34 possible strengths, ranging from the highest of Input ($n = 51$, 6.2%) to the lowest of Significance ($n = 3$ or 0.4%). This broad distribution of strengths was unexpected given that the sample was from two academic programs (see Table 3 for complete distribution of strengths information).

Table 3.

Distribution of Strengths by Occurrence*

Strength ($N = 820$)	n	%	Strength	n	%
Input	51	6.2%	Intellection	22	2.7%
Relator	47	5.7%	Activator	20	2.4%
Empathy	47	5.7%	Self-Assurance	18	2.2%
Connectedness	47	5.7%	Restorative	18	2.2%
Strategic	39	4.8%	Futuristic	15	1.8%
Achiever	37	4.5%	Consistency	15	1.8%
Learner	36	4.4%	Focus	14	1.7%
Woo	35	4.3%	Discipline	13	1.6%
Adaptability	35	4.3%	Arranger	12	1.5%
Maximizer	34	4.1%	Includer	10	1.2%
Positivity	33	4.0%	Competition	10	1.2%
Harmony	32	3.9%	Command	9	1.1%
Responsibility	29	3.5%	Context	8	1.0%
Ideation	29	3.5%	Belief	8	1.0%
Individualization	28	3.4%	Deliberative	7	0.9%
Developer	28	3.4%	Analytical	5	0.6%
Communication	26	3.2%	Significance	3	0.4%

* Based on Clifton Strengths Finder (Gallop, 2005)

Distribution of Personality Preferences

Utilizing *Myers-Briggs Type Indicator*[®] (MBTI) (CPP, 2003), the following personality preference traits were considered in this study: Extravert (E), Introvert (I), Sensing (S), Intuitive (N), Thinking (T), Feeling (F), Judging (J), and Perceiving (P)

(Myers, McCaulley, Quenk, & Hammer, 2003). Pairs of traits are organized in a dichotomous fashion within four domains: Energizing, how we energize ourselves (E/I); Attending, how we take in information (S/N); Deciding, how we make decisions (T/F), and Living, how we relate daily to our surroundings (J/P). As such, participants received a score for one of the dichotomous pairs for each domain (E or I, S or N, T or F, J or P).

Tables 4 and 5 reflect the sample distribution of personality preferences by gender and academic program. Although percentage of occurrence varied per gender the highest trait occurrences for both genders was Extravert (Male = 55.9%, Female = 66.9%), Intuitive (Male = 70.6%, Female = 56.7%), and Feeling (Male = 52.9%; Female = 67.7%). Males had a higher percentage of Perceiving (64.7%) and females for Judging (52.8%).

Table 4.

Distribution of Personality Preferences by Gender Compared to MBTI National Representative Sample*

	Male (<i>n</i> = 34)				Female (<i>n</i> = 127) ⁺			
	NRS% ^{**}	<i>n</i>	% ^{***}	% ⁺ Difference ⁺⁺	NRS% ^{**}	<i>n</i>	% ^{***}	% ⁺ Difference ⁺⁺
ENERGIZING								
Extravert	45.9	19	55.9	-10.0	52.5	85	66.9	-14.4
Introvert	54.1	15	44.1	10.0	47.5	42	33.1	14.4
ATTENDING								
Sensing	71.7	10	29.4	42.3	74.9	55	43.3	31.6
Intuitive	28.3	24	70.6	-42.3	25.1	72	56.7	-31.6
DECIDING								
Thinking	56.5	16	47.1	9.4	24.5	41	32.3	-7.8
Feeling	43.5	18	52.9	-9.4	75.5	86	67.7	7.8
LIVING								
Judging	52.0	12	35.3	16.7	56.2	67	52.8	3.4
Perceiving	48.0	22	64.7	-16.7	43.8	60	47.2	-3.4

⁺ Three participants did not have complete scores for Myers-Briggs Type Indicator (CPP 2003), thus *N* = 161.

⁺⁺ Positive number indicates percentage was higher in MBTI National Representative Sample; negative number indicates percentage was higher in sample.

^{*} MBTI (CPP, 2003)

^{**} Based on MBTI National Representative Sample (NRS) by gender (Myers, McCaulley, Quenk, & Hammer, 2003).

^{***} Percentage of occurrence within gender

This sample had strong preferences for certain personality traits. Comparing the sample's percentage of occurrence of traits to MBTI's (CPP, 2003) national representative sample (NRS) (Myers et al., 2003), males (*n* = 34) scored higher in Extravert by 10 percent, Intuitive by 42.3 percent, Feeling by 9.4 percent, and Judging by 16.7 percent. Sample females (*n* = 127) were higher than MBTI's NRS in Extravert by 14.4 percent, Intuitive by 31.6 percent, Feeling by 7.8 percent, and Perceiving by 3.4 percent (see Table 4).

Within the four domains, both academic programs had higher percentage of occurrence of traits for Extravert, Intuitive, Feeling and Perceiving although the percentages differed by academic program. Counseling and Career Development (CCD) had higher percentages than Organizational Performance and Change (OPC) for Extravert (12.09 percent higher), Sensing (10.80 percent higher), Feeling (17.27 percent higher) and Perceiving (1.04 percent higher). OPC was higher than CCD in Introvert, Intuitive, Thinking, and Living (see Table 5).

Table 5.

Distribution of Personality Preferences by Academic Program*

Traits	Total (N = 161) ⁺		Counseling and Career Development (n = 64)		Organizational Performance and Change (n = 97)		% Dif ^{***}
	N	% ^{**}	n	% ^{**}	n	%	
ENERGIZING							
Extravert	106	65.03	46	71.88	58	59.79	12.09
Introvert	57	34.97	18	28.13	39	40.21	-12.08
ATTENDING							
Sensing	67	41.1	30	46.88	35	36.08	10.80
Intuitive	96	58.9	34	53.13	62	63.92	-10.79
DECIDING							
Thinking	59	36.2	16	25.00	41	42.27	-17.27
Feeling	104	63.8	48	75.00	56	57.73	17.27
LIVING							
Judging	80	49.08	31	48.44	48	49.48	-1.04
Perceiving	83	50.92	33	51.56	49	50.52	1.04

+ Three participants did not have scores for Myers-Briggs Type Indicator (CPP, 2003), thus N = 161

* Based on Myers-Briggs Type Indicator

** Percentage of occurrence within academic program

*** Positive number indicates trait percentage was higher for Counseling and Career Development academic program; negative number indicates trait percentage was higher for Organizational Performance and Change academic program.

A closer look at traits based on raw point means by gender and academic program gave a slightly different picture than distribution of these traits. Males' stronger traits by occurrence were Extravert (55.9%), Intuitive (70.6%), Feeling (52.9%), and Perceiving (64.7%), yet raw point means were higher for Extravert ($M = 17.32$, $SD = 14.20$), Sensing ($M = 17.20$, $SD = 5.73$), Thinking ($M = 13.38$, $SD = 7.10$), and Judging ($M = 18.50$, $SD = 9.79$), a difference in three of the four traits. Females' stronger traits based on occurrence and raw point means were the same for Extravert (66.9%, $M = 16.31$, $SD = 9.15$), Intuitive (56.7%, $M = 13.93$, $SD = 8.32$), and Judging (52.8%, $M = 17.12$; $SD = 8.26$). Females did differ, however, with the higher trait by occurrence for Feeling (67.7%) and higher trait by raw point means for Thinking ($M = 14.71$, $SD = 7.79$) (refer to Tables 4 and 6). Variance of raw point means for males ranged between a low for Sensing ($SD = 5.73$) to a high for Judging ($SD = 9.79$); females ranged between a low for Perceiving ($SD = 6.88$) to a high for Sensing ($SD = 9.34$) (see Table 6).

Table 6.

Variance of Personality Preferences by Gender*

	Sample (<i>N</i> = 161 ⁺)			Males (<i>n</i> = 34)			Females (<i>n</i> = 127)			<i>M</i> Diff**
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	
ENERGIZING										
Extravert	104	16.49	8.93	19	17.32	8.03	85	16.31	9.15	1.01
Introvert	57	13.58	7.49	15	14.20	6.81	42	13.36	7.78	0.84
ATTENDING										
Sensing	65	13.75	8.97	10	17.20	5.73	55	13.13	9.34	4.07
Intuitive	96	14.33	8.44	24	15.54	8.87	72	13.93	8.32	1.61
DECIDING										
Thinking	57	14.33	7.56	16	13.38	7.10	41	14.71	7.79	-1.33
Feeling	104	14.12	7.78	18	12.83	8.17	86	14.36	7.72	-1.53
LIVING										
Judging	79	17.33	8.46	12	18.50	9.79	67	17.12	8.26	1.38
Perceiving	82	16.16	7.31	22	14.91	8.83	60	16.62	6.88	-1.71

⁺ Three participants did not have scores for Myers-Briggs Type Indicator (CPP, 2003), thus *N* = 161

^{*} Based on Myers-Briggs Type Indicator

^{**} Positive numbers indicate means were higher for males; negative numbers indicate means were higher for females.

Trait strengths between academic programs also differed based on occurrence and mean scores. Stronger traits by occurrence and mean scores for CCD (*n* = 64) were Extravert (71.88%, *M* = 17.46, *SD* = 8.59) and Feeling (75%, *M* = 15.58, *SD* = 7.63). Intuition was stronger by occurrence (53.13%, *M* = 12.97, *SD* = 8.41) but Sensing was stronger by mean score (46.88%, *M* = 13.30, *SD* = 8.97). Perceiving was stronger for CCD by occurrence (51.56%, *M* = 15.58, *SD* = 5.86) but Judging was stronger by mean score (48.44%, *M* = 18.94, *SD* = 7.58). OPC's (*n* = 97) strongest traits by occurrence and raw point mean score were Extravert (59.79%, *M* = 15.72, *SD* 9.18), Intuitive (63.92%, *M* = 15.08, *SD* = 8.43), and Perceiving (50.52%, *M* = 16.55, *SD* = 8.37). Feeling was stronger for OPC by occurrence (57.73%, *M* = 12.86, *SD* = 7.35) but Thinking was

stronger by mean score (42.27%, $M = 14.02$, $SD = 7.35$). Variance of scores for CCD ranged between a low for Sensing ($SD = 7.57$) to a high for Introvert ($SD = 8.92$). For OPC these ranged between a low for Introvert ($SD = 6.88$) to a high for Sensing ($SD = 10.10$) (see Tables 5 and 7).

Table 7.

Variance of Personality Preferences by Academic Program*

	Sample ($N = 161^+$)			Counseling and Career Development ($n = 64$)			Organizational Performance and Change ($n = 97$)			M Diff**
	N	M	SD	n	M	SD	n	M	SD	
ENERGIZING										
Extravert	104	16.49	8.93	46	17.46	8.59	58	15.72	9.18	-0.59
Introvert	57	13.58	7.49	18	13.89	8.92	39	13.44	6.85	2.07
ATTENDING										
	65								10.1	
Sensing		13.75	8.97	30	13.30	7.57	35	14.14	0	-2.53
Intuitive	96	14.33	8.44	34	12.97	8.41	62	15.08	8.43	-0.02
DECIDING										
Thinking	57	14.33	7.56	16	15.13	8.27	41	14.02	7.35	0.92
Feeling	104	14.12	7.78	48	15.58	7.63	56	12.86	7.75	-0.13
LIVING										
Judging	79	17.33	8.46	31	18.94	7.58	48	16.29	8.90	-1.32
Perceiving	82	16.16	7.31	33	15.58	5.86	49	16.55	8.37	-2.51

+ Three participants did not have scores for Myers-Briggs Type Indicator (CPP, 2003), thus $N = 161$

* Based on Myers-Briggs Type Indicator

** Positive numbers indicate means were higher for Counseling and Career Development academic program; negative numbers indicate means were higher for Organizational Performance and Change.

Preference clarity. Another way of describing traits is by preference clarity.

Preference clarity, determined by the raw points for each personality trait, is reported in four categories (Slight, Moderate, Clear, and Very Clear) (Myers, McCaulley, Quenk, & Hammer, 2003) (see Table 8 for clarity conversion table). Clarity does not indicate strength of each trait; rather it indicates how closely participants align or see themselves

(thus, the term clarity) with qualities of each trait as compared with MBTI's national representative sample (Myers et al., 2003).

Table 8.

Converting Raw Points of Myers Briggs Type Indicator Traits to Clarity Categories

Dichotomy	Preference Categories			
	Slight	Moderate	Clear	Very Clear
Extrovert-Introvert	11-13	14-16	17-19	20-21
Sensing-Intuition	13-15	16-20	21-24	25-26
Thinking-Feeling	12-14	15-18	19-22	23-24
Judging-Perceiving	11-13	14-16	17-20	21-22

Source: Myers, McCauley, Quenk, & Hammer (2003).

In this sample, Clear was the highest preference for any group. Males had a Clear personality clarity for Extravert and Judging; females for Judging. Participants from Counseling and Career Development academic program had Clear personality clarity for Extravert but none occurred for those in Occupational Performance and Change. Refer to Table 9 for preference clarity information for all groups.

Raw points are only available for traits, not types (combination of traits from each of the four domains), mental functions or attitude functions. As a result, clarity of personality preferences can only be determined with traits and not with other personality considerations.

Table 9.

Personality Preference Clarity by Gender and Academic Program.*

Trait	Gender		Academic Program	
	Male	Female	CCD**	OPC**
ENERGIZING				
Extravert	Clear	Moderate	Clear	Moderate
Introvert	Moderate	Slight	Slight	Slight
ATTENDING				
Sensing	Moderate	Slight	Slight	Slight
Intuitive	Slight	Slight	Slight	Slight
DECIDING				
Thinking	Slight	Slight	Slight	Slight
Feeling	Slight	Slight	Slight	Slight
LIVING				
Judging	Clear	Clear	Moderate	Moderate
Perceiving	Moderate	Moderate	Moderate	Moderate

* Source: Myers, McCaulley, Quenk, & Hammer, 2003.

** Academic Programs: Counseling and Career Development (CCD) and Organizational Performance and Change (OPC).

Personality mental and attitude functions. Beyond traits, another way to review personality is to consider mental and attitude functions. Mental functions are the combination of traits from the Attending (Extravert-Introvert) and Deciding (Thinking-Feeling) domains. Attitude functions are the combination of traits from the Energizing (Extravert-Introvert) and Living (Judging-Perceiving) domains.

In this sample, there were obvious mental and attitude function preferences. Intuitive-Feeling (NF) was the largest mental function ($n = 67, 40.1\%$) and Sensing-Thinking (ST) ($n = 28, 17.2\%$) and Intuitive-Thinking (NT) ($n = 29, 17.8\%$) were equally low. Extravert-Perceiving (EP) was the highest attitude function ($n = 59, 36.2\%$) and Introvert-Perceiving (IP) was the lowest ($n = 26, 16.0\%$) (see Table 10).

Table 10.

*Distribution of Mental and Attitude Functions**

Functions**	<i>n</i>	Percent
Mental Functions		
Sensing-Thinking (ST)	28	17.12
Sensing-Feeling (SF)	39	23.92
Intuitive-Feeling (NF)	67	41.10
Intuitive-Thinking (NT)	29	17.79
Totals	163	99.93
Attitude Functions		
Introvert-Judging (IJ)	30	18.40
Introvert-Perceiving (IP)	26	15.95
Extravert-Perceiving (EP)	59	36.19
Extravert-Judging (EJ)	48	29.44
Totals	163	99.98

* Based on Myers-Briggs Type Indicator (CPP, 2003)

** Source: Myers, McCaulley, Quenk, & Hammer (2003)

*** Note: One participant did not have MBTI scores, thus $N = 163$

Personality preference by type. Type, as defined by MBTI (CPP, 2003), is the combination of one dichotomous trait (E-I, S-N, T-F, J-P) from each of the four domains (Energizing, Attending, Deciding, and Living) which is reported together (i.e., ENFJ). There are 16 possible types (see Appendix Y) (Myers et al., 2003). Because each of these four traits influence or color the others, type has “broader implications and applications that are intrinsic to the dynamic character” of personality (Myers et al., 2003, p. 23).

In this study ($N = 164$), the largest type based on percent of occurrence was ENFP for all categories (Males = 23.55%, Females = 20.16%, Organizational Performance and

Change = 21.43%, and Counseling and Career Development = 20.00%). Counseling and Career Development had the same high percent of occurrence for ESFJ (20.00%). This is in contrast with the MBTI's (CPP, 2003) National Representative Sample (NRS) ($N = 3,009$) (Myers et al., 2003) for which the highest was ISFJ (13.8%) followed by ESFJ (12.3%). Males ($n = 34$) did not have any of the following types: ESTP, ISFP, ESFP, ESFJ, and INTJ. One type was not represented by each of the remaining three categories: ISTP with Females ($n = 129$) and Counseling and Career Development ($n = 65$); and ESTP with Organizational Performance and Change ($n = 98$) (see Table 11). See Appendix Table E for complete distribution of type by NRS, sample, gender, and academic programs.

Table 11.

Comparison of Sample Distribution of Types by Gender and Academic Program with National Averages***

Type	NRS**	Sample (N = 163)		Gender				Academic Program			
		%	Dif ⁺	Male (n = 34)		Female (n = 130)		CCD*** (n = 65)		OPC*** (n = 99)	
				%	Dif ⁺	%	Dif ⁺	%	Dif ⁺	%	Dif ⁺
ISTJ	11.6	5.5	6.1	5.9	5.7	5.4	6.2	1.5	10.1	8.2	3.4
ISFJ	13.8	6.1	7.7	8.8	5.0	5.4	8.4	9.2	4.6	4.1	9.7
INFJ	1.5	4.9	-3.4	2.9	-1.4	5.4	-3.9	3.1	-1.6	6.1	-4.6
INTJ	2.1	1.8	0.3	--	2.1	2.3	-0.2	--	2.1	3.1	-1.0
ISTP	5.4	1.8	3.6	8.6	-3.2	--	5.4	--	5.4	3.1	2.3
ISFP	8.8	2.5	6.3	--	8.8	3.1	5.7	1.5	7.3	3.1	5.7
INFP	4.4	8.0	-3.6	8.6	-4.2	7.8	-3.4	10.8	-6.4	6.1	-1.7
INTP	3.3	3.7	-0.4	8.6	-5.3	2.3	1.0	3.1	0.2	4.1	-0.8
ESTP	4.3	0.6	3.7	--	4.3	0.8	3.5	1.5	2.8	--	4.3
ESFP	8.5	4.3	4.2	--	8.5	5.4	3.1	6.2	2.3	3.1	5.4
ENFP	8.1	20.9	-12.8	22.9	-14.8	20.2	-12.1	20.0	-11.9	21.4	-13.3
ENTP	3.2	10.4	-7.2	14.3	-11.1	9.3	-6.1	9.2	-6.0	11.2	-8.0
ESTJ	8.7	9.2	-0.5	5.7	3.0	10.1	-1.4	7.7	1.0	10.2	-1.5
ESFJ	12.3	11.0	1.3	--	12.3	14.0	-1.7	20.0	-7.7	5.1	7.2
ENFJ	2.5	7.4	-4.9	8.6	-6.1	7.0	-4.5	4.6	-2.1	9.2	-6.7
ENTJ	1.8	1.8	0.0	2.9	-1.1	1.6	0.2	1.5	0.3	2.0	-0.2

* Based on Myers-Briggs Type Indicator (CPP, 2003)

** Based on National Representative Adult Sample (Myers, McCauley, Quenk, & Hammer, 2003)

*** Counseling and Career Development (CCD); Occupational Performance and Change (OPC)

+ Positive numbers indicate percentage of occurrence of type is higher in national representative adult sample; negative numbers indicate percentage of occurrence of type is higher in sample.

Distribution of Vocational Interests

In this study, vocational interests were determined utilizing Strong Interest Inventory (SII) (CPP, 2005) General Occupational Themes (GOT) (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional). Each participant received scores reported as standard scores ($M = 50$; $SD = 10$) for all six GOT. Sample means were

all within one standard deviation ($SD = 10$) of the SII General Representative Sample (Donnay, Morris, Schaubhut, & Thompson, 2005) of the mean ($M = 50$) ranging from the lowest Conventional ($M = 45.80$; $SD = 9.08$) to the highest of Social ($M = 59.57$; $SD = 8.32$) (see Tables 12 and 13).

Table 12.

Distribution of General Occupational Themes by Gender.*

	Sample ($N = 163^+$)		Male ($n = 36$)		Female ($n = 127$)		M Difference**
	M	SD	M	SD	M	SD	
Realistic	47.48	9.27	50.00	8.81	46.72	9.24	3.28
Investigative	47.84	9.86	50.44	10.41	47.09	9.54	3.35
Artistic	55.42	8.92	55.92	9.19	55.43	8.88	0.49
Social	59.57	8.32	58.28	7.91	59.87	8.40	-1.59
Enterprising	50.69	9.66	50.33	9.70	50.60	9.75	-0.27
Conventional	45.80	9.08	46.31	9.00	45.71	9.11	0.6

+ Note: One participant did not have scores for Strong Interest Inventory (CPP, 2005), thus $N = 163$

* Based on Strong Interest Inventory

** Positive number indicates mean was higher for males; negative number indicates mean was higher for females.

Within the sample GOT distribution, Conventional was the lowest for both males ($n = 36$, $M = 46.31$, $SD = 9.00$) and females ($n = 127$, $M = 45.71$, $SD = 9.11$) and Social the highest ($M^{Male} = 58.28$, $SD^{Male} = 7.91$; $M^{Female} = 59.87$, $SD^{Female} = 8.40$). Overall, the mean differences for GOT by gender were higher for men in Realistic (3.28), Investigative (3.35), Artistic (.49), and Conventional (.6) and higher for females in Social (1.59) and Enterprising (.27). Variance of scores for male GOT ranged from a low for Realistic ($SD = 8.81$) to a high for Investigative ($SD = 10.41$). For females the variance of

scores ranged from a low for Social ($SD = 8.40$) to a high for Enterprising ($SD = 9.75$) (see Table 12).

GOT means by academic programs followed the same pattern. All GOT means were within one standard deviation of the SII General Representative Sample (Donnay et al., 2005) of the mean ($M = 50$, $SD = 10$) with the exception of Social for Counseling and Career Development (CCD) which was slightly over ($M = 61.18$, $SD = 6.81$). Paralleling gender scores, mean scores remained the highest for Social ($M^{CCD} = 61.18$, $SD^{CCD} = 6.81$; $M^{OPC} = 58.48$, $SD^{OPC} = 9.08$) and lowest for Conventional ($M^{CCD} = 44.18$, $SD^{CCD} = 8.24$; $M^{OPC} = 46.90$; $SD^{OPC} = 9.13$) for both CCD ($n = 65$) and Organizational Performance and Change (OPC) ($n = 98$) academic programs. Overall, the GOT mean differences by academic programs were higher for OPC for Realistic (3.69), Investigative (4.30), Artistic (2.29), Enterprising (3.14), and Conventional (2.72). The mean difference was higher in Social (2.70) for CCD. Variance of scores for CCD GOT ranged from a low for Artistic ($SD = 8.51$) to a high for Investigative ($SD = 10.30$). Variance of scores for OPC were more consistent ranging from a low for Social ($SD = 9.08$) to a high for Investigative ($SD = 9.20$) (see Table 13).

Table 13.

Distribution of General Occupational Themes by Academic Program.*

	Sample (<i>N</i> = 163 ⁺)		Counseling and Career Development (<i>n</i> = 65)		Organizational Performance and Change (<i>n</i> = 98)		<i>M</i> Difference**
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Realistic	47.48	9.27	45.28	9.10	48.97	9.14	-3.69
Investigative	47.84	9.86	45.28	10.30	49.58	9.20	-4.30
Artistic	55.42	8.92	54.05	8.51	56.34	9.11	-2.29
Social	59.57	8.32	61.18	6.81	58.48	9.08	2.70
Enterprising	50.69	9.66	48.81	10.17	51.95	9.15	-3.14
Conventional	45.80	9.08	44.18	8.24	46.90	9.13	-2.72

+ One participant did not have scores for Strong Interest Inventory (CPP, 2005), thus *N* = 163

* Based on Strong Interest Inventory

** Positive number indicates mean was higher for Counseling and Career Development academic program; negative number indicates mean was higher for Organizational Performance and Change academic program.

Interpretive comments for General Occupational Themes. In addition to standard scores, participants taking SII (CPP, 2005) also receive interpretive comments for each General Occupational Theme (Realistic, Investigative, Artistic, Social, Enterprising, and Convention) in terms of five categories: Very Little (less interest than almost all women/men), Little (less interest than most women/men), Moderate (about as much interest as most women/men), High (more interest that most women/men), and Very High (more interest than almost all women/men) (Grutter & Hammer, 2005). These are determined by the standard score achieved in each GOT and reflect how closely the test-taker responded like those of the same gender from the general representative sample for each GOT category (see Table 14 for ranges).

Table 14.

Range of Standard Scores for Interpretive Comment Categories for Strong Interest Inventory General Occupational Themes (GOT)

Theme	Gender	Interpretive Comment Categories				
		Very Little (0-10%)	Little (11-25%)	Moderate (26-75%)	High (76-90%)	Very High (91-100%)
Realistic	Women	30-34	35-38	39-51	52-56	57-87
	Men	30-43	44-50	51-61	62-66	67-87
Investigative	Women	26-35	36-41	42-56	57-62	63-78
	Men	26-38	39-45	46-58	59-64	65-78
Artistic	Women	26-37	38-44	45-59	60-64	65-76
	Men	26-36	37-42	43-56	57-62	63-76
Social	Women	23-39	40-46	47-59	60-65	66-83
	Men	23-35	36-41	42-55	56-60	61-83
Enterprising	Women	23-37	38-42	43-56	57-62	63-80
	Men	21-37	38-43	44-58	59-64	65-80
Conventional	Women	27-35	36-42	43-57	58-64	65-90
	Men	37-38	39-44	45-57	58-63	64-90

Source: Grutter, J., & Hammer, A. (2005).

In this sample, all GOT mean scores fell in the Moderate interpretive comment range for females. Males' GOT mean scores were also in the Moderate range for all GOT with the exception of Social, which was High (See Table 12). Because interpretive comments are gender specific, this information was not available for academic programs.

Sample Description Summary

This study included 164 graduate students from two academic programs. The sample was predominantly female ($n = 130, 79.3\%$) versus male ($n = 34, 20.7\%$). Students from the Organizational Performance and Change (OPC) academic program ($n = 99, 60.4\%$) outnumbered those from Counseling and Career Development (CCD) ($n = 65, 39.6\%$).

Three assessments were utilized in this study: strengths determined by Clifton Strengths Finder (Gallop, 2005), personality preferences determined by Myers-Briggs Type Indicator (CPP, 2003), and vocational interests determined by Strong Interest Inventory (CPP, 2005).

Sample distribution of 34 possible strengths was widespread, ranging from a high for Input ($n = 51$; 6.2%) to low for Significance ($n = 3$, .4%). This broad dispersal of strengths was unexpected because the sample consisted of graduate students from only two academic programs.

Regarding personality preferences, the sample profile differed from Myers-Briggs Type Indicator (CPP, 2003) national representative sample (NRS) (Myers, McCaulley, Quenk, & Hammer, 2003) in several categories. Males within the sample were higher than the NRS in Extravert, Introvert, Feeling and Judging. Females were higher in Extravert, Intuitive, Feeling, and Perceiving.

In addition, variation existed between preferred personality traits based on occurrence and raw point mean. Males' personality preferences were Extravert-Intuitive-Feeling-Perceiving based on occurrence but Extravert-Sensing-Thinking-Judging based on raw point mean. Females were more consistent with the higher traits based both on occurrence and raw point mean for Extravert, Intuitive, and Judging but differed regarding Feeling based on occurrence and Thinking based on raw point mean.

Extravert and Intuitive were the preferred personality traits for both CCD and OPC based on occurrence and mean. Feeling was consistent for CCD by occurrence and mean but Perceiving was preferred by occurrence and Judging by mean. Extravert, Intuitive, and Perceiving were consistently preferred personality traits for OPC by

occurrence and mean; however, Feeling was preferred based on occurrence and Thinking by mean score.

Clear preferences for mental and attitude functions of personality existed within sample. Intuitive-Feeling (NF) was the highest mental function ($n = 332$, 40.7%) and Extravert-Perceiving (EP) was the highest attitude function ($n = 295$, 36.2%). The favored (highest percent by occurrence) type for all four categories of gender and academic programs was ENFP ($n = 20.85\%$) as compared to the NRS for which ISFJ was the highest occurring type ($n = 13.8\%$).

Vocational interests based on SII (CPP, 2005) General Occupational Themes (GOT) sample means were more consistent with a national representative sample than personality preferences. All six GOT (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional) were within one standard deviation ($M = 50$, $SD = 10$) of the SII's general representative sample (Donnay, Morris, Schaubhut, & Thompson, 2005) for both genders and both academic programs with the exception of Social for CCD which was slightly over one standard deviation ($M = 61.18$, $SD = 6.81$).

Strengths and Personality Preferences

One major focus of this study was to explore the relationship between strengths and personality preferences by observing trends and interplay between the results of Clifton Strengths Finder (CSF) (Gallop, 2005) with those of Myers-Briggs Type Indicator (MBTI) (CPP, 2003). This was done by comparing strengths with personality preference traits, mental functions, attitude functions, and type. This relationship was further examined by monitoring changes in trait clarity when a strength was present.

Strengths and Personality Preference Traits

MBTI (CPP, 2003) reports personality preference in terms of eight traits: Extravert (E), Introvert (I), Sensing (S), Intuitive (N), Thinking (T), Feeling (F), Judging (J), and Perceiving (P) (Myers, McCaulley, Quenk, & Hammer, 2003). Pairs of traits are organized in a dichotomous fashion within four domains: Energizing, how we energize ourselves (E/I); Attending, how we take in information (S/N); Deciding, how we make decisions (T/F), and Living, how we relate daily to our surroundings (J/P) (Myers et al., 2003). Test-takers received a raw point score for one of the dichotomous trait pairs in each domain (E or I, S or N, T or F, J or P). CSF (Gallop, 2005) reported the top five strengths for each test-taker from a possible 34 strengths (see Appendix Tables W and AA).

When reviewing the distribution of traits by strengths, interesting attractions between certain traits and strengths emerged. All (100%) of those with Communication as one of their top five strengths were Extravert. The same relationship occurred between Woo with Extravert, Analytical and Significance with Sensing, Analytical with Thinking, and Discipline and Significance with Judging. The reciprocal was also true. None (0%) with Introvert as their preferred trait had Communication or Woo as one of his or her top ten strengths. This same absence occurred between Intuitive with Analytical and Significance, Feeling with Analytical, and Perceiving with Discipline and Significance (see Table 15).

Table 15.

Distribution of Strengths by Personality Traits***

Trait	Strengths Appearing with Traits 90-100% of the Time	Strengths Appearing with Traits 80-89% of the Time
	Strength [%] (M) ^{***}	Strength [%] (M) ^{***}
ENERGIZING		
Extravert	Activator [95] (17.68)	Competition [80] (23.5)
	Communication [100] (19.64)	Includer [80] (17.88)
	Woo [100] (22.82)	Positivity [84.9] (20.75)
Introvert	--	--
ATTENDING		
Sensing	Analytical [100] (14.2)	Consistency [80] (16.67)
	Significance [100] (19.67)	
Intuitive	--	Futuristic [80] (17.25) Ideation [82.8] (21.25) Strategic [84.6] (17.44)
DECIDING		
Thinking	Analytical [100] (14.2)	--
Feeling	Empathy [91.3] (17.02)	Belief [87.5] (12.71)
	Includer [90] (15.78)	Connectedness [82.9] (13.6) Positivity [87.9] (13.90) Woo [88.6] (14.39)
LIVING		
Judging	Consistency [93.3] (18.71)	Deliberative [85.7] (21.67)
	Discipline [100] (22.31)	
	Significance [100] (25.33)	
Perceiving	--	Competition [80] (17.13) Includer [80] (17.5) Self-Assurance [83.3] (12.33)

* Based on Clifton StrengthsFinder (Gallop, 2005)

** Based on Myers-Briggs Type Indicator (CPP, 2003)

Attractions in the top ten percent (90 to 99%) occurred between Extravert with Activator (95.00%), Feeling with Empathy (91.30%), and Judging with Consistency (93.34%). Attractions in the top twenty percent (80 to 89%) occurred between Extravert with Competition (80.00%), Includer (80.00%), and Positivity (84.85%); Sensing with Consistency (80.00%); Intuitive with Futuristic (80.00%), Ideation (82.76%), and Strategic (84.62%); Feeling with Arranger (87.50%), Connectedness (82.98%),

Maximizer (87.88%), and Woo (88.57%); Judging with Deliberative (85.71%); and Perceiving with Competition (80.00%), Includer (80.00%), and Self-Assurance (83.33%) (see Table 15). Refer to Appendix Table B for complete distribution of strengths and personality traits by percent.

Comparing the raw point means of these same pairings (strengths and personality traits in the top and low ten percent and top and low twenty percent by occurrence), a strong trend of higher percentages by occurrence with higher raw point means happened between most dichotomous traits. The exceptions were Belief (Thinking = 12.5%, $M = 15.0$; Feeling = 87.5%, $M = 12.71$) and Includer (Thinking = 10%, $M = 17.0$; Feeling = 90%, $M = 15.78$). With Competition the raw point means were the same between Extravert and Introvert although eighty percent of participants with Competition as one of their top five strengths were also Extravert (Extravert = 80%, $M = 23.50$; Introvert = 20%, $M = 23.50$) (see Table 15).

This indicates that the relationship of some pairings of personality traits with strengths was not always the same when considering percent of occurrence to raw point means. Thus, taking into account only one of these parameters (percent of occurrence or raw point mean) does not give the complete picture about attractions between strengths and personality preferences. Refer to Appendix Table C for complete listing of strengths with personality trait raw point means.

Strengths and Mental and Attitude Functions

In addition to the eight traits, personality preferences can be described by mental and attitude functions (Myers, McCaulley, Quenk, & Hammer, 2003). These functions

give another picture of the relationship between strengths and personality preferences when various traits are combined together.

Mental functions. Mental functions consider combination of traits in the Attending (Sensing and Feeling) and Deciding (Thinking and Feeling) domains, how information is collected and how decisions are made. Sensing-Thinking (ST) people are considered practical and matter-of-fact. They tend to focus on facts that “can be collected and verified directly by the senses” and “typically approach their decisions regarding facts using objective analysis” (Myers et al., 2003, pp. 40-41). Sensing-Feeling (SF) people are sympathetic and friendly. They are mainly “interested in facts they can gather directly through the senses but they approach their decisions with a subjectivity that is based on their personal value system” (Myers et al., 2003, p. 41). They tend to be more interested in facts about people than facts about things, more of an ST focus.

Intuitive-Thinking (NT) people are logical and ingenious. They “focus on possibilities, theoretical relationships, and abstract patterns, but they judge these from a non-personal, cause-and-effect perspective” and “often pursue possibilities that are technical, scientific, theoretical, or executive, where attention to the human issues may be secondary” (Myers et al., 2003, p. 43). Intuitive-Feeling (NF) people are enthusiastic and insightful. They are likely “attracted to new projects, things that have never happened . . . or truths that have not yet come to light” and “often have a marked gift for the spoken or written word and can communicate both the possibilities they see and the values they attach to those possibilities” (Myers et al., 2003, p. 43).

In this sample, only one mental function was associated with all (100%) of a particular strength: ST with Analytical. There were, however, many mental functions

combinations that were never associated (0%) with individual strengths: ST with Includer; SF with Analytical and Deliberative; NT with Analytical, Belief, Consistency, Discipline, Harmony, and Significance; and NF with Analytical and Significance (see Table 16).

Table 16.

Negative correlations (0% Occurrence) between Functions and Strengths***

Function	Strengths**
Mental Function	
Sensing-Thinking (ST) ***	Includer
Sensing-Feeling (SF)	Analytical, Deliberative
Intuitive-Thinking (NT)	Analytical, Consistency, Discipline, Harmony, Significance
Intuitive-Feeling (NF)	Analytical, Significance
Attitude Function	
Extravert-Judging (EJ)	--
Extravert-Perceiving (EP)	Discipline, Significance
Introvert-Judging (IJ)	Communication, Competition, Self-Assurance, Woo
Introvert-Perceiving (IP)	Activator, Consistency, Deliberative, Discipline, Significance, Woo

* Based on Myers-Briggs Type Indicator (CPP, 2003)

** Based on Clifton Strengths Finder (Gallop, 2005)

*** Terms from Myers, McCaulley, Quenk, & Hammer (2003).

Attitude functions. Attitude functions consider combinations of traits from the Energizing (Extravert and Introvert) and Living (Judging and Perceiving) domains, sources of energy and how people interact with their surroundings (Myers et al., 2003). Extravert-Judging (EJ) people are the decisive extraverts who are “fast moving, decisive, and confident looking and they enjoy making things happen” and, as such, are natural leaders (Myers et al., 2003, p. 48). Extravert-Perceiving (EP) people are adaptable extraverts who are “active, energetic, and social and often seek new experiences” and

“embrace new opportunities with optimism, and obstacles are seen as merely temporary setbacks or challenges to be met” (Myers et al., 2003, p. 47).

Introvert-Judging (IJ) people are considered the decisive introverts. They are “introspective, persevering, and hard to convince or change unless compelling data are provided to override a decision or foregone conclusion” and, as such, “can appear resistant to change . . . [and] adamant and inflexible” (Myers et al., 2003, p. 45).

Introvert-Perceiving (IP) people are adaptable introverts. They tend to be “introspective and adaptable in little things, and firm on important issues” (Myers et al., 2003, p. 46).

In this sample, no strength was totally associated (100%) with any attitude function but several had negative correlations—did not connect (0%) with any strengths: EP with Discipline and Significance; IJ with Communication, Competition, Self-Assurance, and Woo; and IP with Activator, Consistency, Deliberative, Discipline, Significance, and Woo (see Table 16). Refer to Appendix Table D for complete distribution of strengths by mental and attitude functions. Because raw points are only available for individual traits, information within Appendix Table D is listed as percentages only.

Strengths and Personality Type

Personality type, as defined by MBTI (CPP, 2003), is combination of one dichotomous trait (Extravert-Introvert, Sensing-Intuitive, Thinking-Feeling, Judging-Perceiving) from each of the four domains (Energizing, Attending, Deciding, and Living) (i.e., ENFJ). There are 16 possible types (see Table 5 from Chapter 3) (Myers et al., 2003).

An even distribution of types among strengths would be expected if there were no relationship between personality type and strengths. This, however, was not the case with this sample. Table 17 shows the percentage of occurrence of types for the top five strengths. For three of the top five strengths, Input ($n = 50$, 22.0%), Relator ($n = 47$, 21.3%), and Empathy ($n = 46$, 26.2%), ENFP ($n = 34$, 20.9%) was the highest type. ENFP and ENTP were equally strong with Strategic ($n = 39$, both 23.1%). ESFJ (23.4%) was the highest occurring type for Connectedness ($n = 47$), with ENFP being second (19.1%).

Table 17.

Distribution of Types by Top Five Strengths***

Type***	N	Input	Relator	Connectedness	Empathy	Strategic
		($n = 50$)	($n = 47$)	($n = 47$)	($n = 46$)	($n = 39$)
		%+ [n]	%+ [n]	%+ [n]	%+ [n]	%+ [n]
ISTJ	9	8.0% [4]	0.0% [0]	2.1% [1]	2.2% [1]	2.6% [1]
ISTP	3	0.0% [0]	2.1% [1]	0.0% [0]	0.0% [0]	0.0% [0]
ESTP	1	0.0% [0]	2.1% [1]	0.0% [0]	0.0% [0]	0.0% [0]
ESTJ	15	10.0% [5]	14.9% [7]	0.0% [0]	6.5% [3]	10.3% [4]
ISFJ	10	8.0% [4]	6.4% [3]	6.4% [3]	6.5% [3]	2.6% [1]
ISFP	4	0.0% [0]	0.0% [0]	4.3% [2]	2.2% [1]	0.0% [0]
ESFP	7	2.0% [1]	4.3% [2]	0.0% [0]	10.9% [5]	0.0% [0]
ESFJ	18	6.0% [3]	14.9% [7]	10.6% [5]	23.9% [11]	2.6% [1]
INFJ	8	4.0% [2]	4.3% [2]	8.5% [4]	0.0% [0]	2.6% [1]
INFP	13	10.0% [5]	12.8% [6]	23.4% [11]	8.7% [4]	10.3% [4]
ENFP	34	22.0% [11]	21.3% [10]	19.1% [9]	26.2% [11]	23.1% [9]
ENFJ	12	10.0% [5]	2.1% [1]	12.8% [6]	10.9% [5]	10.3% [4]
INTJ	3	4.0% [2]	0.0% [0]	0.0% [0]	0.0% [0]	5.2% [2]
INTP	6	6.0% [3]	6.4% [3]	0.0% [0]	0.0% [0]	5.1% [2]
ENTP	17	10.0% [5]	8.5% [4]	10.6% [5]	0.0% [0]	23.1% [9]
ENTJ	3	0.0% [0]	0.0% [0]	2.1% [1]	2.2% [1]	2.6% [1]

* Based on Myers-Briggs Type Indicator (CPP, 2003)

** Based on Clifton Strengths Finder (Gallop, 2005)

*** Terms from Myers, McCaulley, Quenk, & Hammer (2003).

+ Percent of occurrence of type by strength

Just as there were attractions between certain personality types with particular strengths, the opposite was also true—no attraction between certain personality types with particular strengths. There was no relationship (0% occurrence) between the five top strengths with several types: Input (ISTP, ESTP, ISFP and ENTJ); Relator (ISTJ, ESFP, INTJ, ENTJ); Connectedness (ISTP, ESTP, ESFP, INTJ, INTP); Empathy (ISTP, ESTP, INFJ, INTJ, INTP, ENTP); and Strategic (ISTP, ESTP, ISFP, ESFP) (see Table 17).

Another way of looking at the pattern of attraction between types and strengths is observing the top five strengths with the top five types (see Table 18). ENFP made up 51.4% of all types for Woo, 50.0% of Includer, 39.4% of Positivity, 38.5% of Communications, and 35.3% of Adaptability. The next highest connection by occurrence between type and strength is ENTP making up 40.0% of Competition. Refer to Appendix Tables F and G for complete listing of occurrences of types by strengths.

Table 18.

Percentage of Occurrence of Top Five Types* within Strengths**

Type***	n	Percent of Occurrence of Type within Strengths ⁺	
ENFP	34	51.4% of Woo 50.0% of Includer 39.4% of Positivity	38.5% of Communication 35.3% of Adaptability 26.1% of Empathy
ESFJ	18	23.9% of Empathy 25.0% of Arranger	23.1% of Communication 20.0% of Consistency
ENTP	17	40.0% of Competition 26.7% of Futuristic	24.1% of Ideation 23.1% of Strategic
ESTJ	15	28.6% of Focus 20.7% of Responsibility	
INFP	13	23.4% of Connectedness	

* Based on Myers-Briggs Type Indicator (CPP, 2003)

** Based on Clifton Strengths Finder (Gallop, 2005)

*** Terms from Myers, McCaulley, Quenk, & Hammer (2003).

⁺ Percent of occurrence of type > 20% by strength with $n > 10$.

Variance of Personality Preference Clarity

A final consideration in this study of the relationship between personality preferences and strengths was to consider strengths as variables (present or not present) and analyze how personality preference clarity varied whether strengths were present or not. This was done by using the two highest clarity categories clear and very clear (Myers et al., 2003), and noting if clarity designation differed if a particular strength was present or not (see Table 13 for listing of clarity categories).

If personality preferences were evenly balanced between strengths, it would be expected when clear or very clear traits existed when a strength was present, the opposite dichotomous trait would appear with equal clarity when the strength was not present. This was not the case. Regarding the Energizing domain (Extravert-Introvert), Extravert, the larger trait by occurrence ($n = 106$, 65.03%), occurred as very clear clarity when Arranger ($n = 9$), Positivity ($n = 28$), and Woo ($n = 35$) were present; and with clear clarity when Communication ($n = 25$) and Includer ($n = 8$) were present. In each of these cases, the expected opposite Introvert did not occur when these respective strengths were not present. The highest occurrences of Extravert occurred when certain strengths were not present: Developer ($n = 90$), Input ($n = 76$), and Relator ($n = 75$). In each of these three cases, the Introvert did not appear as clear or very clear when these strengths were present (see Appendix Table H).

At times, but not consistently, both dichotomous personality traits appeared with a particular strength when it was present. Extravert ($n = 8$) and Introvert ($n = 2$) both occurred with very clear clarity when Competition was present but neither clear nor very clear when Competition was not present. In another instance, Introvert ($n = 57$, 34.97%)

had very clear clarity when Analytical ($n = 2$) was present but Extravert did not occur when Analytical was not present (see Appendix Table H).

There was minor activity in the Deciding domain (Thinking or Feeling). Feeling, the larger trait ($n = 104$, 63.8%) in this study, did not appear either as clear or very clear clarity with any strength, present or not. Thinking ($n = 59$, 36.2%) appeared with clear clarity when Analytical ($n = 5$) was present and very clear clarity when Significance ($n = 1$) was present. Thinking, however, did not appear in either clarity categories when any of the strengths were not present (see Appendix Table H)).

Within the Attending domain (Sensing or Intuitive), there was even less activity. Sensing ($n = 67$, 41.1%) did not occur at all with either clear or very clear clarity with any strength, present or not. Intuition ($n = 96$, 58.9%) occurred only once with clear clarity when Ideation was present ($n = 24$), and not at all with very clear clarity with any strength, present or not (see Appendix Table H).

The most interaction between strengths and personality preferences with clear or very clear clarity occurred in the Living domain (Judging and Perceiving). While the sample is relatively equal between these two traits (Judging $n = 80$, 49.08% and Perceiving $n = 83$, 50.92%), the occurrence varies between these whether a strength is present or not; again showing that the dichotomous traits were not equally distributed whether a strength was present or not. Stated another way, in this study there was a stronger occurrence of clear or very clear clarity between one of the dichotomous traits when certain strengths were present or not, but not with the opposite trait in this domain (see Appendix Table H).

Perceiving appeared with clear clarity when the following strengths were present: Activator ($n = 12$), Adaptability ($n = 26$), Analytical ($n = 2$), Belief ($n = 3$), Competition ($n = 8$), Context ($n = 5$), Developer ($n = 10$), Empathy ($n = 22$), Harmony ($n = 10$), Includer ($n = 8$), Individualization ($n = 12$), Positivity ($n = 22$), and Strategic ($n = 23$). In each of these cases, Judging appeared with clear clarity when each of these strengths were not present but not at the same level of occurrence: Activator ($n = 72$), Adaptability ($n = 72$), Analytical ($n = 77$), Belief ($n = 75$), Competition ($n = 78$), Context ($n = 78$), Developer ($n = 62$), Empathy ($n = 56$), Harmony ($n = 58$), Includer ($n = 78$), Individualization ($n = 64$), Positivity ($n = 69$), and Strategic ($n = 65$) (see Appendix Table H).

In several instances, for both Judging and Perceiving (opposite traits) clear clarity occurred when a strength was present: Analytical ($n^{\text{Judging}} = 3, n^{\text{Perceiving}} = 2$), Arranger ($n^{\text{Judging}} = 6, n^{\text{Perceiving}} = 5$), Harmony ($n^{\text{Judging}} = 22, n^{\text{Perceiving}} = 10$), Includer ($n^{\text{Judging}} = 2, n^{\text{Perceiving}} = 12$), and Woo ($n^{\text{Judging}} = 12, n^{\text{Perceiving}} = 23$). This same pattern between Judging and Perceiving, however, did not occur with any strength when it was not present (see Appendix Table H).

In some cases Judging appeared with clear or very clear clarity both when a strength was present and when it was not, although in all of the cases Judging appeared more often when the strength was not present: Analytical ($n^{\text{present}} = 3, n^{\text{absent}} = 77$), Command ($n^{\text{present}} = 4, n^{\text{absent}} = 76$), Consistency ($n^{\text{present}} = 14, n^{\text{absent}} = 66$), Context ($n^{\text{present}} = 2, n^{\text{absent}} = 78$), Harmony ($n^{\text{present}} = 22, n^{\text{absent}} = 58$), Includer ($n^{\text{present}} = 2, n^{\text{absent}} = 78$), Input ($n^{\text{present}} = 26, n^{\text{absent}} = 54$), Relator ($n^{\text{present}} = 21, n^{\text{absent}} = 59$), and Significance ($n^{\text{present}} = 3, n^{\text{absent}} = 77$) (see Appendix Table H).

At times Judging appeared only, without the opposite Perceiving trait, when a strength was present: Arranger ($n = 6$), Consistency ($n = 14$), Discipline ($n = 13$), Focus ($n = 12$), Intellection ($n = 12$), Learner ($n = 16$), Responsibility ($n = 23$), and Restorative ($n = 13$). At other times it occurred only, without the opposite Perceiving trait, when a strength was not present: Communication ($n = 67$), Connectedness ($n = 67$), Futuristic ($n = 73$), Maximizer ($n = 64$), and Self-Assurance ($n = 77$) (see Table 24). Refer to Appendix Table H for complete listings.

It is interesting to compare variation between the pairing personality traits and strengths on the basis of occurrence versus clarity of the personality trait when the paired strength is present. Although clarity does not indicate the power of a personality trait (the trait may be just as strong with a moderate clarity rating as with a very clear rating), it does indicate how closely participants see themselves aligning with the descriptions of that trait (Myers et al., 2003).

In observing the top categories of occurrence (top ten percent, 90-100%) and top clarity category (very clear), there are significant differences (see Table 19). While all (100%) of certain traits were paired with particular strengths (Extravert with Communication, Sensing with Analytical and Significance, Thinking with Analytical, and Judging with Discipline and Significance), none of these traits had very clear clarity. Only two trait-strength combinations appeared in both top ten percent by occurrence and had very clear clarity: Extravert with Woo and Judging with Discipline. In all other cases, the combinations of traits with strengths occurring in the top ten percent were different when the trait had a very clear clarity rating. This disparity between occurrence and clarity suggests that the nature of the attraction between certain personality traits and

strengths may be more complex than just occurrence or clarity alone would indicate.

Thus, consideration of just one of these parameters (occurrence or clarity), would provide just a portion of the total picture of this attraction.

Table 19.

Distribution of Personality Traits with Top Strengths** by Occurrence and Clarity*

Trait	n ^{***}	Strengths Appearing with Traits 90-100% of Time		Very Clear Clarity	
		Strength	Percent	Strength	Percent
ENERGIZING					
Extravert	104	Activator	95.0%	Arranger	8.7%
		Communication	100.0%	Competition	7.7%
		Woo	100.0%	Positivity	26.9%
				Woo	33.7%
Introvert	57	--		Analytical	3.5%
				Competition	3.5%
ATTENDING					
Sensing	65	Analytical	100.0%	--	
		Significance	100.0%		
Intuitive	96	--			
DECIDING					
Thinking	57	Analytical	100.0%	Significance	1.8%
Feeling	104	Empathy	91.3%	--	
		Includer	90.0%		
LIVING					
Judging	79	Consistency	93.3%	Arranger	7.6%
		Discipline	100.0%	Context	2.5%
		Significance	100.0%	Deliberative	7.6%
				Discipline	16.5%
				Learner	20.3%
Perceiving	82	--		--	

* Based on Myers-Briggs Type Indicator (CPP, 2003)

** Based on Clifton Strengths Finder (Gallop, 2005)

*** Three participants did not have scores for MBTI, thus $N = 161$.

Response to Research Question 1

Research Question 1 asked what was the relationship between personality preferences and strengths. While definitive answers did not emerge from this initial study in this area, interesting trends did. For example, all (100%) of participants with Extravert as a preferred personality trait also had Communication and Woo in their top five strengths. This was also the case with Sensing with Significance, and Judging with Discipline and Significance. The opposite was also true in some cases where there was no attraction (0% occurrence) between Introvert with Communication and Woo, Intuitive with Analytical and Significance, Thinking with Includer, Feeling with Analytical, and Perceiving with Discipline and Significance.

This same non-attraction (0% occurrence) occurred when mental functions (combinations of personality traits from the Attending and Deciding domains) and attitude functions (combinations of personality traits from the Energizing and Living domains) were considered. In the mental functions, these included Sensing-Thinking with Includer; Sensing-Feeling with Analytical and Deliberative; Intuitive-Thinking with Analytical, Consistency, Discipline, Harmony and Significance; and Intuitive-Feeling with Analytical and Significance. With attitude functions these included Extravert-Perceiving with Discipline and Significance; Introvert-Judging with Communication, Competition, Self-Assurance, and Woo; and Introvert-Perceiving with Activator, Consistency, Deliberative, Discipline, Significance, and Woo.

Regarding personality type and strengths, Energizing-Intuitive-Feeling-Perceiving (ENFP) was closely associated with Woo (51.4% of those having Woo as one of their top five strengths also had ENFP as their personality type) and Includer (50.0% of those

having Includer as one of their top five strengths also had ENFP as their personality type). Again, there were numerous strengths that were not attracted (0% occurrence) with certain personality types (refer to Appendix Tables F and G for complete listing of occurrences of all types by all strengths).

Finally, the relationship between personality preferences and strengths was explored considering the clarity of personality preferences with strengths. Clarity categories are given with personality traits ranging from Slight to Very Clear. While clarity does not measure the power of a personality trait, it does show the client's self rating against the MBTI's (CPP, 2003) national representative sample. In comparing the highest occurrence (top 10 percent) with the top clarity category (very clear), another interesting trend emerged. In only two cases, Extravert-Woo and Judging-Discipline, did these both appear in the top categories by occurrence and clarity. In all other cases, different strengths were paired with personality traits by occurrence than were paired by clarity. This indicates that the relationship between personality preferences and strengths may be more complex than either occurrence or clarity alone reveals.

Clearly, throughout all of these instances, strengths were neither randomly nor equally distributed among personality traits, types, mental functions or attitude functions. Variation occurred between occurrence and clarity of personality preferences and strengths. All of this indicates that a relationship does occur between certain personality preferences and strengths. Future studies are encouraged to describe this relationship further with other populations.

Strengths and Vocational Interests

The second major focus of this study was to explore the relationship between strengths and vocational interests by observing the trends and interplay between the results of Clifton Strengths Finder (CSF) (Gallop, 2005) with those of Strong Interest Inventory's (SII) (CPP, 2005) general occupational themes (GOT). Unlike personality preferences where scores are reported for only one trait in each four dichotomous pairs, GOT scores are reported for all six themes: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Results are stated in standard scores ($M = 50$, $SD = 10$) (Donnay, Morris, Schaubhut, & Thompson, 2005).

In this study, there was little variation between GOT means for all 34 strengths, whether strengths were present or not. GOT means when strengths were present were all within one standard deviation (means ranging from 40 to 60) with the exceptions of Social with Input and Social with Restorative. In both of these cases the means were slightly above one standard deviation ($m^{\text{Input}} = 60.33$; $m^{\text{Restorative}} = 60.01$). This same pattern continued when strengths were not present. The only exceptions of GOT means over one standard deviation when strengths were not present was again with Social in which the mean was slightly over one standard deviation (ranging from 60.17 to 63.67) for Arranger, Belief, Communication, Competition, Connectedness, Developer, Discipline, Empathy, Futuristic, Includer, Maximizer, Positivity, Self-Assurance, and Woo. Refer to Appendix Table I for complete listing for GOT means when strengths were present and Appendix Table J when strengths were not present.

In addition to standard scores, GOT results are also given in terms of interpretative comments categories ranging from Very Little to Very High (Grutter &

Hammer, 2005). These comments are similar to the clarity categories for MBTI's (CPP, 2003) personality preferences. They indicate how similarly participants responded both in terms of likes and dislikes to SII's (CPP, 2005) general representative sample for each general occupational theme. GOT interpretative comments do vary from MBTI's clarity categories in one aspect. While GOT standard scores represent a comparison to the men and women in SII's general representative sample, the "interpretive comment compares the result only to those of the respondent's own gender" (Grutter & Hammer, 2005, p. 7). See Table 14 for range of scores GOT interpretive comment categories.

In this study, the top ten and bottom ten percent interpretive comment categories for GOT (very little and very high), did not appear at all when strengths were not present. There was some variation for men and slight variation for women when strengths were present. This may be due more to the smaller sample size for men ($n = 34$) than women ($n = 130$), rather than actual differences between the genders. Given this, Table 20 shows the variations of top and lowest interpretive comment categories in this study. Refer to Appendix Tables K through P for complete listings of means, standard deviations, and interpretative comments for men in all six GOTs, and Appendix Tables Q-V for women.

In summary, there seemed to be less interaction between vocational interests and strengths than between personality preferences and strengths. The entire general sample was all within one standard deviation of the mean ($M = 50$, $SD = 10$, range 40-60) for all GOTs. This was also true for all GOT by gender and the overwhelming majority for GOT by academic program (see Tables 12 and 13). The only exception was Social and Counseling and Career Development academic program ($M = 61.18$, $SD = 6.81$).

Table 20.

Interpretive Comments for Men and Women when Strengths Are Present

Interpretative Comment	Men [<i>n</i> = 34]	Women [<i>n</i> = 130]
Very Low (0-10%)		
Realistic	Belief [1] Significance [1]	--
Investigative	--	--
Artistic	--	--
Social	--	--
Enterprising	Belief [1] Significance [1]	
Conventional	Belief [1] Individualization [2] Significance [1]	
Very High (91-100%)		
Realistic	--	--
Investigative	Significance [1]	--
Artistic	Activator [4]	--
Social	Activator [4] Arranger [4] Communication [5] Connectedness [11] Focus [3] Ideation [9] Includer [3] Intellection [2] Self-Assurance [5] Woo [4]	Competition [6]
Enterprising	--	--
Conventional	--	--

This same pattern continued when GOT means and standard deviations were considered when strengths were present or not. With Realistic, Investigative, Artistic, Enterprising, and Conventional, all means were within one standard deviation with all

strengths, whether present or not. The only activity was in the Social general occupational theme and here the range of scores over one standard deviation of the mean was slight. When Restorative ($n = 18$) was not present, the mean for Social was slightly over one standard deviation ($M = 60.01$). There was more activity with Social when certain strengths were present but, again, the means for these were just slightly over one standard deviation. Means ranged from 60.17 to 63.67 for Social when the following strengths were present: Arranger ($n = 12$), Belief ($n = 8$), Communication ($n = 25$), Connectedness ($n = 46$), Developer ($n = 28$), Discipline ($n = 13$), Empathy ($n = 46$), Futuristic ($n = 14$), Includer ($n = 10$), Maximizer ($n = 34$), Positivity ($n = 32$), Self-Assurance ($n = 18$), and Woo ($n = 34$) (see Table 20). Refer to Appendix Tables I and J for complete list.

Response to Research Question 2

Research Question 2 asked what was the relationship between vocational interests and strengths. GOT means were all within one standard deviation for all strengths, whether present or not. Minor fluctuations occurred with Social and 14 strengths when the strengths were present and one strength when it was not. In all of these instances with Social, the means for all Social-strength combination were only slightly over one standard deviation.

As with personality preferences and clarity categories, interpretive comments are given along with GOT scores, ranging from Very Little to Very High, to indicate how similarly participants responded to SII's (CPP, 2005) general representative sample (GRS) of the same gender within each general occupation theme. In comparing the two extremes interpretive comment categories, Very Little (0-10% like the GRS) and Very

High (91-100% like the GRS), women only had one instance of Very High interpretive comment with a strength (Social-Competition, $n = 6$), and none in the Very Low category. Men, on the other hand, had more instances of Very Low and Very High comments with certain strengths (see Table 20).

Regarding the relationship between vocational interests and strengths, based on this study there seems to be little interaction. Future studies are encouraged to explore this further with other populations.

Relationship of Strengths to Gender and Academic Program

While the numbers of participants were heavily skewed to females ($n = 130$, 79%) based on gender, the rate of distribution of strengths between genders (albeit different strengths were involved per gender) was surprisingly similar. Out of a 170 possible responses, distribution of strengths among men ranged from the highest of Connectedness ($n = 11$ or 6.4%) to a low of Deliberative ($n = 0$), the only strength not paired with any top five strengths of any of the male test-takers. Out of a possible 650 responses for females, strengths ranged from a high of Empathy and Input ($n = 42$ each or 6.5%) to a low of Significance ($n = 2$ or 0.3%). See Table 4 for the top strengths by gender or Appendix Table A for the complete list.

This same pattern of similar rates of distribution for strengths continued with academic programs. Out of a possible 325 responses for Counseling and Career Development (CCD), strengths ranged from a highest of Empathy ($n = 24$ or 7.4%) to the low of Context and Significance ($n = 1$ each or 0.3%). Out of a possible 495 responses for Organizational Performance and Change (OPC), strengths ranged from the high of

Input ($n = 35$ or 7.1%) to the low of Belief and Significance ($n = 2$ each or 0.4%) (see Table 21 or Appendix Table A).

Table 21.

Top Ten Strengths by Gender and Program*

Rank	Sample ($N = 164$)	Gender		Program	
		Male ($n = 34$)	Female ($n = 130$)	CCD** ($n = 65$)	OPC** ($n = 99$)
1	Input	Connectedness	Empathy	Empathy	Input
2	Connectedness	Adaptability	Input	Relator	Connectedness
3	Empathy	Relator	Relator	Woo	Strategic
4	Relator	Input	Connectedness	Achiever	Relator
5	Strategic	Learner	Achiever	Connectedness	Learner
6	Achiever	Strategic	Woo	Developer	Empathy
7	Learner	Ideation	Strategic	Harmony	Adaptability
8	Adaptability	Positivity	Maximizer	Input	Achiever
9	Woo	Responsibility	Learner	Maximizer	Ideation
10	Maximizer	Harmony	Individualization	Communication	Individualization

* Based on Clifton Strengths Finder (Gallop, 2005)

** Academic programs: Counseling and Career Development and Organizational Performance and Change

In analyzing the top ten strengths for each category Connectedness, Input, and Relator were consistent across all genders and academic programs. The ranking of these strengths, however, differed between categories. For example, Connectedness was first for males and fourth for women, and Input was second for women and fourth for males. Relator was third for both sexes (see Table 21).

The same differences in ranking of strengths existed between academic programs. Connectedness was second for OPC but fifth for CCD, Input was first for OPC and eighth for CDD, and Relator was second for CCD and fourth for OPC (see Table 21).

While some strengths appeared in both dichotomous categories for gender and academic program, there were strengths that appeared uniquely to only one of those dichotomous variables. Learner and Strategic were in the top ten strengths for both males and females. Empathy was in the top ten strengths for both CCD and OPC. Adaptability, Harmony, Ideation, Positivity, and Responsibility, however, were in the top ten strengths for men but not women. Achiever, Empathy, Maximizer, and Woo were in the top ten strengths for women but not men. Communication, Developer, Harmony, Maximizer, and Woo were in the top ten strengths for CCD but not OPC. Adaptability, Ideation, Individualization, Learner, and Strategic were in the top ten strengths for OPC but not CCD (see Table 26). Refer to Appendix Table A for complete information about strength distribution.

If there was no attraction between individual strengths with certain genders or academic programs, even distribution of strengths between these variables would be expected. Since differences did occur, it suggests an attraction exists between some strengths with certain genders and certain academic programs.

Response to Research Questions 3 and 4

Research Questions 3 and 4 asked about the relationship between strengths to gender and academic programs. In reviewing the top ten strengths for gender and academic programs, strengths were not equally distributed. Some strengths were consistent between gender and academic program but did not have the same ranking. Only three strengths (Connectedness, Input, and Relator) appeared in all four categories (males, females, Counseling and Career Development, and Organizational Performance

and Change) but the rankings of these varied between categories. Some strengths were unique to certain categories but did not have the same ranking (see Table 21).

This vacillating pattern of strengths by genders and academic programs indicates differing attractions exist between genders and academic programs with specific strengths. Future studies are encouraged to describe these relationships further with different populations.

Summary

This study described the nature of the relationship between strengths to personality preferences and vocational interests within a sample of 164 graduate students from two different academic programs. Within this study, a relationship was observed between certain strengths and personality traits, mental functions, attitude functions, types, and clarity. This same relationship, however, did not occur between strengths and vocational interests where very little activity happened, considering both when strengths were present or not present. Finally, an attraction was observed between certain strengths to genders and academic programs, where different strengths and different ranking of similar strengths occurred between and within both of these categories.

CHAPTER 5 – DISCUSSION

Introduction

This chapter includes a brief summary of the purpose of this study, limitations, conclusions, implications of results, and recommendations for future study.

Through the past 100 year history of vocational psychology, career counselors have constantly searched for, devised, and implemented practices and techniques to best prepare their clients for their current world of work. Assessments have been a steady factor in this professional collaboration between counselors and clients.

Initially vocational assessments measured occupational and work environment interests as well as skills. Later, assessments evaluating personality preferences were included, sometimes used in concert with skill inventories. Today's career counselors are integrating old and new concepts, sometimes in unique combinations, to respond to the current chaotic and unpredictable work environment.

As the development of careers shifts from a charge of the employer to the personal responsibility of the individual, self awareness of personal skills, interests, and values gains in importance. Knowledge of personal strengths, or talents, is a new component of vocational self-awareness. Understanding one's strengths serves two critical functions: to be aware of and able to articulate these strengths and then place oneself into positions to use them (McDonald & Hutcheson, 2005).

The availability of assessments is not an issue for career counselors and those seeking employment. Rather, it becomes a question of which assessments will provide

the unique perspective and insight necessary for individuals as they create their individual career path.

The purpose of this study was to expand vocational psychology expertise by examining the relationship between strengths to personality preferences and vocational interests utilizing three assessments: Clinton StrengthsFinder (CSF) (Gallup, 2005), a relatively new measurement of personal strengths, originally used in business and team-building settings, which is now being applied to career development; Myers-Briggs Type Indicator (MBTI) (CPP, 2003), the preeminent personality profile assessment, focusing on personality types of this assessment; and Strong Interest Inventory (SII) (CPP, 2005), the touchstone of vocational interest surveys, focusing on the General Occupations Themes (GOT) of this assessment. Two additional variables, gender and two academic programs (Counseling and Career Development or Organization Performance and Change) were considered in regards to their relationship to strengths.

Limitations of Study

There were several limitations of this exploratory study. First, all the assessments used in this study were self-report in nature. While self-report assessments have many advantages, they also have the disadvantage of accuracy when reporting personal skills and interests (Campbell, 2002). An additional disadvantage of self-report assessments is the use of forced response (respondent is forced to choose one answer between two choices) in some aspects of the assessments used in this study. Forced response does not allow respondents to either like or dislike both choices, thus creating the possibility of frustrating participants which may affect their responses.

The next limitation of this study was the sample itself. Using archival data, the results of this study are not generalizable to larger populations. Rather, these results gave an initial snapshot of the relationship between strengths to personality preferences and vocational interests within a group of graduate students from two different academic programs from one university. Future study will be necessary to expand this knowledge to other populations.

Another sample limitation was the size of the group studied ($N = 164$). Because of its size, there was not equal distribution of strengths or personality preferences within the respondents. In addition, females ($n = 127$) far outnumbered males ($n = 34$). Thus, results were specific to this sample and may not be characteristic of other populations.

Conclusions

This study approached its exploration of strengths with four questions.

Research Question 1. What Is the Relationship between Personality Preferences and Strengths?

This study explored the relationship between strengths and personality preferences by observing trends and interplay between the results of Clifton Strengths Finder (CSF) (Gallop, 2005) with those of Myers-Briggs Type Indicator (MBTI) (CPP, 2003). This was done by comparing strengths with personality preference traits, mental functions, attitude functions, and type. A final review was conducted observing the level of clarity of personality traits with strengths. While definitive answers did not emerge from this initial study, interesting trends did.

Strengths and personality traits. MBTI reports personality preference in terms of eight traits: Extravert (E), Introvert (I), Sensing (S), Intuitive (N), Thinking (T), Feeling (F), Judging (J), and Perceiving (P) (Myers, McCaulley, Quenk, & Hammer, 2003). Pairs of traits are organized in a dichotomous fashion within four domains: Energizing, how we energize ourselves (E/I); Attending, how we take in information (S/N); Deciding, how we make decisions (T/F), and Living, how we relate daily to our surroundings (J/P). Test-takers received a score for one of the dichotomous pairs in each domain (E or I, S or N, T or F, J or P).

Equal distribution of strengths with personality traits would be expected if there was no interaction between strengths and traits. This was not the case in this study. All (100%) of those with Communication as one of their top five strengths were Extravert (E). The same relationship occurred between Woo with Extravert (E), Analytical and Significance with Sensing (S), Analytical with Thinking (T), and Discipline and Significance with Judging (J). The reciprocal was also true. None (0%) with Introvert (I) (the opposite of the dichotomous pair of Extravert-Introvert) as their preferred trait had Communication or Woo as one of his or her top ten strengths. This same absence occurred between Intuitive (N) (opposite of Sensing) with Analytical and Significance, Feeling (F) (opposite of Thinking) with Analytical, and Perceiving (P) (opposite of Judging) with Discipline and Significance.

Attractions in the top ten percent (90 to 99%) occurred between Extravert with Activator, Feeling with Empathy, and Judging with Consistency. Attractions in the top twenty percent (80 to 89%) occurred between Extravert with Competition, Includer, and Positivity; Sensing with Consistency; Intuitive with Futuristic, Ideation, and Strategic;

Feeling with Arranger, Connectedness, Maximizer, and Woo; Judging with Deliberative; and Perceiving with Competition, Includer, and Self-Assurance.

While the analysis of this study did not consider causal effect, there did exist, however, strong connections between certain personality traits with certain strengths.

Strengths and mental and attitude functions. This study further explored the relationship between strengths and personality preferences by considering mental and attitude functions. Mental functions are the combination of personality traits in the Attending (Sensing and Feeling) and Deciding (Thinking and Feeling) domains. Attitude functions are the combination of personality traits from the Energizing (Extravert and Introvert) and Living (Judging and Perceiving) domains (Myers et al., 2003).

In this study, only one strength was totally (100%) associated with any function (Analytical with Sensing-Thinking); however, several had negative correlations (did not connect with any strength). In regards to mental functions these included Sensing-Thinking (ST) with Includer; Sensing-Feeling (SF) with Analytical and Deliberative, Intuitive-Thinking (NT) with Analytical, Consistency, Discipline, Harmony, and Significance; and Intuitive-Feeling (NF) with Analytical and Significance. Regarding attitude function these negative combinations (no link between strength and function) included Extravert-Perceiving (EP) with Discipline and Significance; Introvert-Judging (IJ) with Communication, Competition, Self-Assurance, and Woo; and Introvert-Perceiving (IP) with Activator, Consistency, Deliberative, Discipline, Significance, and Woo. Again, while the analysis of this study did not consider causal effect, there did exist, however, strong non-connections (no link) between certain personality mental and attitude functions with certain strengths.

Strengths and personality type. Personality type, as defined by MBTI (CPP, 2003), is combination of one dichotomous trait from each of the four domains: Extravert (E)-Introvert (I), Sensing (S)-Intuitive (N), Thinking (T)-Feeling (F), Judging (J)-Perceiving (P). There are 16 possible types (Myers et al., 2003).

An even distribution of types among strengths would be expected if there were no attraction between personality type and strengths. This, however, was not the case with this sample. For three of the top five strengths (Input, Relator, Connectedness, Empathy, and Strategic), ENFP, the highest type, had a strong connection with Input, Relator, and Empathy. ENFP and ENTP were equally strong with Strategic. ESFJ and ENFP were the two highest traits with Connectedness.

The same pattern of attraction can be seen observing the top strengths with the top five types. ENFP made up 51.4% of all types for Woo, 50.0% of Includer, 39.4% of Positivity, 38.5% of Communications, and 35.3% of Adaptability. The next highest connection by occurrence between type and strength is ENTP making up 40.0% of Competition.

Just as there was an attraction between certain personality types with particular strengths, the opposite was also true—no attraction between certain personality types with particular strengths. There was no relationship (0% occurrence) between the five top strengths with several types: Input (ISTP, ESTP, ISFP and ENTJ); Relator (ISTJ, ESFP, INTJ, ENTJ); Connectedness (ISTP, ESTP, ESFP, INTJ, INTP); Empathy (ISTP, ESTP, INFJ, INTJ, INTP, ENTP); and Strategic (ISTP, ESTP, ISFP, ESFP). While no causal relationship was considered in this study, there were strong connections between certain types with certain strengths.

Strengths and clarity of personality preferences. A final consideration in this study of the relationship between strengths and personality preferences was observing the level of clarity of a personality preference when paired with certain strengths. MBTI (CPP, 2003) reports clarity by four categories: slight, moderate, clear, and very clear. Although clarity does not indicate the power of a personality trait (the trait may be just as strong with a moderate clarity rating as with a very clear rating), it does indicate how closely participants align themselves with MBTI's national representative sample (Myers, et al., 2003).

In observing the top strengths by occurrence (top ten percent, 90-100%) and by the top clarity category (very clear), significant differences occurred. While all (100%) of certain traits were paired with particular strengths (Extravert with Communication, Sensing with Analytical and Significance, Thinking with Analytical, and Judging with Discipline and Significance), none of these traits had very clear clarity. Only two trait-strength combinations appeared in both top ten percent by occurrence and had very clear clarity: Extravert with Woo and Judging with Discipline. In all other cases, the combinations of traits with strengths occurring in the top ten percent were different than when the trait had a very clear clarity rating. This disparity between high occurrence and very clear clarity suggests that the relationship between the attraction between personality traits and strengths may be more complex than just occurrence or clarity alone would indicate.

Response to Research Question 1. While definitive answers did not occur within this study, interesting trends did. Throughout all consideration, strengths were neither randomly nor equally distributed among personality traits, types, mental functions or

attitude functions. Variation also occurred between occurrence and clarity of personality preferences and strengths. All of this indicates that a relationship does occur between certain personality preferences and strengths. Future studies are encouraged to describe this relationship further with other populations.

Research Question 2: What is the relationship between vocational interests and strengths?

A second major focus of this study was to explore the relationship between strengths and personality preferences by observing trends and interplay between the results of Clifton Strengths Finder (CSF) (Gallop, 2005) with those of Strong Interest Inventory (SII) (CPP, 2005). This was done by comparing strengths with SII's General Occupations Themes (GOT) of Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Unlike personality preferences where scores are reported for only one trait in each four dichotomous pairs, GOT scores are reported for all six themes and stated in standard scores ($M = 50$, $SD = 10$) (Donnay, Morris, Schaubhut, & Thompson, 2005). In addition, a final review was conducted observing interpretive comment categories, similar to MBTI's clarity categories, with strengths.

Strengths and vocational interests. Because respondents received scores for all six GOT, each strength, whether present or not, had corresponding scores for all six GOT. Unlike personality preferences and strengths, there was very little variation between vocational interests and strengths. In this study, GOT means for all 34 strengths, whether strengths were present or not, were all within one standard deviation (means ranging from 40 to 60) with the exceptions of Social with Input and Social with Restorative. In both of these cases the means were slightly above one standard deviation ($m^{\text{Input}} = 60.33$;

$m^{\text{Restorative}} = 60.01$). This same pattern continued when strengths were not present. The only exceptions of GOT means were over one standard deviation when strengths were not present was again with Social in which the mean was slightly over one standard deviation (ranging from 60.17 to 63.67) with Arranger, Belief, Communication, Competition, Connectedness, Developer, Discipline, Empathy, Futuristic, Includer, Maximizer, Positivity, Self-Assurance, and Woo.

Vocational interest interpretative comments and strengths. In addition to standard scores, GOT results are also stated in terms of interpretative comments categories ranging from Very Little to Very High (Grutter & Hammer, 2005). These comments are similar to the clarity categories for MBTI's personality preferences. They indicate how similarly participants responded both in terms of likes and dislikes to SII's (CPP, 2005) general representative sample for each general occupational theme. GOT interpretative comments do vary from MBTI's (CPP, 2003) clarity categories in one aspect. While GOT standard scores represent a comparison to everyone in SII's general representative sample, the "interpretive comment compares the result only to those of the respondent's own gender" (Grutter & Hammer, 2005, p. 7).

In this study, the top and bottom interpretive comment categories for GOT (very little and very high), did not appear at all when strengths were not present for either gender. There was some variation for men and slight variation for women when strengths were present. This may be due more to the smaller sample size for men ($n = 34$) than women ($n = 130$) rather than actual differences between the genders.

In the lowest interpretive category (very low) for men Belief appeared with Realistic and Enterprising; Significance with Realistic, Enterprising, and Conventional;

and Individualization with Conventional. In the top interpretive category (very high) for men, Investigative was connected with Significance; Artistic with Activator; Social with Activator, Arranger, Communication, Connectedness, Focus, Ideation, Includer, Intellection, Self-Awareness, and Woo. For women, the only interaction between vocational interest and strengths occurred in the Very High interpretative category between Social and Competition.

Response to Question 2. There was little variation between vocational interests and strengths compared to the more prevalent activity between personality preferences and strengths. These results seem to belie Holland's (1959, 1966, 1973, 1985, 1992) belief that vocational interests were also an expression of personality. In this study, personality as defined by Holland compared to personality as defined by MBTI showed significant differences when interactions with strengths were considered.

This lack of discernible interaction between vocational interests and strengths perhaps suggests that strengths can be applied across vocational endeavors, rather than being attracted to particular activities; supporting that strengths are not field specific and can be applied across multiple life roles. Future studies are encouraged to describe this relationship further with other populations.

Research Question 3. What is the relationship between gender and strengths?

Because strengths are reported without any numerical data regarding potency and only listed in a prioritized list of the top five strengths for each respondent, strength information is nominative. In this study, patterns of strength distribution were considered for both gender and academic programs.

In this study, the distribution of strengths was surprisingly wide spread, ranging from a high for Input (6.2%) to a low for Significance (0.4%). This pattern of occurrence by percentages was surprisingly similar for both genders, although for different strengths. For men, the range of distribution of all strengths ranged from a high of Connectedness (6.4%) to a low of Deliberative (0%), the only strength not in the top five strengths for all men. For women distribution ranged between a high for Empathy and Input (6.5%) to a low for Significance (0.3%).

In terms of ranking of the top ten strengths by gender, the following strengths appeared for both genders but not in the same order of preference: Connectedness, Input, Learner, Relator, and Strategic. Of the top ten strengths, these were unique to men: Adaptability, Ideation, Positivity, Responsibility, and Harmony. The strengths unique for women were Empathy (top strength for women), Achiever, Individualization, Maximizer, and Woo.

Research Question 4. What is the relationship between academic program (Counseling and Career Development or Organizational Performance and Change) and strengths?

All 34 strengths were represented by each academic program. As with gender, the distribution of strengths was similar in size but not ranking per program. For Counseling and Career Development (CCD), distribution of strengths ranged from a high of Empathy (7.4%) to a low of Context and Significance (0.3%). For Organizational Performance and Change (OPC), distribution ranged from a high for Input (7.1%) to a low for Belief and Significance (0.4%).

Of the top ten strengths for each academic program, the following strengths were present in each program but not in the same order: Achiever, Connectedness, Empathy,

Input, and Relator. Those top ten strengths unique to CCD were Communication, Developer, Harmony, Maximizer, and Woo. The top ten strengths unique to OPC were Adaptability, Ideation, Individualization, Learner, and Strategic.

Response to Research Question 3 and Question 4

Research Questions 3 and 4 ask about the relationship between strengths and gender, and strengths and academic programs. In reviewing the sample's results by gender and academic programs, the top ten strengths for each category were not equally distributed either by ranking or the strengths themselves. Only three strengths (Connectedness, Input, and Relator) appeared in top ten strengths for all four categories (males, females, Counseling and Career Development, and Organizational Performance and Change) but the rankings of these varied between categories. Some strengths were unique to certain categories.

This pattern of different strengths and different ranking of similar strengths between genders and academic programs indicates distinct attractions exist between genders and academic programs with specific strengths, and these attractions are not the same within or between categories. Future studies are encouraged to further describe these relationships with different populations and programs.

Implications of Study

Implications for this study are twofold: expanding knowledge regarding the relationship of strengths to personality preferences, vocational interests, gender, and academic program; and how this deepened awareness will affect the practice of career counseling.

Expanding Knowledge regarding Strengths

Throughout this study, a relationship was observed between certain personality preferences with certain strengths. However, this relationship was not extended to all strengths or all personality preferences. When considering the relationship between vocational interests and strengths, however, there was minimal variation. This indicates that there is a stronger connection between strengths with personality preference than between strengths and vocational interests. Differences were further observed between the connection of strengths to gender and academic program.

Implications for Career Counseling Practice

In order to respond to “identifying multiple individual factors with multiple environments” (Fouad & Zao, 2000, p. 404) in today’s complex vocational landscape, career counselors often employ multiple assessments to assist their clients in career selection and career development. Critical factors in choosing any assessments is the quality of information gained from these and, secondly, if information from one assessment is distinct from another—will it give the client new insights (Larson, Rottinghaus, & Borgen, 2002).

Based on the results of this study, clearly the use of strengths with vocational interest assessments will give clients separate data from which they can begin to construct their personal and career self-awareness. This study further observed some overlap between certain strengths and personality preferences but not all. As such, assessments regarding strengths and personality preferences may show some similar patterns. However, in this study there were many strengths that did not interact with

personality preferences. As such the use of strength assessments along with personality preference assessments can be recommended in career counseling practice.

Recommendations for Future Study

The results of this study gave a brief glimpse into the relationship of strengths to personality preferences, vocational interests, gender, and academic program within a group of graduate students from a Western university. Interesting trends emerged from this study and future study is recommended to explore this with other populations. Rather than developing definitive answers, this exploratory study has opened many doors for further investigation.

Strengths-based programs are moving out of the boardroom and into educational settings. Research is finding positive results using strengths-based programs with college advising and retention (Swanson, 2006) and improving student achievement at the secondary level (Austin, 2005). Based on this study, it is recommended that further study be conducted to determine the efficacy of utilizing strengths in the new arena of career counseling.

Finally, strengths have been described as innate and remaining stable over time (McDonald & Hutcheson, 2006). Personality traits have been described as having a strong genetic basis, developing early in life, and remaining relatively stable throughout the lifespan (Wiggins & Trapnell, 1997). Noting these similarities, further investigation is encouraged to explore if strengths are another expression of personality.

Summary

As today's world of work radically transforms in unpredictable patterns at unprecedented rates of change, both clients and career counselors are scrambling to make sense of and prepare for this undulating vocational landscape. During such evolutionary times, new skills and new awareness are required to take advantage of the unforeseen opportunities that lie within any transition. Included within these is increased self awareness. This self knowledge is expanding beyond personal values and beliefs to also include vocational interests, personality preferences, and now strengths. As such, the use of multiple assessments is recommended in career development to provide the insights necessary to successfully navigate within today's job market.

APPENDICES

Appendix Table A.

Distribution of Strengths by Gender and Academic Program*

Strength	Gender				Program				Total (N = 164)	
	Male (n = 34)		Female (n = 130)		CCD ⁺ (n = 65)		OPC ⁺⁺ (n = 99)			
	n	%**	n	%	n	%***	n	%	n	%
Achiever	6	3.5%	31	4.8%	16	4.9%	21	4.2%	37	4.5%
Activator	4	2.3%	16	2.5%	8	2.5%	12	2.4%	20	2.4%
Adaptability	10	5.8%	25	3.9%	13	4.0%	22	4.4%	35	4.3%
Analytical	2	1.2%	3	0.5%	2	0.6%	3	0.6%	5	0.6%
Arranger	4	2.3%	8	1.2%	7	2.2%	5	1.0%	12	1.5%
Belief	1	0.6%	7	1.1%	6	1.8%	2	0.4%	8	1.0%
Command	1	0.6%	8	1.2%	3	0.9%	6	1.2%	9	1.1%
Communication	6	3.5%	20	3.1%	14	4.3%	12	2.4%	26	3.2%
Competition	4	2.3%	6	0.9%	5	1.5%	5	1.0%	10	1.2%
Connectedness	11	6.4%	36	5.5%	16	4.9%	31	6.3%	47	5.7%
Consistency	4	2.3%	11	1.7%	5	1.5%	10	2.0%	15	1.8%
Context	3	1.8%	5	0.8%	1	0.3%	7	1.4%	8	1.0%
Deliberative	0	0.0%	7	1.1%	2	0.6%	5	1.0%	7	0.9%
Developer	6	3.5%	22	3.4%	16	4.9%	12	2.4%	28	3.4%
Discipline	4	2.3%	9	1.4%	5	1.5%	8	1.6%	13	1.6%
Empathy	5	2.9%	42	6.5%	24	7.4%	23	4.6%	47	5.7%
Focus	3	1.8%	11	1.7%	4	1.2%	10	2.0%	14	1.7%
Futuristic	3	1.8%	12	1.8%	5	1.5%	10	2.0%	15	1.8%
Harmony	7	4.1%	25	3.9%	16	4.9%	16	3.2%	32	3.9%
Ideation	8	4.7%	21	3.2%	10	3.1%	19	3.8%	29	3.5%
Includer	3	1.8%	7	1.1%	3	0.9%	7	1.4%	10	1.2%
Individualization	2	1.2%	26	4.0%	9	2.8%	19	3.8%	28	3.4%
Input	9	5.3%	42	6.5%	16	4.9%	35	7.1%	51	6.2%
Intellection	1	0.6%	21	3.2%	6	1.8%	16	3.2%	22	2.7%
Learner	9	5.3%	27	4.2%	12	3.7%	24	4.8%	36	4.4%
Maximizer	6	3.5%	28	4.3%	15	4.6%	19	3.8%	34	4.1%
Positivity	8	4.7%	25	3.9%	14	4.3%	19	3.8%	33	4.0%
Relator	10	5.8%	37	5.7%	21	6.5%	26	5.3%	47	5.7%
Responsibility	8	4.7%	21	3.2%	10	3.1%	19	3.8%	29	3.5%
Restorative	3	1.8%	14	2.2%	5	1.5%	13	2.6%	18	2.2%
Self-Assurance	5	2.9%	13	2.0%	5	1.5%	13	2.6%	18	2.2%
Significance	1	0.6%	2	0.3%	1	0.3%	2	0.4%	3	0.4%
Strategic	9	5.3%	30	4.6%	12	3.7%	27	5.5%	39	4.8%
Woo	4	2.3%	31	4.8%	18	5.5%	17	3.4%	35	4.3%
TOTAL	170	100.0%	649	100.0%	325	100.0%	495	100.0%	820	100.0%

* Based on Clifton Strengths Finder

+ Counseling and Career Development

** Percentage of occurrence within gender

++ Occupational Performance and Change

*** Percentage of occurrence within program

Appendix Table B.

Percentage Distribution of Personality Traits by Strengths*

Strength	Energizing**		Attending		Deciding		Living	
	E**	I**	S**	N**	T**	F**	J**	P**
Achiever	59.46	40.54	48.65	51.35	37.84	62.16	40.54	59.46
Activator	95.00	5.00	35.00	65.00	35.00	65.00	40.00	60.00
Adaptability	73.53	26.47	35.29	64.71	23.53	76.47	23.53	76.47
Analytical	60.00	40.00	100.00	0.00	100.00	0.00	60.00	40.00
Arranger	75.00	25.00	66.67	33.33	33.33	66.67	50.00	50.00
Belief	62.50	37.50	25.00	75.00	12.50	87.50	62.50	37.50
Command	77.78	22.22	55.56	44.44	77.78	22.22	44.44	55.56
Communication	100.00	0.00	30.77	69.23	23.08	76.92	50.00	50.00
Competition	80.00	20.00	30.00	70.00	70.00	30.00	20.00	80.00
Connectedness	57.45	42.55	23.40	76.60	17.02	82.98	42.55	57.45
Consistency	40.00	60.00	80.00	20.00	46.67	53.33	93.33	6.67
Context	37.50	62.50	50.00	50.00	62.50	37.50	25.00	75.00
Deliberative	28.57	71.43	42.86	57.14	71.43	28.57	85.71	14.29
Developer	57.14	42.86	60.71	39.29	25.00	75.00	64.29	35.71
Discipline	38.46	61.54	76.92	23.08	46.15	53.85	100.00	0.00
Empathy	78.26	21.74	45.65	54.35	8.70	91.30	52.17	47.83
Focus	42.86	57.14	71.43	28.57	57.14	42.86	85.71	14.29
Futuristic	53.33	46.67	20.00	80.00	53.33	46.67	46.67	53.33
Harmony	40.63	59.38	68.75	31.25	28.13	71.88	68.75	31.25
Ideation	68.97	31.03	17.24	82.76	51.72	48.28	27.59	72.41
Includer	80.00	20.00	40.00	60.00	10.00	90.00	20.00	80.00
Individualization	60.71	39.29	32.14	67.86	53.57	46.43	57.14	42.86
Input	58.00	42.00	34.00	66.00	40.00	60.00	52.00	48.00
Intellection	38.10	61.90	33.33	66.67	38.10	61.90	57.14	42.86
Learner	47.22	52.78	38.89	61.11	50.00	50.00	44.44	55.56
Maximizer	73.53	26.47	23.53	76.47	29.41	70.59	47.06	52.94
Positivity	84.85	15.15	42.42	57.58	12.12	87.88	33.33	66.67
Relator	63.83	36.17	46.81	53.19	36.17	63.83	44.68	55.32
Responsibility	58.62	41.38	72.41	27.59	55.17	44.83	79.31	20.69
Restorative	29.41	70.59	58.82	41.18	52.94	47.06	76.47	23.53
Self-Assurance	77.78	22.22	27.78	72.22	66.67	33.33	16.67	83.33
Significance	66.67	33.33	100.00	0.00	33.33	66.67	100.00	0.00
Strategic	69.23	30.77	15.38	84.62	48.72	51.28	38.46	61.54
Woo	100.00	0.00	28.57	71.43	11.43	88.57	34.29	65.71

* Based on Myers-Briggs Type Indicator

** E (Extravert), I (Introvert), S (Sensing), N (Intuitive), T (Thinking), F (Feeling), J (Judging), P (Perceiving).
Terms from Myers, McCaulley, Quenk, & Hammer (2003).

Appendix Table C.

Raw Point Means of Personality Traits when Strengths Are Present*

Strength	Energizing**		Attending		Deciding		Living	
	E**	I**	S**	N**	T**	F**	J**	P**
Achiever	15.41	14.27	14.94	12.37	14.07	15.04	13.73	13.27
Activator	17.68	8.00	12.71	16.00	16.43	12.46	14.88	18.58
Adaptability	17.56	11.89	11.83	14.36	11.88	14.04	14.63	19.08
Analytical	7.00	20.50	14.20	0.00 ^c	21.20	0.00 ⁺	18.33	18.50
Arranger	21.33	8.33	13.25	7.50	13.75	14.44	23.50	17.17
Belief	18.20	15.33	11.50	11.00	15.00	12.71	15.40	20.67
Command	15.43	16.50	14.00	14.00	14.43	5.00	19.75	11.20
Communication	19.64	0.00 ⁺	7.43	12.05	10.40	15.52	13.38	16.69
Competition	23.50	23.50	15.33	13.71	14.57	10.00	15.50	17.13
Connectedness	13.35	12.62	14.60	14.89	10.00	13.60	16.75	14.81
Consistency	10.17	14.56	16.67	10.00	16.86	13.38	18.71	9.00
Context	10.00	8.40	16.00	9.25	11.75	8.33	22.00	17.40
Deliberative	4.50	16.40	10.67	7.25	8.80	5.00	21.67	1.00
Developer	13.00	11.31	13.94	12.67	14.00	17.68	16.56	18.60
Discipline	13.20	14.00	13.60	13.33	18.17	17.00	22.31	0.00 ⁺
Empathy	16.00	15.80	11.95	12.36	8.75	17.02	15.63	17.45
Focus	10.83	14.38	16.40	12.25	15.63	13.29	20.75	9.50
Futuristic	15.75	15.29	13.33	17.25	14.38	11.14	16.57	15.63
Harmony	16.23	12.84	17.18	9.50	18.56	14.00	17.73	17.90
Ideation	15.90	14.67	12.00	21.25	12.53	13.29	13.13	17.90
Includer	17.88	3.50	9.25	13.83	17.00	15.78	17.50	18.88
Individualization	14.71	14.27	18.00	13.68	16.67	12.69	14.94	19.67
Input	13.10	15.48	13.53	16.85	13.60	14.90	17.04	14.04
Intellection	14.25	15.92	10.71	15.93	12.25	15.77	20.92	13.33
Learner	16.31	14.26	16.69	14.68	17.24	13.11	21.31	12.79
Maximizer	16.92	9.67	15.75	15.27	12.50	12.92	15.69	14.94
Positivity	20.75	8.40	11.07	9.84	10.75	13.90	12.91	18.14
Relator	14.33	12.25	13.77	15.08	12.88	12.00	17.38	15.44
Responsibility	16.53	14.67	13.95	10.38	14.63	14.08	18.35	11.30
Restorative	10.80	16.09	12.20	16.50	14.78	6.14	20.69	16.33
Self-Assurance	15.43	12.25	11.80	15.08	16.58	13.67	12.33	13.20
Significance	10.00	5.00	19.67	0.00 ⁺	27.00	3.50	25.33	0.00 ⁺
Strategic	16.70	13.55	14.50	17.44	15.00	13.53	14.80	17.48
Woo	22.83	0.00 ⁺	12.50	12.56	11.25	14.39	19.42	17.52

* Based on Myers-Briggs Type Indicator

** E (Extravert), I (Introvert), S (Sensing), N (Intuitive), T (Thinking), F (Feeling), J (Judging), P (Perceiving).
Terms from Myers, McCaulley, Quenk, & Hammer (2003).

+ Note: On some cases, 100% of the participants had only one personality trait with a specific strength. The opposite dichotomous trait thus would not have any data and the raw point mean is listed as 0.00.

Table D.

*Function Distribution of Mental Functions and Attitude Functions * by Strengths***

Strength	Mental Functions**				Attitude Functions			
	Sensing**		Intuitive		Extravert		Introvert	
	ST%*** (N=29)	SF% (N=37)	NT% (N=30)	NF% (N=66)	EJ% (N=48)	EP% (N=57)	IJ% (N=32)	IP% (N=25)
Achiever	13.51	29.73	21.62	35.14	24.32	40.54	13.51	21.62
Activator	15.00	20.00	20.00	45.00	35.00	60.00	5.00	0.00
Adaptability	8.82	23.53	14.71	52.94	17.65	55.88	2.94	23.53
Analytical	100.00	0.00	0.00	0.00	40.00	20.00	20.00	20.00
Arranger	16.67	50.00	16.67	16.67	41.67	33.33	16.67	8.33
Belief	12.50	12.50	0.00	75.00	37.50	25.00	25.00	12.50
Command	33.33	11.11	44.44	11.11	22.22	55.56	11.11	11.11
Communication	7.69	26.92	11.54	53.85	50.00	46.15	0.00	3.85
Competition	20.00	10.00	50.00	20.00	20.00	60.00	0.00	20.00
Connectedness	2.13	21.28	12.77	63.83	25.53	29.79	17.02	27.66
Consistency	46.67	33.33	0.00	20.00	33.33	6.67	60.00	0.00
Context	12.50	25.00	37.50	25.00	12.50	12.50	12.50	62.50
Deliberative	42.86	0.00	28.57	28.57	28.57	14.29	57.14	0.00
Developer	17.86	39.29	3.57	39.29	35.71	17.86	28.57	17.86
Discipline	46.15	38.46	0.00	15.38	38.46	0.00	61.54	0.00
Empathy	8.70	43.48	2.17	45.65	43.48	36.96	8.70	10.87
Focus	42.86	28.57	7.14	21.43	35.71	14.29	42.86	7.14
Futuristic	6.67	13.33	46.67	33.33	13.33	40.00	33.33	13.33
Harmony	28.13	43.75	0.00	28.13	25.00	15.63	43.75	15.63
Ideation	10.34	6.90	41.38	41.38	17.24	51.72	3.45	27.59
Includer	0.00	40.00	10.00	50.00	10.00	70.00	10.00	10.00
Individualization	25.00	14.29	28.57	32.14	35.71	25.00	17.86	21.43
Input	18.00	16.00	20.00	46.00	26.00	34.00	24.00	16.00
Intellection	14.29	23.81	23.81	38.10	14.29	23.81	42.86	19.05
Learner	19.44	16.67	27.78	36.11	19.44	27.78	22.22	30.56
Maximizer	8.82	14.71	20.59	55.88	35.29	38.24	11.76	14.71
Positivity	9.09	33.33	3.03	54.55	30.30	54.55	6.06	9.09
Relator	19.15	25.53	14.89	40.43	31.91	36.17	10.64	21.28
Responsibility	37.93	31.03	13.79	17.24	48.28	13.79	31.03	6.90
Restorative	35.29	23.53	17.65	23.53	17.65	11.76	47.06	23.53
Self-Assurance	16.67	5.56	50.00	27.78	16.67	61.11	0.00	22.22
Significance	33.33	66.67	0.00	0.00	66.67	0.00	33.33	0.00
Strategic	12.82	5.13	35.90	46.15	25.64	46.15	12.82	15.38
Woo	5.71	28.57	5.71	60.00	34.29	65.71	0.00	0.00
Total	17.30	24.17	17.79	40.74	29.33	36.20	18.40	16.07

* Based on Myers-Briggs Type Indicator

** Based on Clifton Strengths Finder

*** ST (Sensing-Thinking), SF (Sensing-Feeling), NF (Intuitive-Feeling), NT (Intuitive-Thinking), EJ (Extravert-Judging), EP (Extravert-Perceiving), IJ (Introvert-Judging), IP (Introvert-Perceiving). Terms from Myers, McCaulley, Quenk, & Hammer (2003).

Appendix Table E.

Distribution of Type by Gender and Academic Program*

Types	NRS**		Sample		Male		Female		OPC**		CCD**	
	%	N	%	n	% ⁺	n	% ⁺	n	% ⁺	n	% ⁺	
ISTJ	11.6	9	5.52	2	5.88	7	5.43	8	8.16	1	1.54	
ISTP	5.4	3	1.84	3	8.82	0	0.00	3	3.06	0	0.00	
ESTP	4.3	1	0.61	0	0.00	1	0.78	0	0.00	1	1.54	
ESTJ	8.7	15	9.20	2	5.88	13	10.08	10	10.20	5	7.69	
ISFJ	13.8	10	6.13	3	8.82	7	5.43	4	4.08	6	9.23	
ISFP	8.8	4	2.45	0	0.00	4	3.10	3	3.06	1	1.54	
ESFP	8.5	7	4.29	0	0.00	7	5.43	3	3.06	4	6.15	
ESFJ	12.3	18	11.04	0	0.00	18	13.95	5	5.10	13	20.00	
INFJ	1.5	8	4.91	1	2.94	7	5.43	6	6.12	2	3.08	
INFP	4.4	13	7.98	3	8.82	10	7.75	6	6.12	7	10.77	
ENFP	8.1	34	20.86	8	23.53	26	20.16	21	21.43	13	20.00	
ENFJ	2.5	12	7.36	3	8.82	9	6.98	9	9.18	3	4.62	
INTJ	2.1	3	1.84	0	0.00	3	2.33	3	3.06	0	0.00	
INTP	3.3	6	3.68	3	8.82	3	2.33	4	4.08	2	3.08	
ENTP	3.2	17	10.43	5	14.71	12	9.30	11	11.22	6	9.23	
ENTJ	1.8	3	2.45	1	2.94	2	1.55	2	2.04	1	1.54	
Totals		163	100.61	34	100.00	129	100.00	98	100.00	65	100.00	

Note: One participant did not have type information; thus N= 163

* Based on Myers-Briggs Type Indicator

** National Representative Sample (N = 3,009). Source: Myers, McCaulley, Quenk, & Hammer (2003).

*** Terms from Myers, McCaulley, Quenk, & Hammer (2003)

+ Percent of occurrence within gender or academic program

** Academic Programs: A Performance and Change and Counseling and Career Development

Appendix Table F.

Percentage Distribution of Sensing-Thinking (ST) and Sensing-Feeling (SF) Types by Strengths***

Strengths	N	Sensing-Thinking (ST)				Sensing-Feeling (SF)			
		ISTJ+ (n = 9)	ISTP (n = 3)	ESTP (n = 1)	ESTJ (n = 15)	ISFJ (n = 10)	ISFP (n = 4)	ESFP (n = 7)	ESFJ (n = 18)
Achiever	37	0.0%	5.4%	0.0%	8.1%	8.1%	5.4%	10.8%	5.4%
Activator	20	0.0%	0.0%	0.0%	15.0%	0.0%	0.0%	10.0%	10.0%
Adaptability	34	0.0%	5.9%	0.0%	2.9%	0.0%	5.9%	11.8%	5.9%
Analytical	5	20.0%	20.0%	20.0%	40.0%	0.0%	0.0%	0.0%	0.0%
Arranger	12	0.0%	0.0%	0.0%	16.7%	16.7%	0.0%	8.3%	25.0%
Belief	8	0.0%	0.0%	0.0%	12.5%	12.5%	0.0%	0.0%	0.0%
Command	9	11.1%	0.0%	11.1%	11.1%	0.0%	0.0%	0.0%	11.1%
Communication	26	0.0%	0.0%	0.0%	7.7%	0.0%	0.0%	3.8%	23.1%
Competition	10	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%
Connectedness	47	2.1%	0.0%	0.0%	0.0%	6.4%	4.3%	0.0%	10.6%
Consistency	15	33.3%	0.0%	0.0%	13.3%	6.7%	0.0%	6.7%	20.0%
Context	8	0.0%	12.5%	0.0%	0.0%	0.0%	12.5%	0.0%	12.5%
Deliberative	7	28.6%	0.0%	0.0%	14.3%	0.0%	0.0%	0.0%	0.0%
Developer	28	7.1%	0.0%	3.6%	7.1%	14.3%	3.6%	3.6%	17.9%
Discipline	13	30.8%	0.0%	0.0%	15.4%	23.1%	0.0%	0.0%	15.4%
Empathy	46	2.2%	0.0%	0.0%	6.5%	6.5%	2.2%	10.9%	23.9%
Focus	14	7.1%	7.1%	0.0%	28.6%	21.4%	0.0%	0.0%	7.1%
Futuristic	15	6.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.3%
Harmony	32	15.6%	6.3%	0.0%	6.3%	18.8%	6.3%	3.1%	15.6%
Ideation	29	0.0%	0.0%	3.4%	6.9%	0.0%	3.4%	0.0%	3.4%
Includer	10	0.0%	0.0%	0.0%	0.0%	10.0%	0.0%	20.0%	10.0%
Individualization	28	14.3%	0.0%	0.0%	10.7%	0.0%	7.1%	0.0%	7.1%
Input	50	8.0%	0.0%	0.0%	10.0%	8.0%	0.0%	2.0%	6.0%
Intellection	21	9.5%	0.0%	0.0%	4.8%	14.3%	0.0%	4.8%	4.8%
Learner	36	5.6%	2.8%	0.0%	11.1%	8.3%	5.6%	0.0%	2.8%
Maximizer	34	0.0%	0.0%	0.0%	8.8%	2.9%	2.9%	0.0%	8.8%
Positivity	33	0.0%	0.0%	0.0%	9.1%	3.0%	6.1%	15.2%	9.1%
Relator	47	0.0%	2.1%	2.1%	14.9%	6.4%	0.0%	4.3%	14.9%
Responsibility	29	13.8%	3.4%	0.0%	20.7%	10.3%	0.0%	3.4%	17.2%
Restorative	17	29.4%	5.9%	0.0%	0.0%	11.8%	0.0%	0.0%	11.8%
Self-Assurance	18	0.0%	0.0%	0.0%	16.7%	0.0%	5.6%	0.0%	0.0%
Significance	3	0.0%	0.0%	0.0%	33.3%	33.3%	0.0%	0.0%	33.3%
Strategic	39	2.6%	0.0%	0.0%	10.3%	2.6%	0.0%	0.0%	2.6%
Woo	35	0.0%	0.0%	0.0%	5.7%	0.0%	0.0%	8.6%	20.0%

Note: One participant did not have type information, thus N = 163.

* Based on Myers-Briggs Type Indicator

** Based on Clifton Strength Finder

+ Percentage occurrence of type per strength

Appendix Table G.

Percentage Distribution of Intuitive-Feeling(NF) and Intuitive-Thinking (NT) Types by Strengths***

Strengths	N	Intuition-Feeling (NF)				Intuitive-Thinking (NT)			
		INFJ (n = 8)	INFP (n = 13)	ENFP (n = 34)	ENFJ (n = 12)	INTJ (n = 3)	INTP (n = 6)	ENTP (n = 17)	ENTJ (n = 3)
Achiever	37	2.7%	8.1%	18.9%	5.4%	2.7%	2.7%	10.8%	5.4%
Activator	20	5.0%	0.0%	30.0%	10.0%	0.0%	0.0%	20.0%	0.0%
Adaptability	34	2.9%	11.8%	35.3%	2.9%	0.0%	0.0%	8.8%	5.9%
Analytical	5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Arranger	12	0.0%	0.0%	16.7%	0.0%	0.0%	8.3%	8.3%	0.0%
Belief	8	12.5%	12.5%	25.0%	25.0%	0.0%	0.0%	0.0%	0.0%
Command	9	0.0%	0.0%	11.1%	0.0%	0.0%	11.1%	33.3%	0.0%
Communication	26	0.0%	3.8%	38.5%	11.5%	0.0%	0.0%	3.8%	7.7%
Competition	10	0.0%	0.0%	20.0%	0.0%	0.0%	0.0%	40.0%	10.0%
Connectedness	47	8.5%	23.4%	19.1%	12.8%	0.0%	0.0%	10.6%	2.1%
Consistency	15	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Context	8	0.0%	25.0%	0.0%	0.0%	12.5%	12.5%	12.5%	0.0%
Deliberative	7	28.6%	0.0%	0.0%	0.0%	0.0%	0.0%	14.3%	14.3%
Developer	28	7.1%	14.3%	7.1%	10.7%	0.0%	0.0%	3.6%	0.0%
Discipline	13	7.7%	0.0%	0.0%	7.7%	0.0%	0.0%	0.0%	0.0%
Empathy	46	0.0%	8.7%	26.1%	10.9%	0.0%	0.0%	0.0%	2.2%
Focus	14	7.1%	0.0%	14.3%	0.0%	7.1%	0.0%	0.0%	0.0%
Futuristic	15	20.0%	0.0%	13.3%	0.0%	6.7%	13.3%	26.7%	0.0%
Harmony	32	9.4%	3.1%	12.5%	3.1%	0.0%	0.0%	0.0%	0.0%
Ideation	29	0.0%	10.3%	24.1%	6.9%	3.4%	13.8%	24.1%	0.0%
Includer	10	0.0%	0.0%	50.0%	0.0%	0.0%	10.0%	0.0%	0.0%
Individualization	28	0.0%	7.1%	10.7%	14.3%	3.6%	7.1%	14.3%	3.6%
Input	50	4.0%	10.0%	22.0%	10.0%	4.0%	6.0%	10.0%	0.0%
Intellection	21	9.5%	14.3%	9.5%	4.8%	9.5%	4.8%	9.5%	0.0%
Learner	36	2.8%	13.9%	13.9%	5.6%	5.6%	8.3%	13.9%	0.0%
Maximizer	34	8.8%	8.8%	23.5%	14.7%	0.0%	2.9%	14.7%	2.9%
Positivity	33	3.0%	0.0%	39.4%	12.1%	0.0%	3.0%	0.0%	0.0%
Relator	47	4.3%	12.8%	21.3%	2.1%	0.0%	6.4%	8.5%	0.0%
Responsibility	29	6.9%	3.4%	3.4%	3.4%	0.0%	0.0%	6.9%	6.9%
Restorative	17	0.0%	11.8%	5.9%	5.9%	5.9%	5.9%	5.9%	0.0%
Self-Assurance	18	0.0%	5.6%	22.2%	0.0%	0.0%	11.1%	38.9%	0.0%
Significance	3	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Strategic	39	2.6%	10.3%	23.1%	10.3%	5.1%	5.1%	23.1%	2.6%
Woo	35	0.0%	0.0%	51.4%	8.6%	0.0%	0.0%	5.7%	0.0%

Note: One participant did not have type information, thus N = 163.

* Based on Myers-Briggs Type Indicator

** Based on Clifton Strength Finder

+ Percentage occurrence of type per strength

Appendix Table H.

Clear and Very Clear Clarity Categories within Sample for Traits when Strengths** Are Present and Not Present*

Strength	N	Strength Present		Strength Not Present	
		Clear	Very Clear	Clear	Very Clear
Achiever	37			Judging [65]***	
Activator	20	Perceiving [12]		Judging [72]	
Adaptability	34	Perceiving [26]		Judging [72]	
Analytical	5	Thinking [5] Judging [3] Perceiving [2]	Introvert [2]	Judging [77]	
Arranger	12	Perceiving [6]	Extravert [9] Judging [6]		
Belief	8	Perceiving [3]		Judging [75]	
Command	9	Judging [4]		Judging [76]	
Communication	26	Extravert [25]		Judging [67]	
Competition	10	Perceiving [8]	Extravert [8] Introvert [2]	Judging [78]	
Connectedness	47			Judging [60]	
Consistency	15	Judging [14]		Judging [66]	
Context	8	Perceiving [5]	Judging [2]	Judging [78]	
Deliberative	7		Judging [6]		
Developer	28	Perceiving [10]		Extravert [90] Judging [62]	
Discipline	13		Judging [13]		
Empathy	46	Perceiving [22]		Judging [56]	
Focus	14	Judging [12]			
Futuristic	15			Judging [73]	
Harmony	32	Judging [22] Perceiving [10]		Judging [58]	
Ideation	29	Intuition [24] Perceiving [21]		Judging [72]	

Appendix Table H.

Clear and Very Clear Clarity Categories within Sample for Traits when Strengths** Are Present and Not Present (Continued)*

Strength	N	Strength Present		Strength Not Present	
		Clear	Very Clear	Clear	Very Clear
Includer	10	Extravert [8] Judging [2] Perceiving [8]		Judging [78]	
Individualization	28	Perceiving [12]		Judging [64]	
Input	50	Judging [26]		Extravert [76] Judging [54]	
Intellection	21	Judging [12]			
Learner	36		Judging [16]		
Maximizer	34			Judging [64]	
Positivity	33	Perceiving	Extravert [28]	Judging [69]	
Relator	47	Judging [21]		Extravert [75] Judging [59]	
Responsibility	29	Judging [23]			
Restorative	17	Judging [13]			
Self-Assurance	18			Judging [77]	
Significance	3		Thinking [1] Judging [3]	Judging [77]	
Strategic	39	Perceiving [23]		Judging [65]	
Woo	35	Judging [12] Perceiving [23]	Extravert [35]		

* Based on Myers-Briggs Type Indicator

** Based on Clifton Strength Finder

*** Number of occurrences in brackets

Appendix Table I.

Means of General Occupational Themes when Strengths**Are Present*

Strength	n	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
Achiever	37	48.81	49.30	55.46	59.70	52.69	45.73
Activator	20	44.80	46.10	54.95	58.65	53.25	46.35
Adaptability	34	50.03	48.15	56.06	58.85	51.21	47.21
Analytical	5	54.40	51.80	47.00	49.80	49.00	53.60
Arranger	12	49.83	50.67	53.92	63.67	53.25	46.42
Belief	8	45.38	43.13	53.13	63.63	54.25	46.63
Command	9	51.56	47.11	52.67	55.67	48.67	49.00
Communication	25	46.36	46.00	55.12	60.68	50.80	46.32
Competition	10	49.00	47.60	55.00	61.30	59.00	47.00
Connectedness	46	46.30	46.46	57.22	60.17	49.52	45.46
Consistency	14	48.86	49.93	53.43	59.14	49.50	50.93
Context	8	47.75	48.63	49.88	54.00	47.75	45.50
Deliberative	7	50.14	47.43	54.71	56.00	57.86	51.29
Developer	28	46.39	46.68	54.54	61.14	46.86	46.11
Discipline	13	46.69	47.92	51.54	60.62	52.69	50.62
Empathy	46	45.54	46.07	56.78	60.91	48.96	45.24
Focus	14	46.21	46.21	52.50	58.50	49.00	46.00
Futuristic	14	46.50	48.57	56.50	60.21	51.86	47.29
Harmony	32	45.94	47.06	54.44	59.84	49.34	47.31
Ideation	29	50.86	50.52	58.69	58.59	51.97	43.59
Includer	10	46.80	47.00	57.50	62.90	58.10	48.10
Individualization	28	46.79	49.79	56.00	58.11	51.29	45.82
Input	49	45.59	47.76	56.71	57.84	47.00	44.24
Intellection	20	44.95	46.40	58.35	58.20	47.35	43.25
Learner	36	47.89	51.58	55.25	58.14	48.86	46.11
Maximizer	34	48.47	47.85	56.65	60.59	50.76	43.35
Positivity	32	47.50	47.09	55.47	61.34	50.32	44.38
Relator	45	49.00	47.38	54.42	59.69	49.80	44.13
Responsibility	28	47.50	47.89	53.54	58.79	48.93	46.71
Restorative	18	44.33	48.89	53.37	56.06	46.83	42.94
Self-Assurance	18	53.72	51.39	55.83	61.67	55.94	48.17
Significance	3	45.00	56.00	42.67	57.00	48.00	44.67
Strategic	39	48.10	47.49	57.18	59.13	54.18	46.03
Woo	34	46.24	44.94	53.82	61.91	53.79	44.76

* Based on Clifton Strength Finder

** Based on Myers-Briggs Type Indicator

Appendix Table J.

Means of General Occupational Themes when Strengths**Are Not Present*

Strength	n	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
Achiever	37	47.08	47.41	55.40	59.53	50.11	45.82
Activator	20	47.86	48.09	55.48	59.70	50.33	45.72
Adaptability	34	46.80	47.76	55.24	59.76	50.56	45.43
Analytical	5	47.26	47.72	55.69	59.88	50.75	45.55
Arranger	12	47.29	47.62	55.54	59.24	50.49	45.75
Belief	8	47.59	48.09	55.54	59.36	50.51	45.76
Command	9	47.24	47.89	55.58	59.80	50.81	45.61
Communication	25	47.68	48.18	55.47	59.37	50.67	45.71
Competition	10	47.38	47.86	55.44	59.46	50.14	45.72
Connectedness	46	47.95	48.40	54.70	59.33	51.17	45.94
Consistency	14	47.35	47.65	55.61	59.61	50.81	45.31
Context	8	47.46	47.80	55.71	59.86	50.85	45.82
Deliberative	7	47.36	47.86	55.45	59.73	50.37	45.55
Developer	28	47.71	48.09	55.60	59.24	51.51	45.74
Discipline	13	47.55	47.84	55.76	59.48	50.52	45.38
Empathy	46	48.25	48.56	54.87	59.03	51.37	46.03
Focus	14	47.43	47.86	55.64	59.60	50.66	45.66
Futuristic	14	47.57	47.78	55.31	59.51	50.58	45.66
Harmony	32	47.86	48.04	55.66	59.50	51.03	45.43
Ideation	29	46.73	47.26	54.70	59.79	50.41	46.29
Includer	10	47.52	47.90	55.28	59.35	50.20	45.65
Individualization	28	47.62	47.44	55.29	59.98	50.57	45.80
Input	49	48.30	47.88	54.85	60.33	52.32	46.48
Intellection	20	47.84	48.05	55.00	59.77	51.17	46.16
Learner	36	47.36	46.77	55.46	59.98	51.23	45.71
Maximizer	34	47.21	47.84	55.09	59.30	50.68	46.46
Positivity	32	47.47	48.03	55.40	59.13	50.78	46.16
Relator	45	46.89	48.03	55.80	59.53	51.04	46.45
Responsibility	28	47.47	47.83	55.81	59.74	51.07	45.61
Restorative	18	47.87	47.71	55.64	60.01	51.18	46.16
Self-Assurance	18	46.69	47.40	55.36	59.31	50.03	45.50
Significance	3	47.53	47.69	55.66	59.62	50.75	45.82
Strategic	39	47.28	47.96	54.85	59.71	49.57	45.73
Woo	34	47.81	48.62	55.84	58.94	49.89	46.08

* Based on Clifton Strength Finder

** Based on Myers-Briggs Type Indicator

Appendix Table K.

Means and Standard Deviations of REALISTIC General Occupational Theme (GOT) by Strengths** and Male Gender*

Strength	Strength Present			Strength Not Present			Difference ⁺	
	#	Mean	SD	#	Mean	SD	Mean	SD
Achiever	6	47.50 (L)***	7.81	29	50.62 (L)	9.18	-3.12	-1.37
Activator	4	49.75 (L)	12.03	31	50.13 (L)	8.71	-0.38	3.32
Adaptability	10	52.80 (M)	8.39	25	49.00 (L)	9.07	3.80	-0.68
Analytical	2	64.00 (H)	8.49	33	49.24 (L)	8.35	14.76	0.14
Arranger	4	49.75 (L)	12.47	31	50.13 (L)	8.65	-0.38	3.82
Belief	1	40.00 (VL)	0.00	34	50.38 (L)	8.89	-10.38	-8.89
Command	1	66.00 (H)	0.00	34	49.62 (L)	8.62	16.38	-8.62
Communication	5	52.00 (M)	8.54	30	49.77 (L)	9.10	2.23	-0.56
Competition	4	50.75 (L)	6.07	31	50.00 (L)	9.31	0.75	-3.24
Connectedness	11	46.18 (L)	6.52	24	51.88 (M)	9.42	-5.70	-2.90
Consistency	4	54.00 (M)	11.69	31	49.58 (L)	8.63	4.42	3.06
Context	3	51.67 (M)	6.11	32	49.94 (L)	9.21	1.73	-3.10
Deliberative	0	--	--	35	50.09 (L)	8.93	--	--
Developer	6	45.00 (L)	6.78	29	51.14 (M)	9.05	-6.14	-2.27
Discipline	5	47.40 (L)	12.91	30	50.53 (L)	8.31	-3.13	4.60
Empathy	4	50.50 (L)	9.67	31	50.03 (L)	9.00	0.47	0.67
Focus	3	48.00 (L)	7.81	32	50.28 (L)	9.12	-2.28	-1.31
Futuristic	3	52.00 (M)	14.00	32	49.94 (L)	8.63	2.06	5.37
Harmony	7	48.86 (L)	6.76	28	50.39 (L)	9.48	-1.53	-2.72
Ideation	9	52.33 (M)	9.52	25	49.52 (L)	8.89	2.81	0.63
Includer	3	57.00 (M)	8.71	32	49.44 (L)	8.81	7.56	-0.10
Individualization	2	45.50 (L)	0.70	33	50.36 (L)	9.13	-4.86	-8.43
Input	10	49.40 (L)	9.70	25	50.36 (L)	8.80	-0.96	0.90
Intellection	2	43.50 (M)	2.12	33	50.48 (L)	9.04	-6.98	-6.92
Learner	10	50.70 (L)	8.68	25	49.84 (L)	9.20	0.86	-0.52
Maximizer	6	47.17 (L)	6.58	29	50.69 (L)	9.32	-3.52	-2.74
Positivity	8	51.13 (M)	6.77	27	49.78 (L)	9.57	1.35	-2.80
Relator	10	51.90 (M)	9.72	25	49.36 (L)	8.59	2.54	1.13
Responsibility	8	49.25 (L)	9.85	27	50.33 (L)	8.83	-1.08	1.02
Restorative	4	44.75 (L)	5.25	31	50.77 (L)	9.13	-6.02	-3.88
Self-Assurance	5	58.40 (M)	12.93	30	48.70 (L)	7.52	9.70	5.41
Significance	1	40.00 (VL)	0.00	34	50.38 (L)	8.89	-10.38	-8.89
Strategic	9	47.44 (L)	8.48	26	51.00 (M)	9.06	-3.56	-0.58
Woo	4	51.75 (M)	5.67	31	49.87 (L)	9.31	1.88	-3.64

N = 35

* Based on Strong Interest Inventory

** Based on Clifton Strength Finder

*** GOT respondent scores are compared to those of persons of the same gender in the general representative sample regarding similarity of interest in the occupational theme. For men the degree of similarity for the REALISTIC theme is indicated as Very Little (VL) (score of 30-43), Little (L) (44-50), Moderate (M) (51-61), High (H) (62-66), and Very High (VH) (67-87) (Gutter & Hammer, 2005).

⁺ Positive numbers indicate means or standard deviations were higher when strengths were present; negative numbers indicate means or standard deviations were higher when strengths were not present.

Appendix Table L.

Means and Standard Deviations of INVESTIGATIVE General Occupational Theme (GOT)
by Strengths** and Male Gender*

Strength	Strength Present			Strength Not Present			Difference ⁺	
	#	Mean	SD	#	Mean	SD	Mean	SD
Achiever	6	48.67 (M)***	10.91	29	50.83 (M)	10.64	-2.16	0.27
Activator	4	52.50 (M)	9.95	31	50.19 (M)	10.76	2.31	-0.81
Adaptability	10	50.10 (M)	8.59	25	50.60 (M)	11.40	-0.50	-2.81
Analytical	2	58.00 (M)	7.07	33	50.00 (M)	10.63	8.00	-3.56
Arranger	4	47.75 (M)	10.40	31	50.81 (M)	10.69	-3.06	-0.29
Belief	1	40.00 (L)	--	34	50.38 (M)	8.89	-10.38	--
Command	1	62.00 (H)	--	34	50.12 (M)	10.52	11.88	--
Communication	5	55.20 (M)	7.05	30	49.67 (M)	10.92	5.53	-3.87
Competition	4	49.75 (M)	12.44	31	50.55 (M)	10.52	-0.80	1.92
Connectedness	11	46.55 (M)	10.70	24	52.25 (M)	10.21	-5.70	0.49
Consistency	4	48.25 (M)	12.99	31	50.74 (M)	10.42	-2.49	2.57
Context	3	49.00 (M)	11.53	32	50.59 (M)	10.65	-1.59	0.88
Deliberative	0	--	--	35	50.46 (M)	10.55	--	--
Developer	6	46.83 (M)	10.45	29	51.21 (M)	10.60	-4.38	-0.15
Discipline	5	49.40 (M)	14.11	30	50.63 (M)	10.14	-1.23	3.97
Empathy	4	54.00 (M)	10.98	31	50.00 (M)	10.60	4.00	0.38
Focus	3	52.00 (M)	13.11	32	50.31 (M)	10.53	1.69	2.58
Futuristic	3	57.00 (M)	14.77	32	49.84 (M)	10.23	7.16	4.54
Harmony	7	43.71(L)	7.43	28	52.14 (M)	10.64	-8.43	-3.21
Ideation	9	54.78 (M)	9.60	25	49.56 (M)	10.39	5.22	-0.79
Includer	3	46.00 (M)	12.16	32	50.88 (M)	10.51	-4.88	1.65
Individualization	2	60.50 (H)	9.19	33	49.85 (M)	10.44	10.65	-1.25
Input	10	49.40 (M)	10.13	25	50.88 (M)	10.90	-1.48	-0.77
Intellection	2	44.00 (M)	1.14	33	50.85 (M)	10.75	-6.85	-9.61
Learner	10	57.40 (M)	11.64	25	47.68 (M)	8.88	9.72	2.76
Maximizer	6	55.00 (M)	13.43	29	49.52 (M)	9.89	5.48	3.54
Positivity	8	49.63 (M)	9.85	27	50.70 (M)	10.92	-1.07	-1.07
Relator	10	48.00 (M)	8.83	25	51.44 (M)	11.18	-3.44	-2.35
Responsibility	8	50.00 (M)	11.56	27	50.59 (M)	10.47	-0.59	1.09
Restorative	4	56.25 (M)	14.66	31	49.71 (M)	9.99	6.54	4.67
Self-Assurance	5	52.80 (M)	8.46	30	50.07 (M)	10.94	2.73	-2.48
Significance	1	66.00 (VH)	--	34	50.00 (M)	10.36	16.00	--
Strategic	9	46.67 (M)	9.36	26	51.77 (M)	10.79	-5.10	-1.43
Woo	4	43.25 (L)	8.77	31	51.39 (M)	10.52	-8.14	-1.75

N = 35

* Based on Strong Interest Inventory

** Based on Clifton Strength Finder

*** GOT respondent scores are compared to those of persons of the same gender in the general representative sample regarding similarity of interest in the occupational theme. For males the degree of similarity for the INVESTIGATIVE theme is indicated as Very Little (VL) (score of 26-38), Little (L) (39-45), Moderate (M) (46-58), High (H) (59-64), and Very High (VH) (65-78) (Grutter & Hammer, 2005).

⁺ Positive numbers indicate means or standard deviations were higher when strengths were present; negative numbers indicate means or standard deviations were higher when strengths were not present.

Appendix Table M.

Means and Standard Deviations of ARTISTIC General Occupational Theme (GOT) by Strengths** and Male Gender*

Strength	Strength Present			Strength Not Present			Difference+	
	#	Mean	SD	#	Mean	SD	Mean	SD
Achiever	6	48.67 (M)***	10.91	29	50.83 (M)	10.64	-2.16	0.27
Activator	4	64.25 (VH)	6.75	31	54.42 (M)	8.81	9.83	-2.06
Adaptability	10	54.30 (M)	11.33	25	56.04 (M)	8.24	-1.74	3.09
Analytical	2	41.50 (L)	9.19	33	56.39 (M)	8.49	-14.89	0.70
Arranger	4	53.00 (M)	5.71	31	55.87 (M)	9.45	-2.87	-3.74
Belief	1	43.00 (M)	0.00	34	55.91 (M)	8.95	-12.91	-8.95
Command	1	55.00 (M)	0.00	34	55.56 (M)	9.22	-0.56	-9.22
Communication	5	59.80 (H)	5.07	30	54.83 (M)	9.47	4.97	-4.40
Competition	4	53.25 (M)	7.80	31	55.84 (M)	9.31	-2.59	-1.51
Connectedness	11	55.64 (M)	9.70	24	55.50 (M)	9.01	0.14	0.69
Consistency	4	51.50 (M)	4.43	31	56.06 (M)	9.44	-4.56	-5.01
Context	3	54.00 (M)	12.53	32	55.69 (M)	8.96	-1.69	3.57
Deliberative	0	--	--	35	55.54 (M)	9.09	-55.54	-9.09
Developer	6	57.83 (H)	9.32	29	55.07 (M)	9.13	2.76	0.19
Discipline	5	49.60 (M)	6.34	30	56.53 (M)	9.17	-6.93	-2.83
Empathy	4	56.75 (M)	11.05	31	55.39 (M)	9.01	1.36	2.04
Focus	3	55.00 (M)	8.54	32	55.59 (M)	9.27	-0.59	-0.73
Futuristic	3	59.33 (H)	3.78	32	55.19 (M)	9.39	4.14	-5.61
Harmony	7	48.86 (M)	8.68	28	57.21 (H)	8.53	-8.35	0.15
Ideation	9	61.67 (H)	8.09	25	53.96 (M)	8.27	7.71	-0.18
Includer	3	58.33 (H)	12.74	32	55.28 (M)	8.90	3.05	3.84
Individualization	2	66.50 (VH)	7.77	33	54.88 (M)	8.83	11.62	-1.06
Input	10	57.70 (H)	5.47	25	54.68 (M)	10.15	3.02	-4.68
Intellection	2	57.00 (H)	5.65	33	55.45 (M)	9.31	1.55	-3.66
Learner	10	56.80 (M)	10.44	25	55.04 (M)	8.67	1.76	1.77
Maximizer	6	60.67 (H)	7.47	29	54.48 (M)	9.14	6.19	-1.67
Positivity	8	56.00 (M)	8.50	27	55.41 (M)	9.41	0.59	-0.91
Relator	10	53.30 (M)	8.38	25	56.44 (M)	9.37	-3.14	-0.99
Responsibility	8	53.00 (M)	6.34	27	56.30 (M)	9.73	-3.30	-3.39
Restorative	4	54.25 (M)	11.44	31	55.71 (M)	8.96	-1.46	2.48
Self-Assurance	5	60.40 (H)	9.45	30	54.73 (M)	8.93	5.67	0.52
Significance	1	43.00 (M)	0.00	34	55.91 (M)	8.95	-12.91	-8.95
Strategic	9	57.44 (H)	9.47	26	54.88 (M)	9.05	2.56	0.42
Woo	4	51.00 (M)	7.95	31	56.13 (M)	9.17	-5.13	-1.22

N = 35

* Based on Strong Interest Inventory

** Based on Clifton Strength Finder

*** GOT respondent scores are compared to those of the same gender in the general representative sample regarding similarity of interest in a particular occupational theme. For males the degree of interest similarity for the ARTISTIC theme is indicated as Very Little (VL) (score of 26-36), Little (L) (37-42), Moderate (M) (43-56), High (H) (57-62), and Very High (VH) (63-76) (Grutter & Hammer, 2005).

+ Positive numbers indicate means or standard deviations were higher when strengths were present; negative numbers indicate means or standard deviations were higher when strengths were not present.

Appendix Table N.

Means and Standard Deviations of SOCIAL General Occupational Theme (GOT) by Strengths** and Male Gender*

Strength	Strength Present			Strength Not Present			Difference+	
	#	Mean	SD	#	Mean	SD	Mean	SD
Achiever	6	57.00 (H)***	10.80	29	58.97 (H)	7.46	-1.97	3.34
Activator	4	64.25 (VH)	6.75	31	54.42 (H)	8.81	9.83	-2.06
Adaptability	10	57.40 (H)	9.82	25	59.12 (H)	7.28	-1.72	2.54
Analytical	2	48.00 (M)	1.41	33	59.27 (H)	7.74	-11.27	-6.33
Arranger	4	63.00 (VH)	6.05	31	58.06 (H)	8.09	4.94	-2.04
Belief	1	56.00 (H)	--	34	58.71 (H)	8.08	-2.71	-8.08
Command	1	60.00 (H)	--	34	58.59 (H)	8.09	1.41	-8.09
Communication	5	63.40 (VH)	6.58	30	57.83 (H)	8.00	5.57	-1.42
Competition	4	54.00 (H)	12.35	31	59.23 (H)	7.32	-5.23	5.03
Connectedness	11	61.18 (VH)	5.19	24	57.46 (H)	8.81	3.72	-3.62
Consistency	4	50.00 (M)	5.77	31	59.74 (H)	7.58	-9.74	-1.81
Context	3	55.00 (M)	11.53	32	58.97 (H)	7.73	-3.97	3.80
Deliberative	0	--	--	35	58.63 (H)	7.97	-58.63	-7.97
Developer	6	59.67 (H)	4.80	29	58.41 (H)	8.53	1.26	-3.73
Discipline	5	56.20 (H)	6.22	30	59.03 (H)	8.24	-2.83	-2.02
Empathy	4	58.75 (H)	5.12	31	58.61 (H)	8.33	0.14	-3.21
Focus	3	63.00 (VH)	1.00	32	58.22 (H)	8.22	4.78	-7.22
Futuristic	3	57.67 (H)	4.04	32	58.72 (H)	8.28	-1.05	-4.24
Harmony	7	52.00 (M)	7.00	28	60.29 (H)	7.03	-8.29	-0.03
Ideation	9	61.00 (VH)	7.74	25	57.48 (H)	8.02	3.52	-0.28
Includer	3	67.00 (VH)	8.88	32	57.84 (H)	7.56	9.16	1.32
Individualization	2	60.50 (H)	7.77	33	58.52 (H)	8.09	1.98	-0.32
Input	10	55.70 (H)	7.02	25	59.80 (H)	8.16	-4.10	-1.14
Intellection	2	61.50 (VH)	3.53	33	58.45 (H)	8.16	3.05	-4.63
Learner	10	57.60 (H)	7.57	25	59.04 (H)	8.24	-1.44	-0.67
Maximizer	6	56.17 (H)	7.19	29	59.14 (H)	8.14	-2.97	-0.95
Positivity	8	60.88 (H)	5.61	27	57.96 (H)	8.52	2.92	-2.91
Relator	10	57.70 (H)	8.30	25	59.00 (H)	7.98	-1.30	0.32
Responsibility	8	56.88 (H)	9.25	27	59.15 (H)	7.67	-2.27	1.58
Restorative	4	58.00 (H)	5.22	31	58.71 (H)	8.32	-0.71	-3.10
Self-Assurance	5	64.20 (VH)	5.76	30	57.70 (H)	7.98	6.50	-2.22
Significance	1	57.00 (H)	0.00	34	58.68 (H)	8.08	-1.68	-8.08
Strategic	9	58.78 (H)	8.80	26	58.58 (H)	7.85	0.20	0.95
Woo	4	66.50 (VH)	2.88	31	57.61 (H)	7.86	8.89	-4.98

N = 35

* Based on Strong Interest Inventory

** Based on Clifton Strength Finder

*** GOT respondent scores are compared to those of the same gender in the general representative sample regarding similarity of interest in a particular occupational theme. For males the degree of interest similarity for the SOCIAL theme is indicated as Very Little (VL) (score of 23-35), Little (L) (36-41), Moderate (M) (42-55), High (H) (56-60), and Very High (VH) (61-83) (Gutter & Hammer, 2005).

+ Positive numbers indicate means or standard deviations were higher when strengths were present; negative numbers indicate means or standard deviations were higher when strengths were not present.

Appendix Table O.

Means and Standard Deviations of ENTERPRISING General Occupational Theme (GOT) by Strengths** and Male Gender*

Strength	Strength Present			Strength Not Present			Difference ⁺	
	#	Mean	SD	#	Mean	SD	Mean	SD
Achiever	6	47.50 (M)***	10.63	29	51.90 (M)	9.06	-4.40	1.57
Activator	4	63.00 (H)	11.74	31	49.61 (M)	7.98	13.39	3.76
Adaptability	10	52.00 (M)	11.52	25	50.80 (M)	8.54	1.20	2.98
Analytical	2	49.50 (M)	6.36	33	51.24 (M)	9.54	-1.74	-3.18
Arranger	4	51.75 (M)	4.03	31	51.06 (M)	9.84	0.69	-5.81
Belief	1	36.00 (VL)	0.00	34	51.59 (M)	9.08	-15.59	-9.08
Command	1	55.00 (M)	0.00	34	51.03 (M)	9.44	3.97	-9.44
Communication	5	49.80 (M)	5.93	30	51.37 (M)	9.84	-1.57	-3.91
Competition	4	53.75 (M)	6.89	31	50.81 (M)	9.63	2.94	-2.74
Connectedness	11	48.91 (M)	9.12	24	52.17 (M)	9.43	-3.26	-0.31
Consistency	4	51.25 (M)	6.39	31	51.13 (M)	9.72	0.12	-3.33
Context	3	45.67 (M)	4.16	32	51.66 (M)	9.55	-5.99	-5.39
Deliberative	0	0.00	0.00	35	51.14 (M)	9.33	-51.14	-9.33
Developer	6	51.00 (M)	5.83	29	51.17 (M)	9.98	-0.17	-4.15
Discipline	5	49.00 (M)	8.12	30	51.50 (M)	9.59	-2.50	-1.47
Empathy	4	47.25 (M)	10.24	31	51.65 (M)	9.26	-4.40	0.98
Focus	3	55.67 (M)	5.68	32	50.72 (M)	9.55	4.95	-3.87
Futuristic	3	42.33 (M)	10.97	32	51.97 (M)	8.91	-9.64	2.06
Harmony	7	50.57 (M)	5.44	28	51.29 (M)	10.14	-0.72	-4.70
Ideation	9	52.44 (M)	12.97	25	50.40 (M)	8.00	2.04	4.97
Includer	3	62.00 (H)	16.52	32	50.13 (M)	8.08	11.87	8.44
Individualization	2	49.00 (M)	12.72	33	51.27 (M)	9.33	-2.27	3.39
Input	10	49.40 (M)	9.74	25	51.84 (M)	9.27	-2.44	0.47
Intellection	2	47.50 (M)	9.19	33	51.36 (M)	9.43	-3.86	-0.24
Learner	10	49.70 (M)	9.55	25	51.72 (M)	9.37	-2.02	0.18
Maximizer	6	48.83 (M)	10.70	29	51.62 (M)	9.15	-2.79	1.55
Positivity	8	51.75 (M)	5.65	27	50.96 (M)	10.25	0.79	-4.60
Relator	10	53.10 (M)	7.83	25	50.36 (M)	9.90	2.74	-2.07
Responsibility	8	50.25 (M)	7.49	27	51.41 (M)	9.92	-1.16	-2.43
Restorative	4	48.00 (M)	9.62	31	51.55 (M)	9.37	-3.55	0.25
Self-Assurance	5	58.40 (M)	15.43	30	49.93 (M)	7.65	8.47	7.78
Significance	1	36.00 (VL)	0.00	34	51.59 (M)	9.08	-15.59	-9.08
Strategic	9	54.56 (M)	7.60	26	49.98 (M)	9.71	4.58	-2.11
Woo	4	55.00 (M)	5.35	31	50.65 (M)	9.67	4.35	-4.32

N = 35

* Based on Strong Interest Inventory

** Based on Clifton Strength Finder

*** GOT respondent scores are compared to those of the same gender in the general representative sample regarding similarity of interest in a particular occupational theme. For males the degree of interest similarity for the SOCIAL theme is reported as Very Little (VL) (score of 21-37), Little (L) (38-43), Moderate (M) (44-58), High (H) (59-64), and Very High (VH) (65-80) (Grutter & Hammer, 2005).

⁺ Positive numbers indicate means or standard deviations were higher when strengths were present; negative numbers indicate means or standard deviations were higher when strengths were not present.

Appendix Table P.

Means and Standard Deviations of CONVENTIONAL General Occupational Theme (GOT) by Strengths** and Male Gender*

Strength	Strength Present			Strength Not Present			Difference†	
	#	Mean	SD	#	Mean	SD	Mean	SD
Achiever	6	43.50 (L)***	8.55	29	46.76 (M)	9.08	-3.26	-0.53
Activator	4	46.50 (M)	8.66	31	46.14 (M)	9.13	0.36	-0.47
Adaptability	10	46.40 (M)	8.63	25	46.12 (M)	9.25	0.28	-0.62
Analytical	2	62.50 (H)	3.53	33	45.21 (M)	8.20	17.29	-4.67
Arranger	4	47.75 (M)	2.75	31	46.00 (M)	9.47	1.75	-6.72
Belief	1	34.00 (VL)	0.00	34	46.56 (M)	8.32	-12.56	-8.32
Command	1	51.00 (M)	0.00	34	46.06 (M)	9.05	4.94	-9.05
Communication	5	45.80 (M)	5.26	30	46.27 (M)	9.49	-0.47	-4.23
Competition	4	46.50 (M)	5.06	31	46.16 (M)	9.39	0.34	-4.33
Connectedness	11	41.27 (L)	6.51	24	48.46 (M)	9.12	-7.19	-2.61
Consistency	4	49.25 (M)	10.08	31	45.81 (M)	8.78	3.44	1.30
Context	3	40.33(L)	2.88	32	46.75 (M)	9.15	-6.42	-6.27
Deliberative	0	--	0.00	35	46.20 (M)	8.95	-46.20	-8.95
Developer	6	45.17 (M)	5.63	29	46.41 (M)	9.56	-1.24	-3.93
Discipline	5	46.40 (M)	12.15	30	46.17 (M)	8.58	0.23	3.57
Empathy	4	45.25 (M)	7.67	31	46.32 (M)	9.21	-1.07	-1.54
Focus	3	58.67 (H)	13.42	32	45.03 (M)	7.74	13.64	5.68
Futuristic	3	47.67 (M)	5.77	32	46.06 (M)	9.25	1.61	-3.48
Harmony	7	45.57 (M)	7.85	28	46.36 (M)	9.33	-0.79	-1.48
Ideation	9	44.89 (M)	7.23	25	47.32 (M)	9.12	-2.43	-1.89
Includer	3	48.67 (M)	7.37	32	45.97 (M)	9.15	2.70	-1.78
Individualization	2	38.50 (VL)	2.12	33	46.67 (M)	9.00	-8.17	-6.88
Input	10	49.00 (M)	9.59	25	45.08 (M)	8.63	3.92	0.96
Intellection	2	42.50(L)	7.77	33	46.42 (M)	9.08	-3.92	-1.31
Learner	10	47.40 (M)	13.85	25	45.72 (M)	6.39	1.68	7.46
Maximizer	6	43.83 (L)	6.11	29	46.69 (M)	9.45	-2.86	-3.34
Positivity	8	44.75 (M)	7.97	27	46.63 (M)	9.32	-1.88	-1.35
Relator	10	46.70 (M)	7.24	25	46.00 (M)	9.68	0.70	-2.44
Responsibility	8	46.13 (M)	9.56	27	46.22 (M)	8.95	-0.09	0.61
Restorative	4	46.50 (M)	8.06	31	46.14 (M)	9.18	0.36	-1.12
Self-Assurance	5	54.40 (M)	12.36	30	44.83 (M)	7.71	9.57	4.65
Significance	1	35.00 (VL)	0.00	34	46.53 (M)	8.87	-11.53	-8.87
Strategic	9	47.33 (M)	11.89	26	45.81 (M)	7.95	1.52	3.94
Woo	4	42.25 (L)	9.43	31	46.71 (M)	8.92	-4.46	0.51

N = 35

* Based on Strong Interest Inventory

** Based on Clifton Strength Finder

*** GOT respondent scores are compared to those of the same gender in the general representative sample regarding similarity of interest in a particular occupational theme. For males the degree of interest similarity for the CONVENTIONAL theme is reported as Very Little (VL) (score of 27-38), Little (L) (39-44), Moderate (M) (45-57), High (H) (58-63), and Very High (VH) (64-90) (Grutter & Hammer, 2005).

† Positive numbers indicate means or standard deviations were higher when strengths were present; negative numbers indicate means or standard deviations were higher when strengths were not present.

Appendix Table Q.

*Means and Standard Deviations of REALISTIC General Occupational Theme (GOT) * by Strengths** and Female Gender*

Strength	Strength Present			Strength Not Present			Difference ⁺	
	#	Mean	SD	#	Mean	SD	Mean	SD
Achiever	28	48.82 (M)	10.71	98	46.06 (M)	8.77	2.76	1.94
Activator	18	44.39 (M)	7.40	108	47.06 (M)	9.51	-2.67	-2.11
Adaptability	24	48.88 (M)	9.11	102	46.16 (M)	9.26	2.72	-0.15
Analytical	3	48.00 (M)	14.52	123	46.64 (M)	9.18	1.36	5.34
Arranger	8	49.88 (M)	9.62	118	46.46 (M)	9.24	3.42	0.38
Belief	7	46.14 (M)	6.38	119	46.71 (M)	9.42	-0.57	-3.04
Command	6	50.50 (M)	12.21	120	46.48 (M)	9.21	4.02	3.00
Communication	17	44.76 (M)	9.10	109	46.97 (M)	9.12	-2.21	-0.02
Competition	6	47.83 (M)	12.22	120	46.62 (M)	9.15	1.21	3.07
Connectedness	34	46.18 (M)	9.32	92	46.86 (M)	9.28	-0.68	0.04
Consistency	10	46.80 (M)	10.61	116	46.66 (M)	9.19	0.14	1.42
Context	5	45.40 (M)	6.02	121	46.73 (M)	9.38	-1.33	-3.36
Deliberative	7	50.14 (M)	9.24	119	46.47 (M)	9.26	3.67	-0.02
Developer	22	46.77 (M)	8.98	104	46.65 (M)	9.36	0.12	-0.38
Discipline	9	46.22 (M)	8.70	117	46.71 (M)	9.34	-0.49	-0.64
Empathy	41	45.05 (M)	8.44	85	47.46 (M)	9.58	-2.41	-1.14
Focus	12	46.17 (M)	8.24	114	46.73 (M)	9.39	-0.56	-1.15
Futuristic	11	45.00 (M)	10.03	115	46.83 (M)	9.21	-1.83	0.82
Harmony	25	45.12 (M)	9.25	101	47.06 (M)	9.27	-1.94	-0.02
Ideation	19	49.32 (M)	8.92	107	46.21 (M)	9.28	3.11	-0.36
Includer	7	42.43 (M)	8.12	119	46.92 (M)	9.29	-4.49	-1.17
Individualization	23	47.65 (M)	9.63	103	46.46 (M)	9.21	1.19	0.42
Input	41	44.59 (M)	8.97	85	47.68 (M)	9.28	-3.09	-0.31
Intellection	19	44.95 (M)	9.98	107	46.98 (M)	9.14	-2.03	0.84
Learner	26	46.42 (M)	10.38	100	46.74 (M)	9.00	-0.32	1.38
Maximizer	27	48.63 (M)	8.55	99	46.14 (M)	9.41	2.49	-0.86
Positivity	24	46.29 (M)	7.91	102	46.76 (M)	9.58	-0.47	-1.67
Relator	35	48.17 (M)	9.04	91	46.10 (M)	9.33	2.07	-0.29
Responsibility	20	46.80 (M)	9.80	105	46.71 (M)	9.22	0.09	0.58
Restorative	14	44.21 (M)	6.54	112	46.98 (M)	9.52	-2.77	-2.98
Self-Assurance	13	51.92 (M)	11.17	113	46.07 (M)	8.87	5.85	2.30
Significance	2	47.50 (M)	12.01	124	46.66 (M)	9.27	0.84	2.74
Strategic	30	48.17 (M)	9.99	95	46.20 (M)	9.07	1.97	0.92
Woo	30	45.50 (M)	9.77	96	47.04 (M)	9.12	-1.54	0.65

N = 126

* Based on Strong Interest Inventory

** Based on Clifton Strength Finder

*** GOT respondent scores are compared to those of persons of the same gender in the general representative sample regarding similarity of interest in the occupational theme. For females the degree of similarity for REALISTIC theme is indicated as Very Little (VL) (score of 30-34), Little (L) (35-38), Moderate (M) (39-51), High (H) (52-56), and Very High (VH) (57-87) (Grutter & Hammer, 2005).

⁺ Positive numbers indicate means or standard deviations were higher when strengths were present; negative numbers indicate means or standard deviations were higher when strengths were not present.

Appendix Table R.

Means and Standard Deviations of INVESTIGATIVE General Occupational Theme (GOT)
by Strengths** and Female Gender*

Strength	Strength Present			Strength Not Present			Difference ⁺	
	#	Mean	SD	#	Mean	SD	Mean	SD
Achiever	28	49.07 (M)***	8.38	98	46.44 (M)	9.82	2.63	-1.44
Activator	18	45.28 (M)	10.15	108	47.31 (M)	9.46	-2.03	0.69
Adaptability	24	47.33 (M)	9.38	102	46.95 (M)	9.63	0.38	-0.25
Analytical	3	47.67 (M)	8.32	123	47.01 (M)	9.60	0.66	-1.28
Arranger	8	52.13 (M)	10.19	118	46.68 (M)	9.45	5.45	0.74
Belief	7	46.14 (M)	6.38	119	46.71 (M)	9.42	-0.57	-3.04
Command	6	47.50 (M)	9.18	120	47.00 (M)	9.60	0.50	-0.42
Communication	17	43.53 (M)	8.89	109	47.57 (M)	9.57	-4.04	-0.68
Competition	6	46.17 (M)	12.12	120	47.07 (M)	9.46	-0.90	2.66
Connectedness	34	46.18 (M)	9.68	92	47.34 (M)	9.53	-1.16	0.15
Consistency	10	50.60 (M)	6.15	116	46.72 (M)	9.74	3.88	-3.59
Context	5	48.40 (M)	9.91	121	46.97 (M)	9.57	1.43	0.34
Deliberative	7	47.43 (M)	8.03	119	47.00 (M)	9.68	0.43	-1.65
Developer	22	46.64 (M)	9.82	104	47.11 (M)	9.53	-0.47	0.29
Discipline	9	46.56 (M)	6.46	117	47.06 (M)	9.76	-0.50	-3.30
Empathy	41	45.37 (M)	9.81	85	47.82 (M)	9.38	-2.45	0.43
Focus	12	44.33 (M)	7.24	114	47.31 (M)	9.74	-2.98	-2.50
Futuristic	11	46.27 (M)	8.38	115	47.10 (M)	9.68	-0.83	-1.30
Harmony	25	48.00 (M)	8.44	101	46.78 (M)	9.82	1.22	-1.38
Ideation	19	48.68 (M)	9.15	107	46.73 (M)	9.63	1.95	-0.48
Includer	7	47.43 (M)	10.30	119	47.00 (M)	9.55	0.43	0.75
Individualization	23	49.87 (M)	9.47	103	46.39 (M)	9.49	3.48	-0.02
Input	41	47.12 (M)	9.28	85	46.98 (M)	9.73	0.14	-0.45
Intellection	19	46.47 (M)	8.40	107	47.12 (M)	9.77	-0.65	-1.37
Learner	26	48.88 (M)	11.80	100	46.54 (M)	8.88	2.34	2.92
Maximizer	27	46.19 (M)	10.78	99	47.25 (M)	9.23	-1.06	1.55
Positivity	24	46.25 (M)	10.71	102	47.21 (M)	9.30	-0.96	1.41
Relator	35	47.20 (M)	9.74	91	46.96 (M)	9.52	0.24	0.22
Responsibility	20	47.05 (M)	10.33	105	47.11 (M)	9.44	-0.06	0.89
Restorative	14	46.79 (M)	10.85	112	47.05 (M)	9.43	-0.26	1.42
Self-Assurance	13	50.85 (M)	10.77	113	46.58 (M)	9.35	4.27	1.42
Significance	2	51.00 (M)	0.00	124	46.96 (M)	9.61	4.04	-9.61
Strategic	30	47.73 (M)	9.89	95	46.84 (M)	9.52	0.89	0.37
Woo	30	45.17 (M)	10.35	96	47.60 (M)	9.26	-2.43	1.09

N = 126

* Based on Strong Interest Inventory

** Based on Clifton Strength Finder

*** GOT respondent scores are compared to those of persons of the same gender in the general representative sample regarding to similarity of interest in the occupational theme. For females the degree of similarity for the INVESTIGATIVE theme is indicated as Very Little (VL) (score of 26-35), Little (L) (36-41), Moderate (M) (42-56), High (H) (57-62), and Very High (VH) (63-78) (Grutter & Hammer, 2005).

⁺ Positive numbers indicate means or standard deviations were higher when strengths were present; negative numbers indicate means or standard deviations were higher when strengths were not present.

Appendix Table S.

Means and Standard Deviations of ARTISTIC General Occupational Theme (GOT) by Strengths** and Female Gender*

Strength	Strength Present			Strength Present			Difference	
	#	Mean	SD	#	Mean	SD	Mean	SD
Achiever	28	49.07 (M)***	8.38	98	46.44 (M)	9.82	2.63	-1.44
Activator	18	53.50 (M)	9.87	108	55.69 (M)	8.73	-2.19	1.14
Adaptability	24	56.79 (M)	9.52	102	55.04 (M)	8.76	1.75	0.76
Analytical	3	50.67 (M)	13.61	123	55.49 (M)	8.80	-4.82	4.81
Arranger	8	54.38 (M)	7.46	118	55.44 (M)	9.01	-1.06	-1.55
Belief	7	54.57 (M)	6.68	119	55.42 (M)	9.03	-0.85	-2.35
Command	6	55.00 (M)	10.65	120	55.39 (M)	8.85	-0.39	1.80
Communication	17	54.12 (M)	9.25	109	55.57 (M)	8.71	-1.45	0.54
Competition	6	56.17 (M)	11.60	120	55.33 (M)	8.80	0.84	2.80
Connectedness	34	57.59 (M)	8.52	92	54.55 (M)	8.94	3.04	-0.42
Consistency	10	54.20 (M)	8.63	116	55.47 (M)	8.95	-1.27	-0.32
Context	5	47.40 (M)	12.19	121	55.70 (M)	8.64	-8.30	3.55
Deliberative	7	54.71 (M)	6.07	119	55.41 (M)	9.05	-0.70	-2.98
Developer	22	53.64 (M)	8.59	104	55.74 (M)	8.95	-2.10	-0.36
Discipline	9	53.56 (M)	7.03	117	55.51 (M)	9.03	-1.95	-2.00
Empathy	41	56.71 (M)	9.25	85	54.73 (M)	8.70	1.98	0.55
Focus	12	51.00 (M)	9.17	114	55.83 (M)	8.78	-4.83	0.39
Futuristic	11	55.73 (M)	7.53	115	55.34 (M)	9.04	0.39	-1.51
Harmony	25	56.00 (M)	7.52	101	55.22 (M)	9.23	0.78	-1.71
Ideation	19	57.63 (M)	10.44	107	54.97 (M)	8.59	2.66	1.85
Includer	7	57.14 (M)	8.61	119	55.27 (M)	8.94	1.87	-0.33
Individualization	23	56.39 (M)	7.59	103	55.15 (M)	9.18	1.24	-1.59
Input	41	56.66 (M)	8.51	85	54.75 (M)	9.06	1.91	-0.55
Intellection	19	58.63 (M)	8.75	107	54.79 (M)	8.84	3.84	-0.09
Learner	26	54.62 (M)	9.02	100	55.57 (M)	8.90	-0.95	0.12
Maximizer	27	55.52 (M)	9.21	99	55.33 (M)	8.85	0.19	0.36
Positivity	24	55.29 (M)	8.36	102	55.39 (M)	9.06	-0.10	-0.70
Relator	35	54.74 (M)	9.76	91	55.62 (M)	8.58	-0.88	1.18
Responsibility	20	53.75 (M)	9.06	105	55.89 (M)	8.66	-2.14	0.40
Restorative	14	53.50 (M)	10.86	112	55.61 (M)	8.65	-2.11	2.21
Self-Assurance	13	54.08 (M)	7.48	113	55.52 (M)	9.06	-1.44	-1.58
Significance	2	42.50 (L)	12.02	124	55.58 (M)	8.75	-13.08	3.27
Strategic	30	57.13 (M)	8.52	95	54.79 (M)	9.02	2.34	-0.50
Woo	30	54.20 (M)	9.11	96	55.74 (M)	8.84	-1.54	0.27

N = 126

* Based on Strong Interest Inventory

** Based on Clifton Strength Finder

*** GOT respondent scores are compared to those of the same gender in the general representative sample regarding similarity of interest in a particular occupational theme. For females the degree of interest similarity for the ARTISTIC theme is reported as Very Little (VL) (score of 26-37), Little (L) (38-44), Moderate (M) (45-59), High (H) (60-64), and Very High (VH) (65-76) (Grutter & Hammer, 2005).

Note: Regarding differences, positive number indicates mean and standard deviation were higher when strength was present; negative number indicates mean and standard deviation were higher when strength was not present.

Appendix Table T.

Means and Standard Deviations of SOCIAL General Occupational Theme (GOT) by Strengths** and Female Gender*

Strength	Strength Present			Strength Not Present			Difference+	
	#	Mean	SD	#	Mean	SD	Mean	SD
Achiever	28	59.89 (M)***	8.16	98	59.90 (M)	8.54	-0.01	-0.38
Activator	18	53.50 (M)	9.87	108	55.69 (M)	8.73	-2.19	1.14
Adaptability	24	59.76 (M)	8.34	102	60.00 (H)	8.48	-0.24	-0.14
Analytical	3	51.00 (M)	4.35	123	60.11 (H)	8.39	-9.11	-4.04
Arranger	8	64.00 (H)	8.10	118	59.82 (M)	8.41	4.18	-0.31
Belief	7	64.71 (H)	5.18	119	59.61 (M)	8.51	5.10	-3.33
Command	6	54.83 (M)	8.93	120	60.15 (H)	8.36	-5.32	0.57
Communication	17	60.24 (H)	6.65	109	59.84 (M)	8.69	0.40	-2.04
Competition	6	66.17 (VH)	5.30	120	59.58 (M)	8.44	6.59	-3.14
Connectedness	34	59.97 (M)	8.52	92	59.87 (M)	8.44	0.10	0.08
Consistency	10	62.80 (H)	7.87	116	59.65 (M)	8.46	3.15	-0.59
Context	5	53.40 (M)	10.38	121	60.17 (H)	8.28	-6.77	2.10
Deliberative	7	56.00 (M)	8.56	119	60.13 (H)	8.40	-4.13	0.16
Developer	22	61.55 (H)	7.27	104	59.55 (M)	8.64	2.00	-1.37
Discipline	9	63.00 (H)	5.78	117	59.66 (M)	8.57	3.34	-2.79
Empathy	41	61.15 (H)	7.28	85	59.59 (M)	8.90	1.56	-1.62
Focus	12	57.50 (M)	7.09	114	60.15 (H)	8.54	-2.65	-1.45
Futuristic	11	60.91 (H)	7.80	115	59.80 (M)	8.51	1.11	-0.71
Harmony	25	62.04 (H)	7.50	101	59.37 (M)	8.59	2.67	-1.09
Ideation	19	58.11 (M)	11.20	107	60.21 (H)	7.86	-2.10	3.34
Includer	7	61.14 (H)	11.56	119	59.82 (M)	8.26	1.32	3.30
Individualization	23	58.43 (M)	9.50	103	60.22 (H)	8.18	-1.79	1.32
Input	41	58.88 (M)	8.31	85	60.39 (H)	8.49	-1.51	-0.18
Intellection	19	58.16 (M)	8.63	107	60.21 (H)	8.39	-2.05	0.24
Learner	26	58.65 (M)	8.19	100	60.22 (H)	8.49	-1.57	-0.30
Maximizer	27	61.52 (H)	8.19	99	59.45 (M)	8.48	2.07	-0.29
Positivity	24	61.50 (H)	8.89	102	59.52 (M)	8.31	1.98	0.58
Relator	35	60.26 (H)	9.34	91	59.76 (M)	8.10	0.50	1.24
Responsibility	20	59.55 (M)	10.50	105	60.04 (H)	8.03	-0.49	2.47
Restorative	14	55.50 (M)	9.28	112	60.45 (H)	8.19	-4.95	1.09
Self-Assurance	13	60.69 (H)	9.23	113	59.81 (M)	8.37	0.88	0.86
Significance	2	57.00 (M)	2.82	124	59.84 (M)	8.46	-2.84	-5.64
Strategic	30	58.93 (M)	8.72	95	60.19 (H)	8.40	-1.26	0.32
Woo	30	61.30 (H)	7.09	96	59.46 (M)	8.79	1.84	-1.70

N = 126

* Based on Strong Interest Inventory

** Based on Clifton Strength Finder

*** GOT respondent scores are compared to those of the same gender in the general representative sample regarding similarity of interest in a particular occupational theme. For females the degree of interest similarity for the SOCIAL theme is reported as Very Little (VL) (score of 23-39), Little (L) (40-46), Moderate (M) (47-59), High (H) (60-65), and Very High (VH) (66-83) (Grutter & Hammer, 2005).

+ Positive numbers indicate means or standard deviations were higher when strengths were present; negative numbers indicate means or standard deviations were higher when strengths were not present.

Appendix Table U.

Means and Standard Deviations of ENTERPRISING General Occupational Theme (GOT) by Strengths** and Female Gender*

Strength	Strength Present			Strength Not Present			Difference	
	#	Mean	SD	#	Mean	SD	Mean	SD
Achiever	28	53.71(M)**	11.65	98	49.68 (M)	9.04	4.03	2.61
Activator	18	51.12 (M)	7.68	108	50.50 (M)	10.10	0.62	-2.42
Adaptability	24	50.88 (M)	9.06	102	50.51 (M)	9.99	0.37	-0.93
Analytical	3	48.67 (M)	9.50	123	50.63 (M)	9.82	-1.96	-0.32
Arranger	8	54.00 (M)	11.33	118	50.35 (M)	9.68	3.65	1.65
Belief	7	56.86 (M)	13.59	119	50.21 (M)	9.46	6.65	4.13
Command	6	50.00 (M)	8.80	120	50.61 (M)	9.86	-0.61	-1.06
Communication	17	52.35 (M)	9.95	109	50.31 (M)	9.77	2.04	0.18
Competition	6	62.50 (H)	11.36	120	49.98 (M)	9.36	12.52	2.00
Connectedness	34	49.65 (M)	9.26	92	50.93 (M)	10.00	-1.28	-0.74
Consistency	10	48.80 (M)	6.47	116	50.74 (M)	10.02	-1.94	-3.55
Context	5	49.00 (M)	8.74	121	50.65 (M)	9.85	-1.65	-1.11
Deliberative	7	57.86 (H)	9.19	119	50.15 (M)	9.68	7.71	-0.49
Developer	22	45.73 (M)	7.38	104	51.62 (M)	9.95	-5.89	-2.57
Discipline	9	55.00 (M)	8.83	117	50.24 (M)	9.80	4.76	-0.97
Empathy	40	48.98 (M)	8.05	85	51.34 (M)	10.46	-2.36	-2.41
Focus	12	46.50 (M)	11.22	114	51.02 (M)	9.57	-4.52	1.65
Futuristic	11	54.45 (M)	10.74	115	50.21 (M)	9.65	4.24	1.09
Harmony	25	49.00 (M)	8.13	100	50.98 (M)	10.15	-1.98	-2.02
Ideation	19	52.42 (M)	7.58	107	50.25 (M)	10.12	2.17	-2.54
Includer	7	56.43 (M)	11.25	119	50.24 (M)	9.63	6.19	1.62
Individualization	23	52.83 (M)	10.37	103	50.08 (M)	9.63	2.75	0.74
Input	41	47.12 (M)	9.40	85	52.27 (M)	9.57	-5.15	-0.17
Intellection	19	47.68 (M)	9.63	107	51.10 (M)	9.76	-3.42	-0.13
Learner	26	48.62 (M)	7.66	100	51.10 (M)	10.24	-2.48	-2.58
Maximizer	27	51.19 (M)	7.84	99	50.42 (M)	10.28	0.77	-2.44
Positivity	23	49.83 (M)	10.84	102	50.75 (M)	9.58	-0.92	1.26
Relator	35	48.86 (M)	10.12	91	51.26 (M)	9.62	-2.40	0.50
Responsibility	20	48.40 (M)	11.42	105	51.00 (M)	9.49	-2.60	1.93
Restorative	14	46.50 (M)	9.50	112	51.10 (M)	9.74	-4.60	-0.24
Self-Assurance	13	55.00 (M)	11.89	113	50.07 (M)	9.44	4.93	2.45
Significance	2	54.00 (M)	7.07	123	50.53 (M)	9.83	3.47	-2.76
Strategic	30	53.57 (M)	9.69	94	49.55 (M)	9.69	4.02	0.00
Woo	29	53.62 (M)	9.04	96	49.67 (M)	9.86	3.95	-0.82

N = 126

* Based on Strong Interest Inventory

+ Strength was present

*** GOT respondent scores are compared to those of the same gender in the general representative sample regarding similarity of interest in a particular occupational theme. For females the degree of interest similarity for the *ENTERPRISING* theme is reported as Very Little (VL) (score of 21-37), Little (L) (38-42), Moderate (M) (43-56), High (H) (57-62), and Very High (VH) (63-80) (Grutter & Hammer, 2005).

Note: Regarding differences, positive number indicates mean and standard deviation were higher when strength was present; negative number indicates mean and standard deviation were higher when strength was not present.

Appendix Table V.

Means and Standard Deviations of CONVENTIONAL General Occupational Theme (GOT) by Strengths** and Female Gender*

Strength	Strength Present			Strength Not Present			Difference+	
	#	Mean	SD	#	Mean	SD	Mean	SD
Achiever	28	46.25 (M)***	9.37	98	45.53 (M)	9.11	0.72	0.26
Activator	18	46.06 (M)	9.13	108	45.63 (M)	9.18	0.43	-0.05
Adaptability	24	47.54 (M)	9.02	102	45.25 (M)	9.57	2.29	-0.55
Analytical	3	47.67 (M)	10.26	123	45.64 (M)	9.15	2.03	1.11
Arranger	8	45.75 (M)	9.76	118	45.69 (M)	9.14	0.06	0.62
Belief	7	48.43 (M)	8.56	119	45.53 (M)	9.18	2.90	-0.62
Command	6	52.50 (M)	9.39	120	45.35 (M)	9.03	7.15	0.36
Communication	17	47.12 (M)	10.48	109	45.47 (M)	8.94	1.65	1.54
Competition	6	47.33 (M)	9.66	120	45.61 (M)	9.14	1.72	0.52
Connectedness	34	46.74 (M)	8.46	92	45.30 (M)	9.39	1.44	-0.93
Consistency	10	51.60 (M)	7.84	116	45.18 (M)	9.09	6.42	-1.25
Context	5	48.60 (M)	13.46	121	45.57 (M)	8.97	3.03	4.49
Deliberative	7	51.29 (M)	6.80	119	45.36 (M)	9.17	5.93	-2.37
Developer	22	46.36 (M)	10.07	104	45.55 (M)	8.97	0.81	1.10
Discipline	9	51.33 (M)	9.30	117	45.26 (M)	9.02	6.07	0.28
Empathy	41	45.46 (M)	9.25	85	45.80 (M)	9.13	-0.34	0.12
Focus	12	42.00 (L)	9.54	114	46.08 (M)	9.05	-4.08	0.49
Futuristic	11	47.18 (M)	9.50	115	45.55 (M)	9.13	1.63	0.37
Harmony	25	47.80 (M)	8.35	101	45.17 (M)	9.29	2.63	-0.94
Ideation	19	42.95 (L)	8.97	107	46.18 (M)	9.12	-3.23	-0.15
Includer	7	47.86 (M)	8.43	119	45.56 (M)	9.19	2.30	-0.76
Individualization	23	47.57 (M)	7.54	103	45.27 (M)	9.44	2.30	-1.90
Input	41	43.34 (M)	7.81	85	46.82 (M)	9.55	-3.48	-1.74
Intellection	19	43.58 (M)	7.49	107	46.07 (M)	9.38	-2.49	-1.89
Learner	26	45.62 (M)	9.10	100	45.71 (M)	9.19	-0.09	-0.09
Maximizer	27	43.44 (M)	6.79	99	46.30 (M)	9.62	-2.86	-2.83
Positivity	24	44.25 (M)	9.72	102	46.03 (M)	9.01	-1.78	0.71
Relator	35	43.40 (M)	9.16	91	46.57 (M)	9.02	-3.17	0.14
Responsibility	20	46.95 (M)	10.77	105	45.44 (M)	8.87	1.51	1.90
Restorative	14	41.93 (M)	9.65	112	46.16 (M)	9.01	-4.23	0.64
Self-Assurance	13	45.77 (M)	10.10	113	45.68 (M)	9.07	0.09	1.03
Significance	2	49.50 (M)	9.19	124	45.63 (M)	9.16	3.87	0.03
Strategic	30	45.53 (M)	9.86	95	45.74 (M)	9.00	-0.21	0.86
Woo	30	45.10 (M)	9.86	96	45.88 (M)	8.94	-0.78	0.92

N = 126

* Based on Strong Interest Inventory

** Based on Clifton Strength Finder

*** GOT respondent scores are compared to those of the same gender in the general representative sample regarding similarity of interest in a particular occupational theme. For females the degree of interest similarity for the CONVENTIONAL theme is reported as Very Little (VL) (score of 27-35), Little (L) (36-42), Moderate (M) (43-57), High (H) (58-64), and Very High (VH) (65-90) (Grutter & Hammer, 2005).

+ Positive numbers indicate means or standard deviations were higher when strengths were present; negative numbers indicate means or standard deviations were higher when strengths were not present.

Appendix Table W.

Dimensions of Myers Briggs Type Indicator (MBTI) Domains and Traits

Domain and Trait	Description
ENERGIZING:	Orientation through which one takes in energy. Described by Extravert (E) and Introvert (I) personality traits.
Extravert (E)	Energy and attention directed outwardly. An eagerness to interact with the outer world; an action-oriented, sometimes impulsive way of meeting life; openness to new experiences; ease of communication and sociability; and a desire to “talk things out.”
Introvert (I)	Energy and attention drawn inward. Reliance on enduring concepts and experiences more than on transitory external events of fleeting ideas; a thoughtful, contemplative detachment; an enjoyment of solitude and privacy; and a desire to “think things out” before talking about them.
ATTENDING:	Orientation through which one takes in information. Described by Sensing (S) and Intuition (N) personality traits.
Sensing (S)	Takes in information through senses; as such focus is on immediate experience, what is present, realism, and practicality. Has acute powers of observation and memory for details of both past and present experiences.
Intuition (N)	Considers possibilities, meanings, and relationships by way of insight, discovering patterns in seemingly unrelated events. Perception goes beyond what is visible to senses to include possible future events. Tends to be imaginative, theoretical, abstract, future oriented, original, and creative.
DECIDING :	Orientation through which one makes decisions. Described by Thinking (T) and Feeling (F) personality traits.
Thinking (T)	Decisions are made through focus on logic, impartiality, and neutrality. Attention is given to cause and effect, justice, fairness, criticality, impassive dispassionate demeanor, and orientation to time that is linear.
Feeling (F)	Weighs decisions based on values and merits of issues. Relies on an understanding of personal and group values; thus is more subjective than Thinking. Has a desire for affiliation, warmth, and harmony, with a time orientation that includes preservation of enduring values.
LIVING:	Orientation to interaction with outer world. Described by Judging (J) and Perceiving (P) personality traits.
Judging (J)	Concerned with making decisions, seeking closure, planning operations, or organizing events. Likes world to be organized, purposeful, and decisive.
Perceiving (P)	Concerned with incoming information, to receive it as long as possible in an effort to miss nothing that might be important. Described as curious, spontaneous, adaptable, and open to what is new and changeable.

Source: Myers, McCaulley, Quenk, & Hammer (2003)

Appendix Table X.

Dimensions of Myers Briggs Type Indicator (MBTI) Mental and Attitude Functions

Mental Function:	Combination of personality traits from the Attending and Deciding domains
Sensing-Thinking (ST) <i>Practical and Matter-of-Fact</i>	Interested in facts that can be collected by the senses. Uses objective analysis when making decisions. Interested in facts about things.
Sensing-Feeling (SF) <i>Sympathetic and Friendly</i>	Mainly interested in facts that can gather directly through senses but approaches decisions with subjectivity based on personal value system. Interested in facts about people.
Intuitive-Thinking (NT) <i>Logical and Ingenious</i>	Interested in possibilities, theoretical relationships, and abstract patterns but judges these from non-personal, cause-and-effect perspective. Best in solving problems that are technical, scientific, theoretical, or executive.
Intuitive-Feeling (NF) <i>Enthusiastic and Insightful</i>	Interested in possibilities and patterns in terms of human relationships such as complexity of communication, symbolic meanings, and patterns underlying immediate facts. Gifted in written and spoken communication especially in expressing possibilities and values attached to these.
Attitude Function:	Combination of personality traits from the Energizing and Living domains.
Extravert-Judging (EJ) <i>Decisive Extraverts</i>	Fast moving, decisive, and confident looking; enjoys making decisions and getting things done.
Extravert-Perceiving (EP) <i>Adaptable Extraverts</i>	Active, energetic, and social; often seeing new experiences. Optimistic about what outer world has to offer and ability to interact with it in a satisfying way.
Introvert-Judging (IJ) <i>Decisive Introverts</i>	Introspective, persevering, and hard to convince or change unless compelling data are provided.
Introvert-Perceiving (IP) <i>Adaptable Introverts</i>	Introspective, adaptable in little things, and firm on important issues. Can appear as intractable and resistant to change but willing to do so if reasons are compelling.

Source: Myers, McCaulley, Quenk, & Hammer (2003)

Appendix Table Y.

Dimensions of Myers Briggs Type Indicator (MBTI) Types

ISTJ <i>Salt of the Earth</i>	Quiet, serious, earns success by thoroughness and dependability. Practical, matter-of fact, realistic, and responsible. Decides logically what should be done. Takes pleasure in making everything organized. Values traditions and loyalty.
ISTP <i>Walking Encyclopedia</i>	Tolerant and flexible, quiet observer until problem appears, then acts quickly to find workable solutions. Analyzes what makes things work and readily gets through large amounts of data to isolate the core of practical problems. Interested in cause and effect. Values efficiency.
ESTP <i>Self-Starter</i>	Flexible and tolerant, takes a pragmatic approach focused on immediate results. Considers theories and conceptual explanations boring—wants to act energetically to solve the problem. Focuses on here-and-now, spontaneous, enjoys each moment when active with others. Enjoys material comforts and style. Learns best through doing.
ESTJ <i>Take-Charge Leader</i>	Practical, realistic, matter-of-fact. Decisive, quickly moves to implement decisions. Organizes projects and people to get things done, focuses on getting results in the most efficient way possible. Takes care of routine details. Has a clear set of logical standards, systematically follows them and wants other to as well. Forceful in implementing plans.
ISFJ <i>Behind-the-Scenes Leader</i>	Quiet, friendly, responsible, and conscientious. Committed and steady in meeting obligations. Thorough, painstaking, and accurate. Loyal, considerate, notices and remembers specifics about people who are important to them. Concerned with how others feel. Strives to create an orderly and harmonious environment at work and at home.
ISFP <i>Gentle Spirit</i>	Quiet, friendly, sensitive, and kind. Enjoys the present moment, what's going on in surroundings. Likes to have own space and to work within own time frame. Loyal and committed to personal values and to people who are important to them. Dislikes disagreements and conflicts, does not force opinions or values on others.
ESFP <i>Everyone's Friend</i>	Outgoing, friendly, and accepting. Exuberant lover of life, people, and material comforts. Enjoys working with others to make things happen. Brings common sense and a realistic approach to work, and makes work fun. Flexible and spontaneous, adapts readily to new people and environment. Learns best by trying a new skill with other people.
ESFJ <i>Servant Leader</i>	Warmhearted, conscientious, and cooperative. Wants harmony, works with determination to establish it. Likes to work with others to complete tasks accurately and on time. Loyal, follows through even in small matters. Notices what others need in their day-by-day lives and tries to provide it. Wants to be appreciated for who they are and for what they contribute.
INFJ <i>Oracle for People</i>	Seeks meaning and connection in ideas, relationships and material possessions. Wants to understand what motivates people and is insightful about others. Conscientious and committed to firm personal values. Develops a clear vision about how best to serve the common good. Organized and decisive in implementing personal vision.
INFP <i>Values Crusader</i>	Idealistic, loyal to personal values and to people who are important to them. Wants an external life that is congruent with personal values. Curious, quick to see possibilities, can be catalyst for implementing ideas. Seeks to understand people and to help them fulfill their potential. Adaptable, flexible and accepting unless a value is threatened.
ENFP <i>Spark of Energy</i>	Warmly enthusiastic and imaginative. Sees life as full of possibilities. Makes connections between events and information very quickly, and confidently proceeds based on observed patterns. Wants a lot of affirmation from others, and readily gives appreciation and support. Spontaneous and flexible, often relies on ability to improvise and verbal fluency.

Appendix Table Y.

Dimensions of Myers Briggs Type Indicator (MBTI) Types (continued)

ENFJ <i>Values</i> <i>Spokesperson</i>	Warm, empathetic, and responsible. Highly attuned to the emotions, needs, and motivation of others. Finds potential in everyone, wants to help others fulfill their potential. May act as catalyst for individual and group growth. Loyal, responsive to praise and criticism. Sociable, facilitates others in a group, and provides inspiring leadership.
INTJ <i>Designer of the</i> <i>Future</i>	Has original mind and great drive for implementing ideas and achieving goals. Quickly sees patterns in external events and develops long-range explanatory perspectives. When committed, organizes a job and carries it through. Skeptical and independent, has high standards of competence and performance—for self and others.
INTP <i>Blueprinter of</i> <i>Ideas</i>	Seeks to develop logical explanations for everything of interest. Theoretical and abstract, interested more in ideas than in social interaction. Quiet, contained, flexible, and adaptable, Has unusual ability to focus in depth to solve problems in area of interest. Skeptical, sometimes critical, always analytical.
ENTJ <i>Grand-Scale</i> <i>Organizer</i>	Frank, decisive, assumes leadership readily. Quickly sees illogical and inefficient procedures and policies, develops and implements comprehensive systems to solve organizational problems. Enjoys long-term planning and goal setting. Usually well informed, well read, enjoys expanding knowledge and passing it onto others. Forceful in presenting ideas.
ENTP <i>Classic</i> <i>Entrepreneur</i>	Quick, ingenious, stimulating, alert, and outspoken. Resourceful in solving new and challenging problems. Adept at generating conceptual possibilities and then analyzing them strategically. Good at reading other people. Bored by routine, will seldom do the same thing in the same way, apt to turn to one new interest after another.

Sources: Myers, McCaulley, Quenk, & Hammer (2003) and Hirsh & Kise (2000)

Appendix Table Z.

Dimensions of Strong Interest Inventory (SII) General Occupational Themes (GOT)

Realistic	Prefers outdoors and working with tools; prefers action, concrete problems, higher risk-taking; values tradition, common sense.
Investigative	Prefers academic/scientific ideas, data, things, working alone, gathering and analyzing new data and theories; values curiosity.
Artistic	Focuses on self-expression, aesthetics, and art; values originality, independence, imagination, and beauty.
Social	Prefers working with individuals and groups; helping, caring, and nurturing others; teaching; values solving problems through feelings and interaction with others.
Enterprising	Prefers persuading, managing, and selling; motivating and directing; values risk-taking, competition.
Conventional	Prefers organizing, detail, accuracy, math, data, and management; works well in large corporations; values stability.

Source: Donnay, Morris, Schaubhut, & Thompson (2005)

Appendix Table AA.

Dimensions of Clifton StrengthsFinder Strengths

Achiever	Has great stamina and works hard, takes satisfaction from being busy and productive.
Activator	Can make things happen by turning thoughts into action, often impatient.
Adaptability	Prefers to “go with the flow”, tends to be “now” person who take things as they come and discovers the future one day at a time.
Analytical	Searches for reasons and causes, has the ability to think about all the factors that might affect a situation.
Arranger	Can organize but also has flexibility that complements this ability; likes to figure out how all of the pieces and resources can be arranged for maximum productivity.
Belief	Has certain core values that are unchanging; out of these values emerges a defined purpose for life.
Command	Has presence; can take control of a situation and make decisions.
Communication	Finds it easy to put thoughts into words; good conversationalist and presenter.
Competition	Measures progress against the performance of others; strives to win first place and revels in contests.
Connectedness	Has faith in the link between all things; believes there are few coincidences and that almost every event has a reason.
Consistency	Keenly aware of the need to treat people the same; does this by setting up clear rules and adhering to them.
Context	Enjoys thinking about the past; understands the present by researching its history.
Deliberative	Takes serious care in making decisions or choices, anticipates obstacles.
Developer	Recognizes and cultivates the potential in others; spots the signs of each small improvement and derives satisfaction from these improvements.
Discipline	Enjoys routine and structure; work is best described by the order they create.
Empathy	Senses the feelings of other people by imagining self in other’s lives or other’s situations.
Focus	Takes a direction, follows through, and makes the connections necessary to stay on track; prioritizes and then acts.
Futuristic	Inspired by the future and what could be; inspires others with personal vision of the future.

Appendix Table AA.

Dimensions of Clifton StrengthsFinder Strengths (continued)

Harmony	Looks for consensus, does not enjoy conflict; rather seeks areas of agreement.
Ideation	Fascinated by ideas, able to find connections between seemingly disparate phenomena.
Includer	Accepting of others; shows awareness of those who feel left out, makes an effort to include them.
Individualization	Intrigued with the unique qualities of each person, has a gift for figuring out how people who are different can work together productively.
Input	Has a craving to know more, often likes to collect and archive all kinds of information.
Intellection	Characterized by intellectual activity; introspective and appreciates intellectual discussions.
Learner	Has a great desire to learn and wants to continuously improve; focuses on process of learning, rather than the outcome.
Maximizer	Focuses on strengths as a way to stimulate personal and group excellence; seeks to transform something strong into something superb.
Positivity	Has enthusiasm that is contagious; upbeat and gets others excited about what they are going to do.
Relator	Enjoys close relationships with others; finds deep satisfaction in working hard with friends to achieve a goal.
Responsibility	Takes psychological ownership of what they say they will do; committed to stable values such as honesty and loyalty.
Restorative	Adept at dealing with problems; good at figuring out what is wrong and resolving it.
Self-Assurance	Feels confident in ability to manage own life; possesses an inner compass that gives confidence that decisions are right.
Significance	Wants to be very important in the eyes of others; independent and wants to be recognized.
Strategic	Creates alternative ways to proceed; faced with any given scenario, can quickly spot the relevant patterns and issues.
Woo	Loves the challenge of meeting new people and winning them over; derives satisfaction from breaking the ice and making a connection with another person.

Source: Clifton & Anderson (2004)

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