Contextual Influences on Career Values

by

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BSc., University of Alberta, 1976
M.Ed,, University of Alberta, 1991

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Supervisory Committee

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Abstract

Career development theory has traditionally focused mainly on career decision-making and work behaviors and patterns, rather than psychological reasons for working. Blustein (2006) has stepped in to close this gap by providing a taxonomy of three core psychological functions of work: work as a means of survival and power, social connection, and self-determination. Blustein proposes these functions of work are influenced by contextual variables such as access to resources and opportunities.

Although it is impossible to measure and define all circumstantial influences that affect core work functions, it is possible to explore how contextual variables, such as age, gender, education, and personality type, affect objectives sought through work, measured as career values. In the current study, secondary data analysis was conducted on data collected from on-line participants who had completed the Career Values Scale (CVS). Three principal components, conceptually aligned to Blustein's three core functions of work, were extracted from the CVS: Self-Expression, Extrinsic Rewards, and Working with Others. A series of Analysis of Variance (ANOVA) tests were conducted on these component scores to test hypotheses about how work objectives were influenced by the contextual variables of age, gender, education, and personality type.

Age, gender, and education differences accounted for a small, but significant amount of the variance in the career values component scores. Differences in personality type preferences accounted for a greater amount of the variance in the component scores, emphasizing the need to look at personal characteristics as well as contextual variables when considering reasons for working.

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CHAPTER 1: INTRODUCTION TO THE STUDY

Work takes up a significant portion of our adult lives. Considerable effort has been directed toward understanding career decision making and work behaviors and patterns, yet many career development theories do not provide a comprehensive explanation of reasons why people engage in work and what people hope to accomplish by being involved in work (Blustein, 2006). There are various reasons why people work and yet little integration and analysis of the relative importance of different reasons for working, especially research linking reasons for working to contextual variables such as age, gender, education, or personality type.

Recently, David Blustein (2006) created a theoretical model to provide a pragmatic, socially just framework for understanding and studying the psychological functions of work. By integrating multiple perspectives on work motivation from vocational psychology, career counselling, and industrial/organizational psychology, Blustein proposed a taxonomy of three core psychological functions that work may serve to fulfill. These functions include work as a means for survival and power, work as a means of social connection, and work as a means of self-determination. His taxonomy provides a framework for understanding why people work and for exploring how contextual variables may influence people's reasons for working.

Donald Super (1995) also believed that people seek to meet basic human needs through involvement in work, and sought to measure what people want to accomplish through involvement in work by utilizing the construct of career, or work, values. In his theory and research, career values are a construct operationally defined as goals or objectives sought through engagement in work (Macnab, Bakker, & Fitzsimmons, 2005;

Super & Sverko, 1995). These goals or objectives are assumed to represent an individual's attempt to meet his or her psychological or physical needs (Dose, 1997; Super & Sverko, 1995). Super's theory has been elaborated by Mark Savickas in a postmodern career development theory known as Career Construction Theory (2002).

The taxonomy of core work functions and the construct of career values were developed at different times within different career development theories, yet both theoretical concepts help theorists and practitioners understand why people work and what is important for them to achieve through their involvement in work. Since career values are measurable, they provide an indirect, yet concrete, way to research the core functions of work proposed by Blustein.

Blustein (2006) emphasizes there is a wide range of life circumstances that affect reasons why people work. He believes most career development theory has not placed sufficient emphasis on understanding how the lives of people in diverse situations may influence which core work functions are of greatest importance. He notes that career development theory has emphasized the role of work in the lives of the privileged, rather than the realities of all workers, many of who are struggling for survival.

Although it is impossible to completely measure and define all circumstantial influences that may affect core work functions, it is possible to explore how personal and contextual variables such as age, gender, education, and personality type affect objectives sought through work, measured as career values. Analyzing how objectives sought from work differ across these variables will help build understanding of how the circumstances of people's lives link to their reasons for working.

Objective of the Study

In order to explore the influence of contextual variables on career values, secondary data analysis was conducted on a database of results collected from participants who had completed the Career Values Scale (CVS). The CVS measures three groups of career values: Self-Expression, Extrinsic Rewards, and Working with Others. A series of Analysis of Variance (ANOVA) tests were conducted on these three groups of CVS career values to test hypotheses about how the career values were influenced by contextual variables. Age, gender, education, and personality type were the independent variables in these analyses.

Importance of the Study

Career values are thought to be important considerations in career decision-making and development theory, yet there is little research linking how career values might operate within the theoretical frameworks of career development theory. At the same time, career development theory has focused mainly on career decision-making and work behaviors and patterns, rather than psychological reasons for working. Postmodern career development theorists seek to understand how individuals ascribe meaning to their career paths (Savickas, 2002; Young & Valach, 2004). These theorists situate career decision-making and work behaviors within a broad, individualized context that considers the influence of personal characteristics, age, gender, and physical, cultural, and social environments (Savickas, 2002).

Exploring links between and possibly aligning the constructs of career values and core work functions provides additional information to build the theoretical framework for understanding the meaning and importance of work. Finding

relationships, between career values and contextual variables thought to influence reasons for working may help build a better understanding of the core functions that work may fulfill. Understanding how age, gender, education, and personality type link to career values will also provide useful information for career counselling and human resources management.

CHAPTER 2: REVIEW OF RELEVANT LITERATURE

This chapter begins with a description of the theoretical frameworks used within the study. Theoretical connections and previous research findings linking career values, work functions, and contextual variables that may influence work involvement are then described. The contextual variables included in the discussion are age, gender, education, and personality type.

Although there is considerable debate in the theoretical literature about the distinctions between work and career, for the purposes of this study, these terms will be used interchangeably to describe involvement in activities that generate income. This decision was made because the terms work values and career values are often used interchangeably in the literature studied for the current research. To make a specific distinction between the terms for the purpose of this study may create confusion and be inconsistent with the ways these terms are used in the literature.

Theoretical Framework for the Study

This research has been conducted within the postmodern, theoretical perspective of career construction. Postmodern career construction theorists propose career development is an ongoing, fluid, process of making meaning from personal and social context (Young & Valach, 2004). Yet, postmodern career development theorists also acknowledge the existence and importance of identifying and finding outlets for personal characteristics, a tenet of traditional *trait and factor* theory (Savickas, 2002). Because career construction theorists incorporate aspects of *trait and factor* theory, the next section of this chapter includes a description of both traditional and postmodern

career development theory. The chapter also includes a description of Savickas' theory of Career Construction and Blustein's taxonomy of core work functions.

Traditional Career Development Theory

Modern career development theory started over a hundred years ago when Frank Parsons, the founder of career development theory, asserted that wise choice of a vocation required consideration of three factors: understanding of personal attributes, knowledge of work, and reasoning about the relationship between self and work (Brown, 2002). Parsons' theory is now described as the first *trait and factor* theory, an approach that continues to dominate career development theory a hundred years later (Brown, 2002).

The underlying assumption of the *trait and factor* approach is that personal characteristics influence and guide career choice. This idea still remains key to many current theories of career development as, during the past hundred years, many theorists have discussed the importance of recognizing, describing, defining, and assessing personal attributes such as personality, values, and interests (Patton & McMahon, 2006). When these attributes are incorporated as data into the career planning process, people can identify suitable careers to mesh with their personality and meet their needs, values, and interests.

Trait and factor theorists assume that finding a good match between attributes and work options results in a good career choice (Herr, Cramer, & Niles, 2004). In trait and factor theories, personality, values, and interests have historically been conceptualized as traits or attributes that are relatively stable across the life span and career choice is seen as a static, point in time event (Patton & McMahon, 2006). These

early theories assumed that once one found a good match between self and work, the typical course of events was staying in and building on a stable enduring career path.

Postmodern Career Development Theory

More recent career development theory acknowledges career decision-making is not a single-point-in-time event because individuals are dynamic and engaged in different roles and situations throughout their lives (Blustein, 1997). Littleton, Arthur, and Rousseau (2000) use the term "boundaryless" career to describe the non-linear, changing, uncertain nature of career paths in our modern society. As well, theorists have begun to place significantly more emphasis on the context of career development, considering social, environmental, developmental, and cultural variables when formulating career development theories (Collin & Young, 2000).

Super (1953, 1957, 1980, 1990) was one of the first theorists to assert that career development is not static. He developed what is now known as the life-span life-space theory of career development (Blustein, 1997). Life-span, in Super's theory, refers to the process of development and life-space refers to the situational and societal roles affecting an individual. In his theory Super postulated that career development is a complex, dynamic process involving changes in priorities and focus across a lifetime as people move in and out of life roles and seek to accomplish different life and career developmental tasks.

By placing careers into the context of the life cycle, Super took a broad, lifelong, integrative approach to career development. One of the first theorists to espouse what is now known as a constructivist life-career development approach, Super asserted that an individual's career and life decisions occur within, and are affected by, broader life and

situational contexts (Super, 1980; Savickas, 2002). Now several career theorists espouse the view that career development is dynamic and contextual (Betz, 2005; Blustein, 2006; Lent, Brown & Hackett, 2000; Young & Collin, 2004).

Career Construction Theory

Mark Savickas (2002, 2005), a postmodern career development theorist, has advanced Super's theory to make it relevant to our current multicultural, global, changing society. His theory, known as Career Construction theory, incorporates concepts from *trait and factor* theory within a dynamic postmodernist perspective. Savickas proposes individual trait differences are one of three important segments of career theory. He adds psychodynamic motivation and developmental tasks and strategies as the other two key segments in career development. These additional segments add an adaptive, meaning-constructing dynamic to career development theory.

Savickas (2002) conceptualizes a vocational personality composed of abilities, needs, values, and interests. He proposes that individuals interpret information about their characteristics to create a vocational self-concept that becomes relatively stable by late adolescence. This stability helps provide continuity during a person's career. However, he also proposes vocational preferences, which make up the vocational personality, do change during the course of a lifetime as individuals adapt in response to changing work and life situations.

Savickas argues that the objective application of using personal traits to find a job match needs to be augmented by a subjective personal experience of making meaning from situations. This personal perspective helps people become more adaptable and to uncover life themes and find purpose to guide career behaviors. Savickas' theory

places significant emphasis on adapting to the environment and being actively engaged in the process of creating one's career. Although Savickas does not directly discuss the role of career values in this process, a self-assessment of objectives one seeks from involvement in work would likely help an individual become engaged in the process of creating a meaningful career.

Blustein's core work functions

Blustein (2006) places himself within a broad, multidisciplinary, integrated theoretical perspective that is consistent with the constructivist notion that work is a complex social phenomenon influenced by many contextual factors. Interested in social justice, Blustein notes how the current definition of career as a thoughtful selection and planned sequence of work choices is relevant to only a small privileged portion of our society. His goal is to create a more inclusive conceptual framework for understanding the functions of work in the lives of all people. Toward this end, Blustein proposed three core functions that work may serve to fulfill.

Work as a means of survival and power

The first function of work in Blustein's taxonomy is work as a means of survival and power. This function emphasizes the importance of work as a means to provide the goods and services essential for survival, economic, and social status. Historically, in the early 20th century, survival and power were key themes in the vocational literature as extrinsic rewards, primarily money, were seen as the main source of employee motivation (Latham & Ernst 2006). This belief was based on the principles of behaviorism, assuming that extrinsic rewards act in a reinforcing way on behavior (Lepper, Henderlong, & Gingras 1999). Humanistic theories of the psychological

functions of work, such as Maslow's (1954) hierarchy of needs, also proposed the focus of human energy and action is initially directed toward satisfying the basic survival needs of food, shelter, and safety.

The importance of the relationship between work and extrinsic rewards has received theoretical and empirical support within the Effort-Reward Imbalance Model (ERI) developed by Johannes Siegrist (2005). Based within the field of medical sociology and focusing on health consequences, the ERI model proposes that an imbalance between (high) efforts and (low) rewards at work leads to decreased job satisfaction, worker strain, and poor health. Siegrist proposes that work role serves to fulfill basic self-regulatory needs including self-efficacy, self-esteem, and self-integration. Using the concept of social reciprocity, ERI proposes that a worker expects and sets goals to obtain rewards from his or her investment of effort. In this model, rewards are conceptualized as money, esteem, and security.

Several researchers have shown that workers value financial rewards. For younger workers, Bennett, Stadt, and Karmos (1997) found male and female college students both reported economic security as their top work value. Duffy and Sedlacek (2007a), when exploring the career values of first year college students, found high anticipated earnings ranked as the second most reported career value with 20% of students ranking this as important. Sinisalo (2004) explored work values in adolescents aged 15-16 years of age at three different time periods: 1977, 1989, and 1995. Extrinsic values, defined as secure employment, good wages, good work environment, and possibilities for advancement, were found to be the most important values in all three sampling time periods.

Older workers also have been found to value financial rewards. In a survey by the American Association for Retired Persons, participants identified a broad number of reasons for working(Brown, 2003). However, when asked to choose only one reason, the need for money was cited more than any other factor. Brougham and Walsh (2005) found, for older workers, financial goals were frequently chosen as best achieved through employment.

Blustein (2006) asserts there is a gap in postmodern career development theory as most theory currently places very little emphasis on the importance of work as a means to meet basic survival and power needs. He criticizes current career development theory as predominantly reflecting the lives of those who have the luxury of focusing on career choices and self-fulfillment. As a result, the theory tends to exclude those for whom work is primarily a means of survival.

Work as a means of social connection

The second function of work in Blustein's taxonomy is work as a means of social connection. This function emphasizes the importance of work as a means to interact with others, form relationships, provide social support, and build social bonds. Work as a form of social connection also enables people to be connected to the broader cultural, economic, and political systems of their society. Blustein notes the social aspects of work are diverse and complex and that the literature in this important area is in an exploratory stage.

There is evidence to support the importance of work as a means of social connection for people of all ages. Hagstrom and Kjellberg (2007) found young people rated "social relations" as the most important of six work values. Dendinger, Adams and

Jacobson (2005) found a negative relationship between social reasons for working and attitudes toward retirement. These researchers hypothesized that older workers may recognize withdrawal from the workplace as being linked to a significant loss of social interaction. In a recent survey of reasons for working, retirees who worked for pay after retirement listed professional contacts (56%) and social contacts (68%) as reasons for working. (Moen, Erickson, & Agarwal, 2000).

Brougham and Walsh (2005) explored the types of goals best attainable through either retirement or continued employment and found participants reported goals such as social life and positive social qualities were best attained through employment. More than half of the participants in the American Association for Retired Persons study rated "lets you interact with people" as a very important reason for working (Brown, 2003).

Work as a means of self-determination

The third function of work in Blustein's taxonomy is work as a means of self-determination. As proposed by Maslow (1954) in his hierarchy of human needs, this function of work emphasizes the role of work in finding self-actualization and fulfillment. Blustein asserts that this work function has been the central focus of career development theories to date as theorists and researchers have focused on the process of how people can find meaningful and satisfying careers to suit their personal characteristics and situational needs. Recently in the area of work motivation theory, models based on these psychological needs for self-determination have grown in popularity (Latham & Pinder, 2005).

Blustein adopts the concepts of Self-determination Theory (SDT) proposed by Deci and Ryan (2000) for describing this third work function. These theorists propose

that people are intrinsically motivated to learn and develop and seek to fulfill three innate psychological needs of autonomy, competence, and relatedness. Deci and Ryan (2000) define autonomy as a desire to self-organize behaviors. Competence is defined as a desire to have an effect on the environment and attain valued outcomes from it, and relatedness is defined as a need to be connected to and cared for by others. Deci and Ryan assert workers will set goals and objectives that help them meet these three basic needs (Bard, Deci, & Ryan, 2004; Deci, Koestner, & Ryan, 1999; Gagne & Deci, 2005).

There is support for the importance of work as a source of self-determination. Bennett, Stadt, and Karmos (1997) found male and female college students reported achievement and ability utilization as two of their three top values. In a follow-up study of high school students, Kirkpatrick-Johnson (2002) found intrinsic values were rated higher than security goals. In this study the definition of intrinsic values was broad and included diverse aspects such as having interesting work, opportunities to learn new things, seeing results of efforts, being creative, and using best skills and abilities.

Evidence also indicates older workers seek personal meaning and purpose in work (Sweet, 2000; Noonan, 2005; Mor-Barak, 1995). In a study investigating the career values of working adults, Bennett (1999) found the importance of the value "intellectually stimulating" was positively related to age. Schellenberg, Turcotte and Ram (2005) found 19% of Canadians who worked after retirement cited intrinsic rewards, such as challenging tasks and a sense of purpose, as their reason for returning to work.

Westaby, Versenyi, and Hausmann (2005) studied adults, mostly in their 50s, who intended to work after being diagnosed with a terminal illness. For these adults,

intrinsic reasons, such as interest in and enjoyment of work, were more frequently given as reasons for working than extrinsic reasons such as money, benefits or bonuses. In Brougham and Walsh's (2005) exploration of goals attainable through either retirement or continued employment, the researchers found participants reported goals such as achievement and intellect were best attained through employment for older workers. Researchers conducting a study on working in retirement found new experiences and learning new skills were rated by more than half of this group as very or somewhat important (Brown, 2003).

Overall, Blustein's conceptualization of three core work functions is supported by the research literature on career values. Career values provide a concrete way of assessing how people rate the importance of economic, social, and self-determination aspects of work. In this way, career values can provide a practical way to evaluate theories of why people work by assessing what people report they wish to achieve through their involvement in work.

Defining and Measuring Career Values

Introduction

Theoretical formulations about human values have emerged in many disciplines. Most career development theorists have built on the theories of Maslow and Rokeach when conceptualizing and defining career values. Maslow (1954) used the terms needs and values interchangeably and proposed that humans had innate security, social, ego/power, and self-actualization needs. Rokeach (1973) separated the concepts of needs and values. In his model, needs were biological and values were the cognitive representation and transformation of biological needs. He defined values as enduring,

relatively stable beliefs linked to modes of conduct or outcomes. Even though he defined values as stable, Rokeach did propose that values changed somewhat over time and that values were influenced by societal demands. He also explored the idea that values were important indicators of vocational roles and choices.

Values related to work, called career values or alternatively referred to as work or job values, are often mentioned as important considerations in theories of career planning (Brown, 2002; Feldman, 2002; Herr, Cramer, & Niles, 2004). Most career development theorists describe career values as a subset of more global life or personal value systems (Patton, 2000). In a summary of seventeen major career development theories, Patton and McMahon (2006) note that fourteen of these theories acknowledge the role of values. Because career values are mentioned in many diverse theories, there are several definitions and ways to conceptualize them as well as many interpretations of how values may contribute to career development. In career development theory, career values relate to and influence many other aspects of career development including interests, attitudes, goals, beliefs, ethics, standards, and decision-making criteria (Dose, 1997).

Brown (2002), building on the findings of Super and Sverko (1995) considers work values as the cornerstone for his values-based theory of career development. Brown's theory looks at cultural and life roles as well as work roles. In his theory, cultural and work roles act together as the primary variables influencing occupational choice, work satisfaction, and success. Brown forwards a number of propositions about the role of values in career development. He believes, in our individualistic culture, well-defined and prioritized work values are the most important influences in career

choice. He states that work values can only operate in this manner when there are occupational choices available to satisfy the work values and sufficient financial resources available to implement choices. He further proposes that a lack of emphasis in an individual's background on self-assessment of strengths and weaknesses results in difficulty processing career choices. As a result there will be a mismatch between values and work leading to lower job satisfaction and less success.

Even though the construct of career values is incorporated into most career development theory, interests receive far more attention than values in career planning theory (Brown & Crace, 1996). These authors believe the lack of focus on career values in career development theory is an oversight and argue that choosing work aligning to high priority values will result in greater work satisfaction. In support of this assertion, in a study of work values of first year college students, Duffy and Sedlacek (2007a) found 47% of participants reported they were seeking work aligned to their values compared to 29% who reported they were looking for work that matched their interests. Despite these theoretical statements and findings, little emphasis has been placed on studying the role of values in career development theory.

Traditionally it has been assumed that career values, representing the objectives sought by engagement in work, are relatively stable across the life span (Dose, 1997; Feldman, 2002; Patton & McMahon, 2006). Even though postmodern career development theory has expanded to consider the influence of lifelong development and changing life tasks and roles, there has been little theoretical consideration about how reasons for working are affected by changing life situations. Postmodern career development theorists emphasize the importance of life context and the realities of

changing career paths and life circumstances. It is not clear if the concept of relatively stable career values fits into these new theoretical developmental perspectives.

Super's Definition of Work Values

The term "values" can be defined in many ways. This paper uses Super's definition of values. Super (1973) was one of the first and most prominent career theorists to focus on work values. He proposed distinctions between the psychological constructs of needs, interests, and values. In Super's theory, work values are not thought to be directly observable. Rather, work values are a construct operationally defined as goals or objectives sought through engagement in work (Macnab, et al., 2005; Super, 1973; Super & Sverko, 1995). Career values represent an individual's attempt to meet his or her psychological or physical needs (Dose, 1997; Super, 1995).

For example, Super proposes a "need to help" becomes expressed as the work value of altruism. In Super's model, interests are thought to be more specific than values and reflect activities a person can undertake to satisfy a need. For the altruism example, an interest in social work or teaching may arise from the value of altruism (Super, 1995). Super argues that values are more fundamental than interests for career guidance, since values provide a sense of purpose. Interests, in his view, are secondary to and develop from values.

Super put considerable effort into the process of defining and researching work values and conceptualizing how to link work into the context of other life and cultural roles. However, he did not discuss in detail the static or dynamic nature of values. He did comment that career values might change somewhat with age and experience (Super, 1995). He also commented that women tended to favor some values, such as

human relationships, more than men and other values, such as authority, less than men. He was cautious in these statements and noted research on age and gender questions had only been conducted on limited samples.

Measuring Career Values

There are four main strategies for measuring values: rating scales, self-report, pair-comparisons, and an individualized grid system (Zytowski, 1994). Of these four strategies, rating scales are by far the most common and provide the most useful data (Nevill & Kruse, 1996). The Work Values Inventory, developed by Donald Super in 1970 was the first rating tool developed to measure work values (Zytowski, 1994). Fifteen work values were assessed in this measure including altruism, esthetics, creativity, intellectual stimulation, independence, achievement, prestige, management, economic returns, security, surroundings, supervisory relations, associates, variety, and way of life.

Subsequently, an international research study exploring Super's work values across a number of countries was conducted (Super & Sverko, 1995). The objectives of the study were to examine work in the context of other life roles and to develop instruments to measure work values and assess the importance of life roles (Super & Sverko, 1995). This study, called the Work Importance Study, used a refined version of the Work Values Inventory, published by Super and Nevill in 1986, that was simply called the Values Scale. Definitions of scales and construction of items for this new inventory were conducted by international teams of vocational psychologists. The Values Scale identified 21 values of which 18 were common across the countries surveyed. The 18 values common across the countries studied were ability utilization,

achievement, advancement, aesthetics, altruism, authority, autonomy, creativity, economics, life-style, personal development, physical activity, prestige, risk, social interactions, social relations, variety, and working conditions.

Other values scales have included as few as 10 and as many as 30 career values (Zytowski, 1994). Each scale has its own purpose and theoretical underpinnings. For example, the Minnesota Importance Questionnaire focuses on measuring worker satisfaction, the Life Values Inventory is designed to help clients crystallize and prioritize their values, while the Salience Inventory measures participation in values attached to various life roles (Brown, 2007).

Macnab and Fitzsimmons (1987) compared three work values inventories, the Minnesota Importance Questionnaire, the Work Values Inventory, and the Work Aspect Preference Scale, with the Canadian version of the Values Survey they developed for use in the Work Importance Study. They found, through confirmatory factor analysis, that these instruments measured very similar constructs. Subsequently, they revised their earlier values scale developed for the Work Importance Study into an instrument called the Career Values Scale (CVS) (Macnab, et al., 2005). The CVS measures ten career values: Service Orientation, Teamwork, Influence, Creativity, Independence, Excitement, Career Development, Financial Rewards, Prestige, and Security. Data from the CVS was used in the current study and the instrument is described in more detail in the Methods chapter.

Factor Analysis of Super's Values Scale and the Career Values Scale

The underlying factor structure of career values inventories has been explored. Super's Values Scale and the Career Values Scale have both undergone factor analysis.

Sverko, using data from several countries as part of the Work Importance Study, conducted a principle components analysis of Super's Values Scale (Super & Sverko, 1995).

Sverko identified five components common to most countries. The first component was labeled utilitarian orientation, composed of extrinsic economic and material values. The second component was an orientation toward self-actualization, composed of inner-oriented goals linked to self-development. The third component was an individualistic orientation composed of goals linked to personal autonomy or independence. The forth component was social orientation, composed of goals linked to social interactions and relationships. The final component was adventurous orientation, linked to risk and challenge.

Exploratory principal components analysis using CVS results from the normative sample identified three components, which the test developers labeled Self-Expression, Extrinsic Rewards, and Working with Others (Macnab, et al., 2005). The career values included in the Working with Others component of the CVS were Service Orientation, Influence, and Teamwork. The career values included in the Self-Expression component of the CVS were Independence, Creativity, Career development, and Excitement. The career values included in the Extrinsic Rewards component of the CVS were Prestige, Financial Rewards, and Security.

These three categories of career values align to three core functions of work proposed by Blustein (2006); working as a means of self-determination aligns to seeking intrinsic values, or those labeled as Self-Expression in the CVS, working as a means of survival and power aligns to seeking extrinsic values, or those labeled Extrinsic

Rewards in the CVS, and working as a means of social connection aligns to seeking social values, or those labeled as Working with Others in the CVS.

Contextual Variables Influencing Career Values

Although several career development theorists discuss the importance of influences such as age, gender, education, and personality type on work involvement, it is not explicit in the theoretical literature how these contextual variables influence career values or affect the relative importance of the three core functions of work. This section contains a discussion of each of these four variables as well as hypotheses regarding the influence each variable may have on career values.

Age

Adults in North America are living longer, are healthier, and are more active than in the past (Rosenkoetter & Garris, 2001); the number of older adults working has increased in recent years (Clark & Quinn, 2002). A survey of 2,000 older workers conducted by the American Association of Retired Persons found 70% planned to continue to work into their retirement years or never retire (Brown, 2003). Almost half of the participants in this survey saw themselves continuing to work into their 70s or later. In data collected by Statistics Canada, Rowe and Nguyen (2002) found that only 51% of men and 30% of women described themselves as retired by age sixty-five.

At the same time, there have been changes in economic policies supporting older workers who decide to continue to work. In Canada, retirement legislation is primarily a provincial or territorial responsibility and many provinces and all territories currently prohibit setting of a mandatory retirement age. In 1986 mandatory retirement was

abolished for Canadians employed in the federal services (Duchesne, 2004). More than ever before, older workers are entitled to, and are continuing to, work later in life.

Careers evolve over time, partially in response to career and life stages and aging alters the way individuals perceive themselves and define success (Feldman, 2002). What is not clear is if workers of different ages have different objectives they seek to obtain through involvement in work. Age differences in the objectives sought through work have implications for career development theory as well as implications for career counseling and human resources management practices. Since both psychological development and career development theorists propose that changing circumstances and roles across the life span may influence objectives sought through work, both psychological and career development theories will be discussed in the following sections.

Life-span psychological development theories

A number of life-span development theorists propose that adults move through a series of developmental stages characterized by changing life tasks (Csikszentmihalyi, 1993; Erikson, 1980; Neugarten and Neugarten, 1996). These theorists assert different life roles and developmental tasks are important at different times during the life course.

An early contributor to the theory of adult development was Erik Erikson (1980). Erikson proposed a stage theory of development in which individuals maneuver through and resolve challenges or undertake tasks during the course of the life span. A healthy personality grows throughout life in a specific, hierarchical sequence as an individual adapts to the challenges of life. Erikson (1980) proposed eight stages of psychosocial development from his clinical observations and insights. These stages included a stage

of adolescent development and three stages of adult development. Direct implications for career development are evident in two stages of Erikson's theory. These include the challenge of identity for youth and the challenge of generativity in midlife.

Youth (12-19) are challenged to meet the developmental crisis of identity vs. role confusion and begin to choose an educational focus and occupational identity. This stage, in career terms, would involve self-assessment, recognition of strengths, interests, and the initial choosing of career goals. Adults in midlife are challenged to resolve the crisis of generativity vs. stagnation. Generativity is a sense of productivity resulting from making a contribution to society and guiding future generations. In this midlife stage, adults must focus outside of themselves to care for others. Usually this can occur through caring for children, although for some, mentoring or helping any member of the next generation might accomplish successful resolution of this crisis.

Erikson's concept of generativity has since been adapted by a number of other adult developmental theorists (Lachman, 2001; McAdams, de St. Aubin, & Logan, 1993). Bernice Neugarten (1996), who focuses her life-span development research on older adults, believes a major developmental task of older adults is to create and nurture social heirs. She sees midlife and beyond as a chance to create a bridge between generations to pass on knowledge and skills for the future.

This concept of "social heirs" aligns to, and would be important to, older adults in a manner similar to generativity. Csikszentmihalyi (1993) asserts development later in life results in a shift in focus; during development older adults move outside of a personal perspective and commit to goals and actions resulting in the betterment of society as a whole. In these models, nurturing social heirs and bettering society would

be prime values for work later in life and are thought to be less relevant to younger adults. Each of the life stages proposed by Erikson and other theorists are thought to be associated with unique challenges and developmental tasks.

Alternatively, Jung (1976) theorized that midlife and beyond is a time for internal development and opportunities to strive for personal growth. He describes young adulthood as a time when individuals must focus on adapting to their circumstances, fulfilling social roles, and making a living. During this period individuals must accommodate and adapt to the environment in order to experiences success in their societal roles. Only later in life, he theorized, do individuals have opportunities to reflect and focus on internal development and personal growth. Whether midlife is a time for nurturing other or for furthering the development of self, it would seem to follow that the core functions of work and the associated career goals and objectives, as measured by career values, will reflect the developmental context.

Research on adult development and career values

There is some research evidence linking adult developmental theory to career values and core work functions in the workplace. For example, independence is seen as an important developmental task for young people in Erikson's model. Duffy and Sedlacek (2007a), in their study of career values, found intrinsic values, composed of intrinsic interest and independence, was the highest career value selected by first year college students. There is also evidence that independence is important to older workers. Bennett (1999), in a study measuring career values of working adults, found the importance of the values of "permits working independently" and "using one's own methods" were positively related to age. Brougham and Walsh (2005) also found older

workers reported that self-reliance was best attained through employment. These researchers show independence is important to workers of different age groups; a finding that fits with the idea that independence is an important, early life task or career objective.

Research evidence supports the importance of generativity later in life. Schellenberg, Turcotte, and Ram (2005) found 14% of Canadians who worked after retirement cited being needed or wanting to help out as their reason for working. Brougham & Walsh (2005) found that, for older workers, the goal of teaching and helping others was best attained through employment. More than half of the participants in the American Association for Retired Persons survey rated “lets you help people” as a very important reason for working (Brown, 2003). These studies indicate that helping is an important value for older workers. However, the researchers conducting these studies did not compare younger and older workers and they did not look at the relative importance of generativity at different times in the life cycle.

McAdams, de St. Aubin, and Logan (1993) investigated the importance of generativity to young, midlife, and older workers using four different measures of generativity. These researchers found that, when compared to younger and older workers, mid-life workers scored higher overall on measures of generativity. On two of the four measures, mid-life and older workers had similar scores. Younger workers scored lower than midlife or older workers on all of the generativity measures.

A study of generativity by Zucker, Sogrove and Stewart (2002) included three age groups. These researchers found women in their 20s rated the importance of generativity significantly lower than women in their 40s or 60s. The generativity ratings

were not significantly different between the two groups of women in mid-life and later life. In a study measuring career values of working adults, Bennett (1999) found the importance of the value of "making a social contribution" was positively related to age.

Life-span career development theories

Career construction theorists would also assert that changes in personal circumstances and re-assessment of the meaning and importance of career objectives would occur as adults move through their life span. Donald Super was one of the first career development theorists to link vocational behavior to broader life changes occurring across the life span (Super, 1980; Blustein, 1997). Super broadened the perspective of career development by asserting that career development continued to occur throughout the life span. Super defined a career as "the sequence of positions, jobs and occupations that a person occupies and pursues during the course of a life of preparing to work, working, and retiring from work." (Super, 1992).

Super proposed a number of life stages and transitions between stages. These stages included exploration, establishment, maintenance, and disengagement. Unlike the age developmental stages of Erikson, Super did not see these career development stages as linear and additive. Within each stage, individuals may go through what he termed "minicycles" of work and personal changes (Savickas, 2002). For example, Super theorized that career exploration may occur in any life stage and was especially likely to occur as an individual entered into a new life stage (Super, 1992; Blustein, 1997). Individuals move between stages in response to a number of events and situations, which can include personal as well as broader sociological factors. Savickas, in career

construction theory, has renamed the maintenance stage as management to emphasize the dynamic and adaptive nature of career development.

Super (1980, 1990) was one of the first to challenge static *trait and factor* theories by placing career development theory in a developmental context. He acknowledged the importance of multiple and changing life roles and theorized their influence on career involvement and satisfaction. He recognized that finding and maintaining career satisfaction was not only a task of young adulthood and he hypothesized stages and cycles of career development. In his model, stages were influenced by social and economic changes and were seen to be socially and psychologically, rather than biologically determined (Blustein, 1997).

Super used a "career life rainbow" to summarize career development over the life span. He depicted a semi-circle figure starting at birth and continuing past eighty years. He then added career stages of growth, exploration, establishment, maintenance and disengagement on to the figure to align the career stages to the broader life stages of childhood, adolescence, adulthood, middle adulthood and old age.

During the exploratory career stage (age 14-24) Super believed youth explore and test out a number of vocational options. Individuals find out more about themselves and the world of work and begin to tentatively establish themselves in a certain type of work. They often begin educational or training programs to develop skills. In this stage, individuals begin to develop a vocational identity. Super used the terms crystallization, specification, and implementation to summarize the tasks of this stage. Crystallization refers to making a vocational goal, specification to selecting a career, and implementation to training and beginning work in the desired area.

During the establishment stage (age 24-44) individuals gain skills and expertise in a particular field. They learn to adapt within an organization and perform their work competently. After establishment, Super proposes a maintenance stage (age 45-65), when individuals continue to be productive in work. The last stage, disengagement (over age 65) is a time for making and implementing a retirement plan. Until recently, in career development theory, later life has been seen as a time for leaving work and engaging in other life roles (Savickas, 2002).

As the nature of work changes from engagement in long-term jobs to increasing chaos and frequent career change, career theorists need to address the reality that people will be assessing and modifying their career involvement several times over the course of their lives (Littleton, Arthur, and Rousseau, 2000). As theorists change their assumptions about the stability and consistency of work life and recognize the flexible and changing role of work in people's lives, they may also need to rethink their assumptions about career values. The objectives sought through involvement in work may be dynamic across the life span.

Research on career development and career values

To date, researchers have focused mainly on the career values of youth. Several researchers looked at the career values of high school or undergraduate students at a single point in time (Duffy & Sedlacek, 2007a; Moore, 2006; Robinson & Betz, 2008, Rottinghaus & Zytowski, 2006). Other researchers have taken a longitudinal approach in an attempt to explore differences in career values in youth over time (Bennett et al, 1997; Duffy & Sedlacek, 2007B; Kirkpatrick-Johnson, 2001, Kirkpatrick-Johnson 2002; Madill, Montgomerie, Stewin, Fitzsimmons, Tovel, Armour, & Ciccocioppo, 2000;

Rowe & Snizek, 1995; van der Velde, Feij, & Emmerik, 1998). Follow-up time on these studies is as short as three years, but some researchers have collected follow-up data over a ten-year period. Fewer researchers have explored generational differences in career values (Lyons, Duxbury & Higgins, 2005; Murphy, 2001)

It is generally thought that youth, with little practical knowledge of the realities of work, tend to place inflated importance on a number of career values. This is supported by results from several longitudinal studies, in which researchers found the number of respondents rating a value as "very important" declined with age or found lower mean values on values scales across age groups (for example, Kirkpatrick-Johnson, 2001; Madill, et al., 2000).

This finding is not unanimous, however, as other researchers have found various patterns in specific career values over time. Kirkpatrick-Johnson (2002) reported a decrease in the importance of extrinsic values over time and a smaller decrease in altruistic and social values. However, she noted a small upward change over time in the values of security and influence and no change in intrinsic values. Duffy & Sedlacek (2007b) also noted a decrease in extrinsic values over time but they reported an increase in the importance of intrinsic values. In these studies, values inventories were created for the surveys by each researcher, so it is difficult to compare results.

Rokeach (1973) conceptualized values as dynamic and proposed that values develop over the life span. Rokeach specifically distinguished values from traits because he believed values could change and develop as a result of changing social conditions. He used a ranking system to identify the importance of a number of broad values across the life span. In his research he described several development patterns for the values he

studied. For example, the values of accomplishment, wisdom, and responsibility had lower scores in early adolescence, increased during later adolescence, and began to gradually decrease after the college years. Creativity was highest during the college years and relatively unimportant in the other age groups. Security was equally valued in all age groups with the exception of late adolescence and college. Helpfulness showed a gradual increase with age. Independence showed an undulating pattern, showing peaks in adolescent, midlife, and then in later life with periods of less importance reported in between. His study was not specifically looking at career values, but it does provide some early evidence that values may be dynamic rather than stable.

Two more recent researchers looking at generational differences in work values found contradictory results. In a study of ten values measured by the Schwartz Value Survey (SVS), Lyons, et al. (2005), found Generation X research participants (born between 1967 and 1979) rated achievement, hedonism, and stimulation higher than *Baby Boomer* participants. Baby Boomers rated security, benevolence, universalism, conformity, and tradition higher than Generation X participants. In contrast, in a study of twenty-one career values using Super's Values Scale, Murphy (2001) found the values of ability utilization, achievement, advancement, economic rewards, social interactions, social relations, working conditions, physical prowess, and economic security all showed significantly less importance with age. The only value to be rated most highly by older workers was altruism. Both studies sampled employed professionals. Possibly the contradictory findings reflect the different measures used. The Schwartz Value Survey is a more global measure of human values, while Super's Value Scale is specifically linked to work values.

In a recent study of older workers, DeLong and Associates (2006) found reasons for working changed between the ages of 55 and 70. They classified financial reasons for working into a number of different categories that included needing income to live on, wanting income to maintain lifestyle, and needing to build additional retirement savings. As age increased, the percentage of respondents citing each of these financial reasons for working decreased. As workers aged, and the financial reasons became less important, as intrinsic reasons such as wanting to stay active and engaged, doing meaningful work, and social interaction became more important.

Loscocco and Kalleberg (1988), studying a group of American men, found employees in their 40s valued social interactions slightly more than those in their 20s or 30s. In contrast, Kirkpatrick-Johnson (2002) found social values, defined as making contact with people and making friends, decreased over a twelve-year period after high school. These researchers hypothesize the changes in social values are related to maturation and a lessening of peer pressure. This aligns with the career construction theory proposition of career maturation.

A few researchers have explored the relationship between age and the importance of extrinsic career values. Most of these studies are at least 20 years old. Taylor and Thompson (1976) found money was less important to older than younger workers and Brenner (1988) found older managers place less importance on extrinsic values. Kalleberg and Loscocco (1982) also found financial rewards were valued more by younger than older workers. Loscocco and Kalleberg (1988), studying a group of American men, found no age difference in the importance of good pay. However, these researchers did find older employees placed less importance on opportunities for

promotion. In a more recent study, Kirkpatrick-Johnson (2002) found extrinsic rewards all showed a downward trend for participants who were studied in high school and then followed-up twelve years later.

Overall, there is little agreement in how career values are influenced by age. However, there are two fairly consistent research findings. One is that young people tend to inflate the importance of career values, a finding that aligns to the idea in adult development and career construction theories that youth are relatively naive about the world of work and are likely to have idealistic expectations of work outcomes. The other consistent finding is that generativity and social aspects of work are important to workers in midlife and beyond, which aligns to the developmental theories emphasizing the importance of making a social contribution later in life. Overall, the literature tends to support the following hypotheses about age and career values.

Hypotheses regarding age and career values

1. The self-determination function of work: Youth (ages 15-20) will score higher than other age groups on the Self-Expression component of the CVS.
2. The survival and power function of work: Youth (ages 15-20) will score higher than other age groups on the Extrinsic Rewards component of the CVS.
3. The social function of work: Youth (ages 15-20) will score higher than other age groups on the Working with Others component of the CVS. Workers in mid-life (age 41+) and older will score higher than workers in their 20s and 30s on the Working with Others component of the CVS.

Gender

Historically, much of the career and adult development theory has been based on research with men, even though the majority of women are now employed (Betz, 2005). There is little clear information to help determine if and how the career values of men and women may differ. As women engage more fully in the work role it is important to understand what career values are important to them and to explore if the career values they express are different from those expressed by men.

Dynamic theories of career development, such as Super's (1990) life-span model, place career development in a social and societal context. Career Construction Theory also emphasizes the importance of life roles, social context, and societal norms and expectations in the creation of vocational identity (Savickas, 2002). Many social roles are linked to gender and it seems likely that gender, socialization, and role expectations will influence the objectives people seek to achieve through work.

Gender was one of the first contextual areas to be explored in vocational psychology and research has demonstrated gender differences in career aspirations and career behaviors (Blustein & Fourard, 2008). There is considerable evidence demonstrating that gender roles add heterogeneity to the nature and effects of work involvement (Moen, Kim, & Hofmeister, 2001). Blustein (2006) emphasizes the predominance of sexism in both the workplace and in theories of career development. He summarizes several studies demonstrating that women face multiple barriers in the workplace including lack of opportunities and complex choices between work and family roles. Although Blustein does not directly discuss gender differences in core work functions he does emphasize the importance of work as a source of income and independence for women.

Coogan and Chen (2007) identify three broad kinds of barriers influencing women's career development. The first kind of barrier is early gender-role stereotypes and role expectations sending the message that career pursuits are secondary to nurturing roles and responsibilities for women. The second kind of barrier is external obstacles such as lack of employment opportunities, discrimination, and sexual harassment. The third kind of barrier is family responsibilities. They summarize research in these three areas and conclude women's career development is characterized by increased employment interruptions and decreased opportunities for advancement.

There have been a number of theories proposed to explain gender differences in life and career development. Social learning theory has often been applied to explore differences in gender socialization and identity development (Ross-Gordon, 1999). Price (2002) asserts women often have different work patterns and are influenced by different gender role expectations than men. Theorists focusing on sex roles assert females are socialized more toward altruistic values than males (Rowe & Snizek, 1995). Brown (2002), in his values-based career development theory, also proposes women will favor social values and will be focused on group concerns more than individual concerns.

Opportunity structure theories have also been utilized to explore differences in career development patterns between men and women. August and Quintero (2001) assert career development is best studied in a framework of opportunity history or, in other words, through exploring patterns and context throughout an individual's career. Workers with a limited history of opportunities may work for different reasons and have fewer choices about what they do and when they do it than other workers who have a history of opportunities.

Gender differences in occupational status can also compound the influence of opportunity structure. Dietz, Carrozza, and Ritchey (2003) describe work in terms of core/peripheral and primary/secondary labor markets and hypothesize that each of these groups will offer different opportunities and will be more or less occupied by male/female workers. They assert men will be more likely to work in the higher paying, higher status core and primary labor markets. Since women are less likely to have employment benefits, are more likely to work at lower paying jobs, and have traditionally experienced greater work interruptions, monetary needs, expressed as extrinsic career values, may be especially important to them.

Research on gender and career values

August and Quintero (2001) studied how contextual factors, including organizational membership, occupational membership, work peers, and history of opportunities affected subsequent income and retirement related options. These researchers conclude that workers differ greatly in the range of opportunities and options available to them and these differences among individuals can greatly affect work choices. Dietz, et al. (2003) looked at gender differences in accessing an employer pension plan and found differences were linked to occupational variables, with women being more likely to participate in kinds of work where pension plans are not offered.

Women may differ from men in their experiences and the meaning they attach to work roles, social contribution, social-connectedness, financial security, and self-interest (Simmons & Betschild, 2001). These authors found the discontinuous work patterns of the women studied did not fit traditional employment-retirement patterns discussed in the literature. From the perspective of opportunity structure, it follows that factors such

as education, type of work, and kind of employment (i.e. part-time, full-time, self-employment) may affect career development and be linked to expressed career values.

Research findings indicate women of all ages tend to focus on the importance of working with and helping others more than men and that these differences emerge early. Badger, Simpson Craft, and Jensen (1998) found girls scored significantly higher than boys in a measure of caring value orientation. This result was consistent throughout the entire age range of the study, which included sixth grade through twelfth grade. Hagstrom and Kjellberg (2007) determined that women had higher scores on a measure of altruism, defined as helping people and creating a better world. Johnson (2002) also ascertained young women rated altruistic values more highly than young men. Bennett, et al. (1997) found female college students rated altruism higher than males. Duffy and Sedlacek (2007a) also found women rated social values higher than men. Some evidence indicates women are more likely than men to value social interactions in general as well as the values of altruism and caring (Bennett,1999; Cooman, De Gieter, Pepermans, Du Bois, Caers, & Jegers, 2008).

Gender differences have been explored for other work values. Cooman, et al. (2008) found male nursing students reported greater emphasis on the career value autonomy than their female counterparts. This finding aligns with Brown's (2002) values-based career development theory in which he proposes women will be more focused on group concerns than individual concerns. In a study by Johnson (2002), men rated the career value of influence more highly than women rated it. Cooman, et al. (2008) found male nursing students reported greater emphasis on leadership possibilities

than their female counterparts. These findings may link gender differences to the way men and women approach working relationships.

Research on differences between men and women in the importance of extrinsic rewards has been conflicting. In a study by Hagstrom and Kjellberg (2007), men rated benefits and career (high salary and materialistic benefits) more highly than women rated these rewards. As well, Sinisalo (2004) found extrinsic values were rated higher by male students than they were by female students. Loscocco and Kalleberg (1988) found no gender difference in the importance of receiving good pay. For younger workers, Bennett, Stadt, and Karmos (1997) found both male and female college students both reported economic security as their top work value. Rowe and Snizek (1995) in a study of over 7,000 workers found both genders rated the values of income and job security in the same order.

Murphy (2001), using Super's Value Scale, also looked at gender differences in career values for workers across the life span. She found women rated ability utilization, achievement, altruism, personal development, prestige, social interaction, social relations, variety, working conditions, and economic security more highly than males rated these values. The only value in her study rated significantly higher by males was risk. She found no significant gender differences in the values of advancement, aesthetics, authority, autonomy, creativity, economic rewards, lifestyle, physical activity, or physical prowess.

In studies of high school or undergraduate students, using Super's Work Values Scale (Nevill & Super, 1989), young females, overall, tended to rate the importance of career values higher than males rated them (Bennett, et al., 1997; Murphy, 2001;

Robinson & Betz, 2008; Rottinghaus & Zytowski, 2006). Career values that are rated higher by young women include achievement, work environment, variety, coworkers, supervision, prestige, and lifestyle (Kirkpatrick-Johnson, 2002; Robinson & Betz, 2008; Rottinghaus & Zytowski, 2006). In one study young men rated all career values lower than women (Robinson & Betz, 2008), and in another study men rated only two values, independence and income, higher than the rating given by women (Rottinghaus & Zytowski, 2006). Some of the gender studies collapsed work values into categories such as intrinsic, extrinsic, and social. These researchers found males scored higher on extrinsic values whereas females scored higher on intrinsic and social values (Duffy & Sedlacek, 2007a; Kirkpatrick-Johnson, 2002).

Since gender is an important component in the experiences and socialization of men and women, career construction theorists would expect to find gender differences in the importance of career values. Indeed, most researchers have found gender differences in career values as expected by gender socialization and opportunity structure theory. Other researchers have identified no gender differences in career values or have found women rate most career values higher than men do, not just those that would be expected by socialization theory. Considerable evidence in the theoretical and research literature indicates that women report valuing the interactive and helping components of work more than men value these social aspects. If these socialized norms and expectations are expressed in career values, then women may place higher emphasis than men on the importance of social values.

The relative importance of intrinsic and extrinsic rewards for men and women is not as clear in either theory or research findings. The literature contains conflicting ideas

about the influence of gender in determining the importance of extrinsic rewards, or the survival and power functions of work. Since men are still perceived as the major income provider, traditional social views would indicate survival and power functions are more important to men than women. These normative expectations would, according to Career Construction Theory, become part of men's and women's vocational identities, although gender expectations are only part of the total career context for men and women.

However, because of interrupted work histories and lower paying work, women may have a greater need for, and may seek to obtain, financial resources through employment. Blustein emphasizes that meeting survival and power needs will be most important for those who need financial resources the most. Even though women have not traditionally been socialized to be major wage earners, they typically have access to fewer resources and opportunities than men have. Because of this, women may place higher emphasis than men on the importance of extrinsic values such as financial rewards.

There are also conflicting views about the influence of gender in the importance of intrinsic rewards. Women are socialized to place emphasis on the family as well as the work role, so work may not be as important a source of self-expression and identity for women as it is for men. However, self-determination theory proposes both men and women strive to be autonomous and competent, so this theory would predict intrinsic values, linked to work as a means of self-determination, would be important for all workers. Blustein (2006) asserts that the core functions sought through work will align to an individual's social and personal context. Since women are more likely to divide

their attention between, and gain personal satisfaction from, both family and work roles, they may place less emphasis than men on the importance of work as a means of self-expression and score lower than men do on career values linked to self-expression. Overall, the literature tends to support the following hypotheses about gender and career values.

Hypotheses regarding gender and career values

4. The self-determination function of work: Men will score higher than women on the Self-Expression component of the CVS.
5. The survival and power function of work: Women will score higher than men on the Extrinsic Reward component of the CVS.
6. The social function of work: Women will score higher than men on the Working with Others component of the CVS.

Education

Education may influence career values in a number of ways. Level of education influences work opportunities, which may, in turn, be reflected in career values. Blustein (2006) notes that access to education and opportunities to develop essential work skills are not open or equal. The concept of finding self-expression and self-determination through work is relevant to only a small percentage of workers with access to educational and vocational opportunities. Workers with limited educational opportunities are more likely to work in order to meet survival and power needs (Blustein, 2006; Blustein, Kenna, Gill, & DeVoy, 2008).

The experience of education itself may influence career values according to Kirkpatrick-Johnson (2002). She asserts youth accessing education have several advantages over those who don't; they develop skills, achieve credentials, and experience fewer barriers in their quest to obtain their career objectives. These advantages provide educated youth with more opportunities to find work in which they can strive to meet intrinsic as well as extrinsic career objectives.

Research on education and career values

Rowe and Snizek (1995) argue differences in values are linked to education and occupational prestige. In a study of over 7,000 workers from multiple occupational groups they found the value of "work that gives a feeling of satisfaction" was positively related to educational attainment. Other studies also have supported the idea that educational involvement and aspiration may influence career values, with those having higher education evaluating intrinsic values higher and income and job security values lower than those with less education (Warr, 2008).

Kirkpatrick-Johnson (2002) found students from advantaged educational experiences placed less emphasis on the value of job stability and greater emphasis on the value of having influence. Duffy and Sedlacek (2007a) found students seeking advanced degrees ranked prestige values higher and intrinsic values lower than students seeking a bachelor's degree. In the workplace, Brenner (1988) found a positive relationship between educational background and importance of intrinsic values in men in management positions. Some indirect support for the idea that higher education may link to intrinsic work values is that workers with higher education are more likely to continue working in the absence of financial need (Warr, 2008).

Warr (2008) assessed the importance of a number of work values and found highly educated workers, more than less educated workers, valued having an interesting job, having a job that meets one's abilities, achieving something, using initiative, being useful to society and having opportunities for advancement. The less educated workers rated good pay and job security more highly than the more educated workers rated these values.

The theory and research in this area clearly indicates that greater opportunities and options are available to those who have obtained higher educational levels, and that working as a means of survival and power will be more important to participants who have lower levels of education. Because greater opportunities and options are available to those having obtained higher educational levels, participants who have higher levels of education will have more opportunities to focus beyond survival and power needs and seek intrinsic objectives and rewards. There is a lack of discussion about the interaction between education and the importance of social values. It seems possible that participants with greater education and opportunities will be able to turn their attention to social values as well as intrinsic values more than participants with lower educational levels who are driven more by financial need. Overall, the literature tends to support the following hypotheses about education and career values.

Hypotheses regarding education and career values

7. The self-determination function of work: Participants with higher levels of education will score higher than the less educated groups on the Self-Expression component of the CVS.
8. The survival and power function of work: Participants with lower levels of education will score higher than the more educated groups on the Extrinsic Reward component of the CVS.
9. The social function of work: Participants with higher levels of education will score higher than the less educated groups on the Working with Others component of the CVS.

Personality Type

Although there are several alternative personality assessment models and tools available to explore personality differences, this paper focuses on the theory developed by Carl Jung. This focus is used because the secondary data collected was based on an indicator designed to describe and report personality preferences using this model of personality types. Carl Jung developed the theory of personality types and he asserts people are born with innate preferences in the way they are energized, take in information, make decisions, and deal with the world around them (Jung, 1976). Based on and elaborating Carl Jung's theoretical work, Isabel Myers, created a tool called the Myers-Briggs Type Indicator ® (MBTI®), which sorts people into one of sixteen qualitatively different personality types using a four-letter code to summarize mental functions and orientations toward life (Briggs-Myers & Myers, 1980). The four-letter code represents preferences on four pairs of dichotomies: Extraversion/Introversion, Sensing/Intuition, Thinking/Feeling, and Judging/Perceiving (Briggs-Myers, McCaulley, Quenk, &Hammer, 1998; Briggs-Myers & Myers, 1980).

Personality type theorists assume everyone can, and does, use both sides of each preference pair, with one side of the preference pair being naturally preferred over the other. The MBTI ® instrument, along with the Strong Interest Inventory and Self Directed Search, is one of the three most widely used instruments in college career counselling centers and is widely used in career counselling in high schools and universities, by private career practitioners and within organizations (Hammer, 1996). The following personality type preferences descriptions are summarized from Briggs-Myers (1998).

The first letter of the personality type code represents a preference for either Extraversion (E) or Introversion (I), alternative ways of focusing mental energy and attention. Individuals with a preference for E are most comfortable when they are able to focus their attention and energy outwardly by talking or acting. They are energized by interactions and prefer work activities that provide interactions with people, discussions, and opportunities for talking and taking action. Individuals with a preference for I are most comfortable when they are able to focus their attention and energy inwardly by reflecting on thoughts, memories, and feelings. They are energized by quiet time for contemplation and opportunities to develop ideas or process information internally without interruption.

The second letter of the personality type code represents a preference for either Sensing (S) or Intuition (N), alternative ways of taking in information. Individuals with a preference for S focus first and foremost on taking in information through the senses in a concrete, sequential manner. They enjoy practical, immediate tasks and outcomes and are interested in hearing and processing factual data. Individuals with a preference for N focus first and foremost on taking in conceptual information and finding patterns and connections to link facts and ideas together. They enjoy imagining future possibilities and envisioning changes and are interested in integrating information and processing ideas.

The third letter of the personality type code represents a preference for either Thinking (T) or Feeling (F), alternative ways of evaluating information and making decisions. Individuals with a preference for T prefer to make decisions based on logic and objective analysis. They seek verifiable data and are often more task than people

oriented in their work interactions. Individuals with a preference for F prefer to make decisions through a more personal, subjective, evaluation of relative worth of information. They seek to build rapport and collaborate with others and are often more people than task oriented in their work interactions.

The last letter of the personality type code represents a preference for either Judging (J) or Perceiving (P), alternative strategies for dealing with the external environment. Individuals with a preference for J are most comfortable when they have structure and predictability in their external environment. They prefer to make decisions, follow a plan and accomplish results. Individuals with a preference for P are most comfortable when they can be flexible and unstructured. They prefer to keep their options open and act spontaneously.

The preference pair combinations interact together in a dynamic manner. As a result, each four-letter MBTI ® code represents a unique personality type. Personality type theory asserts people who are able to use and develop their preferred functions will be more satisfied in their careers (Myers, 1980). There is considerable evidence indicating that personality type preferences link to the kinds of occupations people are attracted to (Schaubhut & Thompson, 2008) and the work activities people prefer to engage in (Briggs, et al., 1998; Dunning, 2001; Kummerow, 1991).

Career Construction Theory, as defined by Savickas (2002), would likely categorize personality type as part of individual differences, such as traits, abilities, needs, values, and interests, which comprise an individual's vocational personality. Savickas proposes that individuals interpret information about these personal characteristics to create a vocational self-concept that becomes relatively stable by late

adolescence. This vocational identity is an important aspect of career development and provides continuity for an individual throughout their career. An individual's innate preferences for day-to-day functioning, part of his or her vocational identity, likely align to the objectives he or she seeks from work.

Research on personality type and career values

Limited research has been done on the relationship between personality and work values (Duffy, Borges, & Hartung, 2009). The research that has been done has produced contradictory evidence regarding this relationship. Garden (1997) looked at links between psychological type and reasons for working in a group of software workers. She studied the relationship between personality type preferences and six motivation goals. The motivation goals included money and comfort, structure and security, friendship and relationships at work, recognition goals, power and responsibility, and autonomy and creativity. She found personality type differences to be relatively unimportant in her analysis, with money and comfort ranking highest with all employees, followed by recognition and then autonomy.

In contrast, Briggs, et al. (1998), in a summary of values research related to personality type, report a number of studies with significant findings. In these studies, having preferences for SJ was related to high ranking of the values of security and stability, having preferences for NP was linked to high rankings on the value of creativity, and having preferences for NT was linked to the value of personal autonomy. Preferences for TJ were associated with high ranking on the values of achievement. Barbuto, Fritz, Lim and Xu (2008) found students preferring E scored significantly

higher than students who preferred I on a measure of intrinsic motivation. Students preferring P also scored higher on this measure than students preferring J.

The participants in the national sample used to develop the latest form of the MBTI ® were asked to rank eleven values on a scale from very important to not important (Myers, et al., 1998). A number of differences were found between personality type groups. For example, financial security was ranked as very important by 76% of ESTJs and only 50% of INFJs and INTJs. Relationships/ friendships were ranked as very important by 79.5% of ENFPs and only 30.8% of INTJs.

Personality type theory may influence the importance individuals place on the different core work functions and objectives sought through work. Individuals who prefer S and J are practical, realistic, and tend to value stability. Individuals with these preferences are likely to place more importance on extrinsic rewards than individuals with the alternative preferences, N and P, who value flexibility, change, and spontaneity. Individuals who prefer Sensing (S) and Judging (J) likely will score higher than other individuals with preferences for Intuition (N) or Perceiving (P) on the Extrinsic Rewards component of the CVS.

Individuals with preferences for E and F are drawn to interacting with others, building rapport and collaborating at work and are drawn to helping or improving the situations of others. These individuals will be more likely to report the importance of social functions of work. In contrast, those who prefer Thinking (T), preferring to approach work with an objective, task-focused approach, will place less value on the social aspects of work. Individuals who prefer Extraversion (E) and Feeling (F) likely

will score higher than those who prefer Introversion (I) and Thinking (T) on the Working with Others component of the CVS.

Jungian theory asserts all individuals strive toward intrinsic growth and development. Since NPs highly value creativity and NTs highly value personal autonomy and achievement, participants with preferences for NTP, when compared to the other personality type groups, may place more importance on values linked to self-determination and self-expression. Overall, the literature tends to support the following hypotheses about personality type and career values.

Hypotheses regarding personality type and career values

10. The self-determination function of work. Of the 16 personality type groups, the highest scores on the Self-Expression component of the CVS will be for those participants who prefer N and T and P (ENTP and INTP).
11. The survival and power function of work: Of the 16 personality type groups, the highest scores on the Extrinsic Rewards component of the CVS will be for those participants who prefer both S and J (ESTJ, ISTJ, ESFJ, and ISFJ).
12. The social function of work: Of the 16 personality type groups, the highest scores on the Working with Others component of the CVS will be for those participants who prefer both E and F (ESFP, ESFJ, ENFP, and ENFJ).

Literature Summary

There is considerable theoretical and research interest in understanding what is important to people as they work, grow, and develop throughout the life span. Across career development, adult development, and gender development there is a common theme as theorists attempt to understand what people value and what motivates them as

they work, live, and develop. Although theorists use widely different language, applications, and perspectives, they all propose that humans strive to meet innate psychological and/or biological needs through engagement in work. In career development theory, these human needs are linked to, or expressed as, career values.

Different theorists propose different, and often contradictory, views about human values and needs. Since the suppositions of the theorists are different, from each of their viewpoints they predict different motivators for working and different tasks and objectives sought through work. Underlying all of the theories are assumptions about the nature of human needs and values. Needs and values are most often seen as persistent, relatively stable aspects of an individual.

Postmodern career construction theorists assert humans act in a dynamic way, making meaning from, and adapting to, changing circumstances and situations. It is not clear in the theoretical literature if this dynamic adaptation to change is associated with workers seeking different objectives through their work involvement. If differences in career values are found to link to contextual variables such as age, gender, education, or personality type then perhaps career values are not as stable as originally thought to be in theories of career development. If so, this creates a new and broader perspective on how career values are understood and applied in career development theory and practice.

In the current study, specific relationships between scores on the three components of the Career Values Scale and the contextual variables of age, gender, education, and personality type are hypothesized based on findings in the literature. Scores on the Career Values Scale can be grouped into three components. The three

components on the CVS align to the three core work functions proposed by Blustein (2006). These three core work functions include working as a means for survival and power (measured by the Extrinsic Rewards component of the CVS), working as a means of social connection (measured by the Working with Others component of the CVS) and working as a means of self-determination (measured by the Self-Expression component of the CVS). Information the data analysis will help determine if these three core work functions are equally important to workers of different ages, gender, education, and personality types.

CHAPTER 3: METHODOLOGY

To test the research hypotheses, a post-positivistic approach was used to conduct secondary data analysis (SDA) on data collected on-line over a two-year period between 2001 and 2002 by Psychometrics Canada. The database contained results of an on-line administration of the Career Values Scale (Macnab, et al., 2005). This chapter includes a description of how the data were collected, information about the career values scale, demographic information about the participants in the database, and the strategy used for data analysis.

Data collection

The Career Values Scale (CVS) was made available during 2001 and 2002 at no charge on the Internet by Psychometrics Canada, a Canadian company that provides assessment and training services. Links to the CVS administration site, offering a free career test, were placed on several reputable career related websites. Google ads were purchased to increase traffic to the testing site. As a result of completing the inventory, participants received information about their career values. The database included results of the online administration of the inventory only if participants completed all 88 items. Participants provided categorical information about their age, gender, education, ethnicity, work role involvement, country, occupation, and personality type (if known). All administrations of the inventory were anonymous. Participants received the feedback on their career values directly from the site and were not required to identify themselves in any way, not even through an e-mail address.

Description of the Career Values Scale

The CVS measures 10 career values. The inventory is composed of 88 statements. Participants rate each statement on a five-point scale indicating how important the statement is for planning their life and career. The five choices for rating each item are *not at all important*, *unimportant*, *neutral (neither important nor unimportant)*, *important*, and *very important*. The 10 Career Values measured by the CVS are:

- Service Orientation: work objectives related to helping and providing direct benefits to others. An example of an item for this career value is "Help and support others".
- Influence: work objectives related to controlling and managing the work efforts of others. An example of an item for this career value is "Direct and organize others".
- Independence: work objectives related to making independent decisions and setting one's own goals. An example of an item for this career value is "Set my own goals and schedule".
- Creativity: work objectives related to developing new ideas and being innovative. An example of an item for this career value is "Use my imagination and creativity".
- Financial Rewards: work objectives related to receiving high salary and financial incentives for performance. An example of an item for this career value is "Make a good income".

- Career Development: work objectives related to engaging in personal and professional growth. An example of an item for this career value is “Learn for the sake of learning”.
- Prestige: work objectives related to obtaining recognition and status. An example of an item for this career value is “Work in an admired career”.
- Teamwork: work objectives related to having collaborative and positive working relationships with others. An example of an item for this career value is “Work collaboratively with people”.
- Security: work objectives related to having steady and predictable work and a sense of job security. An example of an item for this career value is “Earn a steady salary”.
- Excitement: work objectives related to having variety, taking risks, and trying new things. An example of an item for this career value is “Have each day be different”.

Due to copyright protection the inventory items have not been included in this document. The CVS was developed by psychologists at Psychometrics Canada and was based on the research tools developed for the International Work Importance Study (Super & Sverko, 1995). As part of this research project, experts in career development created items to measure the different aspects of work that were important to workers. Evaluating and elaborating on these items, Macnab, et al. (2005) initially created 120 items for a trial version of the CVS. After collecting preliminary data and determining internal consistency and item reliability, the test developers dropped the number of items to 88. They then used a matched sample of 7000 men and 7000 women to develop

norms for the inventory and conducted reliability and validity analyses (Macnab, et al., 2005).

Internal consistency calculated for each scale for males and females, using Cronbach's Alpha, showed internal consistency coefficients ranging from .75 to .89, with the majority of scales being above .8. Validity analyses demonstrated the CVS discriminated between occupational groups. As well, anticipated correlations were found between the CVS and a Career Interest Profiler and Work Personality Index measure. A group of 8554 participants also rated the accuracy of the measure and 95% of those participants rated the feedback as quite or very accurate (Macnab, et al., 2005).

A principal components analysis of the CVS results by the test developers on the matched normative sample produced three major components. The three components and the associated career values are:

- Self Expression: This component includes the four career values of Creativity, Independence, Excitement, and Career Development.
- Extrinsic Rewards: This component includes the three career values of Financial Rewards, Prestige, and Security.
- Working with Others: This component includes the three career values of Service Orientation, Teamwork, and Influence.

The component loadings for the CVS reported by Macnab, Bakker, & Fitzsimmons are shown in Table 1. Development of the Career Values Scale is described in more detail in the Manual and Users Guide (Macnab, et al., 2005).

Table 1

Principal Component Analysis of the CVS Norm Group

Scale	Component		
	1	2	3
Independence	0.697		
Creativity	0.852		
Development	0.578		
Excitement	0.685		
Finance		0.803	
Prestige		0.735	
Security		0.782	
Influence			0.485
Teamwork			0.800
Service			0.888

Development = Career Development; Finance = Financial Rewards; Service = Service Orientation

Description of Participants in the Database

The database contained results from 29,482 participants who completed the Career Values Scale. Participants completed all items on the CVS and many provided information on age, education, role status, ethnicity, and country. Participants were required to provide gender information. More women than men, 17,327 (58.8%),

completed the inventory. Of the sample, 28, 244 (95.8%) provided information about their age in one of seven categories. Age data are summarized in Table 2.

Table 2

Age Distribution of Research Study Participants

Age Group	Frequency	Percent
15-20	8220	27.9
21-25	4526	15.4
26-30	4269	14.5
31-40	6038	20.5
41-50	3767	12.8
51-60	1306	04.4
60+	118	00.4
No age information	1238	04.2

Of the participant group 27,020 (91.7%) provided educational information. Participants' educational level ranged from some high school to doctoral degrees. The largest percentages of participants had a bachelor's degree (26.7%), high school education (18.6%), or some college (15.5%). Sample participants were more highly educated than the average Canadian. Chi square calculations, using Statistics Canada (2006) census levels of education attainment as a comparison group, determined that the percentage of sample participants was significantly different than expected within the general population (X^2 (6) = 58.31, $p < .001$). As shown in Table 3, the educational groups having high school and some high school were under-represented in the sample

group and the educational groups having Bachelor, Masters, or Professional degrees were over-represented in the sample.

Table 3

Comparison of educational achievement between sample participants and Canadian population from 2006 census

Educational achievement	% of participants	% of Canadians
High School incomplete	20	24
High School	9	26
Trade/Technical	3	11
Post 2ndary Certificate or Diploma	24	21
Bachelor's Degree	29	12
Master's/Professional Degree	14	5
Doctorate	1	1
TOTAL	100	100

Participants could choose between seventeen occupational categories and 83.5% of the participants provided occupational information. All occupational categories were represented, with the largest number of participants checking the business-management (18.9%) category. A summary of the occupational breakdown of the sample is shown in Table 4.

Table 4

Occupational Distribution of Research Study Participants

Occupation	Frequency	Percent
Architecture	1566	5.3
Art/Design	2254	7.6
Business - Management	5559	18.9
Business - Sales/Clerical	2101	7.1
Education	2404	8.2
Journalism	656	2.2
Law	1223	4.1
Science	1275	4.3
Medicine Health	2106	7.1
Social Science	1465	5.0
Human Services	2004	6.8
Agriculture	187	0.6
Transportation	304	1.0
Machine Trades	180	0.6
Construction	248	0.8
Religion	180	0.6
Entertainment	912	3.1
No occupational information	4858	16.5

The sample was primarily composed of participants of Caucasian ancestry (68.2%), with some representation from African American/Canadians (4.8%), Native American/Canadians (4.2%), Asian American/Canadians (3.6%), and Latinos/Latinas (3.9%). Of the sample participants, 8.8% responded “other” to ethnicity and 6.4% did not respond to this question. Over 60 countries or geographical regions were represented in the sample although the participants were mainly from the USA (59.9%), Canada

(16.5%) and the UK (11.6%). Participants could also choose role status categories. The majority of respondents were employed (41.5%) but a large number of participants were students (34.8%) in various levels of education. Over 20% of the sample participants were either in junior or senior high school. Some participants were self-employed, seeking employment, or homemakers. See Table 5 for details.

Table 5

Role Involvement of Research Study Participants

Role status	Frequency	Percent
Junior High Student	608	2.1
High School Student	5531	18.8
College Student	4092	13.9
Employed	12235	41.5
Self-Employed	1104	3.7
Homemaker	512	1.7
Seeking Employment	3748	12.7
No role status information	1652	5.6

Just over 20% of the sample participants provided information regarding their four letter personality types. Within this group, all of the 16 personality types were represented.

Data Analysis Strategy

Quantitative methods were used to analyze the data using SPSS 16.0 (2007). Internal reliability for each CVS scale was assessed and a correlation matrix was produced to assess correlations among scales. An initial principal component analysis

was conducted on the 88 items to confirm the 10 scale structure of the inventory. A principal components analysis was then conducted on the ten scales to confirm the existence of three components within the measure.

Four separate sets of one-way Analysis of Variance (ANOVA) were conducted to test age, gender, education, or personality type hypotheses related to each of the three components of the CVS. The three component scores, Extrinsic Rewards, Working with Others, and Self-Expression, were used as dependent variables for each set of analyses. Age, gender, education, and personality type were used, in separate analyses, as dependent, or grouping, variables. Participants in the 60+ age category were omitted from the analyses because of the small number of cases in this group and the much broader possible age span of participants compared to other groups.

Age analyses included six categories: 15-20, 21-25, 26-30, 31-40, 41-50, and 51-60 years of age. Education analyses included ten categories: some high school, high school, trade technical, some college, associate degree, community college, bachelor's degree, master's degree, professional degree, and doctorate degree. Personality type analyses included the 16 personality types as sorted by the Myers-Briggs Type Indicator® (Briggs-Myers & Myers, 1980). These 16 four letter codes represent preferences for Extraversion (E) or Introversion (I), Sensing (S) or Intuition (N), Thinking (T) or Feeling (F), and Judging (J) or Perceiving (P). Thus the 16 personality types are summarized as: ESTJ, ESFJ, ENTJ, ENFJ, ESTP, ESFP, ENTP, ENFP, ISTJ, ISFJ, INTJ, INFJ, ISTP, ISFP, INTP, and INFP.

In cases of multiple groups, statistically significant F-tests from the ANOVA were followed by Bonferroni-adjusted t-tests to determine which specific groups differed.

CHAPTER 4: RESULTS

The first part of this chapter includes a summary of how values were ranked by the participants. The second part contains an analysis of the CVS scores from the sample participants including internal consistency calculations, a correlation matrix showing the interrelationship among the 10 CVS scales, and results from a principal components analysis completed on the values scales. The next parts of the chapter contain separate ANOVA results for the four grouping variables of age, gender, education, and personality type. Component sores were used as the independent variable producing three separate ANOVAs for each grouping variable.

Value Scales Rankings

In order to summarize the relative importance of the career values to participants, scores for each career value were ranked from one to ten for each participant. As shown in Table 6 and Figures 1 and 2, the value of Career Development was rated as most important by 36.1% of the sample participants and by 73.2% as one of the top three rated career values. The career value of Service was next likely to be chosen as most important. This value was chosen by 19.5% of the sample participants as their most important career value and by 48.6% as one of the top three rated career values. Creativity was chosen by 10.1% of the sample participants as most important and Financial Rewards was chosen by 9.6%.

After these four top career values, other values were much less frequently chosen as most important. Independence was rated as most important for 6.7% of the sample participants. Security was rated as most important for 6.0% of the sample participants. Influence was rated as most important for 5% of the sample participants. Prestige was

rated as most important for 4.2% of the sample participants. Excitement was rated as most important for 1.9% of the sample participants. Teamwork was rated as most important for 0.8% of the sample participants. Chi square calculations determined these differences in ratings were statistically significant (X^2 (9) = 98.9, $p < .001$ for first place rating and X^2 (9) = 112.93, $p < .001$ for the top three ratings).

Table 6

Percent of Total Sample Rating a Career Value as the Most Important and as One of the Top Three Most Important Career Values

Career Value	Rated Most Important	In Top Three Rating
Career Development	36.1	73.2
Service Orientation	19.5	48.6
Creativity	10.1	37.3
Financial Rewards	9.6	31.9
Independence	6.7	28.0
Security	6.0	23.8
Influence	5.0	19.7
Prestige	4.2	18.2
Excitement	1.9	9.5
Teamwork	0.8	9.7

The percentage of people in the sample rating the ten career values as most important or as one of the top three most important values is shown in Figures 1 and 2.

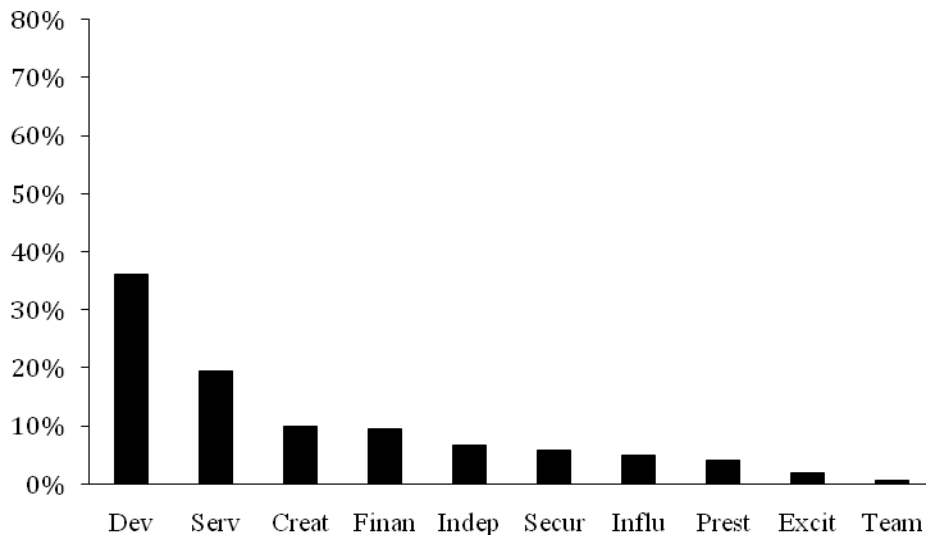

Figure 1. Percent of total sample rating a career value as the most important career value.

Serv = Service; Influ = Influence; Indep = Independence; Creat = Creativity; Finan = Financial Rewards; Dev = Career Development; Prest = Prestige; Team = Teamwork; Secur = Security; Excit =Excitement.

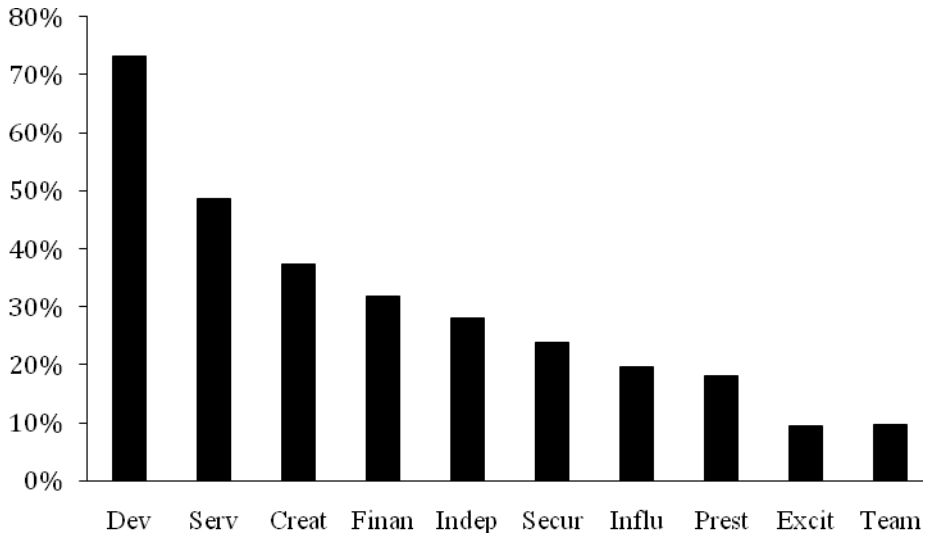

Figure 2. Percent of total sample rating a career value as one of the top three most important career values.

Serv = Service; Influ = Influence; Indep = Independence; Creat = Creativity; Finan = Financial Rewards; Dev = Career Development; Prest = Prestige; Team; Teamwork; Secur = Security; Excit =Excitement.

Analysis of CVS Items

To check scale reliability, internal consistency coefficients were calculated for each of the 10 career values scales comprising the CVS. The Cronbach's Alpha coefficients ranged from .75 to .88, indicating all scales showed good to excellent internal consistency. These coefficients are summarized in Table 7.

Table 7

Internal Consistency Coefficients for the CVS 10 scales from the sample data

CVS Scale	Cronbach's Alpha
Service Orientation	0.84
Influence	0.86
Independence	0.79
Creativity	0.87
Financial Rewards	0.86
Career Development	0.88
Prestige	0.84
Teamwork	0.88
Security	0.77
Excitement	0.75

Since the career values scales contained different numbers of items, and thus different means and standard deviations, they were not directly comparable. In order to compare scores, Sten Scores, a form of standardized scores, provided in the database for the 10 career values scales were used for the rest of the calculations in this section. Sten scores range from 1 to 10, have a mean of 5.5 and a standard deviation of 2 (Macnab, Bakker, & Fitzsimmons, 2005). Correlations among scales were calculated using Pearson's correlation coefficient. All of the correlations, with the exception of the correlation between Security and Excitement, were significant at the $p < .001$ level. All correlations were positive, with the exception of the correlation between Creativity and Security. These correlations are shown in Table 8.

Table 8

Inter-correlations of 10 CVS Scales for the Sample (Pearson)

	Serv	Influ	Indep	Creat	Finan	Dev	Prest	Team	Secur	Excit
Serv	1	0.45*	0.11*	0.23*	0.09*	0.36*	0.23*	0.59*	0.23*	0.23*
Influ		1	0.31*	0.44*	0.44*	0.35*	0.54*	0.44*	0.20*	0.46*
Indep			1	0.49*	0.38*	0.29*	0.28*	0.16*	0.16*	0.35*
Creat				1	0.31*	0.51*	0.29*	0.26*	-0.03*	0.49*
Finan					1	0.22*	0.60*	0.23*	0.43*	0.35*
Dev						1	0.27*	0.33*	0.08*	0.36*
Prest							1	0.38*	0.39*	0.36*
Team								1	0.23*	0.41*
Secur									1	0.01
Excit										1

*p< .001. Serv = Service; Influ = Influence; Indep = Independence; Creat = Creativity; Finan = Financial Rewards; Dev = Career Development; Prest = Prestige; Team = Teamwork; Secur = Security; Excit =Excitement.

Principal component analysis (PCA) was conducted on the 10 CVS scales. Three components had initial eigenvalues over 1 (see Table 9). This, plus inspection of the scree plot (see Figure 3) supported a three component interpretation for the component analysis.

Table 9

Total Variance Explained: Extraction Method Principal Component Analysis

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	03.94	39.41	39.41
2	01.39	13.92	53.33
3	01.28	12.82	66.15
4	00.77	07.71	73.86
5	00.63	06.29	80.15
6	00.54	05.44	85.59
7	00.42	04.16	89.75
8	00.38	03.76	93.51
9	00.35	03.51	97.02
10	00.30	02.98	100.00

Component 1 accounted for 39.41 % of the total variance, component 2 accounted for 13.92 % of the total variance, and Component 3 accounted for 12.82 of the total variance (see Table 9).

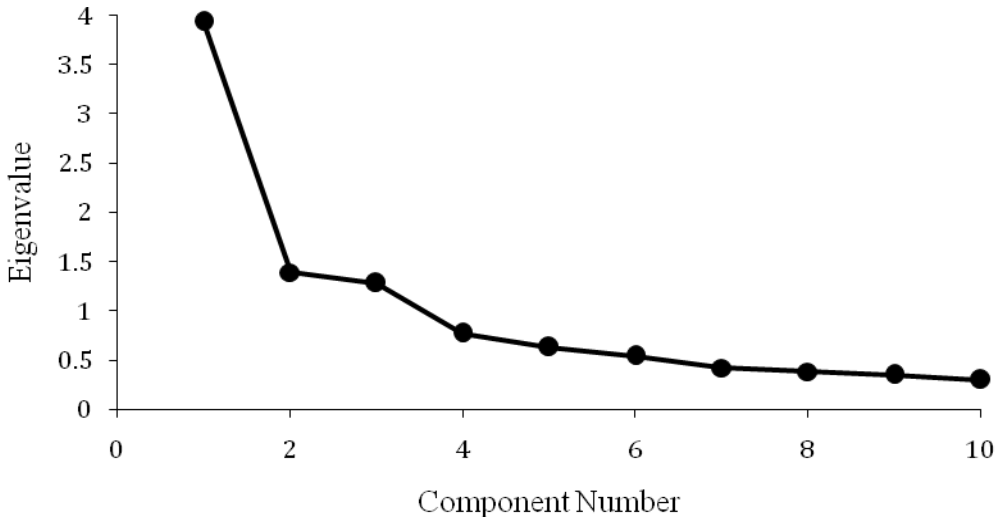

Figure 3. Scree Plot showing the principal components extracted from the 10 scales on the CVS.

Loadings for the three main components were obtained using Varimax rotation procedures and are described in Table 10. These three components are similar to those extracted from the norm group by the test developers. Component 1, labeled Self-Expression by the test developers, contained the career values Creativity, Excitement, Independence, and Career Development as found in the CVS developers' principal components analysis (Macnab, Bakker, & Fitzsimmons, 2005). One difference in component loadings between the sample and norm group was the loading of the career value Influence. Influence loaded on two Components, 1 (.475) and 3 (.473). A second difference was that, in this sample, Career Development also loaded on both Components 1 (.584) and 3 (.416).

Three scales, Financial Rewards, Security, and Prestige loaded on Component 2, the same values scales that make up the Extrinsic Rewards component extracted by the test developers. Component 3, labeled Working with Others by the test developers, contained the same career values of Service Orientation, Teamwork, and Influence

found in the CVS developer's principal components analysis. As noted above, the career value Career Development also loaded on this component (.416).

Table 10

Principal Components Analysis of Research Data

Scale	Component		
	1	2	3
Independence	0.685	__ [a]	__
Creativity	0.841	__	__
Development	0.584	__	0.416
Excitement	0.684	__	__
Finance	__	0.792	__
Prestige	__	0.729	__
Security	__	0.788	__
Influence	0.475	__	0.473
Teamwork	__	__	0.797
Service	__	__	0.881

Rotation converged in 5 iterations through varimax rotation.

[a] Only component loadings of 0.4 or above were included in the table. Development = Career Development; Finance = Financial Rewards; Service = Service Orientation.

In summary, the principal components analysis confirmed the three-component structure of the CVS, with most career values loading as expected on the three components. The career values of Influence and Career Development loaded on two components, Self-expression and Working with Others. The scale of Influence is

composed of items regarding controlling and managing the work efforts of others and conceptually fits well into working with others, while the scale of Career Development has items related to engaging in personal and professional growth, and conceptually fits into Self-Expression. Three component scores were produced from the principal components analysis. The components scores produced have a mean of 0 and a standard deviation of 1.

Age

Three separate one-way ANOVA's were conducted to determine if significant age differences existed for the three components scores produced by principal components analysis of the CVS.

Component 1 (Self-Expression) Analysis by Age

Means and standard deviations for Component 1 scores across the six age groups appear in Table 11.

Table 11

Descriptive Statistics for Component 1 (Self-Expression) Scores by Age

Age	M	SD	N
15-20	- 00.11	00.98	8220
21-25	- 00.05	01.03	4526
26-30	00.02	01.02	4269
31-40	00.09	01.00	6038
41-50	00.10	00.99	3767
51-60	00.14	00.99	1306
Total	00.00	01.00	28126

These means are shown in Figure 4.

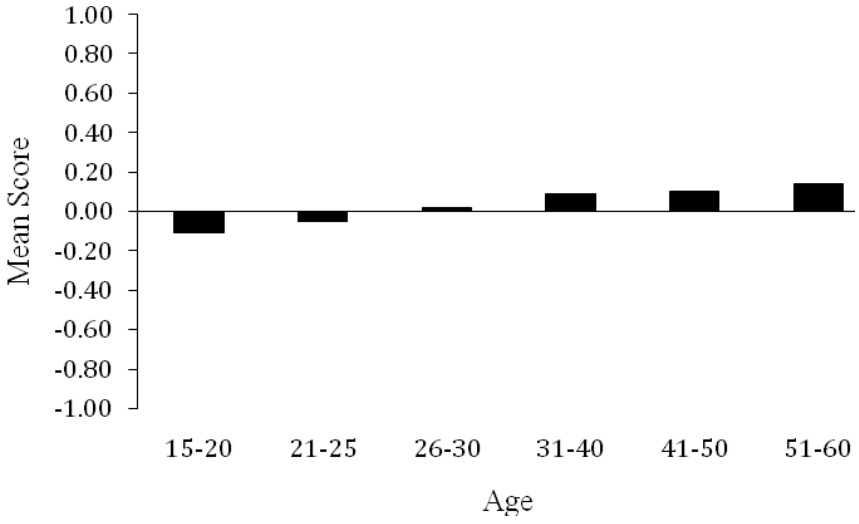

Figure 4. Age differences on Self-Expression component score

Bars represent the mean score for each age group on Component 1. The horizontal line represents the mean score for the entire sample.

Results of the one-way ANOVA on Component 1 by age indicated that the main effect for age was significant, $F(5) = 45.25$, $p < .001$. This effect was small, however, with age accounting for less than 1% of the variance in this component score (See Table 12).

Table 12

Summary of ANOVA Results for Component 1(Self-Expression) by Age

Variable	SS	df	MS	F	P	η^2
Age	224.46	5	44.89	45.25	00.00	00.008
Error	27900.54	28120	00.99			

Several significant differences between age groups were found in the post hoc analysis by using Bonferroni multiple comparisons (See Table A1). Scores on Component 1 exhibited a small, gradual increase as age increased. The youngest age group (15-20 year olds) scored significantly lower than all other age groups, and the next age group, 21-25 year olds, scored significantly lower than all of the older age groups (26-30, 31-40, 41-50, and 51-60 year olds). The 26-30 year old group also scored significantly lower than the older three age groups (31-40, 41-50, and 51-60 year olds). There were no significant differences between the 31-40, 41-50, and 51-60 year old age groups in this component score. These results do not support Hypothesis 1, which stated youth (15-20 year olds) would score higher than other age groups on the Self-Expression component of the CVS. The youngest group (15-20 year olds) had the lowest mean score on this component, opposite to what was predicted.

Component 2 (Extrinsic Rewards) Analysis by Age

Means and standard deviations for Component 2 scores across the six age groups appear in Table 13.

Table 13

Descriptive Statistics for Component 2 (Extrinsic Rewards) Scores by Age

Age	M	SD	N
15-20	0.40	1.02	8220
21-25	- 0.08	1.05	4526
26-30	- 0.13	0.92	4269
31-40	- 0.17	0.91	6038
41-50	- 0.26	0.90	3767
51-60	- 0.27	0.86	1306
Total	0.00	1.00	28126

These means are shown in Figure 5.

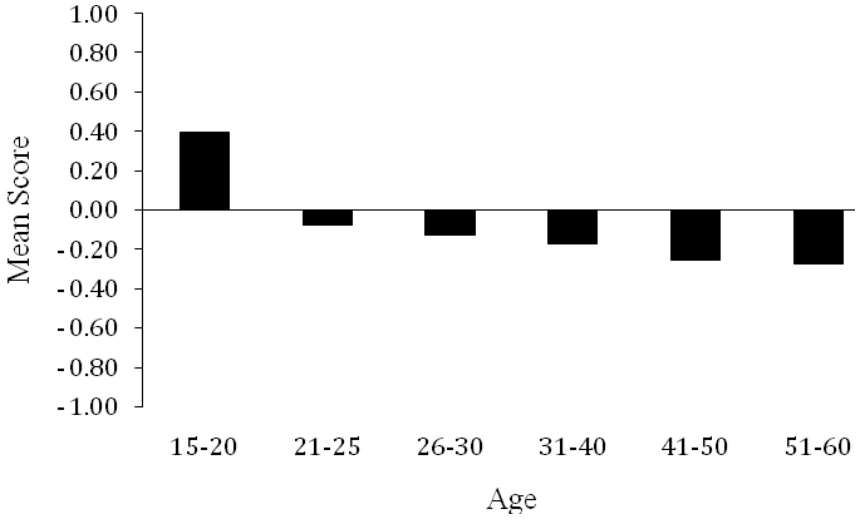

Figure 5. Age differences on Extrinsic Rewards component score.

Bars represent the mean score for each age group on Component 2. The horizontal line represents the mean score for the entire sample.

Results of the one-way ANOVA on Component 2 by age indicated that the main

effect for age was significant, F (5) = 408.38, p < .001. This effect accounted for 6.8% of the variance in this component score (See Table 14).

Table 14

Summary of ANOVA Results for Component 2 (Extrinsic Rewards) by Age

Variable	SS	df	MS	F	P	η^2
Age	1904.00	5	380.80	408.38	00.00	0.068
Error	26220.10	28120	00.93			

Several significant differences between age groups were found in the post hoc analysis by using Bonferroni multiple comparisons (See Table A2). Scores on Component 2 decreased across age groups. The youngest age group (15-20 year olds) scored significantly higher than all other age groups. In fact, this was the only age group to score above the total group mean in this component. The next age group, 21-25 year olds, scored significantly higher than three of the older age groups (31-40, 41-50, and 51-60 year olds). The 26-30 year old group also scored significantly higher than the two oldest age groups (41-50, and 51-60 year olds). There were no significant differences between the 21-25 and the 26-30 year old group, no significant differences between the 26-30 and 31-40 year old group, and no significant differences between the 41-50 and the 51-60 year old age groups in this component score. These results support Hypothesis 2, which stated youth (15-20 year olds) would score higher than other age groups on the Extrinsic Rewards component of the CVS.

Component 3 (Working with Others) Analysis by Age

Means and standard deviations for Component 3 scores across the six age groups appear in Table 15.

Table 15

Descriptive Statistics for Component 3 (Working with Others) Scores by Age

Age	M	SD	N
15-20	0.01	1.02	8220
21-25	0.07	1.04	4526
26-30	-0.01	1.00	4269
31-40	-0.08	0.99	6038
41-50	0.02	0.94	3767
51-60	0.05	0.90	1306
Total	0.00	1.00	28126

These means are shown in Figure 6.

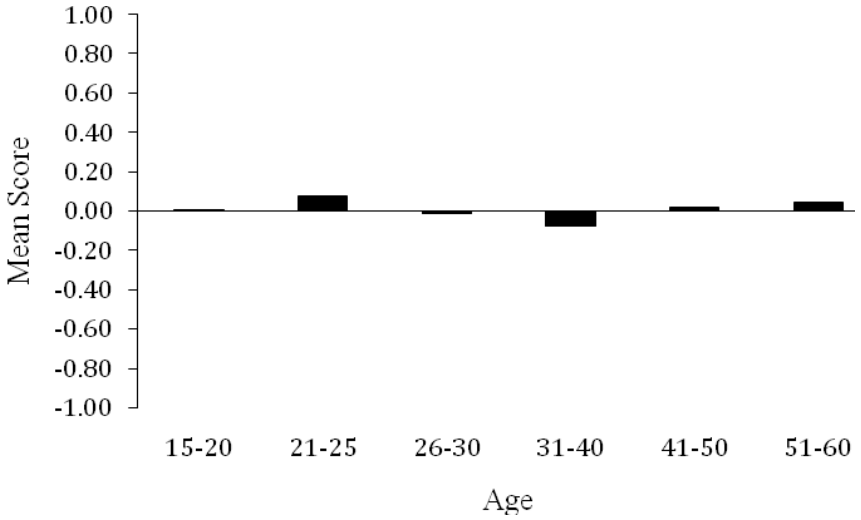

Figure 6. Age differences on Working with Others component score.

Bars represent the mean score for each age group on Component 3. The horizontal line represents the mean score for the entire sample.

Results of the one-way ANOVA on Component 3 by age indicated that the main effect for age was significant, $F(5) = 13.39$, $p < .001$. This effect was significant, but very small, with age accounting for only .2 % of the variance in this component score (See Table 16).

Table 16

Summary of ANOVA Results for Component 3 (Working with Others) by Age

Variable	SS	df	MS	F	P	η^2
Age	66.78	5	13.36	13.39	00.00	0.002
Error	28058.22	28120	00.99			

Several significant differences between age groups were found in the post hoc analysis by using Bonferroni multiple comparisons (See Table A3). Scores on

Component 3 were lowest in the 31-41 year old age group. This score was significantly lower than all other age groups. The 21-25 year old age group had the highest score on this component; this score was significantly higher than the scores of the other young groups (15-20, 26-30, 31-40 year olds) but not significantly different from the two oldest groups (41-50 and 51-60 year olds). There were no significant differences between the 41-50 and 51-60 year old age groups in this component score. These results supported Hypothesis 3 somewhat. Hypothesis 3 stated youth (ages 15-20) would score higher than other age groups on the Working with Others component of the CVS and that workers in mid-life (age 41+) and older would score higher than workers in their 20s and 30s on this component. Although the youngest group did not have the highest mean score, as expected, the mean scores of participants in their later 20s and 30s were lower than the mean scores of the other age groups.

Gender

Component 1 (Self-Expression) Analysis by Gender

Means and standard deviations for Component 1 scores for men and women in the sample appear in Table 17.

Table 17

Descriptive Statistics for Component 1 (Self-Expression) Scores by Gender

Gender	M	SD	N
Men	0.14	0.97	10892
Women	- 0.09	1.03	17234
Total	0.00	1.00	28126

These means are shown in Figure 7.

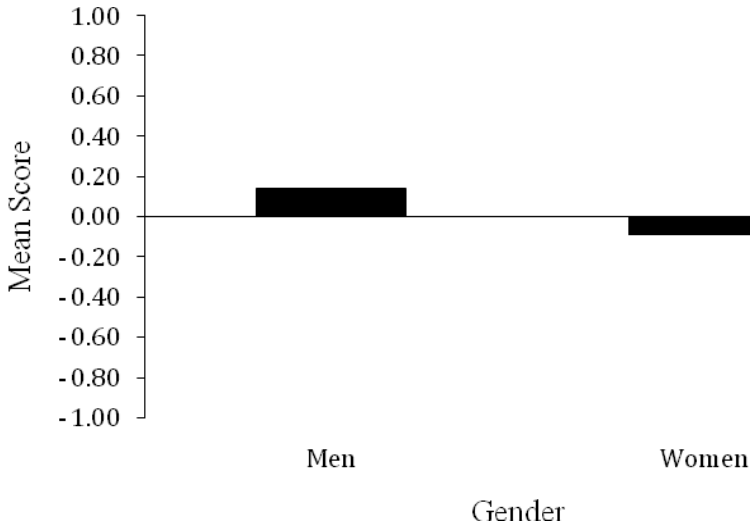

Figure 7. Gender differences on Self-Expression component score.

Bars represent the mean score for gender on Component 1. The horizontal line represents the mean score for the entire sample.

Results of the one-way ANOVA on Component 1 by gender indicated that the main effect for gender was significant, $F(1) = 332.84$, $p < .001$. This effect was small, with gender accounting for 1.2 % of the variance in this component score (See Table 18). These results support Hypothesis 4, which stated men would score higher on the Self-Expression component of the CVS.

Table 18

Summary of ANOVA Results for Component 1 (Self-Expression) by Gender

Variable	SS	df	MS	F	P	η^2
Gender	328.96	1	328.96	332.84	00.00	0.012
Error	27796.04	28124	00.99			

Component 2 (Extrinsic Rewards) Analysis by Gender

Means and standard deviations for Component 2 scores for men and women in the sample appear in Table 19.

Table 19

Descriptive Statistics for Component 2 (Extrinsic Rewards) Scores by Gender

Gender	M	SD	N
Men	0.06	1.00	10892
Women	-0.04	1.00	17234
Total	0.00	1.00	28126

These means are shown in Figure 8.

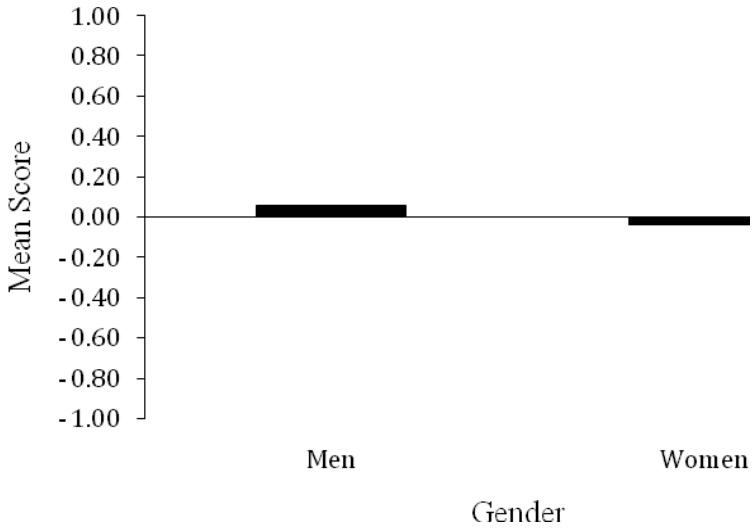

Figure 8. Gender differences on Extrinsic Rewards component score.

Bars represent the mean score for gender on Component 2. The horizontal line represents the mean score for the entire sample.

Results of the one-way ANOVA on Component 2 by gender indicated that the main effect for gender was significant, $F(1) = 53.68$, $p < .001$. This effect was very

small, with gender accounting for only 0.2 % of the variance in this component score (See Table 20). These results support Hypothesis 5, which stated men would score higher on the Extrinsic Rewards component of the CVS.

Table 20

Summary of ANOVA Results for Component 2(Extrinsic Rewards) by Gender

Variable	SS	df	MS	F	P	η^2
Gender	53.58	1	53.58	53.68	00.00	0.002
Error	28071.42	28124	00.998			

Component 3 (Working with Others) Analysis by Gender

Means and standard deviations for Component 3 scores for men and women in the sample appear in Table 21.

Table 21

Descriptive Statistics for Component 3 (Working with Others) Scores by Gender

Gender	M	SD	N
Men	- 0.15	1.00	10892
Women	0.10	0.99	17234
Total	0.00	1.00	28126

These means are shown in Figure 9.

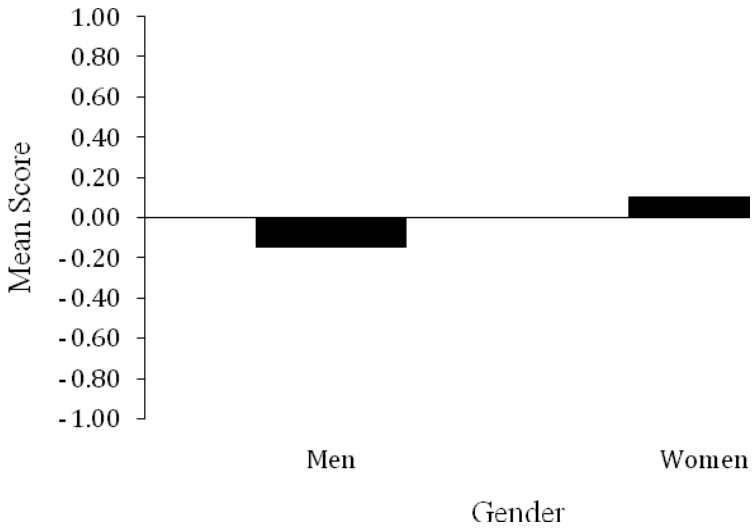

Figure 9. Gender differences on Working with Others component score.

Bars represent the mean score for gender on Component 3. The horizontal line represents the mean score for the entire sample.

Results of the one-way ANOVA on Component 3 by gender indicated that the main effect for gender was significant, $F(1) = 414.93$, $p < .001$. This effect was small, accounting for 1.5 % of the variance in this component score (See Table 22). These results support Hypothesis 6, which stated women would score higher on the Working with Others component of the CVS.

Table 22

Summary of ANOVA Results for Component 3 (Working with Others) by Gender

Variable	SS	df	MS	F	P	η^2
Gender	408.91	1	408.91	414.93	00.00	0.015
Error	27716.09	28124	00.99			

Education

Component 1 (Self-Expression) Analysis by Education

Means and standard deviations for Component 1 scores across the 10 educational groups appear in Table 23.

Table 23

Descriptive Statistics for Component 1 (Self-Expression) Scores by Education

Education	M	SD	N
Some High School	- 0.08	0.95	5445
High School	- 0.17	0.99	2482
Trade/Technical School	- 0.08	0.93	657
Some College	- 0.08	1.03	4552
Associate Degree	- 0.12	0.98	918
Community College	0.01	0.98	788
Bachelor's Degree	0.04	1.01	7826
Master's Degree	0.23	0.99	3245
Professional Degree	0.31	0.96	519
Doctorate	0.41	1.05	415
TOTAL	0.00	1.00	26847

These means are shown in Figure 10.

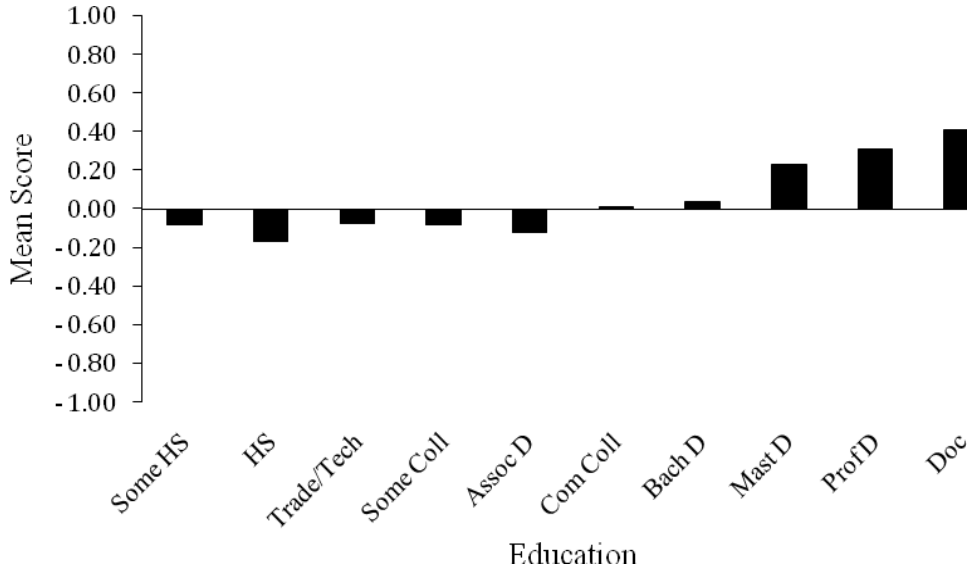

Figure 10. Educational differences on Self-Expression component score.

Bars represent the mean score for each educational group on Component 1. The horizontal line represents the mean score for the entire sample. Some HS = Some High School; HS = High School; Trade/Tech = Trade/Technical School; Some Coll = Some College; Assoc D = Associate Degree; Com Coll = Community College; Bach D = Bachelor's Degree; Mast D = Master's Degree; Prof D = Professional Degree; Doc = Doctorate.

Results of the one-way ANOVA on Component 1 by education indicated that the main effect for education was significant, $F(9) = 51.54$, $p < .001$. This effect was significant, with education accounting for 1.7 % of the variance in this component score (See Table 24).

Table 24

Summary of ANOVA Results for Component 1 (Self-Expression) by Education

Variable	SS	df	MS	F	P	η^2
Education	456.65	9	50.74	51.54	00.00	0.017
Error	26418.63	26837	00.99			

Several significant differences between educational groups were found in the post hoc analysis by using Bonferroni multiple comparisons (See Table A4). Generally, mean scores tended to be higher as educational level increased. High-school graduates scored the lowest on this component; the mean score of this group was significantly lower on this component than all other groups with the exception of those with Trade/Technical or Associate Degrees. There were no significant differences among mean scores of the Some High School, Trade/Technical School, Some College, Associate Degree, and Community College groups.

Those with academic degrees generally scored significantly higher than the other groups on Component 1. Participants with a Doctoral level of education had the highest mean score, significantly higher than all other educational groups except for the Professional Degree group. There was no significant difference between mean scores of those with Doctoral and those with Professional Degrees. The mean score of those with Professional Degrees was significantly higher than all the lower educational groups, with the exception of the Master's Degree group. There was no significant difference between mean scores of those with Professional Degrees and those with Master's Degrees. Those with Bachelor's Degrees scored higher than the lower educational

groups, with the exception of no significant difference between this group and the Community College and Trade/Technical groups. These results support Hypothesis 7, which stated participants with higher levels of education would score higher than the less educated groups on the Self-Expression component of the CVS.

Component 2 (Extrinsic Rewards) Analysis by Education

Means and standard deviations for Component 2 scores across the 10 educational groups appear in Table 25.

Table 25

Descriptive Statistics for Component 2 (Extrinsic Rewards) Scores by Education

Education	M	SD	N
Some High School	0.42	0.99	5445
High School	0.22	1.01	2482
Trade/Technical School	- 0.01	0.93	657
Some College	- 0.04	0.98	4552
Associate Degree	- 0.03	0.93	918
Community College	- 0.08	0.93	788
Bachelor's Degree	- 0.20	0.94	7826
Master's Degree	- 0.27	0.95	3245
Professional Degree	- 0.21	0.94	519
Doctorate	- 0.43	1.00	415
TOTAL	- 0.01	1.00	26847

These means are shown in Figure 11.

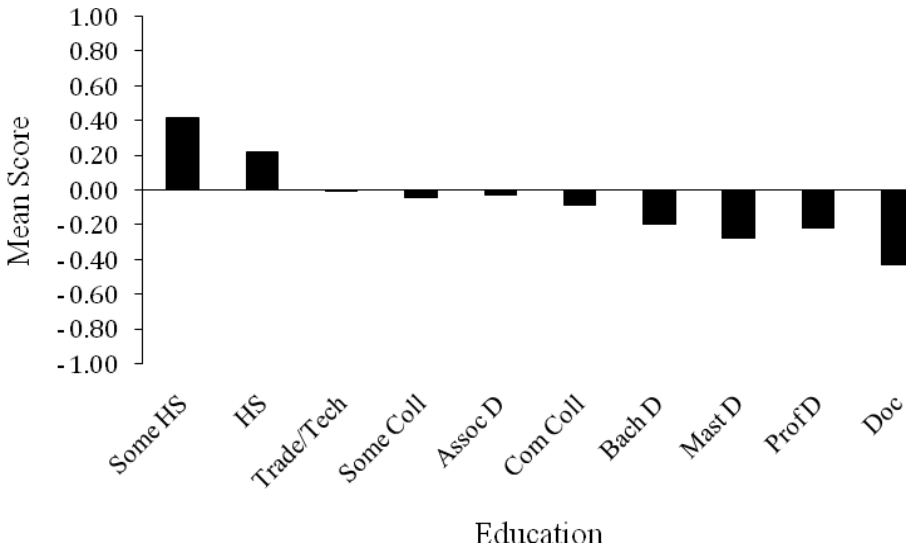

Figure 11. Educational differences on Extrinsic Rewards component score. Bars represent the mean score for each educational group on Component 2. The horizontal line represents the mean score for the entire sample. Some HS = Some High School; HS = High School; Trade/Tech = Trade/Technical School; Some Coll = Some College; Assoc D = Associate Degree; Com Coll = Community College; Bach D = Bachelor's Degree; Mast D = Master's Degree; Prof D = Professional Degree; Doc = Doctorate.

Results of the one-way ANOVA on Component 2 by education indicated that the main effect for education was significant, $F(9) = 205.96$, $p < .001$, with education accounting for 6.5 % of the variance in this component score (See Table 26).

Table 26

Summary of ANOVA Results for Component 2 (Extrinsic Rewards) by Education

Variable	SS	df	MS	F	P	η^2
Education	1732.21	9	192.47	205.96	00.00	0.065
Error	25078.40	26837	00.93			

Several significant differences between educational groups were found in the post hoc analysis by using Bonferroni multiple comparisons (See Table A5). Participants with some high school obtained the highest mean score on this component. This score was significantly higher than all of the other groups. High school graduates had the second highest score, which was also significantly higher than all of the more educated groups. These groups, some high school and high school graduates, were the only two groups to score above the sample mean score. Those with Master's and Doctoral degrees rated this value significantly lower than all other groups with the exception of the Professional Degree group. These results support Hypothesis 8, which stated participants with lower levels of education would score higher than the more educated groups on the Extrinsic Rewards component of the CVS.

Component 3 (Working with Others) Analysis by Education

Means and standard deviations for Component 3 scores across the 10 educational groups appear in Table 27.

Table 27

Descriptive Statistics for Component 3 (Working with Others) Scores by Education

Education	M	SD	N
Some High School	0.02	1.02	5445
High School	0.05	1.00	2482
Trade/Technical School	0.04	0.96	657
Some College	- 0.05	1.03	4552
Associate Degree	- 0.10	1.05	918
Community College	0.16	0.95	788
Bachelor's Degree	- 0.01	0.98	7826
Master's Degree	0.02	0.97	3245
Professional Degree	- 0.05	1.00	519
Doctorate	- 0.17	0.97	415
TOTAL	0.00	1.00	26847

These means are shown in Figure 12.

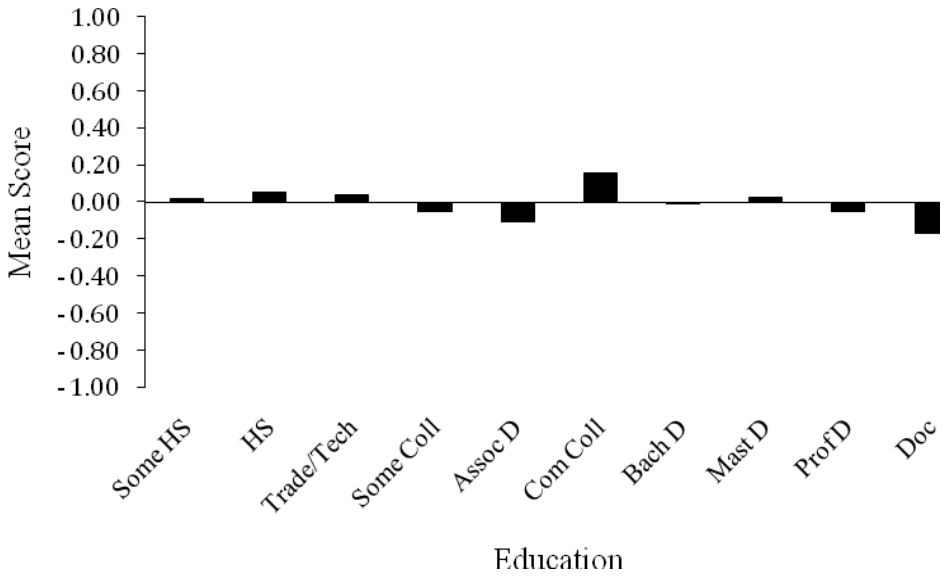

Figure 12. Educational differences on Working with Others component score. Bars represent the mean score for each educational group on Component 3.The horizontal line represents the mean score for the entire sample. Some HS = Some High School; HS = High School; Trade/Tech = Trade/Technical School; Some Coll = Some College; Assoc D = Associate Degree; Com Coll = Community College; Bach D = Bachelor's Degree; Mast D = Master's Degree; Prof D = Professional Degree; Doc = Doctorate.

Results of the one-way ANOVA on Component 3 by education indicated that the main effect for education was significant, $F(9) = 7.29$, $p < .001$. This effect was significant, but very small, with education accounting for only 0.2 % of the variance in this component score (See Table 28).

Table 28

Summary of ANOVA Results for Component 3 (Working with Others) by Education

Variable	SS	df	MS	F	P	η^2
Education	65.58	9	07.29	07.29	00.00	0.002
Error	26827.74	26837	01.00			

Some significant differences between educational groups were found in the post hoc analysis by using Bonferroni multiple comparisons (See Table A6). The Community College group scored significantly higher on this component than all other educational groups with the exception of the High School and Trades/Technical groups. The Doctorate educational group scored lowest on this component. No clear trends were seen in the mean score differences as education level increased. These results did not support Hypothesis 9, which stated participants with higher levels of education would score higher than the less educated groups on the Work with Others component of the CVS.

Personality Type

Component 1 (Self-Expression) Analysis by Personality Type

Means and standard deviations for Component 1 scores across the 16 personality type groups appear in Table 29. Note the overall mean score of the sample reporting personality type preferences is higher (M = 0.16) than the entire research sample group (M = 0).

Table 29

Descriptive Statistics for Component 1 (Self-Expression) Scores by Personality Type

Type	M	SD	N
ENFJ	0.11	0.92	349
ENFP	0.44	0.98	658
ENTJ	0.54	0.89	297
ENTP	0.78	0.97	318
ESFJ	- 0.61	0.96	244
ESFP	- 0.29	0.95	112
ESTJ	- 0.16	0.88	256
ESTP	0.08	0.88	107
INFJ	- 0.11	0.98	604
INFP	0.19	0.97	856
INTJ	0.43	0.94	642
INTP	0.62	1.01	539
ISFJ	- 0.71	1.03	245
ISFP	- 0.16	1.01	127
ISTJ	- 0.33	0.99	391
ISTP	0.18	0.90	109
TOTAL	0.16	1.04	5854

Type = Personality Type

These means are shown in Figure 13.

Figure 13. Personality type differences on Self-Expression component score. Bars represent the mean score for each personality type group on Component 1. The horizontal line represents the mean score for the entire research sample.

Results of the one-way ANOVA on Component 1 (Self-Expression) by personality type indicated that the main effect for personality type was significant, $F(15) = 65.57$, $p < .001$. This effect accounted for 14.4 % of the variance in this component score (See Table 30).

Table 30

Summary of ANOVA Results for Component 1 (Self-Expression) by Personality Type

Variable	SS	df	MS	F	P	η^2
Personality Type	916.17	15	61.08	65.57	00.00	0.144
Error	5437.92	5838	00.93			

Several significant differences on Component 1 between personality groups were found in the post hoc analysis by using Bonferroni multiple comparisons (See Table A7). The Intuitive Types (N) generally scored above the research sample mean and Sensing types (S) generally scored below the research sample mean, although these group mean scores were not always significantly different from all the other personality type groups. ENTP and INTP groups scored highest on this component and the ESFJ and ISFJ groups scored lowest on this component. The ENTP group's mean score was significantly higher than eight of the other personality type groups. The INTP group's mean score was significantly higher than ten of the other group means. These results support Hypothesis 10, which stated that the highest scores on the Self-Expression component of the CVS would be for participants who prefer N and T and P (ENTP and INTP).

Component 2 (Extrinsic Rewards) Analysis by Personality Type

Means and standard deviations for Component 2 scores across the 16 personality type groups appear in Table 31. Note the overall mean score of the sample reporting personality type preferences is lower (M = - 0.28) than the entire research sample group (M = 0). Eleven of the sixteen personality type groups had a lower mean score than the mean score for the overall research sample. These eleven types included all of the eight types with preferences for Intuition.

Table 31

Descriptive Statistics for Component 2 (Extrinsic Rewards) Scores by Personality Type

Type	M	SD	N
ENFJ	- 0.18	0.94	349
ENFP	- 0.53	0.97	658
ENTJ	- 0.07	0.85	297
ENTP	- 0.50	0.91	318
ESFJ	0.22	0.96	244
ESFP	- 0.06	1.05	112
ESTJ	0.21	0.93	256
ESTP	0.03	1.03	107
INFJ	- 0.34	0.98	604
INFP	- 0.58	0.98	856
INTJ	- 0.31	0.94	642
INTP	- 0.62	0.96	539
ISFJ	0.10	0.88	245
ISFP	- 0.23	1.07	127
ISTJ	0.17	0.93	391
ISTP	- 0.06	0.89	109
TOTAL	- 0.28	0.99	5854

Type = Personality Type

These means are shown in Figure 14.

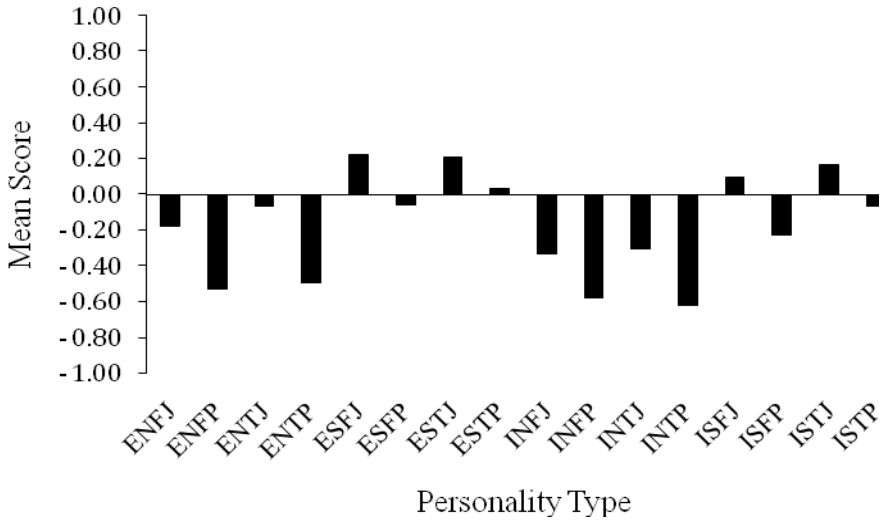

Figure 14. Personality type differences on Extrinsic Rewards component score. Bars represent the mean score for each personality type group on Component 2. The horizontal line represents the mean score for the entire research sample.

Results of the one-way ANOVA on Component 2 by personality type indicated that the main effect for personality type was significant, $F(15) = 34.69$, $p < .001$. This effect accounted for 8.2 % of the variance in this component score (See Table 32).

Table 32

Summary of ANOVA Results for Component 2 (Extrinsic Rewards) by Personality Type

Variable	SS	df	MS	F	P	η^2
Personality Type	473.56	15	31.57	34.69	00.00	0.082
Error	5312.87	5838	00.91			

Several significant differences between personality type groups on Component 2 were found in the post hoc analysis by using Bonferroni multiple comparisons (See Table A8). The SJ (ESFJ, ESTJ, ISFJ and ISTJ) groups had the highest mean scores on

this component. Only one other personality type group (ESTP) was above the research sample mean and this mean was only slightly above 0 (0.03). The group with the highest score, ESFJ, was significantly higher than 10 other personality type groups. The four NP groups (ENFP, ENTP, INTP, and INFP) had the lowest mean scores on this component. The group with the lowest score, INTP, was significantly lower than 10 other groups, and the group with the next lowest mean score, INFP, was significantly lower than 11 other groups. These results support Hypothesis 11, which stated that the highest scores on the Extrinsic Rewards component of the CVS would be for participants who prefer both S and J (ESTJ, ISTJ, ESFJ, and ISFJ).

Component 3 (Working with Others) Analysis by Personality Type

Means and standard deviations for Component 3 scores across the 16 personality type groups appear in Table 33. The overall mean score of the sample reporting personality type preferences is lower (M = - 0.07) than the mean of the research sample (M = 0).

Table 33

Descriptive Statistics for Component 3 (Working with Others) Scores by Personality Type

Type	M	SD	N
ENFJ	0.43	0.81	349
ENFP	0.34	0.89	658
ENTJ	0.00	0.88	297
ENTP	0.00	0.93	318
ESFJ	0.55	0.85	244
ESFP	0.46	0.95	112
ESTJ	0.23	0.86	256
ESTP	0.11	0.94	107
INFJ	- 0.04	1.01	604
INFP	- 0.14	1.04	856
INTJ	- 0.56	1.02	642
INTP	- 0.66	1.08	539
ISFJ	0.09	0.94	245
ISFP	- 0.10	1.06	127
ISTJ	- 0.34	0.95	391
ISTP	- 0.48	1.07	109
TOTAL	- 0.07	1.03	5854

Type = Personality Type

These means are shown in Figure 15.

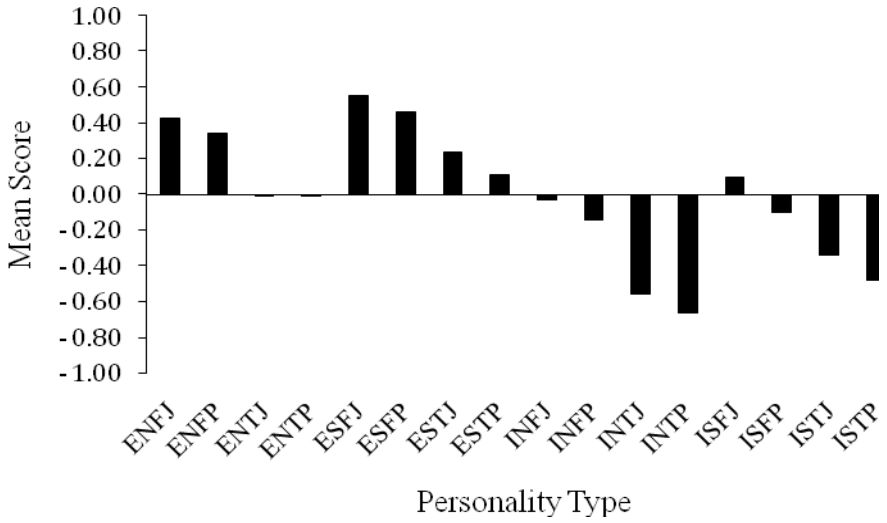

Figure 15. Personality type differences on Working with Others component score. Bars represent the mean score for each personality type group on Component 3. The horizontal line represents the mean score for the entire research sample.

Results of the one-way ANOVA on Component 3 by personality type indicated that the main effect for personality type was significant, $F(15) = 53.54$, $p < .001$. This effect accounted for 12.1 % of the variance in this component score (See Table 34).

Table 34

Summary of ANOVA Results for Component 3 (Working with Others) by Personality Type

Variable	SS	df	MS	F	P	η^2
Personality Type	753.35	15	50.22	53.54	00.00	0.121
Error	5476.84	5838	00.94			

Several significant differences between personality type groups on Component 3 were found in the post hoc analysis by using Bonferroni multiple comparisons (See Table A9). Only one Introverted group, ISFJ, was above the research sample mean on

this component and this score was only slightly above the mean (0.09). All but two of the Extraverted groups were above the research sample mean score on this component. The exceptions were both ENTs (ENTP and ENTJ). The mean scores for these two groups were equal to the research sample mean (M = 0). The groups with the highest mean scores on this component were all EFs (ENFJ, ENFP, ESFJ, and ESFP). The ESF groups (ESFP and ESFJ) had the highest scores of these four. The highest score, ESFJ, was significantly higher than ten of the other groups. The groups with the lowest scores were all ITs (INTJ, INTP, ISTJ, and ISTP). These groups each scored significantly lower than nine or ten of the other personality groups. With the exception of the ISFJ group, the groups with IF preferences (INFJ, INFP, and ISFP) all scored slightly below the research sample mean. These results support Hypothesis 12, which stated that the highest scores on the Working with Others component of the CVS would be for participants who prefer both E and F (ESFP, ESFJ, ENFP, and ENFJ).

CHAPTER 5: DISCUSSION

Principal components analysis was conducted on the Career Values Scale (CVS) and confirmed three main components: Self-Expression, Extrinsic Rewards, and Working with Others. These components align to Blustein's taxonomy of core work functions that include work as a means of self-determination, work as a means of survival and power, and work as a means of social connection. The results on the components analysis reinforce Blustein's contention that there are three different categories of objectives that people seek from involvement in work.

There were significant age, gender, education, and personality type differences among mean scores on all three components of the career values measure. In this chapter the research findings for each of the three career value components are discussed in relationship to the 12 research hypotheses presented earlier. The chapter begins with a discussion of the relative importance of the 10 individual career values that make up the three components of the CVS.

Ratings of the 10 career values

In order to ascertain the relative importance of individual values to the research sample participants, the ten career values were rated from one to ten for each participant. Of the top five rated career values, three were values that loaded on the component of Self-Expression. These included Career Development, Creativity, and Independence. Career Development was rated as the most important value for these research sample participants, rated by 36.1% of the participants as most important and by 73.2% of the participants as one of their top three career values. The value of Career Development is

composed of items measuring the importance of personal and professional development, learning and skill development, and challenge.

The career value Creativity, with items measuring the importance of solving problems and being creative and original, was chosen in third place, rated by 10.1% of the participants as the most important career value and by 37.3% of the participants as one of their top three career values. Independence, a career value composed of items measuring the importance of self-reliance and autonomy was rated in fifth place; rated by 6.7% of the participants as the most important career value and by 28% of the participants as one of their top three career values.

The importance given to these three values by the participants supports Blustein's (2006) notion of work as a means of self-determination. In this sample, participants demonstrated that development, creative expression, and independence were key objectives sought through involvement in work. These objectives align with the propositions of self-determination theory adopted by Blustein. Self-determination theorists propose individuals seek to develop and grow in order to meet the innate psychological needs of competence and autonomy (Deci & Ryan, 2000).

The career value Service Orientation was second in the ratings. This value was chosen by 19.5% of the participants as their most important career value and by 48.6% as one of the top three rated career values. The Service Orientation career value is composed of items assessing the importance of relationships and providing personal service and direct benefits to others. This finding supports the work of several researchers who have found social values are important to workers (Brougham & Walsh, 2005; Dendinger et al., 2005; Hagstrom & Kjellberg, 2007, Moen, et al., 2000).

The importance of this value to the research participants also links to one of Blustein's core work functions; work as a mean of social connection. This result also aligns to the theory of self-determination proposed by Deci and Ryan (2000) in which relatedness is included as one of three innate psychological needs.

Financial Rewards was fourth in the ratings, chosen by 9.6% of the participants as their most important career value and by 31.9% as one of the top three rated career values. The Financial Rewards value is composed of items measuring the importance of high salary and financial security. This value, although not rated as highly as Career Development, Service Orientation, or Creativity, was still rated in the top three career values for almost a third of the research participants. The importance of this value aligns to Blustein's notion of work as a means of survival and power. The current sample is highly educated and may, as suggested by Blustein's theory, be able to attend more to self-expression needs because of their status and privilege. This may explain why the value of Financial Rewards was less important to many participants than values linked to values related to social interactions and self-expression.

The three core functions of work and the hypothesized relationships among the study variables are discussed below in more detail. The hypotheses are discussed in relation to each core function (rather than in the order presented earlier) in order to focus on the core work functions.

Component 1: Self-Expression: Work as a means of self-determination

Component 1, Self-Expression, focuses on the importance of work as a means to meet intrinsic needs. This component score shows the importance of intrinsic rewards and work objectives, such as learning and self-development, creativity, independence,

and excitement, to participants. Significant differences between age, gender, educational, and personality type groups were found on this component.

Self-Expression and Age

Hypothesis #1, that youth (ages 15-20) will score higher than other age groups on the Self-Expression component of the CVS, was not supported by the research findings. Mean scores on Self-Expression showed a pattern of gradual increase across age groups. The two youngest groups (15-20 year olds and 21-25 year olds) scored significantly lower, rather than higher, than all other groups on this component. Although this was a significant finding, the amount of variation in the mean score on the Self-Expression component accounted for by age differences was very small (.8%).

The finding that youth score lower on a measure of the importance of Self-Expression is contrary to the findings of several researchers (such as Kirkpatrick-Johnson, 2001; Madill, et al., Tovel, et al., 2000) who proposed young people have inflated career values as a result of a lack of knowledge about the world of work. This finding also does not align with Super's (1980) concept of young adulthood, in adult and career development theory, as a time for focusing primarily on achieving independence and self-understanding.

Perhaps the importance of learning and development, for participants in these age groups, is associated with school rather than work roles, so is not seen to be as important, in the work context, as it is for participants in other age groups. Alternatively, perhaps these youth, with fewer resources and skills, see work as a venue for meeting survival and power needs rather than a place for personal development. The youngest group, 15-20 years of age, likely have little work experience except for unskilled jobs.

Perhaps the nature of the work they are doing provides little opportunity for seeking or meeting intrinsic work objectives.

Self-Expression and Gender

Hypothesis # 4 that men will score higher than women on the Self-Expression component of the CVS was supported by the research findings. Although this was a significant finding, the amount of variation in the Self-Expression component accounted for by gender differences was very small (1.2%). Since a very small amount of variance in self-expression is accounted for by gender differences, this research adds little clarity to resolve differences of opinion regarding the role of gender in reasons for working.

Perhaps gender is too broad a category to use when attempting to understand differences in reasons for working. Opportunity structure theorists such as August and Quintero (2001) and Dietz, et al., (2003) propose gender differences occur related to differential access for men and women to education, high status employment, and resources. Looking at those variables directly, rather than gender differences, may provide a better understanding of the role of opportunity structure in the lives of men and women. Barriers to career development for women proposed by Coogan and Chan (2007), such as role expectations, lack of employment opportunities, and increased family responsibilities, may not be as prevalent in this sample of participants.

Self-Expression and Education

Hypothesis #7 that participants with higher levels of education will score higher than the less educated groups on the Self-Expression component of the CVS was supported by the research findings. Education accounted for 1.7% of the variance in Self-Expression mean scores. Those with extended, academic educational experiences

scored significantly higher on this component than those with lesser educational experiences as predicted by Bluestein's (2006) theory. This finding supports other research findings by Rowe and Snizek (1995), Duffy and Sedlacek (2007a), and Warr (2008). Those with higher educational attainment may well have greater freedom and opportunity to focus on the more intrinsic aspects and rewards of work. This finding aligns to the proposition of opportunity structure theorists such as August and Quintero (2001) and Dietz, et al., (2003), that education links to greater resources and access to meaningful work. Although these theorists discuss gender differences in work values, the assertion that those lacking opportunities will not be able to fully engage in meaningful work may be relevant to all workers, not only women.

Self-Expression and Personality Type

Hypothesis # 10, that participants who have personality type preferences for N and T and P (ENTP and INTP) will score highest of the Self-Expression component on the CVS, was supported by the research findings. The ENTP group's mean score was significantly higher than eight of the other groups and the INTP group's mean score was significantly higher than ten of the other group means. Personality type differences accounted for 14.4% of the variance in mean scores of the Self-Expression component. Generally, Intuitive types (N), scored above the research sample mean and Sensing types (S) scored below the research sample mean, although these group mean scores were not always significantly different from all the other groups.

This supports the personality type theory (Briggs-Myers et al., 1998) that individuals with preferences for Intuition (N) will tend to value long-term developmental opportunities and seek change more than individuals who prefer Sensing

(S). Personality type preferences have an influence on the objectives one seeks by involvement in work as assessed through this career values inventory. This difference in mean scores reinforces the proposition of career construction theorists (Savickas, 2002) that it is important to consider the influence of personal characteristics on career behavior. This relationship between Self Expression and personality type was much stronger than the relationships with age or educational level, suggesting an important link between personality type preferences and work values.

Component 1:Self-Expression Summary

Although the mean scores on Component 1, for all three contextual variables, age, gender, and education, had statistically significant differences between groups it is important to note that the amount of variance accounted for in the Self-Expression component mean score by these variables was small. Overall, these contextual variables, in this sample of participants, did not greatly influence Self-Expression mean scores.

This sample consists of mainly North American, Caucasian, Internet users. Blustein (2006) warns against making generalizations from samples of privileged individuals, commenting that these groups will not accurately represent the realities of all workers. Possibly the small but significant between group differences reflects the reality that workers in this sample may all have the luxury of focusing their attention on self-development and self-determination. Workers in this study, no matter what their age, gender, or education, may all strive to meet intrinsic rewards at work. This idea is certainly supported by the fact that over 70% of this research sample placed Career Development as one of their top three values.

Personality type differences, compared to the other variables, accounted for a much larger percentage of the variance (14.4%) in Self-Expression scores. This finding helps us remember it is important to consider individual personal characteristics and differences when studying career goals and objectives. Personality type preferences link to and help identify the goals and objectives sought through involvement in work.

Component 2: Extrinsic Rewards: Work as a means of survival and power

Extrinsic Rewards are focused on the importance of work as a means of meeting the financial objectives of participants. Significant differences for all of the contextual variables studied were found for the Component 2 mean scores.

Extrinsic Rewards and Age

Hypothesis #2, that youth (ages 15-20) will score higher than other age groups on the Extrinsic Rewards component of the CVS, was supported by the research findings. In a trend opposite to Self-Expression, the importance of Extrinsic Rewards decreased steadily over age, accounting for 6.8% of the variance. The two youngest and two oldest groups were significantly different than all other groups.

The finding that youth score higher on a measure of the importance of Extrinsic Rewards aligns to the findings of several researchers (such as Kirkpatrick-Johnson, 2001; Madill, et al., Tovel, et al., 2000) who proposed young people have inflated career values as a result of a lack of knowledge about the world of work. Youth may have unrealistic financial expectations. Alternatively youth may have little education and experience, and less access to and ability to generate resources. As youth contemplate moving out on their own they are faced with the challenge of providing for their basic physical needs of food and shelter, things that for many youth in this sample group, have

likely been provided by parents. This need to survive on their own may lead to a greater focus on and importance of financial work objectives. Older workers, in this sample, may have access to more resources and the luxury of minimizing their attention on meeting financial objectives through work.

Jung (1976) talks about young adulthood as a time when individuals must focus on adapting to their circumstances, fulfilling social roles, and making a living. He theorized that only in midlife and beyond is there a time for internal development and opportunities to strive for personal growth. This view would fit with the finding in this research that older workers see financial rewards as less important and intrinsic rewards more important than their younger counterparts. Whether it is because they have more resources, the time and opportunity for personal development, or other reasons, older workers in this sample group compared to the younger ones, place significantly less importance on financial rewards.

Extrinsic Rewards and Gender

Hypothesis # 5 that women will score higher than men on the Extrinsic Reward component of the CVS was not supported by the research findings. Men scored significantly higher than women on Extrinsic Rewards. This finding does not align to the theoretical ideas of opportunity structure theorists such as August and Quintero (2001), Dietz, et al., (2003), and Coogan and Chan (2007), who proposed women would generally have a greater need for, and therefore place greater importance on, work objectives linked to meeting financial goals. It does align to the views of sex role socialization theorists such as Brown (2002), Ross-Gordon (1999), Rowe and Snizek (1995) who propose men are socialized to be primary wage earners.

However, even though the men's mean scores were significantly higher than the women's score in this component of the CVS, the variance accounted for in Extrinsic Rewards by gender was very small (.2%). As with the Self-Expression component, a very small amount of variance in Extrinsic Rewards is accounted for by gender differences and this research adds little clarity to resolve differences of opinion regarding the role of gender in reasons for working. Perhaps more in-depth information regarding the financial needs and resources of sample participants would have provided a way to assess if opportunity structure influences career values.

Extrinsic Rewards and Education

Hypothesis #8, that participants with lower levels of education will score higher than the more educated on the Extrinsic Reward component of the CVS, was supported by the research findings. There was a steady decrease in the importance of Extrinsic Rewards across the educational groups, accounting for 6.5% of the variance in the mean scores.

Participants with the lowest educational categories scored significantly higher on this component than all of the older groups and those with higher educational attainment generally scored significantly lower than the other groups. Those who have higher educational attainment are likely to have more work opportunities and financial resources and may be able to move beyond survival and power and place less importance on these kinds of work objectives. The link between education and financial needs would be expected and supports the findings of Blustein (2006) and Blustein et al. (2008)

There are obvious correlations between age and educational attainment; the younger sample group is largely composed of those with some high school or a high school education. These two variables will confound each other. However, the trend of lower mean scores associated with lower educational levels continues across all educational groups, not just high school. A matched age sample with different educational attainment levels would be necessary to separate the age and educational variables.

Extrinsic Rewards and Personality Type

Hypothesis # 11, that participants with preferences for both S and J (ESTJ, ISTJ, ESFJ, and ISFJ) will have the highest scores on the Extrinsic Rewards component of the CVS, was supported by the research findings. Personality type differences accounted for 8.2% of variance on Component 2. Personality type theorists (Briggs-Myers & Myers, 1980; Briggs-Myers et al., 1990) assert that some individuals are naturally predisposed to seek stability and financial security as work objectives, whereas others are more driven to seek change and variety as work objectives.

Finding personality type group differences in Component 2 scores further supports these assertions of personality type theory. As well, finding personality type group differences in this component supports the assertion of career construction theorists such as Savickas (2002) that an individual's vocational personality has a role to play in expression of vocational preferences and influences the process of determining what objectives an individual seeks to achieve through involvement in work.

Component 2:Extrinsic Rewards Summary

Gender, although statistically significant, accounted for a small amount of variance in the Extrinsic Rewards component mean score and, in this sample of participants, did not greatly influence the Extrinsic Rewards mean scores. Age (6.8%) and educational attainment (6.5%) accounted for a greater amount of the variance in the Extrinsic Rewards mean score, although it is difficult to separate these two variables from each other.

Extrinsic Rewards are rated as less important for those who are older and have more formal education. Blustein's theory is supported by this finding, as he proposes that those with higher education and those with greater resources are less likely to be motivated by financial need. Almost a third of the research participants rated Financial Rewards as one of their top three out of the ten career values, indicating financial incentives are certainly important to many people in this sample. This reinforces the importance of including extrinsic, financial work objectives as a core function of work.

Personality type differences, compared to the other variables, accounted for a larger percentage of the variance (8.2%) in the Extrinsic Reward scores. This finding helps us remember it is important to consider individual personal characteristics and differences when studying career goals and objectives. Personality preferences link to, and help identify the goals and objectives sought through, involvement in work.

Component 3: Working with Others: Work as a means of social connection

Working with Others focuses on the importance of work as a means of interacting with and helping others. Mean scores on the Working with Others

component were significantly influenced by age, gender, education, and personality type.

Working with Others and Age

Hypothesis # 3, that youth (ages 15-20) will score higher than other age groups on the Working with Others component of the CVS, was supported by the research findings and the hypothesis The finding that youth score higher on a measure of the importance of Working with Others would be expected by theorists and researchers (such as Kirkpatrick-Johnson, 2001; Madill, et al., Tovel, et al., 2000) who proposed young people have inflated career values as a result of a lack of knowledge about the world of work.

The second part of hypothesis #10, that workers in mid-life (age 41+) will score higher than workers in their 20s and 30s on the Working with Others component of the CVS was somewhat supported by the research findings. The 31-40 year old group had the lowest mean score in this component, significantly lower than both younger and older groups. The highest mean score, in the 21-25 year old group, was not significantly different from the scores of the older two groups, 41-50 and 51-60 year olds. Overall, age differences were significant, but small, accounting for only .2% of the variance in Component 3 scores.

The lower mean scores in the 31-40 year old group may reflect other contextual influences affecting this time of life. This age range is a common time for raising families and the social focus of individuals may be placed more in the home than work environment at this time. The higher scores in midlife age groups and beyond (41-50 and 51-60 year olds) may result from an emphasis on generativity later in life as

proposed by several theorists including Erikson (1980), Lachman (2001) and Neugarten (1996).

Working with Others and Gender

Hypothesis # 6, that women will score higher than men on the Working with Others component of the CVS, was supported by the research findings. Women scored significantly higher, accounting for 1.5% of the variance in the Working with Others component mean score. There is considerable agreement about the importance of social values for women and it is not surprising that this component was rated higher by women than by men. A broad range of role socialization and gendered development theorists and researchers would expect this finding (such as Badger, et al. 1998; Blustein & Fourard, 2008; Duffy & Sedlacek, 2007a; Hagstrom & Kjellberg, 2007; Simmons & Betschild, 2001).

As with the other two components of the CVS, gender accounted for a small amount of the variance in component 3, Working with Others. Although the findings are significant and the direction of the findings does align to theoretical perspectives and previous research findings, there are only small mean differences in social reasons for working. Gender is not a clear indicator for the importance of social values.

Working with Others and Education

Hypothesis # 9, that participants with higher levels of education will score higher than the less educated groups on the Working with Others component of the CVS, was not supported by the research findings. Educational attainment group means were either slightly above or below the mean score of the research sample, with no clear increasing or decreasing trends as educational level increased. The highest mean score for

Component 3 was in the Community College group and the lowest score was in the Doctoral group. This relationship has not been discussed in the theoretical or research literature and there was no clear relationship in these research findings. It may be that the field of education is more important that the level of education in influencing this career value component. Differences in education, although significant, accounted for a very small amount (.2%) of the variance in Component 3 scores.

Working with Others and Personality Type

Hypothesis # 12, that those who prefer both E and F (ESFP, ESFJ, ENFP, and ENFJ) will have the highest scores on the Working with Others component of the CVS, was supported by the research findings. Personality type differences accounted for 12.1% of the variation in the mean scores for this component. The highest group, ESFJ, was significantly higher than ten of the other groups.

The finding that the participants with preferences for E and F (ENFJ, ENFP, ESFJ, and ESFP) had the four highest scores may be related to the preferences individuals with these personality types have to collaborate with and help others (Briggs-Myers et al., 1998; Dunning, 2001). The mean scores of the personality type groups with a preference for Extraversion, a preference for acting and interacting with others, were mostly above the research sample mean score on this component. The groups with the lowest scores on Component 3 were all ITs (INTJ, INTP, ISTJ, and ISTP), who, according to personality type theory, prefer privacy and like to take an objective, impersonal approach to working relationships (Briggs-Myers et al., 1998Dunning, 2001). This finding supports the expected links between personality type preferences and career values.

Component 3:Working with Others Summary

Age and education, although statistically significant, accounted for a small amount of variance in the Working with Others component mean score and, in this sample of participants, did not greatly influence the Working with Others mean scores. Gender (1.5%) accounted for slightly more of the variance in the Working with Others mean score. The small differences in these variables may reflect the importance of working with others to all workers. The career value Service Orientation was second highest in overall rating and was chosen by almost half of the research sample participants as one of their three most important values.

The findings show the values associated with the Working with Others component are more important to the younger and older research participants than to the group of participants in their thirties. Working with Others, as expected, is of more importance to women than men. The Working with Others component does not show any clear trends related to education. Personality type differences, compared to the other variables, accounted for a much larger percentage of the variance (12.1%) in Working with Others scores. The personality type preferences related to how people focus their energy and how they prefer to evaluate information and make decisions influence how people rate the importance of the Working with Others component.

Summary

Principal components analysis of the CVS confirmed three main components: Self-Expression, Extrinsic Rewards, and Working with Others. These components align to Blustein's taxonomy of core work functions that include work as a means of self-determination, work as a means of survival and power, and work as a means of social

connection. The results on the components analysis reinforce Blustein's (2006) contention that there are three different categories of objectives that people seek from involvement in work. When rating the relative importance of the 10 individual career values, participants chose values reflecting each of the core work functions, indicating that all three work functions were relevent to sample participants.

Age, gender, education, and personality type all were shown to significantly affect mean scores on all three principal components of the CVS. Overall, gender accounted for a small part of the variance in the three components. This finding is contradictory to previous theory and research that indicated gender would play a major role in determining what objectives people seek through involvement in work. Age and education were linked to Extrinsic Rewards; at higher age and educational levels, Extrinsic Rewards were less important to sample participants. Age and education accounted for only small amounts of variance in the Self-Expression and Working with Others components of the CVS.

Personality type preferences accounted for a larger amount of the variance in all three CVS components and followed patterns predicted from personality type theory. Sample participants who preferred N, T, and P had the highest mean scores on Self Expression, sample participants who preferred S and J had the highest mean scores on Extrinsic Rewards, and sample participants who preferred E and F had the highest mean scores on Working with Others. The link between personal preferences and career values emphasizes the role of individual characteristics and attributes in determining a vocational personality as proposed by Savickas (2002) in career construction theory.

CHAPTER SIX: IMPLICATIONS AND RECOMMENDATIONS

This chapter includes the theoretical and practical implications of the current research. Conceptual and methodological limitations of the study are then discussed. The chapter ends with recommendations for future research.

Implications of the Research

Theoretical Implications of the Research

The taxonomy of three core work functions theorized by Blustein (2006) is supported by the results of this study. The three principal components extracted from an inventory of career values were consistent with the three conceptual domains proposed by Blustein as core reasons for working: self-determination, survival and power, and social connection. This finding reinforces the need for career theorists to move beyond the emphasis on making personal choices and seeking personal satisfaction in career decision-making. The present research findings serve as an encouragement to career theorists to acknowledge that working is important as a means for survival and power and for social connection. The recognition of these broader motivational factors must be incorporated into the theoretical framework of career development in order for theory to adequately reflect the realities of people's lives.

The research findings also align to the proposition of career construction theorists who state that contextual variables, such as age, gender, education, and personality type, significantly influence career development. In this study, differences in the objectives sought through work, as measured by a career values inventory, were found for contextual variables. Some of the differences found in the study, though significant, were small, accounting for less than 1% of the variance, yet other results

were larger. One variable, personality type accounted for over 14% of the variance in one of the career values component scores. Postmodern assumptions about the relevance of context to career development were supported by these significant differences in career values found across the age, gender, education, and personality type groups.

Career development theorists may want to revisit some of the previous assumptions and propositions that were not supported by this study. Gender had a very small effect on the career values scores in this sample. Perhaps what have previously been seen as gender differences may more accurately described by other constructs, such as opportunity structure, work status, or even personality type differences. As well, inflated values scores were not seen in all CVS components for youth, so theorists may want to re-think how young people view and interpret what is important for them to achieve in the world of work.

Personality type preferences accounted for between 8-14% of the variance in the component scores. In career construction theory, Savickas (2002) states that individuals create a vocational self-concept based on their vocational personality, which is composed of abilities, needs, values, and interests. He also notes that individuals make meaning in their lives and express their vocational preferences through subjective interpretation of information about their personal characteristics. Finding differences in the objectives sought through work for participants with different personality preferences highlights the importance of considering the role of innate individual characteristics as well as more situational or developmental contextual influences.

The concepts and propositions offered by theorists interested in development, work motivation, psychological needs, and gender, provide insights and information

necessary to more fully understand the complex interactions and situations influencing career development. Including these additional perspectives will enable theorists to link work goals and objectives to broader life tasks, needs, life goals, and challenges. By creating a taxonomy of core work functions, Blustein has begun the process of broadening career development theory. The current research provides additional data to support his taxonomy and a link, through the study of career values, to a measure that can provide practical information about what people seek through their involvement in work.

Practical Implications of the Research

Career development theorists and researchers do not always offer practical practitioner strategies for enhancing the career development process (Valach & Young, 2002). There are a number of practical implications for career practitioners to be found in the results of this study. As well, there are insights and implications in the study for those involved in human resources management and organizational development roles.

Several theorists have proposed career values are an important consideration in career development. Assessment of career values can help provide a sense of purpose for work and a focus for self-exploration, central themes in the practice of career development in North America. However, two of the three most commonly used tools in career planning are primarily focused on interests rather than values -- the Strong Interest Inventory (Donnay, Morris, Schaubhut & Thompson, 2004) and the Self Directed Search (Holland, 1994). Adding career values to the career assessment process provides a way for practitioners to help clients understand their personal reasons for working. By exploring themes of work related to economic survival and power, social

connection, and self-determination, practitioners can help clients recognize what important objectives they are seeking through engagement in work and establish priorities.

Blustein et al. (2008) discuss the many implications that looking at work through the taxonomy of work functions can have for career counselling practice. This taxonomy allows for an inclusive approach that integrates work related issues with social, economic, and emotional factors. This framework also provides a way to individualize client goals and foster critical consciousness for each client and practitioner. Duffy and Sedlacek (2007b) also suggest it is important for career practitioners to directly explore contextual variables by asking clients to assess any role that factors such as gender play in their career decision-making. Practitioners can then further explore whether clients consider these factors to be barriers or supports. Awareness of systemic and structural barriers to meaningful employment can provide a starting point for fostering skill development and advocating for client needs.

A challenge for practitioners is to help clients assess their career values within a broader life context. Every individual has a unique constellation of influences and needs. Blustein (2006) cautions practitioners against assuming it is possible to make generalizations regarding any specific contextual influence. He emphasizes that practitioners benefit from identifying and considering the constellation of social advantages and barriers that may affect a client's career success.

Blustein also asserts that, as a researcher, theorist, or practitioner, it is important to explore one's own values. When practitioners explore their own biases and needs, and help clients do the same, they are better able to provide a respectful and personalized

career counselling process, helping clients to determine what they are seeking from work. Discussions about career values and reasons for working can be an important part of this process.

Career values inventories are tools that can be used by individuals to self-assess how important it is for them to meet a variety of objectives through involvement in work. Such tools allow the client to construct what is important to them in a career. The constructivist career counselling process is based on becoming aware of, and taking action steps based on, a client's subjective narrative or story (Brott, 2005). Assessment of career values may provide a platform for clients to share their narratives with the career practitioner.

As a caution, relying heavily on existing career patterns and previous work experiences when providing career counselling may overlook the importance of change and development throughout the life span. Although these strategies of looking for meaning from the past are thought to include context and build on important work themes, using these techniques may inadvertently move a client along an already established trajectory. In life stages where new developmental tasks and challenges are becoming salient to an individual, continuation of an existing career path may not be the most satisfying or appropriate solution. Values shifts may be evidence of important life changes and transitions.

It is important for practitioners to use values indicators very cautiously with adolescents, as the initial emphasis placed on a career value may change significantly within a few years. In all cases in this study the career values of the youngest groups differed from the older groups. Practitioners should not automatically assume young

people rate all career values higher, as this trend was true for only some career values components in the current study. Career practitioners would benefit from recognizing the influence of age and gender on career values and from awareness of how the interaction of life and career development tasks, as well as workplace role and expectations, may influence an individual in the process of career planning.

As Brown (2002) promotes, defining and prioritizing career values is an important task for clients who are undergoing career development. Developing strategies to help clients accomplish this task enhances the career development process. Finding work options to suit values may also be an area where practitioners can help clients in career development. Many inventories and occupational systems link interests to career choices, but few describe how a specific kind of work would link to career values. Linking career values to occupations needs to be a task on the minds of career practitioners.

Career Development was the single career value rated as most important by participants in this study. The importance of the value of Career Development can be highlighted appropriately during career consulting. Many clients may be interested in a "learn to learn" approach to career development and may be seeking opportunities to learn and develop throughout their career. Coaching life-long learning strategies and skills is a service career consultants should be providing to create a valuable link between career planning and success in educational or on-the-job learning situations.

Almost half of this sample placed Service Orientation as one of their top three career values. Opportunities to help and serve others may be common themes career-planning clients wish to discuss. Distinguishing among, and discussing the importance

of various social values such as service, altruism, teamwork, and influence may help clients define and prioritize their career objectives. When working with older clients, career counsellors need to keep in mind the concepts of generativity and midlife development. Although it would be erroneous to assume all midlife clients, or any individual client, is seeking to help and serve others, social interactions may be a theme to explore during the career planning process.

Savickas (2005) emphasizes the importance of career adaptability. This concept represents an important theoretical and practical means to better conceptualize theory and counsel individuals in the process of career development. Understanding and assessing the nature of an individual's coping resources, competencies, and attitudes toward changes, challenges, and development may help workers explore, learn, and meet the demands of a complex workplace (Blustein & Fourard, 2008). Toward this goal, it is important to recognize that not all workers are seeking to fulfill self-determination needs. Career practitioners need to acknowledge and respect the needs of workers who have little choice in their educational and work options; they must adapt their career practices to serve these workers more effectively (Blustein & Fourard, 2008).

Coogan and Chen (2007) suggest several interventions to assist women during career counselling. These include using direct discussion of realities and inequities as well as discussion of strategies to help women deal with workplace realities. Strategies for balancing and otherwise managing multiple roles are also suggested. They also believe practitioners should help women develop self-efficacy and enhance their self-concept. These researchers also note that the norm groups for some vocational tests are

composed primarily of men and that practitioners need to be aware of potential gender biases when using these tools. These suggestions, when used to identify and discuss reasons for working and objectives sought through work will create a more personalized service for this population of career clients.

This study also has important practical implications for human resources professionals. The value of Career Development far surpasses the other values in importance for the majority of participants in this study. To meet the career values of many workers, it will be important for organizations to offer opportunities for ongoing learning and career development in the workplace. As well, educational institutions should become more aware of and sensitive to the personal and professional development needs of adults of all ages. Values commonly rated important in this study include Service Orientation, Creativity, Financial Rewards, and Independence. Human resources professionals may wish to consider whether their workplace is providing opportunities for employees to work toward goals and objectives that satisfy these values.

The current research also has implications for the usefulness of identifying personality type preferences during the career planning process. Personality type differences accounted for the most variance in career values component scores. For all components, the personality type differences found were in the direction predicted by personality type theorists. Practitioners may find it helpful to use personality type information with clients and to have a discussion with clients about how their personality preferences may influence the objectives they are seeking from their involvement in work.

Limitations of the Research

As with any research, there are a number of limitations in the current study. In this part of the chapter, conceptual limitations are discussed as well as the limitations of the research methodology used.

Conceptual Limitations

Career values are constructs used in career development theory and practice. A large assumption is being made in this research that the specific career values measured by the Career Values Scale can accurately be used to test the relevance of concepts of adult and career developmental theory. The theoretical formulations, such as core functions of work and adult developmental tasks, are general and broad and not easily represented through career values scores and components. This is an issue whenever attempts are made to support theory. Carefully matching theoretical ideas to the career goals and objectives measured by each scale will minimize this problem as much as possible. However, clearly the Self-Expression component of the CVS cannot adequately represent work as a means of self-determination, the Extrinsic Reward component cannot adequately represent the full complexity of work as a means of survival and power, and the Working with Others component is not sufficient as a replacement for the idea of work as a means of social connection.

As with self-report inventory, the CVS results are subject to measurement error. Differences in participant's scores on the CVS may represent differences in the context in which the inventory was completed and variations in how participants interpreted the questions and instructions. For example, words such as "planning" or "life and career" in the instructions for the CVS may have different connotations to participants.

Another problem with using a career values instrument is that the Career Values Scale, as well as the previous values instruments it was modeled on, used groups of experts to develop items. This way of creating items provides face and content validity, but does not necessarily imply construct validity (Walsh, Vacha-Haase, Kapes, Dresden, Thomson, & Ochoa-Shargey, 1996). Although links between adult developmental theory and values instruments can be inferred, none of the career values instruments have been developed to validate any particular theoretical perspective. A review of the Values Scale by Green (1998) in the Mental Measurements Yearbook notes that the validity of the Values Scale could be improved by evidence linking the values measured to an underlying theoretical framework. Although this is the intent of the current researcher, such linking is, at best, only incorporating a small portion of the complex theoretical formulation of reasons for working.

Comparing differences among age groups is not an ideal way to study developmental stages. Differences among age groups may reflect changing social contexts or measure cohort differences rather than actual adult development. This study demonstrates differences between the career values across age groups but cannot demonstrate that these differences are due to developmental changes. However, any differences found between age groups will have implications for practitioners and can provide groundwork for further studies.

A constructivist approach to career development includes a complex reflexive interaction between individuals and society (Patton, 2000). This research has focused on understand the meaning people ascribe to their career values through an 88-item measure. The current study does not include important data about the context of an

individual's life or look at the way people construct their career values in concert with their life experiences. By looking only at scores on a career values measure, considerable richness is lost and important life context cannot be considered. By focusing on the average scores on expressed values it is impossible to understand how any individual's career values are relevant to their situation and experiences. Using qualitative research methods, such as a narrative approach, is necessary to understand how the concepts of career values and core work functions operate at the individual level.

Limitations of the Methodology

Secondary data analysis has advantages and problems. Using an already established database is a reactive rather than proactive approach to answering research questions. It is necessary to focus only on the data collected rather than gathering information specifically designed to answer the research question. On the plus side, the database used in the current study is large and uses a psychometric measure aligned well to the research questions being asked. Age and education have been collapsed in the database into categorical variables, reducing the power of the study. However, due to the large number of participants, this is not of great concern. The values scale is an ordinal measure, which will necessarily be analyzed as if it were an interval measure. However, treating ordinal data as interval is commonly done in social science and usually does not alter substantive research conclusions (Garson, 2008).

This study was limited also by the sample. This study included only people who chose to take a values inventory rather than studying a broad range of workers defined by specific characteristics. It would also be interesting to study older adults to see how

an older group affects the trends of differences found in this study. Longitudinal studies would also be valuable to help investigate the developmental assumptions made in the theories and in this study.

There are also limitations arising from using an Internet sample. Representation errors are often cited as a major issue of this data collection format (Andrews, Nonnecke, & Preece, 2003; Couper, 2000; Gosling, et al. 2004). Participants must have had access to and been able to utilize the Internet in order to complete the instrument. Internet users are commonly reported to have greater income and higher education than those who do not access the Internet (Couper, 2000). As well, people looking for and choosing to fill out a self-assessment tool exploring their career values may not represent a typical worker. Brown (2002) argues that those who have defined and prioritized goals are more likely than other workers to find a satisfactory career match. These workers may not respond the same way to a survey of career values as those who were not seeking out this kind of tool.

This sample composition is a key issue when attempting to confirm Bustein's core functions of work. The sample group used in this study may reinforce the ongoing problem career development theorists have of not including and studying those who are disadvantaged. Designing a research study to include participants with limited resources and skills would definitely improve the quality of research in this area.

Because certain portions of the population are excluded from participating in a survey, Internet studies use non-probability sampling designs and results from these surveys cannot be generalized to the broader population (Couper, 2000, Granello & Wheaton 2004). An Internet user, who is already not typical of the general population,

must visit a specific site and then self-select into the survey. Visitors to a specific site may differ from Internet users in general, and those who choose to complete an instrument on line may differ from those who don't. Web-based surveys do not allow researchers to define a survey frame or calculate response rates or make error of measurement estimates (Best, Krueger, Hubbard & Smith, 2001; Granello & Wheaton 2004).

However, advocates of Internet research argue that Internet samples are actually more diverse than many other convenience samples that tend to be used in the current research literature. Gosling, et al. (2004) found a large Internet sample they had collected to be more diverse in respect to several demographic characteristics including gender, socioeconomic status, geographic region, and age than a combination of 510 traditional samples published in the *Journal of Personality and Social Psychology*. These authors conducted research to explore some common myths about Internet participants. Their research indicated that users are not unmotivated, socially isolated, or maladjusted. They also present evidence to demonstrate that repeat or malicious respondents do not seriously compromise Internet results. Their study also showed that Internet results were consistent with results found using different survey formats. In a survey of undergraduate students, Knapp and Kirk (2003) also found no significant differences in participant responses to questions administered via paper mail-in, automated telephone, or Internet. Although the Internet sample may be as diverse as samples of convenience, it is important to recognize that the data in this study describe mostly North American, Caucasian individuals with access to the Internet who have

chosen to complete an online instrument. This group certainly does not represent all workers.

Recommendations for future research

There remains considerable work to do with respect to theory and research of career values. Career values are beginning to be operationally defined, but there are still diverse interpretations and definitions in the theoretical and research literature. Efforts need to be made to separate and delineate different kinds of career values. Grouping values into intrinsic, extrinsic, and social categories provides a conceptual framework, but this framework needs to be more fully defined.

For example, the concept of social career values is very broad and may include career values labeled as service, altruism, teamwork, influence, generativity, or caring. Some social values emphasize the importance of providing direct service to or nurturing others, while other social values emphasize social interactions and connections. These aspects of social values are all important, but not easily captured within a broad categorization system unless each of the aspects of social values are carefully defined and separated.

Several tools and strategies are used to explore career values, work motivation, and needs. For example, asking people to rank values from most to least important may provide very different results than completing inventories that add up a total rating for each value. Definitions of career values, and the specific strategies or items used to measure a value, differ widely. Additional conceptual clarity in the area would allow research results to be compared more easily.

Investigating possible links between career values and job satisfaction is an additional area for further research. Also, research in this area may help identify relationships among career values, work tasks and occupational titles. In a manner similar to the development of interest inventories, researchers could create profiles of the typical values associated with working in certain occupations. These could be used as tools in the career planning process.

More extensive investigation of the relationships between changing values, interests, and personality patterns across gender and life span is needed. This would help establish whether interests and values are conceptually related as proposed by Super. Such research could lead to the development of more integrated and comprehensive career development tools.

Post-modern constructivist theories of career development cannot be adequately tested without collecting additional information about the life history and situational context of those being studied. In a similar way, without detailed information about the opportunities present for women throughout their life, it is difficult to provide evidence for theories of opportunity structure. Qualitative studies collecting comprehensive data and in-depth perspectives of individuals would be better positioned to provide evidence to support these theories.

As Blustein and Fouard (2008) argue, it is important to look more closely at contextual influences on career choice and development. They note that the interactions among variables such as gender, race, poverty, social class, sexual orientation, and culture have been widely dismissed until recently by career development theorists. Finding out more about core work functions and key work objectives for people from

diverse backgrounds and experiences will enrich career development theory and enhance the practice of career development and human resources management.

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APPENDIX

Table A1

Post Hoc Bonferroni Analysis of Factor 1 (Self Expression) by Age

Age Groups		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
15-20	21-25	-.0635253*	0.01843709	0.009	-0.1176465	-0.0094042
	26-30	-.1322452*	0.01879159	0.000	-0.1874070	-0.0770834
	31-40	-.1997134*	0.01688284	0.000	-0.2492721	-0.1501547
	41-50	-.2085060*	0.01959838	0.000	-0.2660361	-0.1509760
	51-60	-.2569941*	0.02967197	0.000	-0.3440947	-0.1698935
21-25	15-20	.0635253*	0.01843709	0.009	0.0094042	0.1176465
	26-30	-.0687198*	0.02125182	0.018	-0.1311035	-0.0063362
	31-40	-.1361881*	0.01958434	0.000	-0.1936769	-0.0786992
	41-50	-.1449807*	0.02196845	0.000	-0.2094680	-0.0804934
	51-60	-.1934688*	0.03128805	0.000	-0.2853133	-0.1016243
26-30	15-20	.1322452*	0.01879159	0.000	0.0770834	0.1874070
	21-25	.0687198*	0.02125182	0.018	0.0063362	0.1311035
	31-40	-.0674682*	0.01991843	0.011	-0.1259378	-0.0089986
	41-50	-.0762609*	0.0222668	0.009	-0.1416239	-0.0108978
	51-60	-.1247490*	0.03149825	0.001	-0.2172105	-0.0322874
31-40	15-20	.1997134*	0.01688284	0.000	0.1501547	0.2492721
	21-25	.1361881*	0.01958434	0.000	0.0786992	0.1936769
	26-30	.0674682*	0.01991843	0.011	0.0089986	0.1259378
	41-50	-.0087926	0.02068131	1.000	-0.0695016	0.0519163
	51-60	-.0572808	0.03039813	0.893	-0.1465129	0.0319514
41-50	15-20	.2085060*	0.01959838	0.000	0.1509760	0.2660361
	21-25	.1449807*	0.02196845	0.000	0.0804934	0.2094680
	26-30	.0762609*	0.0222668	0.009	0.0108978	0.1416239
	31-40	.0087926	0.02068131	1.000	-0.0519163	0.0695016
	51-60	-.0484881	0.03198613	1.000	-0.1423818	0.0454056
51-60	15-20	.2569941*	0.02967197	0.000	0.1698935	0.3440947
	21-25	.1934688*	0.03128805	0.000	0.1016243	0.2853133
	26-30	.1247490*	0.03149825	0.001	0.0322874	0.2172105
	31-40	.0572808	0.03039813	0.893	-0.0319514	0.1465129
	41-50	.0484881	0.03198613	1.000	-0.0454056	0.1423818

Note. Based on observed means. SE = Standard Error; p = Significance.
The error term is Mean Square (Error) = .992
*p < .05

Table A2

Post Hoc Bonferroni Analysis of Factor 2 (Extrinsic Rewards) by Age

Age Groups		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
15-20	21-25	.4711052*	0.0178736	0.000	0.4186383	0.5235721
	26-30	.5213292*	0.0182172	0.000	0.4678535	0.5748049
	31-40	.5698297*	0.0163668	0.000	0.5217858	0.6178736
	41-50	.6503654*	0.0189993	0.000	0.5945938	0.7061371
	51-60	.6674311*	0.0287650	0.000	0.5829928	0.7518694
21-25	15-20	-.4711052*	0.0178736	0.000	-0.5235721	-0.4186383
	26-30	.0502240	0.0206022	0.222	-0.0102529	0.1107008
	31-40	.0987245*	0.0189857	0.000	0.0429928	0.1544562
	41-50	.1792602*	0.0212970	0.000	0.1167441	0.2417764
	51-60	.1963259*	0.0303317	0.000	0.1072887	0.2853631
26-30	15-20	-.5213292*	0.0182172	0.000	-0.5748049	-0.4678535
	21-25	-.0502240	0.0206022	0.222	-0.1107008	0.0102529
	31-40	.0485005	0.0193096	0.180	-0.0081818	0.1051829
	41-50	.1290363*	0.0215862	0.000	0.0656711	0.1924015
	51-60	.1461020*	0.0305355	0.000	0.0564666	0.2357373
31-40	15-20	-.5698297*	0.0163668	0.000	-0.6178736	-0.5217858
	21-25	-.0987245*	0.0189857	0.000	-0.1544562	-0.0429928
	26-30	-.0485005	0.0193096	0.180	-0.1051829	0.0081818
	41-50	.0805357*	0.0200492	0.001	0.0216824	0.1393891
	51-60	.0976014*	0.0294690	0.014	0.0110967	0.1841062
41-50	15-20	-.6503654*	0.0189993	0.000	-0.7061371	-0.5945938
	21-25	-.1792602*	0.0212970	0.000	-0.2417764	-0.1167441
	26-30	-.1290363*	0.0215862	0.000	-0.1924015	-0.0656711
	31-40	-.0805357*	0.0200492	0.001	-0.1393891	-0.0216824
	51-60	.0170657	0.0310085	1.000	-0.0739581	0.1080894
51-60	15-20	-.6674311*	0.0287650	0.000	-0.7518694	-0.5829928
	21-25	-.1963259*	0.0303317	0.000	-0.2853631	-0.1072887
	26-30	-.1461020*	0.0305355	0.000	-0.2357373	-0.0564666
	31-40	-.0976014*	0.0294690	0.014	-0.1841062	-0.0110967
	41-50	-.0170657	0.0310085	1.000	-0.1080894	0.0739581

Note. Based on observed means. SE = Standard Error; p = Significance.
The error term is Mean Square (Error) = .932
*p < .05

Table A3

Post Hoc Bonferroni Analysis of Factor 3 (Working with Others) by Age

Age Groups		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
15-20	21-25	-.0680435*	0.0184891	0.004	-0.1223173	-0.0137696
	26-30	.0186658	0.0188446	1.000	-0.0366516	0.0739833
	31-40	.0846619*	0.0169305	0.000	0.0349634	0.1343605
	41-50	-.0095211	0.0196537	1.000	-0.0672135	0.0481713
	51-60	-.0398370	0.0297557	1.000	-0.1271834	0.0475093
21-25	15-20	.0680435*	0.0184891	0.004	0.0137696	0.1223173
	26-30	.0867093*	0.0213118	0.001	0.0241496	0.1492690
	31-40	.1527054*	0.0196396	0.000	0.0950543	0.2103565
	41-50	.0585224	0.0220304	0.119	-0.0061469	0.1231916
	51-60	.0282064	0.0313763	1.000	-0.0638973	0.1203101
26-30	15-20	-.0186658	0.0188446	1.000	-0.0739833	0.0366516
	21-25	-.0867093*	0.0213118	0.001	-0.1492690	-0.0241496
	31-40	.0659961*	0.0199746	0.014	0.0073616	0.1246307
	41-50	-.0281869	0.0223296	1.000	-0.0937344	0.0373606
	51-60	-.0585029	0.0315871	0.960	-0.1512253	0.0342196
31-40	15-20	-.0846619*	0.0169305	0.000	-0.1343605	-0.0349634
	21-25	-.1527054*	0.0196396	0.000	-0.2103565	-0.0950543
	26-30	-.0659961*	0.0199746	0.014	-0.1246307	-0.0073616
	41-50	-.0941830*	0.0207397	0.000	-0.1550633	-0.0333028
	51-60	-.1244990*	0.0304839	0.001	-0.2139829	-0.0350150
41-50	15-20	.0095211	0.0196537	1.000	-0.0481713	0.0672135
	21-25	-.0585224	0.0220304	0.119	-0.1231916	0.0061469
	26-30	.0281869	0.0223296	1.000	-0.0373606	0.0937344
	31-40	.0941830*	0.0207397	0.000	0.0333028	0.1550633
	51-60	-.0303160	0.0320764	1.000	-0.1244746	0.0638427
51-60	15-20	.0398370	0.0297557	1.000	-0.0475093	0.1271834
	21-25	-.0282064	0.0313763	1.000	-0.1203101	0.0638973
	26-30	.0585029	0.0315871	0.960	-0.0342196	0.1512253
	31-40	.1244990*	0.0304839	0.001	0.0350150	0.2139829
	41-50	.0303160	0.0320764	1.000	-0.0638427	0.1244746

Note. Based on observed means. SE = Standard Error; p = Significance.
The error term is Mean Square (Error) = .998
*p < .05

Table A4

Post Hoc Bonferroni Analysis of Factor 1 (Self Expression) by Education

Education		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
Some HS	HS	.0885599*	0.0240294	0.010	0.0101972	0.1669227
	Trade/Tech	-.0025780	0.0409772	1.000	-0.1362097	0.1310537
	Some Coll	-.0006136	0.0199261	1.000	-0.0655951	0.0643679
	Assoc D	.0423857	0.0353996	1.000	-0.0730568	0.1578282
	Com Coll	-.0886597	0.0378159	0.858	-0.2119820	0.0346626
	Bach D	-.1195769*	0.0175094	0.000	-0.1766772	-0.0624767
	Mast D	-.3101802*	0.0220035	0.000	-0.3819363	-0.2384241
	Prof D	-.3919367*	0.0455800	0.000	-0.5405786	-0.2432948
	Doc	-.4911867*	0.0505259	0.000	-0.6559577	-0.3264156
HS	Some HS	-.0885599*	0.0240294	0.010	-0.1669227	-0.0101972
	Trade/Tech	-.0911379	0.0435312	1.000	-0.2330983	0.0508224
	Some Coll	-.0891735*	0.0247564	0.014	-0.1699071	-0.0084399
	Assoc D	-.0461743	0.0383271	1.000	-0.1711634	0.0788149
	Com Coll	-.1772196*	0.0405694	0.001	-0.3095212	-0.0449181
	Bach D	-.2081369*	0.0228562	0.000	-0.2826738	-0.1335999
	Mast D	-.3987401*	0.0264572	0.000	-0.4850202	-0.3124601
	Prof D	-.4804967*	0.0478891	0.000	-0.6366688	-0.3243245
	Doc	-.5797466*	0.0526184	0.000	-0.7513415	-0.4081517
Trade/Tech	Some HS	.0025780	0.0409772	1.000	-0.1310537	0.1362097
	HS	.0911379	0.0435312	1.000	-0.0508224	0.2330983
	Some Coll	.0019644	0.0414077	1.000	-0.1330712	0.1370001
	Assoc D	.0449637	0.0507019	1.000	-0.1203814	0.2103088
	Com Coll	-.0860817	0.0524175	1.000	-0.2570215	0.0848581
	Bach D	-.1169989	0.0403005	0.166	-0.2484237	0.0144258
	Mast D	-.3076022*	0.0424465	0.000	-0.4460253	-0.1691790
	Prof D	-.3893587*	0.0582674	0.000	-0.5793757	-0.1993417
	Doc	-.4886086*	0.0622127	0.000	-0.6914917	-0.2857256
Some Coll	Some HS	.0006136	0.0199261	1.000	-0.0643679	0.0655951
	HS	.0891735*	0.0247564	0.014	0.0084399	0.1699071
	Trade/Tech	-.0019644	0.0414077	1.000	-0.1370001	0.1330712
	Assoc D	.0429993	0.0358971	1.000	-0.0740655	0.1600640
	Com Coll	-.0880461	0.0382820	0.966	-0.2128883	0.0367961
	Bach D	-.1189633*	0.0184945	0.000	-0.1792761	-0.0586506
	Mast D	-.3095666*	0.0227952	0.000	-0.3839045	-0.2352287
	Prof D	-.3913231*	0.0459674	0.000	-0.5412285	-0.2414178
	Doc	-.4905731*	0.0508757	0.000	-0.6564848	-0.3246614

Table A4 (continued)

Education		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
Assoc D	Some HS	-.0423857	0.0353996	1.000	-0.1578282	0.0730568
	HS	.0461743	0.0383271	1.000	-0.0788149	0.1711634
	Trade/Tech	-.0449637	0.0507019	1.000	-0.2103088	0.1203814
	Some Coll	-.0429993	0.0358971	1.000	-0.1600640	0.0740655
	Com Coll	-.1310454	0.0481829	0.294	-0.2881757	0.0260850
	Bach D	-.1619626*	0.0346140	0.000	-0.2748431	-0.0490821
	Mast D	-.3525658*	0.0370905	0.000	-0.4735225	-0.2316092
	Prof D	-.4343224*	0.0544893	0.000	-0.6120187	-0.2566261
	Doc	-.5335723*	0.0586892	0.000	-0.7249648	-0.3421799
Com Coll	Some HS	.0886597	0.0378159	0.858	-0.0346626	0.2119820
	HS	.1772196*	0.0405694	0.001	0.0449181	0.3095212
	Trade/Tech	.0860817	0.0524175	1.000	-0.0848581	0.2570215
	Some Coll	.0880461	0.0382820	0.966	-0.0367961	0.2128883
	Assoc D	.1310454	0.0481829	0.294	-0.0260850	0.2881757
	Bach D	-.0309173	0.0370815	1.000	-0.1518446	0.0900101
	Mast D	-.2215205*	0.0394032	0.000	-0.3500192	-0.0930218
	Prof D	-.3032770*	0.0560892	0.000	-0.4861907	-0.1203634
	Doc	-.4025270*	0.0601775	0.000	-0.5987729	-0.2062810
Bach D	Some HS	.1195769*	0.0175094	0.000	0.0624767	0.1766772
	HS	.2081369*	0.0228562	0.000	0.1335999	0.2826738
	Trade/Tech	.1169989	0.0403005	0.166	-0.0144258	0.2484237
	Some Coll	.1189633*	0.0184945	0.000	0.0586506	0.1792761
	Assoc D	.1619626*	0.0346140	0.000	0.0490821	0.2748431
	Com Coll	.0309173	0.0370815	1.000	-0.0900101	0.1518446
	Mast D	-.1906032*	0.0207159	0.000	-0.2581604	-0.1230461
	Prof D	-.2723598*	0.0449726	0.000	-0.4190208	-0.1256988
	Doc	-.3716097*	0.0499786	0.000	-0.5345960	-0.2086234
Mast D	Some HS	.3101802*	0.0220035	0.000	0.2384241	0.3819363
	HS	.3987401*	0.0264572	0.000	0.3124601	0.4850202
	Trade/Tech	.3076022*	0.0424465	0.000	0.1691790	0.4460253
	Some Coll	.3095666*	0.0227952	0.000	0.2352287	0.3839045
	Assoc D	.3525658*	0.0370905	0.000	0.2316092	0.4735225
	Com Coll	.2215205*	0.0394032	0.000	0.0930218	0.3500192
	Bach D	.1906032*	0.0207159	0.000	0.1230461	0.2581604
	Prof D	-.0817565	0.0469053	1.000	-0.2347204	0.0712073
	Doc	-.1810065*	0.0517246	0.021	-0.3496867	-0.0123262

Table A4 (continued)

Education		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
Prof D	Some HS	.3919367*	0.0455800	0.000	0.2432948	0.5405786
	HS	.4804967*	0.0478891	0.000	0.3243245	0.6366688
	Trade/Tech	.3893587*	0.0582674	0.000	0.1993417	0.5793757
	Some Coll	.3913231*	0.0459674	0.000	0.2414178	0.5412285
	Assoc D	.4343224*	0.0544893	0.000	0.2566261	0.6120187
	Com Coll	.3032770*	0.0560892	0.000	0.1203634	0.4861907
	Bach D	.2723598*	0.0449726	0.000	0.1256988	0.4190208
	Mast D	.0817565	0.0469053	1.000	-0.0712073	0.2347204
	Doc	-.0992499	0.0653362	1.000	-0.3123192	0.1138193
Doc	Some HS	.4911867*	0.0505259	0.000	0.3264156	0.6559577
	HS	.5797466*	0.0526184	0.000	0.4081517	0.7513415
	Trade/Tech	.4886086*	0.0622127	0.000	0.2857256	0.6914917
	Some Coll	.4905731*	0.0508757	0.000	0.3246614	0.6564848
	Assoc D	.5335723*	0.0586892	0.000	0.3421799	0.7249648
	Com Coll	.4025270*	0.0601775	0.000	0.2062810	0.5987729
	Bach D	.3716097*	0.0499786	0.000	0.2086234	0.5345960
	Mast D	.1810065*	0.0517246	0.021	0.0123262	0.3496867
	Prof D	.0992499	0.0653362	1.000	-0.1138193	0.3123192

Note. Based on observed means. SE = Standard Error; p = Significance.
Some HS = Some High School; HS = High School; Trade/Tech = Trade/Technical School; Some Coll = Some College; Assoc D = Associate Degree; Com Coll = Community College; Bach D = Bachelor's Degree; Mast D = Master's Degree; Prof D = Professional Degree; Doc = Doctorate.
The error term is Mean Square (Error) = .984
*p < .05

Table A5

Post Hoc Bonferroni Analysis of Factor 2 (Extrinsic Rewards) by Education

Education		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
Some HS	HS	.1969473*	0.0234120	0.000	0.1205981	0.2732965
	Trade/Tech	.4261141*	0.0399243	0.000	0.2959161	0.5563121
	Some Coll	.4573760*	0.0194141	0.000	0.3940642	0.5206878
	Assoc D	.4437815*	0.0344900	0.000	0.3313053	0.5562576
	Com Coll	.5002619*	0.0368442	0.000	0.3801084	0.6204153
	Bach D	.6155397*	0.0170595	0.000	0.5599067	0.6711727
	Mast D	.6916993*	0.0214381	0.000	0.6217871	0.7616116
	Prof D	.6319219*	0.0444088	0.000	0.4870994	0.7767444
	Doc	.8441519*	0.0492276	0.000	0.6836147	1.0046891
HS	Some HS	-.1969473*	0.0234120	0.000	-0.2732965	-0.1205981
	Trade/Tech	.2291668*	0.0424126	0.000	0.0908541	0.3674795
	Some Coll	.2604287*	0.0241203	0.000	0.1817696	0.3390878
	Assoc D	.2468342*	0.0373422	0.000	0.1250566	0.3686117
	Com Coll	.3033145*	0.0395269	0.000	0.1744125	0.4322166
	Bach D	.4185924*	0.0222689	0.000	0.3459707	0.4912140
	Mast D	.4947520*	0.0257774	0.000	0.4106889	0.5788151
	Prof D	.4349746*	0.0466586	0.000	0.2828154	0.5871338
	Doc	.6472045*	0.0512663	0.000	0.4800188	0.8143903
Trade/Tech	Some HS	-.4261141*	0.0399243	0.000	-0.5563121	-0.2959161
	HS	-.2291668*	0.0424126	0.000	-0.3674795	-0.0908541
	Some Coll	.0312619	0.0403438	1.000	-0.1003040	0.1628277
	Assoc D	.0176674	0.0493991	1.000	-0.1434291	0.1787639
	Com Coll	.0741477	0.0510706	1.000	-0.0923997	0.2406952
	Bach D	.1894256*	0.0392650	0.000	0.0613778	0.3174733
	Mast D	.2655852*	0.0413558	0.000	0.1307189	0.4004515
	Prof D	.2058078*	0.0567702	0.013	0.0206734	0.3909422
	Doc	.4180377*	0.0606141	0.000	0.2203679	0.6157076
Some Coll	Some HS	-.4573760*	0.0194141	0.000	-0.5206878	-0.3940642
	HS	-.2604287*	0.0241203	0.000	-0.3390878	-0.1817696
	Trade/Tech	-.0312619	0.0403438	1.000	-0.1628277	0.1003040
	Assoc D	-.0135945	0.0349747	1.000	-0.1276513	0.1004623
	Com Coll	.0428859	0.0372983	1.000	-0.0787485	0.1645202
	Bach D	.1581637*	0.0180193	0.000	0.0994007	0.2169267
	Mast D	.2343233*	0.0222095	0.000	0.1618956	0.3067511
	Prof D	.1745459*	0.0447863	0.004	0.0284925	0.3205994
	Doc	.3867759*	0.0495684	0.000	0.2251274	0.5484244

Table A5 (continued)

Education		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
Assoc D	Some HS	-.4437815*	0.0344900	0.000	-0.5562576	-0.3313053
	HS	-.2468342*	0.0373422	0.000	-0.3686117	-0.1250566
	Trade/Tech	-.0176674	0.0493991	1.000	-0.1787639	0.1434291
	Some Coll	.0135945	0.0349747	1.000	-0.1004623	0.1276513
	Com Coll	.0564804	0.0469449	1.000	-0.0966125	0.2095732
	Bach D	.1717582*	0.0337246	0.000	0.0617782	0.2817382
	Mast D	.2479179*	0.0361375	0.000	0.1300693	0.3657664
	Prof D	.1881404*	0.0530892	0.018	0.0150101	0.3612708
	Doc	.4003704*	0.0571811	0.000	0.2138959	0.5868449
Com Coll	Some HS	-.5002619*	0.0368442	0.000	-0.6204153	-0.3801084
	HS	-.3033145*	0.0395269	0.000	-0.4322166	-0.1744125
	Trade/Tech	-.0741477	0.0510706	1.000	-0.2406952	0.0923997
	Some Coll	-.0428859	0.0372983	1.000	-0.1645202	0.0787485
	Assoc D	-.0564804	0.0469449	1.000	-0.2095732	0.0966125
	Bach D	.1152778	0.0361287	0.064	-0.0025422	0.2330979
	Mast D	.1914375*	0.0383908	0.000	0.0662406	0.3166343
	Prof D	.1316600	0.0546480	0.720	-0.0465536	0.3098736
	Doc	.3438900*	0.0586312	0.000	0.1526867	0.5350934
Bach D	Some HS	-.6155397*	0.0170595	0.000	-0.6711727	-0.5599067
	HS	-.4185924*	0.0222689	0.000	-0.4912140	-0.3459707
	Trade/Tech	-.1894256*	0.0392650	0.000	-0.3174733	-0.0613778
	Some Coll	-.1581637*	0.0180193	0.000	-0.2169267	-0.0994007
	Assoc D	-.1717582*	0.0337246	0.000	-0.2817382	-0.0617782
	Com Coll	-.1152778	0.0361287	0.064	-0.2330979	0.0025422
	Mast D	.0761596*	0.0201836	0.007	0.0103384	0.1419809
	Prof D	.0163822	0.0438170	1.000	-0.1265103	0.1592747
	Doc	.2286122*	0.0486944	0.000	0.0698139	0.3874105
Mast D	Some HS	-.6916993*	0.0214381	0.000	-0.7616116	-0.6217871
	HS	-.4947520*	0.0257774	0.000	-0.5788151	-0.4106889
	Trade/Tech	-.2655852*	0.0413558	0.000	-0.4004515	-0.1307189
	Some Coll	-.2343233*	0.0222095	0.000	-0.3067511	-0.1618956
	Assoc D	-.2479179*	0.0361375	0.000	-0.3657664	-0.1300693
	Com Coll	-.1914375*	0.0383908	0.000	-0.3166343	-0.0662406
	Bach D	-.0761596*	0.0201836	0.007	-0.1419809	-0.0103384
	Prof D	-.0597774	0.0457001	1.000	-0.2088108	0.0892560
	Doc	.1524525	0.0503955	0.112	-0.0118934	0.3167985

Table A5 (continued)

Education		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
Prof D	Some HS	-.6319219*	0.0444088	0.000	-0.7767444	-0.4870994
	HS	-.4349746*	0.0466586	0.000	-0.5871338	-0.2828154
	Trade/Tech	-.2058078*	0.0567702	0.013	-0.3909422	-0.0206734
	Some Coll	-.1745459*	0.0447863	0.004	-0.3205994	-0.0284925
	Assoc D	-.1881404*	0.0530892	0.018	-0.3612708	-0.0150101
	Com Coll	-.1316600	0.0546480	0.720	-0.3098736	0.0465536
	Bach D	-.0163822	0.0438170	1.000	-0.1592747	0.1265103
	Mast D	.0597774	0.0457001	1.000	-0.0892560	0.2088108
	Doc	.2122300*	0.0636574	0.039	0.0046356	0.4198243
Doc	Some HS	-.8441519*	0.0492276	0.000	-1.0046891	-0.6836147
	HS	-.6472045*	0.0512663	0.000	-0.8143903	-0.4800188
	Trade/Tech	-.4180377*	0.0606141	0.000	-0.6157076	-0.2203679
	Some Coll	-.3867759*	0.0495684	0.000	-0.5484244	-0.2251274
	Assoc D	-.4003704*	0.0571811	0.000	-0.5868449	-0.2138959
	Com Coll	-.3438900*	0.0586312	0.000	-0.5350934	-0.1526867
	Bach D	-.2286122*	0.0486944	0.000	-0.3874105	-0.0698139
	Mast D	-.1524525	0.0503955	0.112	-0.3167985	0.0118934
	Prof D	-.2122300*	0.0636574	0.039	-0.4198243	-0.0046356

Note. Based on observed means. SE = Standard Error; p = Significance.
Some HS = Some High School; HS = High School; Trade/Tech = Trade/Technical School; Some Coll = Some College; Assoc D = Associate Degree; Com Coll = Community College; Bach D = Bachelor's Degree; Mast D = Master's Degree; Prof D = Professional Degree; Doc = Doctorate.
The error term is Mean Square (Error) = .934
*p < .05

Table A6

Post Hoc Bonferroni Analysis of Factor 3 (Working with Others) by Education

Education		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
Some HS	HS	-.0322303	0.0242147	1.000	-0.1111975	0.0467368
	Trade/Tech	-.0191686	0.0412933	1.000	-0.1538310	0.1154939
	Some Coll	.0695813*	0.0200798	0.024	0.0040985	0.1350640
	Assoc D	.1232720*	0.0356727	0.025	0.0069390	0.2396049
	Com Coll	-.1361251*	0.0381076	0.016	-0.2603986	-0.0118516
	Bach D	.0304979	0.0176445	1.000	-0.0270428	0.0880385
	Mast D	-.0019803	0.0221732	1.000	-0.0742898	0.0703292
	Prof D	.0730414	0.0459316	1.000	-0.0767470	0.2228298
	Doc	.1872542*	0.0509156	0.011	0.0212122	0.3532961
HS	Some HS	.0322303	0.0242147	1.000	-0.0467368	0.1111975
	Trade/Tech	.0130618	0.0438669	1.000	-0.1299936	0.1561171
	Some Coll	.1018116*	0.0249473	0.002	0.0204553	0.1831679
	Assoc D	.1555023*	0.0386227	0.003	0.0295491	0.2814555
	Com Coll	-.1038948	0.0408823	0.497	-0.2372168	0.0294272
	Bach D	.0627282	0.0230325	0.291	-0.0123836	0.1378400
	Mast D	.0302500	0.0266612	1.000	-0.0566955	0.1171956
	Prof D	.1052717	0.0482585	1.000	-0.0521050	0.2626484
	Doc	.2194845*	0.0530242	0.002	0.0465661	0.3924029
Trade/Tech	Some HS	.0191686	0.0412933	1.000	-0.1154939	0.1538310
	HS	-.0130618	0.0438669	1.000	-0.1561171	0.1299936
	Some Coll	.0887498	0.0417271	1.000	-0.0473274	0.2248270
	Assoc D	.1424405	0.0510930	0.239	-0.0241799	0.3090609
	Com Coll	-.1169565	0.0528218	1.000	-0.2892148	0.0553017
	Bach D	.0496664	0.0406113	1.000	-0.0827720	0.1821049
	Mast D	.0171882	0.0427739	1.000	-0.1223026	0.1566790
	Prof D	.0922099	0.0587168	1.000	-0.0992727	0.2836925
	Doc	.2064227*	0.0626925	0.045	0.0019749	0.4108706
Some Coll	Some HS	-.0695813*	0.0200798	0.024	-0.1350640	-0.0040985
	HS	-.1018116*	0.0249473	0.002	-0.1831679	-0.0204553
	Trade/Tech	-.0887498	0.0417271	1.000	-0.2248270	0.0473274
	Assoc D	.0536907	0.0361740	1.000	-0.0642770	0.1716584
	Com Coll	-.2057063*	0.0385773	0.000	-0.3315115	-0.0799012
	Bach D	-.0390834	0.0186371	1.000	-0.0998614	0.0216946
	Mast D	-.0715616	0.0229710	0.083	-0.1464729	0.0033497
	Prof D	.0034601	0.0463220	1.000	-0.1476015	0.1545217
	Doc	.1176729	0.0512681	0.978	-0.0495184	0.2848643

Table A6 (continued)

Education		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
Assoc D	Some HS	-.1232720*	0.0356727	0.025	-0.2396049	-0.0069390
	HS	-.1555023*	0.0386227	0.003	-0.2814555	-0.0295491
	Trade/Tech	-.1424405	0.0510930	0.239	-0.3090609	0.0241799
	Some Coll	-.0536907	0.0361740	1.000	-0.1716584	0.0642770
	Com Coll	-.2593971*	0.0485546	0.000	-0.4177394	-0.1010547
	Bach D	-.0927741	0.0348810	0.352	-0.2065253	0.0209770
	Mast D	-.1252523*	0.0373766	0.036	-0.2471418	-0.0033627
	Prof D	-.0502306	0.0549096	1.000	-0.2292975	0.1288363
	Doc	.0639822	0.0591418	1.000	-0.1288864	0.2568509
Com Coll	Some HS	.1361251*	0.0381076	0.016	0.0118516	0.2603986
	HS	.1038948	0.0408823	0.497	-0.0294272	0.2372168
	Trade/Tech	.1169565	0.0528218	1.000	-0.0553017	0.2892148
	Some Coll	.2057063*	0.0385773	0.000	0.0799012	0.3315115
	Assoc D	.2593971*	0.0485546	0.000	0.1010547	0.4177394
	Bach D	.1666230*	0.0373675	0.000	0.0447629	0.2884830
	Mast D	.1341448*	0.0397072	0.033	0.0046550	0.2636346
	Prof D	.2091665*	0.0565218	0.010	0.0248420	0.3934909
	Doc	.3233793*	0.0606416	0.000	0.1256197	0.5211389
Bach D	Some HS	-.0304979	0.0176445	1.000	-0.0880385	0.0270428
	HS	-.0627282	0.0230325	0.291	-0.1378400	0.0123836
	Trade/Tech	-.0496664	0.0406113	1.000	-0.1821049	0.0827720
	Some Coll	.0390834	0.0186371	1.000	-0.0216946	0.0998614
	Assoc D	.0927741	0.0348810	0.352	-0.0209770	0.2065253
	Com Coll	-.1666230*	0.0373675	0.000	-0.2884830	-0.0447629
	Mast D	-.0324782	0.0208757	1.000	-0.1005564	0.0356000
	Prof D	.0425435	0.0453195	1.000	-0.1052487	0.1903357
	Doc	.1567563	0.0503641	0.084	-0.0074871	0.3209997
Mast D	Some HS	.0019803	0.0221732	1.000	-0.0703292	0.0742898
	HS	-.0302500	0.0266612	1.000	-0.1171956	0.0566955
	Trade/Tech	-.0171882	0.0427739	1.000	-0.1566790	0.1223026
	Some Coll	.0715616	0.0229710	0.083	-0.0033497	0.1464729
	Assoc D	.1252523*	0.0373766	0.036	0.0033627	0.2471418
	Com Coll	-.1341448*	0.0397072	0.033	-0.2636346	-0.0046550
	Bach D	.0324782	0.0208757	1.000	-0.0356000	0.1005564
	Prof D	.0750217	0.0472671	1.000	-0.0791220	0.2291654
	Doc	.1892345*	0.0521236	0.013	0.0192532	0.3592158

Table A6 (continued)

Education		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
Prof D	Some HS	-.0730414	0.0459316	1.000	-0.2228298	0.0767470
	HS	-.1052717	0.0482585	1.000	-0.2626484	0.0521050
	Trade/Tech	-.0922099	0.0587168	1.000	-0.2836925	0.0992727
	Some Coll	-.0034601	0.0463220	1.000	-0.1545217	0.1476015
	Assoc D	.0502306	0.0549096	1.000	-0.1288363	0.2292975
	Com Coll	-.2091665*	0.0565218	0.010	-0.3934909	-0.0248420
	Bach D	-.0425435	0.0453195	1.000	-0.1903357	0.1052487
	Mast D	-.0750217	0.0472671	1.000	-0.2291654	0.0791220
	Doc	.1142128	0.0658402	1.000	-0.1004999	0.3289255
Doc	Some HS	-.1872542*	0.0509156	0.011	-0.3532961	-0.0212122
	HS	-.2194845*	0.0530242	0.002	-0.3924029	-0.0465661
	Trade/Tech	-.2064227*	0.0626925	0.045	-0.4108706	-0.0019749
	Some Coll	-.1176729	0.0512681	0.978	-0.2848643	0.0495184
	Assoc D	-.0639822	0.0591418	1.000	-0.2568509	0.1288864
	Com Coll	-.3233793*	0.0606416	0.000	-0.5211389	-0.1256197
	Bach D	-.1567563	0.0503641	0.084	-0.3209997	0.0074871
	Mast D	-.1892345*	0.0521236	0.013	-0.3592158	-0.0192532
	Prof D	-.1142128	0.0658402	1.000	-0.3289255	0.1004999

Note. Based on observed means. SE = Standard Error; p = Significance.
Some HS = Some High School; HS = High School; Trade/Tech = Trade/Technical School; Some Coll = Some College; Assoc D = Associate Degree; Com Coll = Community College; Bach D = Bachelor's Degree; Mast D = Master's Degree; Prof D = Professional Degree; Doc = Doctorate.
The error term is Mean Square (Error) = 1.000
*p < .05

Table A7

Post Hoc Bonferroni Analysis of Factor 1 (Self Expression) by Personality Type

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ENFJ	ENFP	-.3292922*	0.0639107	0.000	-0.5549820	-0.1036024
	ENTJ	-.4234752*	0.0761921	0.000	-0.6925346	-0.1544158
	ENTP	-.6695534*	0.0748206	0.000	-0.9337696	-0.4053371
	ESFJ	.7252522*	0.0805386	0.000	0.4408437	1.0096607
	ESFP	.4076435*	0.1048125	0.012	0.0375158	0.7777712
	ESTJ	.2698711	0.0794199	0.082	-0.0105869	0.5503291
	ESTP	.0296123	0.1066504	1.000	-0.3470054	0.4062299
	INFJ	.2217131	0.0648933	0.077	-0.0074465	0.4508727
	INFP	-.0780391	0.0612955	1.000	-0.2944937	0.1384155
	INTJ	-.3217420*	0.0641861	0.000	-0.5484044	-0.0950797
	INTP	-.5072762*	0.0663107	0.000	-0.7414413	-0.2731111
	ISFJ	.8260092*	0.0804418	0.000	0.5419425	1.1100759
	ISFP	.2749349	0.1000169	0.720	-0.0782578	0.6281277
	ISTJ	.4474729*	0.0710721	0.000	0.1964938	0.6984521
	ISTP	-.0697053	0.1058989	1.000	-0.4436691	0.3042586
ENFP	ENFJ	.3292922*	0.0639107	0.000	0.1036024	0.5549820
	ENTJ	-.0941831	0.0674676	1.000	-0.3324333	0.1440672
	ENTP	-.3402612*	0.0659148	0.000	-0.5730281	-0.1074943
	ESFJ	1.0545443*	0.0723402	0.000	0.7990871	1.3100016
	ESFP	.7369356*	0.0986525	0.000	0.3885612	1.0853101
	ESTJ	.5991632*	0.0710926	0.000	0.3481116	0.8502149
	ESTP	.3589044*	0.1006029	0.044	0.0036424	0.7141664
	INFJ	.5510053*	0.0543855	0.000	0.3589523	0.7430583
	INFP	.2512530*	0.0500377	0.000	0.0745533	0.4279528
	INTJ	.0075501	0.0535397	1.000	-0.1815162	0.1966164
	INTP	-.1779840	0.0560692	0.181	-0.3759829	0.0200148
	ISFJ	1.1553014*	0.0722325	0.000	0.9002247	1.4103781
	ISFP	.6042271*	0.0935415	0.000	0.2739010	0.9345532
	ISTJ	.7767651*	0.0616270	0.000	0.5591399	0.9943903
	ISTP	.2595869	0.0998058	1.000	-0.0928605	0.6120343

Table A7 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ENTJ	ENFJ	.4234752*	0.0761921	0.000	0.1544158	0.6925346
	ENFP	.0941831	0.0674676	1.000	-0.1440672	0.3324333
	ENTP	-.2460781	0.0778808	0.191	-0.5211009	0.0289446
	ESFJ	1.1487274*	0.0833892	0.000	0.8542525	1.4432024
	ESFP	.8311187*	0.1070185	0.000	0.4532010	1.2090364
	ESTJ	.6933463*	0.0823093	0.000	0.4026850	0.9840076
	ESTP	.4530875*	0.1088191	0.004	0.0688113	0.8373636
	INFJ	.6451883*	0.0683991	0.000	0.4036486	0.8867281
	INFP	.3454361*	0.0649956	0.000	0.1159151	0.5749571
	INTJ	.1017332	0.0677285	1.000	-0.1374386	0.3409050
	INTP	-.0838010	0.0697453	1.000	-0.3300947	0.1624928
	ISFJ	1.2494845*	0.0832958	0.000	0.9553396	1.5436293
	ISFP	.6984102*	0.1023263	0.000	0.3370621	1.0597582
	ISTJ	.8709482*	0.0742869	0.000	0.6086167	1.1332797
	ISTP	.3537700	0.1080827	0.128	-0.0279056	0.7354456
ENTP	ENFJ	.6695534*	0.0748206	0.000	0.4053371	0.9337696
	ENFP	.3402612*	0.0659148	0.000	0.1074943	0.5730281
	ENTJ	.2460781	0.0778808	0.191	-0.0289446	0.5211009
	ESFJ	1.3948055*	0.0821380	0.000	1.1047491	1.6848620
	ESFP	1.0771968*	0.1060464	0.000	0.7027117	1.4516819
	ESTJ	.9394244*	0.0810414	0.000	0.6532405	1.2256084
	ESTP	.6991656*	0.1078632	0.000	0.3182648	1.0800664
	INFJ	.8912665*	0.0668679	0.000	0.6551337	1.1273992
	INFP	.5915142*	0.0633823	0.000	0.3676903	0.8153381
	INTJ	.3478113*	0.0661819	0.000	0.1141013	0.5815214
	INTP	.1622772	0.0682444	1.000	-0.0787163	0.4032707
	ISFJ	1.4955626*	0.0820431	0.000	1.2058413	1.7852839
	ISFP	.9444883*	0.1013092	0.000	0.5867319	1.3022447
	ISTJ	1.1170263*	0.0728795	0.000	0.8596645	1.3743881
	ISTP	.5998481*	0.1071203	0.000	0.2215710	0.9781251

Table A7 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ESFJ	ENFJ	-.7252522*	0.0805386	0.000	-1.0096607	-0.4408437
	ENFP	-1.0545443	0.0723402	0.000	-1.3100016	-0.7990871
	ENTJ	-1.1487274	0.0833892	0.000	-1.4432024	-0.8542525
	ENTP	-1.3948055	0.0821380	0.000	-1.6848620	-1.1047491
	ESFP	-.3176087	0.1101553	0.474	-0.7066036	0.0713862
	ESTJ	-.4553811*	0.0863485	0.000	-0.7603061	-0.1504562
	ESTP	-.6956399*	0.1119054	0.000	-1.0908151	-0.3004648
	INFJ	-.5035391*	0.0732098	0.000	-0.7620670	-0.2450112
	INFP	-.8032913*	0.0700405	0.000	-1.0506273	-0.5559553
	INTJ	-1.0469942	0.0725837	0.000	-1.3033112	-0.7906773
	INTP	-1.2325284	0.0744691	0.000	-1.4955034	-0.9695534
	ISFJ	.1007571	0.0872893	1.000	-0.2074903	0.4090044
	ISFP	-.4503172*	0.1056026	0.002	-0.8232350	-0.0773995
	ISTJ	-.2777792	0.0787387	0.051	-0.5558315	0.0002730
	ISTP	-.7949575*	0.1111895	0.000	-1.1876042	-0.4023107
ESFP	ENFJ	-.4076435*	0.1048125	0.012	-0.7777712	-0.0375158
	ENFP	-.7369356*	0.0986525	0.000	-1.0853101	-0.3885612
	ENTJ	-.8311187*	0.1070185	0.000	-1.2090364	-0.4532010
	ENTP	-1.0771968	0.1060464	0.000	-1.4516819	-0.7027117
	ESFJ	.3176087	0.1101553	0.474	-0.0713862	0.7066036
	ESTJ	-.1377724	0.1093401	1.000	-0.5238884	0.2483436
	ESTP	-.3780312	0.1304685	0.453	-0.8387586	0.0826962
	INFJ	-.1859304	0.0992918	1.000	-0.5365626	0.1647019
	INFP	-.4856826*	0.0969787	0.000	-0.8281464	-0.1432188
	INTJ	-.7293855*	0.0988311	0.000	-1.0783908	-0.3803802
	INTP	-.9149197*	0.1002240	0.000	-1.2688436	-0.5609957
	ISFJ	.4183658*	0.1100846	0.018	0.0296207	0.8071109
	ISFP	-.1327085	0.1251044	1.000	-0.5744935	0.3090764
	ISTJ	.0398295	0.1034358	1.000	-0.3254367	0.4050956
	ISTP	-.4773487*	0.1298549	0.029	-0.9359093	-0.0187881

Table A7 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ESTJ	ENFJ	-.2698711	0.0794199	0.082	-0.5503291	0.0105869
	ENFP	-.5991632*	0.0710926	0.000	-0.8502149	-0.3481116
	ENTJ	-.6933463*	0.0823093	0.000	-0.9840076	-0.4026850
	ENTP	-.9394244*	0.0810414	0.000	-1.2256084	-0.6532405
	ESFJ	.4553811*	0.0863485	0.000	0.1504562	0.7603061
	ESFP	.1377724	0.1093401	1.000	-0.2483436	0.5238884
	ESTP	-.2402588	0.1111030	1.000	-0.6326004	0.1520827
	INFJ	-.0481580	0.0719773	1.000	-0.3023334	0.2060175
	INFP	-.3479102*	0.0687512	0.000	-0.5906933	-0.1051271
	INTJ	-.5916131*	0.0713403	0.000	-0.8435394	-0.3396868
	INTP	-.7771473*	0.0732578	0.000	-1.0358447	-0.5184499
	ISFJ	.5561382*	0.0862582	0.000	0.2515320	0.8607443
	ISFP	.0050639	0.1047519	1.000	-0.3648498	0.3749776
	ISTJ	.1776019	0.0775940	1.000	-0.0964083	0.4516120
	ISTP	-.3395763	0.1103819	0.253	-0.7293712	0.0502185
ESTP	ENFJ	-.0296123	0.1066504	1.000	-0.4062299	0.3470054
	ENFP	-.3589044*	0.1006029	0.044	-0.7141664	-0.0036424
	ENTJ	-.4530875*	0.1088191	0.004	-0.8373636	-0.0688113
	ENTP	-.6991656*	0.1078632	0.000	-1.0800664	-0.3182648
	ESFJ	.6956399*	0.1119054	0.000	0.3004648	1.0908151
	ESFP	.3780312	0.1304685	0.453	-0.0826962	0.8387586
	ESTJ	.2402588	0.1111030	1.000	-0.1520827	0.6326004
	INFJ	.1921008	0.1012299	1.000	-0.1653755	0.5495772
	INFP	-.1076514	0.0989621	1.000	-0.4571192	0.2418165
	INTJ	-.3513543	0.1007781	0.059	-0.7072349	0.0045263
	INTP	-.5368885*	0.1021444	0.000	-0.8975940	-0.1761829
	ISFJ	.7963970*	0.1118358	0.000	0.4014678	1.1913262
	ISFP	.2453227	0.1266481	1.000	-0.2019136	0.6925590
	ISTJ	.4178607*	0.1052977	0.009	0.0460197	0.7897017
	ISTP	-.0993175	0.1313428	1.000	-0.5631323	0.3644973

Table A7 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
INFJ	ENFJ	-.2217131	0.0648933	0.077	-0.4508727	0.0074465
	ENFP	-.5510053*	0.0543855	0.000	-0.7430583	-0.3589523
	ENTJ	-.6451883*	0.0683991	0.000	-0.8867281	-0.4036486
	ENTP	-.8912665*	0.0668679	0.000	-1.1273992	-0.6551337
	ESFJ	.5035391*	0.0732098	0.000	0.2450112	0.7620670
	ESFP	.1859304	0.0992918	1.000	-0.1647019	0.5365626
	ESTJ	.0481580	0.0719773	1.000	-0.2060175	0.3023334
	ESTP	-.1921008	0.1012299	1.000	-0.5495772	0.1653755
	INFP	-.2997522*	0.0512868	0.000	-0.4808629	-0.1186416
	INTJ	-.5434551*	0.0547088	0.000	-0.7366501	-0.3502601
	INTP	-.7289893*	0.0571867	0.000	-0.9309343	-0.5270443
	ISFJ	.6042961*	0.0731033	0.000	0.3461443	0.8624480
	ISFP	.0532218	0.0942156	1.000	-0.2794846	0.3859283
	ISTJ	.2257598*	0.0626454	0.038	0.0045382	0.4469814
	ISTP	-.2914184	0.1004379	0.447	-0.6460977	0.0632610
INFP	ENFJ	.0780391	0.0612955	1.000	-0.1384155	0.2944937
	ENFP	-.2512530*	0.0500377	0.000	-0.4279528	-0.0745533
	ENTJ	-.3454361*	0.0649956	0.000	-0.5749571	-0.1159151
	ENTP	-.5915142*	0.0633823	0.000	-0.8153381	-0.3676903
	ESFJ	.8032913*	0.0700405	0.000	0.5559553	1.0506273
	ESFP	.4856826*	0.0969787	0.000	0.1432188	0.8281464
	ESTJ	.3479102*	0.0687512	0.000	0.1051271	0.5906933
	ESTP	.1076514	0.0989621	1.000	-0.2418165	0.4571192
	INFJ	.2997522*	0.0512868	0.000	0.1186416	0.4808629
	INTJ	-.2437029*	0.0503890	0.000	-0.4216432	-0.0657626
	INTP	-.4292371*	0.0530689	0.000	-0.6166410	-0.2418331
	ISFJ	.9040484*	0.0699291	0.000	0.6571054	1.1509913
	ISFP	.3529741*	0.0917746	0.015	0.0288876	0.6770605
	ISTJ	.5255121*	0.0589105	0.000	0.3174797	0.7335444
	ISTP	.0083339	0.0981517	1.000	-0.3382724	0.3549401

Table A7 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
INTJ	ENFJ	.3217420*	0.0641861	0.000	0.0950797	0.5484044
	ENFP	-.0075501	0.0535397	1.000	-0.1966164	0.1815162
	ENTJ	-.1017332	0.0677285	1.000	-0.3409050	0.1374386
	ENTP	-.3478113*	0.0661819	0.000	-0.5815214	-0.1141013
	ESFJ	1.0469942*	0.0725837	0.000	0.7906773	1.3033112
	ESFP	.7293855*	0.0988311	0.000	0.3803802	1.0783908
	ESTJ	.5916131*	0.0713403	0.000	0.3396868	0.8435394
	ESTP	.3513543	0.1007781	0.059	-0.0045263	0.7072349
	INFJ	.5434551*	0.0547088	0.000	0.3502601	0.7366501
	INFP	.2437029*	0.0503890	0.000	0.0657626	0.4216432
	INTP	-.1855342	0.0563829	0.121	-0.3846409	0.0135726
	ISFJ	1.1477513*	0.0724763	0.000	0.8918137	1.4036889
	ISFP	.5966770*	0.0937299	0.000	0.2656856	0.9276683
	ISTJ	.7692150*	0.0619126	0.000	0.5505813	0.9878487
	ISTP	.2520368	0.0999824	1.000	-0.1010342	0.6051078
INTP	ENFJ	.5072762*	0.0663107	0.000	0.2731111	0.7414413
	ENFP	.1779840	0.0560692	0.181	-0.0200148	0.3759829
	ENTJ	.0838010	0.0697453	1.000	-0.1624928	0.3300947
	ENTP	-.1622772	0.0682444	1.000	-0.4032707	0.0787163
	ESFJ	1.2325284*	0.0744691	0.000	0.9695534	1.4955034
	ESFP	.9149197*	0.1002240	0.000	0.5609957	1.2688436
	ESTJ	.7771473*	0.0732578	0.000	0.5184499	1.0358447
	ESTP	.5368885*	0.1021444	0.000	0.1761829	0.8975940
	INFJ	.7289893*	0.0571867	0.000	0.5270443	0.9309343
	INFP	.4292371*	0.0530689	0.000	0.2418331	0.6166410
	INTJ	.1855342	0.0563829	0.121	-0.0135726	0.3846409
	ISFJ	1.3332854*	0.0743644	0.000	1.0706802	1.5958907
	ISFP	.7822111*	0.0951975	0.000	0.4460374	1.1183848
	ISTJ	.9547491*	0.0641126	0.000	0.7283465	1.1811518
	ISTP	.4375709*	0.1013595	0.002	0.0796371	0.7955047

Table A7 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ISFJ	ENFJ	-.8260092*	0.0804418	0.000	-1.1100759	-0.5419425
	ENFP	-1.1553014	0.0722325	0.000	-1.4103781	-0.9002247
	ENTJ	-1.2494845	0.0832958	0.000	-1.5436293	-0.9553396
	ENTP	-1.4955626	0.0820431	0.000	-1.7852839	-1.2058413
	ESFJ	-.1007571	0.0872893	1.000	-0.4090044	0.2074903
	ESFP	-.4183658*	0.1100846	0.018	-0.8071109	-0.0296207
	ESTJ	-.5561382*	0.0862582	0.000	-0.8607443	-0.2515320
	ESTP	-.7963970*	0.1118358	0.000	-1.1913262	-0.4014678
	INFJ	-.6042961*	0.0731033	0.000	-0.8624480	-0.3461443
	INFP	-.9040484*	0.0699291	0.000	-1.1509913	-0.6571054
	INTJ	-1.1477513	0.0724763	0.000	-1.4036889	-0.8918137
	INTP	-1.3332854	0.0743644	0.000	-1.5958907	-1.0706802
	ISFP	-.5510743*	0.1055288	0.000	-0.9237314	-0.1784172
	ISTJ	-.3785363*	0.0786397	0.000	-0.6562389	-0.1008337
	ISTP	-.8957145*	0.1111194	0.000	-1.2881138	-0.5033152
ISFP	ENFJ	-.2749349	0.1000169	0.720	-0.6281277	0.0782578
	ENFP	-.6042271*	0.0935415	0.000	-0.9345532	-0.2739010
	ENTJ	-.6984102*	0.1023263	0.000	-1.0597582	-0.3370621
	ENTP	-.9444883*	0.1013092	0.000	-1.3022447	-0.5867319
	ESFJ	.4503172*	0.1056026	0.002	0.0773995	0.8232350
	ESFP	.1327085	0.1251044	1.000	-0.3090764	0.5744935
	ESTJ	-.0050639	0.1047519	1.000	-0.3749776	0.3648498
	ESTP	-.2453227	0.1266481	1.000	-0.6925590	0.2019136
	INFJ	-.0532218	0.0942156	1.000	-0.3859283	0.2794846
	INFP	-.3529741*	0.0917746	0.015	-0.6770605	-0.0288876
	INTJ	-.5966770*	0.0937299	0.000	-0.9276683	-0.2656856
	INTP	-.7822111*	0.0951975	0.000	-1.1183848	-0.4460374
	ISFJ	.5510743*	0.1055288	0.000	0.1784172	0.9237314
	ISTJ	.1725380	0.0985733	1.000	-0.1755568	0.5206328
	ISTP	-.3446402	0.1260159	0.751	-0.7896440	0.1003636

Table A7 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ISTJ	ENFJ	-.4474729*	0.0710721	0.000	-0.6984521	-0.1964938
	ENFP	-.7767651*	0.0616270	0.000	-0.9943903	-0.5591399
	ENTJ	-.8709482*	0.0742869	0.000	-1.1332797	-0.6086167
	ENTP	-1.1170263	0.0728795	0.000	-1.3743881	-0.8596645
	ESFJ	.2777792	0.0787387	0.051	-0.0002730	0.5558315
	ESFP	-.0398295	0.1034358	1.000	-0.4050956	0.3254367
	ESTJ	-.1776019	0.0775940	1.000	-0.4516120	0.0964083
	ESTP	-.4178607*	0.1052977	0.009	-0.7897017	-0.0460197
	INFJ	-.2257598*	0.0626454	0.038	-0.4469814	-0.0045382
	INFP	-.5255121*	0.0589105	0.000	-0.7335444	-0.3174797
	INTJ	-.7692150*	0.0619126	0.000	-0.9878487	-0.5505813
	INTP	-.9547491*	0.0641126	0.000	-1.1811518	-0.7283465
	ISFJ	.3785363*	0.0786397	0.000	0.1008337	0.6562389
	ISFP	-.1725380	0.0985733	1.000	-0.5206328	0.1755568
	ISTP	-.5171782*	0.1045365	0.000	-0.8863311	-0.1480254
ISTP	ENFJ	.0697053	0.1058989	1.000	-0.3042586	0.4436691
	ENFP	-.2595869	0.0998058	1.000	-0.6120343	0.0928605
	ENTJ	-.3537700	0.1080827	0.128	-0.7354456	0.0279056
	ENTP	-.5998481*	0.1071203	0.000	-0.9781251	-0.2215710
	ESFJ	.7949575*	0.1111895	0.000	0.4023107	1.1876042
	ESFP	.4773487*	0.1298549	0.029	0.0187881	0.9359093
	ESTJ	.3395763	0.1103819	0.253	-0.0502185	0.7293712
	ESTP	.0993175	0.1313428	1.000	-0.3644973	0.5631323
	INFJ	.2914184	0.1004379	0.447	-0.0632610	0.6460977
	INFP	-.0083339	0.0981517	1.000	-0.3549401	0.3382724
	INTJ	-.2520368	0.0999824	1.000	-0.6051078	0.1010342
	INTP	-.4375709*	0.1013595	0.002	-0.7955047	-0.0796371
	ISFJ	.8957145*	0.1111194	0.000	0.5033152	1.2881138
	ISFP	.3446402	0.1260159	0.751	-0.1003636	0.7896440
	ISTJ	.5171782*	0.1045365	0.000	0.1480254	0.8863311

Note. Based on observed means.
The error term is Mean Square (Error) = .931
*p < .05

Table A8

Post Hoc Bonferroni Analysis of Factor 2 (Extrinsic Rewards) by Personality Type

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ENFJ	ENFP	.3512724*	0.0631716	0.000	0.1281926	0.5743521
	ENTJ	-.1124494	0.0753109	1.000	-0.3783972	0.1534984
	ENTP	.3190013*	0.0739553	0.002	0.0578407	0.5801620
	ESFJ	-.4035846*	0.0796072	0.000	-0.6847040	-0.1224653
	ESFP	-.1216527	0.1036004	1.000	-0.4875000	0.2441946
	ESTJ	-.3860690*	0.0785015	0.000	-0.6632836	-0.1088544
	ESTP	-.2097261	0.1054170	1.000	-0.5819883	0.1625360
	INFJ	.1565630	0.0641428	1.000	-0.0699465	0.3830724
	INFP	.4024769*	0.0605866	0.000	0.1885256	0.6164283
	INTJ	.1256761	0.0634438	1.000	-0.0983650	0.3497172
	INTP	.4433267*	0.0655439	0.000	0.2118696	0.6747838
	ISFJ	-.2750722	0.0795115	0.065	-0.5558538	0.0057093
	ISFP	.0461179	0.0988602	1.000	-0.3029902	0.3952260
	ISTJ	-.3458679*	0.0702502	0.000	-0.5939445	-0.0977913
	ISTP	-.1166374	0.1046742	1.000	-0.4862764	0.2530017
ENFP	ENFJ	-.3512724*	0.0631716	0.000	-0.5743521	-0.1281926
	ENTJ	-.4637218*	0.0666873	0.000	-0.6992167	-0.2282268
	ENTP	-.0322710	0.0651525	1.000	-0.2623460	0.1978040
	ESFJ	-.7548570*	0.0715036	0.000	-1.0073600	-0.5023540
	ESFP	-.4729251*	0.0975116	0.000	-0.8172706	-0.1285795
	ESTJ	-.7373413*	0.0702705	0.000	-0.9854896	-0.4891931
	ESTP	-.5609985*	0.0994394	0.000	-0.9121519	-0.2098450
	INFJ	-.1947094*	0.0537565	0.035	-0.3845413	-0.0048774
	INFP	.0512046	0.0494591	1.000	-0.1234517	0.2258608
	INTJ	-.2255963*	0.0529205	0.002	-0.4124760	-0.0387165
	INTP	.0920543	0.0554208	1.000	-0.1036547	0.2877633
	ISFJ	-.6263446*	0.0713971	0.000	-0.8784714	-0.3742178
	ISFP	-.3051545	0.0924597	0.117	-0.6316604	0.0213515
	ISTJ	-.6971403*	0.0609143	0.000	-0.9122487	-0.4820318
	ISTP	-.4679098*	0.0986516	0.000	-0.8162812	-0.1195383

Table A8 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ENTJ	ENFJ	.1124494	0.0753109	1.000	-0.1534984	0.3783972
	ENFP	.4637218*	0.0666873	0.000	0.2282268	0.6992167
	ENTP	.4314508*	0.0769801	0.000	0.1596086	0.7032929
	ESFJ	-.2911352*	0.0824249	0.050	-0.5822046	-0.0000658
	ESFP	-.0092033	0.1057809	1.000	-0.3827505	0.3643439
	ESTJ	-.2736196	0.0813574	0.093	-0.5609194	0.0136803
	ESTP	-.0972767	0.1075606	1.000	-0.4771088	0.2825554
	INFJ	.2690124*	0.0676080	0.008	0.0302660	0.5077588
	INFP	.5149263*	0.0642440	0.000	0.2880597	0.7417930
	INTJ	.2381255*	0.0669452	0.045	0.0017197	0.4745313
	INTP	.5557761*	0.0689387	0.000	0.3123307	0.7992215
	ISFJ	-.1626228	0.0823325	1.000	-0.4533659	0.1281203
	ISFP	.1585673	0.1011429	1.000	-0.1986018	0.5157364
	ISTJ	-.2334185	0.0734278	0.178	-0.4927162	0.0258792
	ISTP	-.0041880	0.1068327	1.000	-0.3814496	0.3730736
ENTP	ENFJ	-.3190013*	0.0739553	0.002	-0.5801620	-0.0578407
	ENFP	.0322710	0.0651525	1.000	-0.1978040	0.2623460
	ENTJ	-.4314508*	0.0769801	0.000	-0.7032929	-0.1596086
	ESFJ	-.7225860*	0.0811881	0.000	-1.0092880	-0.4358840
	ESFP	-.4406540*	0.1048200	0.003	-0.8108083	-0.0704998
	ESTJ	-.7050703*	0.0801042	0.000	-0.9879446	-0.4221960
	ESTP	-.5287275*	0.1066158	0.000	-0.9052232	-0.1522317
	INFJ	-.1624384	0.0660946	1.000	-0.3958403	0.0709636
	INFP	.0834756	0.0626493	1.000	-0.1377598	0.3047110
	INTJ	-.1933252	0.0654165	0.376	-0.4243325	0.0376820
	INTP	.1243253	0.0674552	1.000	-0.1138811	0.3625318
	ISFJ	-.5940736*	0.0810943	0.000	-0.8804443	-0.3077028
	ISFP	-.2728834	0.1001376	0.774	-0.6265025	0.0807356
	ISTJ	-.6648693*	0.0720367	0.000	-0.9192547	-0.4104838
	ISTP	-.4356387*	0.1058814	0.005	-0.8095411	-0.0617364

Table A8 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ESFJ	ENFJ	.4035846*	0.0796072	0.000	0.1224653	0.6847040
	ENFP	.7548570*	0.0715036	0.000	0.5023540	1.0073600
	ENTJ	.2911352*	0.0824249	0.050	0.0000658	0.5822046
	ENTP	.7225860*	0.0811881	0.000	0.4358840	1.0092880
	ESFP	.2819319	0.1088814	1.000	-0.1025643	0.6664282
	ESTJ	.0175157	0.0853499	1.000	-0.2838829	0.3189142
	ESTP	.1938585	0.1106113	1.000	-0.1967465	0.5844636
	INFJ	.5601476*	0.0723631	0.000	0.3046096	0.8156857
	INFP	.8060616*	0.0692305	0.000	0.5615859	1.0505372
	INTJ	.5292607*	0.0717443	0.000	0.2759081	0.7826134
	INTP	.8469113*	0.0736079	0.000	0.5869776	1.1068451
	ISFJ	.1285124	0.0862798	1.000	-0.1761701	0.4331949
	ISFP	.4497026*	0.1043813	0.002	0.0810975	0.8183076
	ISTJ	.0577167	0.0778281	1.000	-0.2171199	0.3325534
	ISTP	.2869473	0.1099036	1.000	-0.1011587	0.6750532
ESFP	ENFJ	.1216527	0.1036004	1.000	-0.2441946	0.4875000
	ENFP	.4729251*	0.0975116	0.000	0.1285795	0.8172706
	ENTJ	.0092033	0.1057809	1.000	-0.3643439	0.3827505
	ENTP	.4406540*	0.1048200	0.003	0.0704998	0.8108083
	ESFJ	-.2819319	0.1088814	1.000	-0.6664282	0.1025643
	ESTJ	-.2644163	0.1080756	1.000	-0.6460669	0.1172344
	ESTP	-.0880734	0.1289596	1.000	-0.5434726	0.3673258
	INFJ	.2782157	0.0981435	0.552	-0.0683616	0.6247930
	INFP	.5241296*	0.0958571	0.000	0.1856264	0.8626329
	INTJ	.2473288	0.0976881	1.000	-0.0976403	0.5922979
	INTP	.5649794*	0.0990649	0.000	0.2151485	0.9148103
	ISFJ	-.1534195	0.1088115	1.000	-0.5376689	0.2308298
	ISFP	.1677706	0.1236576	1.000	-0.2689052	0.6044464
	ISTJ	-.2242152	0.1022396	1.000	-0.5852572	0.1368268
	ISTP	.0050153	0.1283532	1.000	-0.4482421	0.4582728

Table A8 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ESTJ	ENFJ	.3860690*	0.0785015	0.000	0.1088544	0.6632836
	ENFP	.7373413*	0.0702705	0.000	0.4891931	0.9854896
	ENTJ	.2736196	0.0813574	0.093	-0.0136803	0.5609194
	ENTP	.7050703*	0.0801042	0.000	0.4221960	0.9879446
	ESFJ	-.0175157	0.0853499	1.000	-0.3189142	0.2838829
	ESFP	.2644163	0.1080756	1.000	-0.1172344	0.6460669
	ESTP	.1763429	0.1098182	1.000	-0.2114614	0.5641471
	INFJ	.5426320*	0.0711449	0.000	0.2913960	0.7938679
	INFP	.7885459*	0.0679561	0.000	0.5485706	1.0285212
	INTJ	.5117451*	0.0705153	0.000	0.2627322	0.7607579
	INTP	.8293957*	0.0724106	0.000	0.5736900	1.0851013
	ISFJ	.1109967	0.0852606	1.000	-0.1900867	0.4120802
	ISFP	.4321869*	0.1035405	0.004	0.0665512	0.7978226
	ISTJ	.0402011	0.0766967	1.000	-0.2306402	0.3110423
	ISTP	.2694316	0.1091053	1.000	-0.1158553	0.6547185
ESTP	ENFJ	.2097261	0.1054170	1.000	-0.1625360	0.5819883
	ENFP	.5609985*	0.0994394	0.000	0.2098450	0.9121519
	ENTJ	.0972767	0.1075606	1.000	-0.2825554	0.4771088
	ENTP	.5287275*	0.1066158	0.000	0.1522317	0.9052232
	ESFJ	-.1938585	0.1106113	1.000	-0.5844636	0.1967465
	ESFP	.0880734	0.1289596	1.000	-0.3673258	0.5434726
	ESTJ	-.1763429	0.1098182	1.000	-0.5641471	0.2114614
	INFJ	.3662891*	0.1000592	0.030	0.0129469	0.7196313
	INFP	.6122031*	0.0978176	0.000	0.2667767	0.9576294
	INTJ	.3354022	0.0996126	0.092	-0.0163627	0.6871672
	INTP	.6530528*	0.1009631	0.000	0.2965187	1.0095869
	ISFJ	-.0653461	0.1105425	1.000	-0.4557081	0.3250158
	ISFP	.2558440	0.1251834	1.000	-0.1862201	0.6979081
	ISTJ	-.1361418	0.1040800	1.000	-0.5036825	0.2313989
	ISTP	.0930887	0.1298238	1.000	-0.3653622	0.5515396

Table A8 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
INFJ	ENFJ	-.1565630	0.0641428	1.000	-0.3830724	0.0699465
	ENFP	.1947094*	0.0537565	0.035	0.0048774	0.3845413
	ENTJ	-.2690124*	0.0676080	0.008	-0.5077588	-0.0302660
	ENTP	.1624384	0.0660946	1.000	-0.0709636	0.3958403
	ESFJ	-.5601476*	0.0723631	0.000	-0.8156857	-0.3046096
	ESFP	-.2782157	0.0981435	0.552	-0.6247930	0.0683616
	ESTJ	-.5426320*	0.0711449	0.000	-0.7938679	-0.2913960
	ESTP	-.3662891*	0.1000592	0.030	-0.7196313	-0.0129469
	INFP	.2459140*	0.0506937	0.000	0.0668978	0.4249301
	INTJ	-.0308869	0.0540761	1.000	-0.2218476	0.1600739
	INTP	.2867637*	0.0565253	0.000	0.0871541	0.4863733
	ISFJ	-.4316352*	0.0722578	0.000	-0.6868016	-0.1764689
	ISFP	-.1104451	0.0931260	1.000	-0.4393038	0.2184137
	ISTJ	-.5024309*	0.0619209	0.000	-0.7210941	-0.2837677
	ISTP	-.2732004	0.0992763	0.713	-0.6237779	0.0773772
INFP	ENFJ	-.4024769*	0.0605866	0.000	-0.6164283	-0.1885256
	ENFP	-.0512046	0.0494591	1.000	-0.2258608	0.1234517
	ENTJ	-.5149263*	0.0642440	0.000	-0.7417930	-0.2880597
	ENTP	-.0834756	0.0626493	1.000	-0.3047110	0.1377598
	ESFJ	-.8060616*	0.0692305	0.000	-1.0505372	-0.5615859
	ESFP	-.5241296*	0.0958571	0.000	-0.8626329	-0.1856264
	ESTJ	-.7885459*	0.0679561	0.000	-1.0285212	-0.5485706
	ESTP	-.6122031*	0.0978176	0.000	-0.9576294	-0.2667767
	INFJ	-.2459140*	0.0506937	0.000	-0.4249301	-0.0668978
	INTJ	-.2768008*	0.0498063	0.000	-0.4526833	-0.1009184
	INTP	.0408497	0.0524552	1.000	-0.1443869	0.2260864
	ISFJ	-.6775492*	0.0691204	0.000	-0.9216363	-0.4334621
	ISFP	-.3563590*	0.0907132	0.010	-0.6766975	-0.0360206
	ISTJ	-.7483448*	0.0582292	0.000	-0.9539713	-0.5427184
	ISTP	-.5191143*	0.0970166	0.000	-0.8617121	-0.1765165

Table A8 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
INTJ	ENFJ	-.1256761	0.0634438	1.000	-0.3497172	0.0983650
	ENFP	.2255963*	0.0529205	0.002	0.0387165	0.4124760
	ENTJ	-.2381255*	0.0669452	0.045	-0.4745313	-0.0017197
	ENTP	.1933252	0.0654165	0.376	-0.0376820	0.4243325
	ESFJ	-.5292607*	0.0717443	0.000	-0.7826134	-0.2759081
	ESFP	-.2473288	0.0976881	1.000	-0.5922979	0.0976403
	ESTJ	-.5117451*	0.0705153	0.000	-0.7607579	-0.2627322
	ESTP	-.3354022	0.0996126	0.092	-0.6871672	0.0163627
	INFJ	.0308869	0.0540761	1.000	-0.1600739	0.2218476
	INFP	.2768008*	0.0498063	0.000	0.1009184	0.4526833
	INTP	.3176506*	0.0557309	0.000	0.1208465	0.5144547
	ISFJ	-.4007483*	0.0716381	0.000	-0.6537261	-0.1477706
	ISFP	-.0795582	0.0926460	1.000	-0.4067217	0.2476053
	ISTJ	-.4715440*	0.0611966	0.000	-0.6876493	-0.2554387
	ISTP	-.2423135	0.0988262	1.000	-0.5913013	0.1066743
INTP	ENFJ	-.4433267*	0.0655439	0.000	-0.6747838	-0.2118696
	ENFP	-.0920543	0.0554208	1.000	-0.2877633	0.1036547
	ENTJ	-.5557761*	0.0689387	0.000	-0.7992215	-0.3123307
	ENTP	-.1243253	0.0674552	1.000	-0.3625318	0.1138811
	ESFJ	-.8469113*	0.0736079	0.000	-1.1068451	-0.5869776
	ESFP	-.5649794*	0.0990649	0.000	-0.9148103	-0.2151485
	ESTJ	-.8293957*	0.0724106	0.000	-1.0851013	-0.5736900
	ESTP	-.6530528*	0.1009631	0.000	-1.0095869	-0.2965187
	INFJ	-.2867637*	0.0565253	0.000	-0.4863733	-0.0871541
	INFP	-.0408497	0.0524552	1.000	-0.2260864	0.1443869
	INTJ	-.3176506*	0.0557309	0.000	-0.5144547	-0.1208465
	ISFJ	-.7183989*	0.0735044	0.000	-0.9779672	-0.4588306
	ISFP	-.3972088*	0.0940965	0.003	-0.7294947	-0.0649229
	ISTJ	-.7891946*	0.0633711	0.000	-1.0129790	-0.5654102
	ISTP	-.5599641*	0.1001873	0.000	-0.9137585	-0.2061697

Table A8 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ISFJ	ENFJ	.2750722	0.0795115	0.065	-0.0057093	0.5558538
	ENFP	.6263446*	0.0713971	0.000	0.3742178	0.8784714
	ENTJ	.1626228	0.0823325	1.000	-0.1281203	0.4533659
	ENTP	.5940736*	0.0810943	0.000	0.3077028	0.8804443
	ESFJ	-.1285124	0.0862798	1.000	-0.4331949	0.1761701
	ESFP	.1534195	0.1088115	1.000	-0.2308298	0.5376689
	ESTJ	-.1109967	0.0852606	1.000	-0.4120802	0.1900867
	ESTP	.0653461	0.1105425	1.000	-0.3250158	0.4557081
	INFJ	.4316352*	0.0722578	0.000	0.1764689	0.6868016
	INFP	.6775492*	0.0691204	0.000	0.4334621	0.9216363
	INTJ	.4007483*	0.0716381	0.000	0.1477706	0.6537261
	INTP	.7183989*	0.0735044	0.000	0.4588306	0.9779672
	ISFP	.3211901	0.1043084	0.250	-0.0471573	0.6895376
	ISTJ	-.0707957	0.0777302	1.000	-0.3452867	0.2036954
	ISTP	.1584348	0.1098343	1.000	-0.2294264	0.5462961
ISFP	ENFJ	-.0461179	0.0988602	1.000	-0.3952260	0.3029902
	ENFP	.3051545	0.0924597	0.117	-0.0213515	0.6316604
	ENTJ	-.1585673	0.1011429	1.000	-0.5157364	0.1986018
	ENTP	.2728834	0.1001376	0.774	-0.0807356	0.6265025
	ESFJ	-.4497026*	0.1043813	0.002	-0.8183076	-0.0810975
	ESFP	-.1677706	0.1236576	1.000	-0.6044464	0.2689052
	ESTJ	-.4321869*	0.1035405	0.004	-0.7978226	-0.0665512
	ESTP	-.2558440	0.1251834	1.000	-0.6979081	0.1862201
	INFJ	.1104451	0.0931260	1.000	-0.2184137	0.4393038
	INFP	.3563590*	0.0907132	0.010	0.0360206	0.6766975
	INTJ	.0795582	0.0926460	1.000	-0.2476053	0.4067217
	INTP	.3972088*	0.0940965	0.003	0.0649229	0.7294947
	ISFJ	-.3211901	0.1043084	0.250	-0.6895376	0.0471573
	ISTJ	-.3919858*	0.0974333	0.007	-0.7360550	-0.0479167
	ISTP	-.1627553	0.1245586	1.000	-0.6026128	0.2771022

Table A8 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ISTJ	ENFJ	.3458679*	0.0702502	0.000	0.0977913	0.5939445
	ENFP	.6971403*	0.0609143	0.000	0.4820318	0.9122487
	ENTJ	.2334185	0.0734278	0.178	-0.0258792	0.4927162
	ENTP	.6648693*	0.0720367	0.000	0.4104838	0.9192547
	ESFJ	-.0577167	0.0778281	1.000	-0.3325534	0.2171199
	ESFP	.2242152	0.1022396	1.000	-0.1368268	0.5852572
	ESTJ	-.0402011	0.0766967	1.000	-0.3110423	0.2306402
	ESTP	.1361418	0.1040800	1.000	-0.2313989	0.5036825
	INFJ	.5024309*	0.0619209	0.000	0.2837677	0.7210941
	INFP	.7483448*	0.0582292	0.000	0.5427184	0.9539713
	INTJ	.4715440*	0.0611966	0.000	0.2554387	0.6876493
	INTP	.7891946*	0.0633711	0.000	0.5654102	1.0129790
	ISFJ	.0707957	0.0777302	1.000	-0.2036954	0.3452867
	ISFP	.3919858*	0.0974333	0.007	0.0479167	0.7360550
	ISTP	.2292305	0.1033275	1.000	-0.1356532	0.5941142
ISTP	ENFJ	.1166374	0.1046742	1.000	-0.2530017	0.4862764
	ENFP	.4679098*	0.0986516	0.000	0.1195383	0.8162812
	ENTJ	.0041880	0.1068327	1.000	-0.3730736	0.3814496
	ENTP	.4356387*	0.1058814	0.005	0.0617364	0.8095411
	ESFJ	-.2869473	0.1099036	1.000	-0.6750532	0.1011587
	ESFP	-.0050153	0.1283532	1.000	-0.4582728	0.4482421
	ESTJ	-.2694316	0.1091053	1.000	-0.6547185	0.1158553
	ESTP	-.0930887	0.1298238	1.000	-0.5515396	0.3653622
	INFJ	.2732004	0.0992763	0.713	-0.0773772	0.6237779
	INFP	.5191143*	0.0970166	0.000	0.1765165	0.8617121
	INTJ	.2423135	0.0988262	1.000	-0.1066743	0.5913013
	INTP	.5599641*	0.1001873	0.000	0.2061697	0.9137585
	ISFJ	-.1584348	0.1098343	1.000	-0.5462961	0.2294264
	ISFP	.1627553	0.1245586	1.000	-0.2771022	0.6026128
	ISTJ	-.2292305	0.1033275	1.000	-0.5941142	0.1356532

Note. Based on observed means.
The error term is Mean Square (Error) = .910
*p < .05

Table A9

Post Hoc Bonferroni Analysis of Factor 3 (Working with Others) by Personality Type

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ENFJ	ENFP	.0914004	0.0641390	1.000	-0.1350955	0.3178963
	ENTJ	.4319625*	0.0764642	0.000	0.1619421	0.7019829
	ENTP	.4340585*	0.0750878	0.000	0.1688985	0.6992184
	ESFJ	-.1243775	0.0808263	1.000	-0.4098019	0.1610468
	ESFP	-.0312157	0.1051869	1.000	-0.4026653	0.3402340
	ESTJ	.1965268	0.0797036	1.000	-0.0849329	0.4779866
	ESTP	.3181976	0.1070313	0.355	-0.0597652	0.6961604
	INFJ	.4643361*	0.0651251	0.000	0.2343579	0.6943142
	INFP	.5739495*	0.0615144	0.000	0.3567219	0.7911772
	INTJ	.9878417*	0.0644154	0.000	0.7603697	1.2153136
	INTP	1.0908258*	0.0665476	0.000	0.8558243	1.3258273
	ISFJ	.3355237*	0.0807291	0.004	0.0504424	0.6206050
	ISFP	.5301926*	0.1003741	0.000	0.1757384	0.8846468
	ISTJ	.7693559*	0.0713260	0.000	0.5174803	1.0212314
	ISTP	.9080859*	0.1062771	0.000	0.5327863	1.2833854
ENFP	ENFJ	-.0914004	0.0641390	1.000	-0.3178963	0.1350955
	ENTJ	.3405621*	0.0677085	0.000	0.1014609	0.5796633
	ENTP	.3426581*	0.0661502	0.000	0.1090598	0.5762564
	ESFJ	-.2157779	0.0725986	0.356	-0.4721476	0.0405918
	ESFP	-.1226160	0.0990048	1.000	-0.4722347	0.2270027
	ESTJ	.1051265	0.0713466	1.000	-0.1468218	0.3570748
	ESTP	.2267972	0.1009622	1.000	-0.1297337	0.5833281
	INFJ	.3729357*	0.0545797	0.000	0.1801967	0.5656746
	INFP	.4825492*	0.0502164	0.000	0.3052183	0.6598800
	INTJ	.8964413*	0.0537309	0.000	0.7066997	1.0861828
	INTP	.9994255*	0.0562694	0.000	0.8007194	1.1981315
	ISFJ	.2441233	0.0724904	0.092	-0.0118644	0.5001111
	ISFP	.4387922*	0.0938756	0.000	0.1072863	0.7702981
	ISTJ	.6779555*	0.0618471	0.000	0.4595529	0.8963580
	ISTP	.8166855*	0.1001623	0.000	0.4629792	1.1703918

Table A9 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ENTJ	ENFJ	-.4319625*	0.0764642	0.000	-0.7019829	-0.1619421
	ENFP	-.3405621*	0.0677085	0.000	-0.5796633	-0.1014609
	ENTP	.0020960	0.0781589	1.000	-0.2739090	0.2781011
	ESFJ	-.5563400*	0.0836871	0.000	-0.8518667	-0.2608133
	ESFP	-.4631781*	0.1074007	0.002	-0.8424457	-0.0839106
	ESTJ	-.2354356	0.0826033	0.526	-0.5271351	0.0562638
	ESTP	-.1137649	0.1092077	1.000	-0.4994135	0.2718838
	INFJ	.0323736	0.0686434	1.000	-0.2100288	0.2747760
	INFP	.1419871	0.0652278	1.000	-0.0883537	0.3723279
	INTJ	.5558792*	0.0679704	0.000	0.3158532	0.7959052
	INTP	.6588634*	0.0699944	0.000	0.4116899	0.9060368
	ISFJ	-.0964387	0.0835933	1.000	-0.3916342	0.1987567
	ISFP	.0982301	0.1026918	1.000	-0.2644085	0.4608688
	ISTJ	.3373934*	0.0745522	0.001	0.0741249	0.6006619
	ISTP	.4761234*	0.1084687	0.001	0.0930846	0.8591622
ENTP	ENFJ	-.4340585*	0.0750878	0.000	-0.6992184	-0.1688985
	ENFP	-.3426581*	0.0661502	0.000	-0.5762564	-0.1090598
	ENTJ	-.0020960	0.0781589	1.000	-0.2781011	0.2739090
	ESFJ	-.5584360*	0.0824314	0.000	-0.8495284	-0.2673435
	ESFP	-.4652741*	0.1064252	0.002	-0.8410967	-0.0894515
	ESTJ	-.2375316	0.0813308	0.421	-0.5247377	0.0496745
	ESTP	-.1158609	0.1082485	1.000	-0.4981221	0.2664004
	INFJ	.0302776	0.0671068	1.000	-0.2066986	0.2672538
	INFP	.1398911	0.0636087	1.000	-0.0847323	0.3645144
	INTJ	.5537832*	0.0664183	0.000	0.3192384	0.7883280
	INTP	.6567674*	0.0684881	0.000	0.4149131	0.8986216
	ISFJ	-.0985347	0.0823361	1.000	-0.3892909	0.1922214
	ISFP	.0961341	0.1016711	1.000	-0.2629001	0.4551684
	ISTJ	.3352974*	0.0731398	0.001	0.0770164	0.5935784
	ISTP	.4740274*	0.1075029	0.001	0.0943993	0.8536555

Table A9 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ESFJ	ENFJ	.1243775	0.0808263	1.000	-0.1610468	0.4098019
	ENFP	.2157779	0.0725986	0.356	-0.0405918	0.4721476
	ENTJ	.5563400*	0.0836871	0.000	0.2608133	0.8518667
	ENTP	.5584360*	0.0824314	0.000	0.2673435	0.8495284
	ESFP	.0931619	0.1105488	1.000	-0.2972224	0.4835462
	ESTJ	.3209044*	0.0866569	0.026	0.0148903	0.6269184
	ESTP	.4425751*	0.1123051	0.010	0.0459885	0.8391617
	INFJ	.5887136*	0.0734713	0.000	0.3292623	0.8481649
	INFP	.6983271*	0.0702906	0.000	0.4501076	0.9465465
	INTJ	1.1122192*	0.0728429	0.000	0.8549868	1.3694516
	INTP	1.2152034*	0.0747351	0.000	0.9512891	1.4791176
	ISFJ	.4599013*	0.0876011	0.000	0.1505530	0.7692496
	ISFP	.6545701*	0.1059798	0.000	0.2803205	1.0288198
	ISTJ	.8937334*	0.0790199	0.000	0.6146880	1.1727788
	ISTP	1.0324634*	0.1115866	0.000	0.6384142	1.4265126
ESFP	ENFJ	.0312157	0.1051869	1.000	-0.3402340	0.4026653
	ENFP	.1226160	0.0990048	1.000	-0.2270027	0.4722347
	ENTJ	.4631781*	0.1074007	0.002	0.0839106	0.8424457
	ENTP	.4652741*	0.1064252	0.002	0.0894515	0.8410967
	ESFJ	-.0931619	0.1105488	1.000	-0.4835462	0.2972224
	ESTJ	.2277425	0.1097306	1.000	-0.1597526	0.6152376
	ESTP	.3494133	0.1309345	0.917	-0.1129597	0.8117862
	INFJ	.4955517*	0.0996465	0.000	0.1436671	0.8474363
	INFP	.6051652*	0.0973251	0.000	0.2614783	0.9488522
	INTJ	1.0190573*	0.0991841	0.000	0.6688055	1.3693091
	INTP	1.1220415*	0.1005819	0.000	0.7668534	1.4772296
	ISFJ	.3667394	0.1104778	0.109	-0.0233942	0.7568729
	ISFP	.5614083*	0.1255512	0.001	0.1180454	1.0047712
	ISTJ	.8005715*	0.1038053	0.000	0.4340007	1.1671423
	ISTP	.9393015*	0.1303187	0.000	0.4791031	1.3995000

Table A9 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ESTJ	ENFJ	-.1965268	0.0797036	1.000	-0.4779866	0.0849329
	ENFP	-.1051265	0.0713466	1.000	-0.3570748	0.1468218
	ENTJ	.2354356	0.0826033	0.526	-0.0562638	0.5271351
	ENTP	.2375316	0.0813308	0.421	-0.0496745	0.5247377
	ESFJ	-.3209044*	0.0866569	0.026	-0.6269184	-0.0148903
	ESFP	-.2277425	0.1097306	1.000	-0.6152376	0.1597526
	ESTP	.1216707	0.1114999	1.000	-0.2720721	0.5154136
	INFJ	.2678092*	0.0722343	0.025	0.0127259	0.5228925
	INFP	.3774227*	0.0689967	0.000	0.1337725	0.6210729
	INTJ	.7913148*	0.0715951	0.000	0.5384887	1.0441409
	INTP	.8942990*	0.0735194	0.000	0.6346776	1.1539204
	ISFJ	.1389969	0.0865663	1.000	-0.1666972	0.4446910
	ISFP	.3336658	0.1051261	0.181	-0.0375691	0.7049007
	ISTJ	.5728290*	0.0778712	0.000	0.2978402	0.8478178
	ISTP	.7115590*	0.1107761	0.000	0.3203720	1.1027461
ESTP	ENFJ	-.3181976	0.1070313	0.355	-0.6961604	0.0597652
	ENFP	-.2267972	0.1009622	1.000	-0.5833281	0.1297337
	ENTJ	.1137649	0.1092077	1.000	-0.2718838	0.4994135
	ENTP	.1158609	0.1082485	1.000	-0.2664004	0.4981221
	ESFJ	-.4425751*	0.1123051	0.010	-0.8391617	-0.0459885
	ESFP	-.3494133	0.1309345	0.917	-0.8117862	0.1129597
	ESTJ	-.1216707	0.1114999	1.000	-0.5154136	0.2720721
	INFJ	.1461385	0.1015915	1.000	-0.2126147	0.5048916
	INFP	.2557520	0.0993155	1.000	-0.0949641	0.6064680
	INTJ	.6696441*	0.1011380	0.000	0.3124923	1.0267958
	INTP	.7726282*	0.1025092	0.000	0.4106343	1.1346221
	ISFJ	.0173261	0.1122352	1.000	-0.3790136	0.4136659
	ISFP	.2119950	0.1271004	1.000	-0.2368387	0.6608287
	ISTJ	.4511583*	0.1056738	0.002	0.0779892	0.8243274
	ISTP	.5898883*	0.1318119	0.001	0.1244169	1.0553597

Table A9 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
INFJ	ENFJ	-.4643361*	0.0651251	0.000	-0.6943142	-0.2343579
	ENFP	-.3729357*	0.0545797	0.000	-0.5656746	-0.1801967
	ENTJ	-.0323736	0.0686434	1.000	-0.2747760	0.2100288
	ENTP	-.0302776	0.0671068	1.000	-0.2672538	0.2066986
	ESFJ	-.5887136*	0.0734713	0.000	-0.8481649	-0.3292623
	ESFP	-.4955517*	0.0996465	0.000	-0.8474363	-0.1436671
	ESTJ	-.2678092*	0.0722343	0.025	-0.5228925	-0.0127259
	ESTP	-.1461385	0.1015915	1.000	-0.5048916	0.2126147
	INFP	.1096135	0.0514700	1.000	-0.0721440	0.2913710
	INTJ	.5235056*	0.0549042	0.000	0.3296206	0.7173906
	INTP	.6264898*	0.0573909	0.000	0.4238235	0.8291561
	ISFJ	-.1288123	0.0733644	1.000	-0.3878862	0.1302615
	ISFP	.0658565	0.0945521	1.000	-0.2680382	0.3997513
	ISTJ	.3050198*	0.0628691	0.000	0.0830081	0.5270315
	ISTP	.4437498*	0.1007966	0.001	0.0878037	0.7996960
INFP	ENFJ	-.5739495*	0.0615144	0.000	-0.7911772	-0.3567219
	ENFP	-.4825492*	0.0502164	0.000	-0.6598800	-0.3052183
	ENTJ	-.1419871	0.0652278	1.000	-0.3723279	0.0883537
	ENTP	-.1398911	0.0636087	1.000	-0.3645144	0.0847323
	ESFJ	-.6983271*	0.0702906	0.000	-0.9465465	-0.4501076
	ESFP	-.6051652*	0.0973251	0.000	-0.9488522	-0.2614783
	ESTJ	-.3774227*	0.0689967	0.000	-0.6210729	-0.1337725
	ESTP	-.2557520	0.0993155	1.000	-0.6064680	0.0949641
	INFJ	-.1096135	0.0514700	1.000	-0.2913710	0.0721440
	INTJ	.4138921*	0.0505690	0.000	0.2353162	0.5924680
	INTP	.5168763*	0.0532585	0.000	0.3288030	0.7049496
	ISFJ	-.2384258	0.0701789	0.082	-0.4862507	0.0093991
	ISFP	-.0437569	0.0921024	1.000	-0.3690009	0.2814870
	ISTJ	.1954063	0.0591209	0.115	-0.0133690	0.4041817
	ISTP	.3341363	0.0985023	0.084	-0.0137079	0.6819805

Table A9 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
INTJ	ENFJ	-.9878417*	0.0644154	0.000	-1.2153136	-0.7603697
	ENFP	-.8964413*	0.0537309	0.000	-1.0861828	-0.7066997
	ENTJ	-.5558792*	0.0679704	0.000	-0.7959052	-0.3158532
	ENTP	-.5537832*	0.0664183	0.000	-0.7883280	-0.3192384
	ESFJ	-1.1122192	0.0728429	0.000	-1.3694516	-0.8549868
	ESFP	-1.0190573	0.0991841	0.000	-1.3693091	-0.6688055
	ESTJ	-.7913148*	0.0715951	0.000	-1.0441409	-0.5384887
	ESTP	-.6696441*	0.1011380	0.000	-1.0267958	-0.3124923
	INFJ	-.5235056*	0.0549042	0.000	-0.7173906	-0.3296206
	INFP	-.4138921*	0.0505690	0.000	-0.5924680	-0.2353162
	INTP	.1029842	0.0565843	1.000	-0.0968337	0.3028020
	ISFJ	-.6523179*	0.0727351	0.000	-0.9091697	-0.3954662
	ISFP	-.4576490*	0.0940647	0.000	-0.7898226	-0.1254755
	ISTJ	-.2184858	0.0621337	0.053	-0.4379004	0.0009288
	ISTP	-.0797558	0.1003395	1.000	-0.4340878	0.2745763
INTP	ENFJ	-1.0908258	0.0665476	0.000	-1.3258273	-0.8558243
	ENFP	-.9994255*	0.0562694	0.000	-1.1981315	-0.8007194
	ENTJ	-.6588634*	0.0699944	0.000	-0.9060368	-0.4116899
	ENTP	-.6567674*	0.0684881	0.000	-0.8986216	-0.4149131
	ESFJ	-1.2152034	0.0747351	0.000	-1.4791176	-0.9512891
	ESFP	-1.1220415	0.1005819	0.000	-1.4772296	-0.7668534
	ESTJ	-.8942990*	0.0735194	0.000	-1.1539204	-0.6346776
	ESTP	-.7726282*	0.1025092	0.000	-1.1346221	-0.4106343
	INFJ	-.6264898*	0.0573909	0.000	-0.8291561	-0.4238235
	INFP	-.5168763*	0.0532585	0.000	-0.7049496	-0.3288030
	INTJ	-.1029842	0.0565843	1.000	-0.3028020	0.0968337
	ISFJ	-.7553021*	0.0746300	0.000	-1.0188453	-0.4917589
	ISFP	-.5606332*	0.0955375	0.000	-0.8980076	-0.2232588
	ISTJ	-.3214700*	0.0643416	0.000	-0.5486813	-0.0942587
	ISTP	-.1827400	0.1017215	1.000	-0.5419522	0.1764723

Table A9 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ISFJ	ENFJ	-.3355237*	0.0807291	0.004	-0.6206050	-0.0504424
	ENFP	-.2441233	0.0724904	0.092	-0.5001111	0.0118644
	ENTJ	.0964387	0.0835933	1.000	-0.1987567	0.3916342
	ENTP	.0985347	0.0823361	1.000	-0.1922214	0.3892909
	ESFJ	-.4599013*	0.0876011	0.000	-0.7692496	-0.1505530
	ESFP	-.3667394	0.1104778	0.109	-0.7568729	0.0233942
	ESTJ	-.1389969	0.0865663	1.000	-0.4446910	0.1666972
	ESTP	-.0173261	0.1122352	1.000	-0.4136659	0.3790136
	INFJ	.1288123	0.0733644	1.000	-0.1302615	0.3878862
	INFP	.2384258	0.0701789	0.082	-0.0093991	0.4862507
	INTJ	.6523179*	0.0727351	0.000	0.3954662	0.9091697
	INTP	.7553021*	0.0746300	0.000	0.4917589	1.0188453
	ISFP	.1946689	0.1059057	1.000	-0.1793193	0.5686570
	ISTJ	.4338321*	0.0789205	0.000	0.1551376	0.7125266
	ISTP	.5725621*	0.1115163	0.000	0.1787613	0.9663630
ISFP	ENFJ	-.5301926*	0.1003741	0.000	-0.8846468	-0.1757384
	ENFP	-.4387922*	0.0938756	0.000	-0.7702981	-0.1072863
	ENTJ	-.0982301	0.1026918	1.000	-0.4608688	0.2644085
	ENTP	-.0961341	0.1016711	1.000	-0.4551684	0.2629001
	ESFJ	-.6545701*	0.1059798	0.000	-1.0288198	-0.2803205
	ESFP	-.5614083*	0.1255512	0.001	-1.0047712	-0.1180454
	ESTJ	-.3336658	0.1051261	0.181	-0.7049007	0.0375691
	ESTP	-.2119950	0.1271004	1.000	-0.6608287	0.2368387
	INFJ	-.0658565	0.0945521	1.000	-0.3997513	0.2680382
	INFP	.0437569	0.0921024	1.000	-0.2814870	0.3690009
	INTJ	.4576490*	0.0940647	0.000	0.1254755	0.7898226
	INTP	.5606332*	0.0955375	0.000	0.2232588	0.8980076
	ISFJ	-.1946689	0.1059057	1.000	-0.5686570	0.1793193
	ISTJ	.2391633	0.0989253	1.000	-0.1101748	0.5885013
	ISTP	.3778933	0.1264660	0.338	-0.0687000	0.8244865

Table A9 (continued)

Personality Type		Mean Difference			95% Confidence Interval	
(I)	(J)	(I-J)	SE	p	Lower Bound	Upper Bound
ISTJ	ENFJ	-.7693559*	0.0713260	0.000	-1.0212314	-0.5174803
	ENFP	-.6779555*	0.0618471	0.000	-0.8963580	-0.4595529
	ENTJ	-.3373934*	0.0745522	0.001	-0.6006619	-0.0741249
	ENTP	-.3352974*	0.0731398	0.001	-0.5935784	-0.0770164
	ESFJ	-.8937334*	0.0790199	0.000	-1.1727788	-0.6146880
	ESFP	-.8005715*	0.1038053	0.000	-1.1671423	-0.4340007
	ESTJ	-.5728290*	0.0778712	0.000	-0.8478178	-0.2978402
	ESTP	-.4511583*	0.1056738	0.002	-0.8243274	-0.0779892
	INFJ	-.3050198*	0.0628691	0.000	-0.5270315	-0.0830081
	INFP	-.1954063	0.0591209	0.115	-0.4041817	0.0133690
	INTJ	.2184858	0.0621337	0.053	-0.0009288	0.4379004
	INTP	.3214700*	0.0643416	0.000	0.0942587	0.5486813
	ISFJ	-.4338321*	0.0789205	0.000	-0.7125266	-0.1551376
	ISFP	-.2391633	0.0989253	1.000	-0.5885013	0.1101748
	ISTP	.1387300	0.1049098	1.000	-0.2317413	0.5092014
ISTP	ENFJ	-.9080859*	0.1062771	0.000	-1.2833854	-0.5327863
	ENFP	-.8166855*	0.1001623	0.000	-1.1703918	-0.4629792
	ENTJ	-.4761234*	0.1084687	0.001	-0.8591622	-0.0930846
	ENTP	-.4740274*	0.1075029	0.001	-0.8536555	-0.0943993
	ESFJ	-1.0324634	0.1115866	0.000	-1.4265126	-0.6384142
	ESFP	-.9393015*	0.1303187	0.000	-1.3995000	-0.4791031
	ESTJ	-.7115590*	0.1107761	0.000	-1.1027461	-0.3203720
	ESTP	-.5898883*	0.1318119	0.001	-1.0553597	-0.1244169
	INFJ	-.4437498*	0.1007966	0.001	-0.7996960	-0.0878037
	INFP	-.3341363	0.0985023	0.084	-0.6819805	0.0137079
	INTJ	.0797558	0.1003395	1.000	-0.2745763	0.4340878
	INTP	.1827400	0.1017215	1.000	-0.1764723	0.5419522
	ISFJ	-.5725621*	0.1115163	0.000	-0.9663630	-0.1787613
	ISFP	-.3778933	0.1264660	0.338	-0.8244865	0.0687000
	ISTJ	-.1387300	0.1049098	1.000	-0.5092014	0.2317413

Note. Based on observed means.
The error term is Mean Square (Error) = .938
*p < .05