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The Role of Personality Using the Millon College Counseling Inventory in Explaining a Variety of Career Decision-Making Variables

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THE ROLE OF PERSONALITY USING THE MILLON COLLEGE COUNSELING

INVENTORY IN EXPLAINING A VARIETY OF CAREER

DECISION-MAKING DIFFICULTIES

by

Carly Dell Chadick

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ABSTRACT

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In vocational research, the Five Factor Model (FFM) is one of the most popular theories of personality used when evaluating the role of personality in career development. However, thus far, few other personality theories have been used in vocational research, such as Millon's theory. Therefore, the purpose of this study was to examine how Millon's theory, operationalized using the Millon College Counseling Inventory (MCCI), may explain career development constructs, above the FFM traits, in a college student sample. Results indicated that the MCCI explained additional variance beyond FFM traits in several different career variables (i.e., profile elevation, negative career thinking, career decision self-efficacy, and emotional and personality career difficulties). The MCCI "needy" scale explained the largest amount of variance in Career Thoughts Inventory (CTI) scores. Additionally, the MCCI career confusion scale was most highly correlated with Emotional and Personality Career Difficulties Scale scores and with CTI scores, which illustrates convergent validity. Overall, the findings from this study suggest that Millon's theory is another conceptualization of personality that can explain career decision making constructs and that the MCCI may be a useful measure in college and career counseling settings in identifying problematic personality traits that are most associated with vocational concerns.

ACKNOWLEDGMENTS

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CHAPTER I –Introduction

Costa, McCrae, and Kay (1985) defined personality as "the relatively enduring styles of thinking, feeling, and acting that characterize an individual" (pg. 124). One's personality affects an individual's life in a number of different ways such as: 1) how one learns, 2) how an individual will socialize in his/her environment, and 3) how different individuals think about and organize things in a variety of ways depending on their personality traits (Sampson, Reardon, Peterson, & Lenz, 2004). Given that personality affects individuals' behavior, it is is to be expected that personality also influences individuals' career choice and development. In reviewing the literature related to career decision-making, it is apparent that personality is a central theme of a number of career theories including, Holland's Theory (Holland, 1997), Social Cognitive Career Theory (Lent, Brown, & Hackett, 1994), and Cognitive Information Processing Theory (Sampson et al., 2004).

Furthermore, personality can be conceptualized in several ways. The Five Factor Model (FFM) is one of the most popular theories of personality (Costa & McCrae, 2010), thus it has been the most popular conceptualization of personality when investigating the role of personality in career development. However, other theories of personality, such as Millon's theory (Millon & Davis, 1996), may also add valuable understanding of the role of personality in the career development process. The aim of the current study was to examine the applicability of Millon's theory of personality in explaining career development constructs, above the usefulness of the FFM, in a college student sample. Thus, the FFM and Millon's theory will be reviewed to understand how each may relate to the career development process.

Five Factor Model

Original research on personality traits by Guilford, Cattell, and Eysenck began using factor analysis to define personality dimensions (McCrae & John, 1992). It was not until Tupes and Christal in 1961 found the same five personality factors during analyses in eight different samples, that the Five Factor Model was established (John & McCrae, 1992). However, Costa and McCrae's (1985, 1984) research illustrated convergence for the five-factors when measured by observers and instruments. According to McCrae and John (1992), these five factors can be found singly, or in combination, in almost every personality inventory.

Out of this research on personality, the Five Factor Model (FFM) was developed. The FFM is a personality taxonomy that characterizes traits based on five dimensions (Costa, McCrae, & Kay, 1985). More specifically, the FFM consists of five distinct personality traits ―openness to experience, neuroticism, extraversion, agreeableness, and conscientiousness― which are thought to be stable personality traits that describe a wide range of individuals (McCrae & Costa, 2010). As defined by McCrae and Costa (2010), an individual who is high on neuroticism may experience emotional distress often, have irrational ideas, be less able to control impulses, and may experience negative affect frequently such as fear, sadness, embarrassment, anger, guilt, and disgust, as a result. People who are high on extraversion tend to be sociable, prefer large groups, and enjoy excitement. Extraverted individuals are also often assertive, active, talkative, upbeat, energetic, and optimistic. Someone who is high on the openness to experience trait typically has an active imagination, aesthetic sensitivity, and pays attention to inner feelings. Additionally, individuals higher on openness to experience may also have a preference for variety, intellectual curiosity, and be independent of judgment. An individual who is high on the agreeableness trait is altruistic, sympathetic to others, and interpersonally oriented. Finally, a conscientious person typically is a planner, organizer, and carries out tasks regularly.

They are often purposeful, strong-willed and determined; which in turn leads to higher academic and occupational achievement. Finally, traits of extreme conscientiousness may include being annoyingly fastidiousness, compulsively neat, or display workaholic behavior.

Research on the FFM has provided evidence supporting the validity and the stability of these traits over time. For example, in a longitudinal study, an adult sample, at midlife, was reevaluated after a time frame of six to nine years using the NEO Personality Inventory (NEO-PI, Costa & McCrae, 1985), one measure of the FFM. Results from the study indicated that the personality traits of the FFM are generally stable over time (Costa, Herbst, McCrae, & Siegler, 2000). A more recent study, found 10-year stability using the NEO-PI-R in a large sample of adults (Terracciano, Costa, & McCrae, 2006).

Given its popularity and empirical support, the FFM is used widely in vocational research. The authors suggested that knowing an individual's strengths and weaknesses is beneficial in helping he or she find realistic occupational choices (Costa, McCrae, & Kay, 1985). Furthermore, McCrae and Costa (2010) suggested that being able to understand an individual's openness to experience can help vocational psychologists better understand the client's occupational outlook.

Broadly, research applying the FFM to career development issues has focused on the negative effects of FFM personality traits on career development, suggesting high levels of neuroticism relates to poor outcomes as do low levels of conscientiousness and agreeableness. For instance, high neuroticism has been associated with lower income (Gelissen & de Graaf, 2006; Nyhus & Pons, 2005), being employed in lower levels of management (Moutafi, Furnham, & Crump, 2007), and CEO's with higher levels of neuroticism tend to earn less income (Boudreau, Boswell, & Judge, 2001). Research suggests that individuals high on neuroticism are more likely to have lower problem-solving confidence, problem solving deficits in general, and

may be lower in acquired skills needed to approach problems (Chartrand, Rose, Elliott, Marmarosh, & Caldwell, 1993), which suggests likely having difficulty in making career choices. Supporting this notion, in a meta-analysis that analyzed personality and vocational outcomes over a four-year period, the researchers concluded that individuals with higher levels of neuroticism experienced the most difficulties in career decisions (Tokar, Fischer, & Subich, 1998).

Alternatively, a number of other traits from the FFM have been shown to relate to positive career outcomes. Some findings suggest that extraversion has been positively correlated with individuals obtaining more promotions (Boudreau et al., 2001), holding higher managerial positions (Moutafi et al., 2007), and increased problem-solving confidence in career decision making (Chartrand et al., 1993). Furthermore, individuals with high levels of conscientiousness have been shown to be better at career decision making (Di Fabio & Palazzeschi, 2009; Page, Bruch, & Haase, 2008). Evidence was also found that those with higher levels of agreeableness and openness to experience also had less career decision-making difficulties (Lounsbury, 2005).

Personality and Career Decision Making

Research on the connections between the FFM personality traits and career development has included a number of variables. Most notably, this research includes examination of the relationship between FFM personality traits and vocational interests, career decision-making self-efficacy, negative career thinking, and career difficulties. More specific explanation of the relationship between FFM personality traits and these specific variables will be discussed.

Vocational Interests

Vocational interests are personal characteristics regarding an individual's likes or dislikes associated with different types of work and occupations. Holland's (1997) theory is one of the most pervasive taxonomy of interests. His theory specifies that individuals can be classified into

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six different personality types. These types represent six distinct characterological descriptions labeled as: realistic, investigative, artistic, social, enterprising, and conventional. They are often referred to by their acronym, RIASEC. While Holland often referred to the RIASEC themes as personality, they are more typically regarded as vocational interests.

Describing these six types, Holland (1997) noted that a person with the realistic personality type prefers systematic manipulation of objects and enjoys working with tools, machines, and animals opposed to education or therapeutic activities. Someone who is an investigative type of person would likely prefer activities that include the opportunity to analyze, evaluate, or solve problems related to physical, biological, and cultural issues. An individual who is an artistic type typically enjoys using his or her imagination or creativity and prefers to do ambiguous or unsystematic activities involving art forms or products. Social personality types tend to enjoy working with others to inform, train, develop, cure, or enlighten them with their interpersonal and educational competencies. Enterprising types typically prefer persuading, leading, or managing individuals and occupations where they can use their interpersonal and persuasive competencies for economic gain. Finally, a person who is a conventional type prefers activities that involve explicit, ordered, and systematic manipulation of data with special attention to carrying out tasks in significant detail. Holland's theory suggests that an individual's RIASEC theme is thought to be a person's vocational identity and that individuals are more likely to be successful and satisfied in occupations that fit their highest RIASEC themes (Holland, 1997). Interests are frequently assessed when providing individuals assistance with career choice given the popularity of Holland's theory.

Several studies have found correlations between the FFM personality traits and Holland's personality types (Gottfredson, Jones, & Holland, 1993; Larson, Rottinghaus, & Borgen, 2002). The results from two meta-analytic studies suggest that interests and FFM personality traits are

complementary as evidenced by the similarities in the constructs of the FFM and Holland's RIASEC themes. In a meta-analysis by Larson et al. (2002), the researchers found that Holland's social theme has been shown to be most related to extraversion, agreeableness, and openness to experience. Additionally, results support that artistic and openness to experience were found to be positively correlated, while Holland's enterprising theme was most closely related to higher extraversion and conscientiousness, and lower neuroticism (Larson et al., 2002). Finally, Larson et al. (2002) concluded that investigative and openness to experience and conventional and conscientiousness were also positively correlated. In their research investigating relations between the FFM traits and RIASEC themes, Schaub and Tokar (2005) found positive associations between artistic and openness, social with extraversion and agreeableness, and conventional learning experiences with conscientiousness. Evidence from the literature suggests that although personality and vocational interests are highly related to each other and have some substantial overlap; they are still separate constructs and need to be treated as such (Gottfredson et al., 1993).

Interest Profile Elevation

Additionally, a secondary construct of Holland's (1997) theory, concerning one's overall profile elevation across all RIASEC interest themes, has received attention in relation to personality traits and career development processes. Interest profile elevation has been defined by several different authors (Bullock & Reardon, 2005; Fuller, Holland, Johnston, 1999; & Gottfredson et al., 1993), with elevation generally referring to how high or low one's scores are across Holland's RIASEC themes. Typically, having all high RIASEC scores refers to high profile elevation, while having mostly low RIASEC scores define low profile elevation. Thus far, there have been several studies that examined relationships between low and high profiles and personality types.

A study conducted by Fuller, Holland, and Johnston (1999) lead to a substantial amount of additional research related to one's RIASEC profile. Fuller et al. (1999) sought to better understand the relationship between high profile elevation on the Self-Directed Search (SDS; Holland, 1985), a measure of Holland's RIASEC themes, and personality traits. The NEO Five Factor Inventory and the Personality Styles Inventory (PSI; Silver & Malone, 1993) were used as measures of personality traits. The results indicated, personality traits such as openness and extraversion were positively associated with total score profile elevation. Extending this line of research, Bullock and Reardon (2008) found that profile elevation was positively correlated with the FFM factors of extraversion, openness to experience, and conscientiousness. Bullock and Reardon (2008) inferred that individuals with higher profile elevation are more likely open to a variety of career options and more conscientiousness about the career decision-making process.

However, researchers also have illustrated how low-profile elevation and the FFM personality characteristics are correlated. For instance, low profile elevation has been correlated with more negative characteristics such as depressive traits, unsociability, and unconventionality (Bullock & Reardon, 2005). Low interest profiles also have been associated with persons who may be unenthusiastic and unexpressive (Bullock & Reardon, 2005). Individuals with low profile elevation tend to have more negative outcomes and may be indicative of an individual with depression or low interests in activities overall. Low profile elevation may be revealing of someone who is not willing to consider his/her options, is not as diligent at completing tasks, and has a more introverted disposition (Bullock & Reardon, 2008). Fuller et al., (1999) found that low profile elevation also was correlated with the depressive and narcissism scales from the PSI for both men and women. Depressive traits were strongly negatively correlated with overall SDS scores, indicating that individuals with higher depressive symptoms may be more likely to have lower profiles and those with lower depressive symptoms have higher profile elevations.

On the other hand, low-profile elevation can also be a positive indicator of a decided person.

Individuals with certain personality traits may produce profiles with low elevations and recognizing those personality traits in students may lead to better identification of mental health concerns, such as depression, and needed career counseling interventions. Therefore, a better understanding of career decision making processes and personality traits using a different, and possibly more thorough measure of personality may be a more informative tool for guiding future treatment consideration.

Career Decision-Making Self-Efficacy

Another construct that has received attention regarding the relationship between personality and career development is self-efficacy. Self-efficacy is a person's judgment of his or her own abilities to complete or perform a particular task (Lent et al., 1994), such as the thought, "can I do this." Self-efficacy was initially popularized in the vocational literature by Social Cognitive Career Theory (SCCT), a unifying framework which originally sought to combine several career theories and has roots in Bandura's (1986) social cognitive theory (Lent et al., 1994). SCCT views self-efficacy as an important construct related to career development as it affects the development of interests and goals (Lent et al., 1994).

In regards to self-efficacy's role in career development, career decision-making self-efficacy, originally defined by Taylor and Betz (1983), has been of particular focus. Simply put, career decision-making self-efficacy is a person's belief about his or her ability to manage the process of making career decisions (Taylor & Betz, 1983). The Career Decision-Making Self-Efficacy Scale (CDMSE) was developed by Taylor and Betz (1983) to operationalize this construct. The CDMSE includes items that assess one's efficacy in relation to self-appraisal, occupational information, goal selection, planning, and problem solving based on Crites' (1961)

model of career maturity. A wealth of research has been established that evaluates the relationship between the FFM and career decision making self-efficacy.

A meta-analysis that reviewed the literature on personality and vocational behavior concluded that the personality factors that are most associated with self-confident career behaviors (e.g., high self-efficacy) are conscientiousness, neuroticism, and extraversion (Tokar et al., 1998). A more recent study aimed to understand the relationship of personality to career decision self-efficacy using FFM (Hartman & Betz, 2007). Hartman and Betz (2007) found positive correlations between conscientiousness and extraversion with career decision-making self-efficacy. Additionally, evidence documented that neuroticism was negatively associated with career decision-making self-efficacy, suggesting that personality traits can have both a positive and negative impact on career decision-making difficulties (Hartman & Betz, 2007).

A more recent study sought to understand how career decision-making self-efficacy was related to FFM personality factors, dysfunctional career thoughts, and cultural mistrust in a sample of college students (Bullock-Yowell et al., 2011). Results indicated that career decision-making self-efficacy was positively correlated with all traits of the FFM, different from findings by Hartman and Betz (2007) who that only found three of the FFM factors to be correlated. Overall, research supports relations between the FFM traits and career decision-making self-efficacy.

Negative Career Thinking

Dysfunctional career thinking, sometimes referred to as negative career thinking, pertains to thoughts that interfere with career problem solving and decision-making processes (Sampson et al., 1996). Attention to negative career thinking, is a focus of the Cognitive Information Processing (CIP) theory (Sampson, et al., 2004). Negative career thinking can occur at any one of the four domains (i.e., self-knowledge, occupational knowledge, decision-making skills, and

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executive processing) that are the focus of the CIP theory, and cause significant difficulties in the career decision making process (Sampson et al., 1998). Furthermore, within CIP, negative career thoughts can be assessed used the Career Thoughts Inventory (CTI; Sampson, Peterson, Lenz, Reardon, & Saunders, 1996).

The CTI (Sampson et al., 1996) assesses three negative career thinking across three domains: Decision Making Confusion, Commitment Anxiety, and External Conflict. Decision Making Confusion (DMC) is when an individual is unable to make a career decision based on conflicting emotions or negative thoughts. Therefore, an individual who scores high on (DMC) would likely have more difficulty making career decisions due to not being able to fully comprehend the career decision process. The second domain of negative career thoughts is Commitment Anxiety (CA), which refers to difficulty making a commitment to a career that is coupled with general feelings of anxiety about the decision-making process outcome (Sampson et al., 1996). Finally, External Conflict (EC), occurs when there is an inability to balance external perceptions (i.e., from family or friends) with one's own perceptions about oneself. Therefore, higher scores on EC indicate those who experience more external conflict in their dysfunctional career thinking than others (Sampson et al., 1996).

Research has supported relationships between the FFM traits and CTI scores. For instance, the FFM trait neuroticism has found to account for a significant amount of variance of negative career thoughts and feelings (Kelly & Shin, 2009). Additional support from Bullock-Yowell et al. (2011) suggested that negative career thoughts are negatively correlated with all of the FFM personality traits.

Emotional and Personality-Related Aspects of Career-Decision-Making Difficulties

Additional research on personality and career issues focuses on specific difficulties in the career development process. Although individuals make career decisions in a variety of different

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ways, there is a wealth of information about the difficulties in career decision-making one may encounter. Various taxonomies have been developed to explain career decision difficulties, in both cognitive and affective domains. Saka, Gati, and Kelly (2008) provided their own framework of emotional and personality related aspects of career decision making by developing a taxonomy that delineates the various difficulties people may experience.

The taxonomy of career difficulties developed by Saka, Gati, and Kelly (2008), specifically examines the relationship of temporary, chronic, and pervasive career decision-making difficulties associated with personality and emotional factors. Their taxonomy proposes three major clusters of difficulties, which include problems related to: pessimistic views, anxiety, and self-concept and identity. These categories are then subdivided into 11 specific categories. Pessimistic views include subcategories such as pessimistic views about the work and the individual's control. Furthermore, the anxiety domain delves into how self-efficacy and task-specific self-efficacy are personality aspects related to career decision difficulties. More specifically, Saka et al. (2008), describe that individuals likely experience anxiety about the process, about uncertainty, about the choice, and about the outcomes related to their career development. Finally, the self-concept and identity category focuses on general anxiety, self-esteem, uncrystallized identity, and conflictual attachment and separation. The Emotional and Personality Career Difficulties Scale (EPCD, Saka at al., 2008) was developed to operationalize and empirically examine the aforementioned taxonomy. Although there is no clinical cutoff for the EPCD at this time, research suggests that individuals who score lower on the measure are further along in the career decision process. Conversely, participants with higher scores likely experience more difficulties in the process.

Although Saka and colleague's (2008) taxonomy is focused on personality and emotional aspects that affect career development, previous research suggests their taxonomy shares some

overlap with FFM traits. For instance, the relationship between the FFM and EPCD has been evaluated in a recent study by Oztemel (2014) in a sample of high school students. Of note, this study only evaluated three of the five personality traits (i.e., neuroticism, extroversion, and conscientiousness). Results coincide with other FFM and career indecision research (Bullock & Reardon, 2008; Fuller et al., 1999) in that career decision making difficulties are positively associated with neuroticism and negatively correlated with extraversion and conscientiousness.

Thus far, much of the research on vocational psychology and personality has been limited to primarily using the FFM. Yet, the FFM is limited in that it only assesses five personality traits, whereas there is a magnitude of other personality characteristics that describe individuals, particularly abnormal personality characteristics. Thus, a better understanding of how individuals' characterological traits influence career development may assist college counseling center staff in identifying students who may likely have more difficulties in the process of career decision-making. By identifying the individuals with difficulties early on, there could be more preventative measures employed to assist in their career decision-making. Moreover, applying another theory of personality, such as Millon's theory could add to literature on personality and vocational research. Furthermore, Millon's measure used to operationalize his theory for college students is the Millon College Counseling Inventory (MCCI). The intended purpose and target population for the MCCI are students being seen in college counseling centers. Therefore, information on MCCI scales that correlate with career variables could be used as a guide to treatment decisions around career development issues which may be common in this treatment setting.

Millon's Evolutionary Theory of Personality

Theodore Millon was an innovator in the field of personality disorders and created one of the most widely known theoretical classification systems of personality. The theory Millon

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developed is rooted in evolutionary theory, seeking to better understand personality in relation to existence, adaptation, reproduction, and abstraction (Millon & Davis, 1996). Rather than using one theoretical orientation (e.g., behavioral), his theory encompasses a systems approach that considers an individual's active and passive personality traits.

Millon's personality model is derived from principles of evolution and seeks to clarify personality structure and styles related to deficient, unbalanced, or conflicted modes of adaptation. The four domains of evolutionary principles are demonstrated in *existence, adaptation, replication, and abstraction*; however, the first three domains are the primary focus of Millon's theory. Each of the domains includes a polarity that describes the range of behaviors that explain that specific domain, of which an individual will identify towards the low or high end of the polarity. These are known as the Fundamental Polarities and are considered phases in which all individuals advance through in a linear fashion. The four polarities assumed under the three main evolutionary aspects (i.e., existence, adaptation, and replication) through which an individual progresses during his or her life and are: *pleasure-pain, active-passive, self-other, and thinking-feeling* (Millon & Davis, 1996).

Fundamental Polarities

Existence. This domain is concerned with basic survival strategies, existence, and represents the aim of life-enhancement versus life-preservation, which incorporates the *pleasure-pain polarity*. Millon has termed life-enhancement (*pleasure*) and life-preservation (*pain*) as the existential aim; whereas the former emphasizes survival and improving ones' quality of life and the latter focuses on avoiding actions that impair or jeopardize the quality of life in an individual (Millon & Davis, 1996). Manifestations of these actions include fulfillment seeking without acknowledgement for emotional safety, or withdrawing from sources of social discomfort, respectfully.

Adaptation. While existence is centered on existence and surviving, the second phase relates to ones' adaptation to how he/she is able to endure and continue to survive in his or her own environment. The polarity *active-passive*, within this phase, focuses on an individual's active or passive role in his or her surroundings. The passive orientation is the tendency to accommodate to one's environment whereas on the other end, the active orientation involves modifying the environment to make it more suitable to the person's personality characteristics.

Replication. Replication is related to reproductive styles that maximize the diversity of genes passed on that are effective attributes. Once an organism has survived and adapted to the environment, the next phase is focused on replication and the *self-other* polarity. In this phase, a person's focus is on maximizing self-reproduction and the characteristics associated with a focus on the self may be egotistic, insensitive, inconsiderate, or socially uncaring. Oppositely, an individual whose focus is on others would have personality characteristics such as protecting and reproducing a next of kin with characteristics such as; intimate, caring, and solicitous (Millon & Davis, 1996). To summarize the initial aspects of Millon's theory, the main focus is on the domains of *existence, adaptation, and replication* and how one develops throughout the three polarities associated in those domains in a linear fashion.

Functional and Structural Domains

According to Millon's theory, personality can also be classified into functional and structural domains. Millon understood that personality could not be defined by one of the historical approaches of psychopathology such as: biological, psychoanalytic, cognitive, and behavioral (Millon & Davis, 1996). Instead, he suggested personality be viewed as a multireferential construct and assessed across the traditional psychological schools of thought. Functional and structural domains include four additional subcategories that represent personality expression in Millon's theory and are explained below. Millon attests that the

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development of psychological disorders differ with every individual according to his classification system. Therefore, the functional and structural domains are the subjective aspects (i.e., cognitive style, self-image, mood/temperament) and the evolutionary principles are phases that every person progresses through (i.e., every individual falls on different areas of the polarity continuum).

Functional Domains. Functional characteristics represent dynamic interactions that occur between an individual's environment and intrapsychic world (Millon, Millon, et al., 2006). Functional domains have been defined as representing "expressive modes of regulatory action, that is, behavior, social conduct, cognitive processes, and unconscious mechanisms that manage, adjust, transform, coordinate, balance, discharge, and control the give-and-take of inner and outer life" (Millon, & Davis, 1996, p. 321). Furthermore, functional domains can be broken down into four subcategories—expressive acts, interpersonal conduct, cognitive style, and intrapsychic dynamics. Expressive acts and interpersonal conduct, which are viewed at the behavioral level, assist in differentiating individuals on the passive-active polarity or how one functions in relation to others. Cognitive style focuses on how a person allocates attention, encodes and processes information, organizes thoughts, and communicates ideas to others and represents data at the phenomenological level. Finally, regulatory mechanisms are derived at the intrapsychic level and represent internal processes such as defense mechanisms.

Structural Domains. Structural attributes represent more deeply embedded and enduring traits of memories, attitudes, needs, fears, and conflicts that consistently play a role in ongoing life events. Structures contain internalized residues in forms of memories which are associated with concepts of self and others. The first two structural domains include self-image and object representations and are located at the phenomenological level where an individual forms his/her identity. Object representations are internal images of figures and relationships from the past

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that can analyzed for clinical purposes. Finally, mood/temperament is at the biophysical level

data analysis and related to both the pleasure-pain and active-passive polarities.

Mood/Temperament includes neuropsychological functioning, energy, affect, and physical health

effects on mental functioning; the biophysical aspects of personality.

In summation, Millon's theory is based on an evolutionary background, incorporates

interpersonal and environmental aspects of an individual, and stresses polar opposites. As a

result of difference across these polarities, functional, and structural domains, Millon indicates

there are 15 personality styles and disorders that are comprised of a variety of facets and

characteristics opposed to a singular definition of the particular trait. To assess these personality

styles, Millon has developed a number of personality measures. One of which is the Millon

Clinical Multiaxial Inventory-III (MCMI-III; Millon, Millon, Davis & Grossman, 2006). The

MCMI has become a commonly used measures for assessing personality disorders, however a

more recent measure, the Millon College Counseling Inventory, may be a more useful tool to

assess personality in university settings. Previous research has shown a connection between the

MCMI and FFM. However, before describing previous findings, the MCCI will be explained

first.

<div align="center">The Millon College Counseling Inventory</div>

The Millon College Counseling inventory (MCCI; Millon, Strack et al., 2006) is an

inventory developed to quickly evaluate common difficulties and problem areas that college

students often experience. Originally developed to address the need for a comprehensive

instrument that assesses both personality styles and clinical issues in college students, the main

purpose of the MCCI is to help uncover significant psychological problems that are often

grounded in stable personality traits. It is multidimensional measure that assesses personality

styles, expressed concerns, clinical signs, and includes response tendency indices. The

personality scales on the MCCI connect to the aforementioned Millon's evolutionary theory and serve to assess the main personality traits that Millon speculates arise out of different standings on the polarities, structural, and functional dimensions (Millon, Strack, et al., 2006). Similar to other Millon assessments, the MCCI assesses normal traits associated with personality disorders according to the *DSM-IV-TR* (American Psychiatric Association, 2000). The MCCI was empirically developed using 41 initial target constructs, but a total of nine scales were determined to be problem-specific and therefore dropped from the final measure. A research sample of 564 cases was used to for the final inventory and coefficient alpha internal consistency reliabilities were computed to eliminate any scales that were considered too unreliable. The personality scales include the scales of: introverted, inhibited, dejected, needy, sociable, confident, unruly, conscientious, oppositional, denigrated, and borderline. Detailed descriptions of the personality scales are found in Table 1.

Additionally, the MCCI includes scales of expressed concerns associated with problematic feelings, attitudes, and experiences that are prevalent in many college settings. The expressed concern scales measure mental health upset, identity quandaries, and family disquiet. Other scales include items that measure the student's subjective experience of peer alienation, romantic distress, academic concerns, career confusion, abusive experiences, living arrangement problems, financial burdens, and spiritual doubts. However, for the purposes of this study, the personality scales of the MCCI, as well as the career concerns scale, are most relevant. The career confusion scale assesses a students' general indecision and confusion related to choosing a career path and individuals who elevate this scale are indicative of a student whom is having difficulties choosing a career (Millon, Strack, et al., 2006).

Millon's theory of personality is also relevant to career development. However, there is very little research on the relations between the personality traits specified by Millon and career

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development variables, and what has been done is most limited to relationships between Millon's personality traits and Holland's RIASEC typology. An article by Tango and Dziuban (1985),

Table 1

MCCI Personality Styles scales

Scale	Definition
Introverted	Low key, quiet, and unassuming. Easy going and modest.
Inhibited	Hesitant with others, shy, and unjustifiably nervous
Dejected	Pessimistic and gloomy attitude towards themselves and others. Poor self-image and low self-esteem
Needy	Cooperative, reliable, obliging, and naïve. A team player, cordial, agreeable and reliable
Sociable	Outgoing, talkative, extroverted, and lively. Dramatic, colorful, spontaneous, clever, enthusiastic, and vigorous.
Confident	Cool, calm, and self-assured. Unflappable, enjoys attention, self-centered, and self-assured.
Unruly	Impulsive, head strong, dominant, blunt and insensitive.
Conscientious	Responsible, industrious, and respectful of authority. Conforming, conventional, perfectionistic, and inflexible.
Oppositional	Unconventional, individualistic, and passive aggressive. Nervous, distracted, angry, or dissatisfied with themselves and others.
Denigrated	Submissive, moody, and irritable. Pessimistic, selfless devotion to others. Negativistic and self-demeaning.
Borderline	Vacillate between positive and negative, lively and engaging. Impulsive, reckless, and intense attachments.

assessed personality characteristics and career indecision difficulties in a sample of community college students using the Strong-Campbell Interest Inventory (SCII; Campbell & Hansen, 1981) and Millon Multiaxial Clinical Inventory (MMCI; Millon, 1982). Canonical correlations produced three multivariate relationships among interest and personality patterns the authors coined as *uncommitted proprietor*, *nonstop driver*, and *retreater*. An uncommitted proprietor was a student who had vocational interests in areas such as adventure, music, writing, religion, and office management; along with personality traits such as submissive, gregarious, narcissistic,

and conforming. An uncommitted proprietor was an individual who may lack depth or persistence, but have strong desires to be in the workforce. On the other hand, a nonstop driver, is someone who wants to be noticed, feels a need to conform, and has personality traits such as narcissistic, aggressive, conforming, and negativistic as assessed on the MMCI. Finally, the retreater, consists of personality traits such as avoidant, nonaggressive, and submissive and prefers work where one can disconnect from the world (e.g., music and office jobs). Although it uses a different measure to operationalize Millon's personality theory, this research illustrates how Millon's conceptualization of personality is related to career development issues.

Another study by Strack (1994), sought to understand the relationship between Millon's eight personality styles and Holland's six occupational types in a sample of normal adults. The Personality Adjective Check List (PACL; Strack, 1991), based on Millon's personality theory, which sampled normal, opposed to abnormal, traits and was used for the study. For men, results suggested that Holland's enterprising, investigative, artistic, and realistic types were associated with Millon's confident, forceful, respectful, cooperative, inhibited, and sensitive personality traits. There were slight differences with the female sample. The enterprising, investigative, artistic, social, and conventional occupational types were associated with the personality traits of confident, forceful, respectful, cooperative, introversive, and sociable. The results of this study illustrated how Millon and Hollands' theories are linked on several traits. Besides these studies, no other research has been identified that has examined how Million's theory, assessed via the MCCI personality scales, relate to career development constructs. Therefore, there is no information on how Millon's theory may assist in understanding the career development of college students, specifically.

Furthermore, research on Million's personality traits, assessed using the MCMI, and the FFM traits suggests that while some traits across theories are overlapping, Millon's traits assess unique aspects of personality. For instance, using a sample of chronic PTSD victims, researchers sought to understand the relationship of FFM domains to personality disorders as defined on the MCMI-II (Millon et al., 2006; Hyer, Braswell, Albrecht, Boyd, Boudewyns, & Talbert, 1994). Results from Hyer et al. (1994) indicated that neuroticism was negatively associated with Histrionic and positively correlated with Passive-Aggressive, Self-Defeating, Schizotypal, and Borderline MCMI-II personality scales. Extraversion was negatively associated with Schizoid and Avoidant personality scales on the MCMI-II and positively with Histrionic and Antisocial scales. Schizoid and Avoidant were negatively associated with openness and positively with Histrionic, Narcissistic, and Antisocial personality scales. Agreeableness was positively and negatively correlated with Dependent and Schizotypal, respectively. Dependent and Passive-Aggressive personality scales were both positively correlated with conscientiousness.

Aluja et al. (2007) compared five personality factor domains scores with scores from the clinical scales of the MCMI-II and found similar results to Hyer et al.'s (1994) conclusions. Researchers found that in a sample of Americans, neuroticism scores were most highly correlated with scores on the MCMI-II clinical scales of Paranoid ($r = .50$), Schizoid ($r = .33$) Schizotypal ($r = .57$), Borderline ($r = .70$), Avoidant ($r = .70$), Dependent ($r = .72$), Passive-Aggressive ($r = .60$), Self-Defeating ($r = .71$), Depressive ($r = .82$), and Sadistic ($r = .39$). Extraversion was most highly positively correlated with Histrionic ($r = .68$), and negatively correlated with Schizoid ($r = -.56$) and Avoidant ($r = -.42$) personality scales. Agreeableness was negatively correlated with Paranoid ($r = -.54$), Schizotypal ($r = -.35$), Antisocial ($r = -.59$), Borderline ($r = -.34$), Narcissistic ($r = -.60$), Passive-Aggressiveness ($r = -.43$), and Sadistic ($r =$

-.65). Whereas, conscientiousness was positively correlated with the Obsessive-Compulsive (r =.73) personality scale and negatively with the Antisocial (r = -.32) scale. Openness to experience was not correlated with any of the clinical personality scales on the MCMI-III. The relationship of these correlations show generally moderate relationships, and therefore show mostly modest construct overlap between the FFM and Millon's personality scales.

As shown, Millon's personality traits capture unique aspects of personality beyond the five-factor model and thus would add to the vocational literature to help explain how personality impacts career decision making, particularly in a college student sample, where career planning is a highly relevant task. As previous research illustrates, some of Millon's scales overlap more greatly with FFM traits than others. For instance, neuroticism and extraversion of the FFM have more overlap with Millon's personality traits than conscientiousness, openness, and agreeableness of the FFM (Aluja et al., 2007 & Hyer et al., 1994). Yet, at the same time, Millon's personality theory is unique and captures personality characteristics that the FFM may not.

The Current Study

There are a variety of personality traits associated with career issues as presented. Empirical evidence suggests that FFM personality traits have been correlated with career decision making difficulties in the process of making an actual career choice (Gati et al., 2006), as well as, with factors such as self-efficacy (Lent et al., 1994). However, the majority of vocational research on career issues and personality is limited to using the FFM. Thus, there appears to be a gap in the literature of how other personality traits may explain a variety of career difficulties and issues. Millon's theory and the MCCI have the capability of adding to our understanding of career development in identifying personality traits, above and beyond the

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FFM, that relate to potential career development problems. Moreover, the MCCI was developed for college students for use in college counseling centers and to assess a broader range of both normal and abnormal personality traits and problematic areas. Because vocational decisions are often made while college students are obtaining their degrees, the MCCI may be able help guide interventions when college students are having difficulty narrowing down their career choices. In addition, further inclusion of additional personality traits in this body of research may increase understanding of the implications of personality on career development and assist in further development of career interventions or screening for vocational problems.

Given the evidence mentioned previously that personality relates to career choice and development issues, the goal of the current study was to examine the relations between MCCI personality scales and interest profile elevation, career decision-making self-efficacy, negative career thoughts, and career decision-making difficulties related to aspects of one' emotions and personality. Furthermore, because the MCCI was developed for use with college students in these settings, further understanding on how the MCCI scores explain these career development constructs can extend the utility of the use of the MCCI measure for college counseling centers and university students. Based on a review of the existing literature, more specific hypotheses regarding these variables are described below.

An individual's profile elevation is thought to effect one's career decision-making process or play a role in career difficulties. Findings from the Bullock and Reardon (2008) study found that profile elevation was positively correlated with the FFM traits of extraversion, openness to experience, and conscientiousness. On the other end of the spectrum, profile elevation has been negatively associated with depression (Fuller et al., 1999) and neuroticism (Gottfredson and Jones, 1993; Holland, Johnson, Asama, 1993; Fuller et al., 1999). As such, the MCCI scales of dejected, sociable, confident, conscientious, and needy may be associated with

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profile elevation on a measure of interests, the Interest Profiler Short Form (IPSF; Rounds, Su, Lewis, & Rivkin, 2010).

Hypothesis 1: It was expected that MCCI personality scales would explain additional variance in interest profile elevation, measure by IPSF total scores, beyond that explained by scales measuring the FFM, with the MCCI scales of dejected, sociable, confident, conscientious, and needy expected to be most relevant.

The Career Decision-Making Self-Efficacy Scale-Short Form (CDSE-SF) measures self-appraisal, occupational information, goal selection, planning, and problem solving. This measure has also been associated with FFM personality traits in a number of studies. For instance, individuals who have higher levels of conscientiousness (Gati et al., 2010) and extraversion (Hartman & Betz, 2007) have been shown to have less decision-making difficulties. Whereas evidence has also suggested that neuroticism was negatively associated with career decision-making self-efficacy (Samuel & Widiger, 2008; Saulsman & Page, 2004). Higher scores on the CDSE-SF are indicative of more mature views related to self-efficacy and lower scores suggest a deficit in self-efficacy for career making decisions. Therefore, the confident, conscientious, and sociable MCCI scales may be most correlated with the CDSE-SF scales.

Hypothesis 2: It was expected that MCCI personality scales would explain additional variance in CDSE-SF total scores beyond that explained by scales measuring the FFM. MCCI scales of confident, conscientious, and sociable were expected to be most related to CDSE-SF scales.

There is ample evidence that personality is correlated with negative career thoughts. Many studies have found that neuroticism is positively correlated with scores on the CTI (Sampson et al., 1996; Bullock-Yowell et al., 2011). On the other end of the spectrum,

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extraversion has been shown to be positively correlated with problem solving confidence and

ease of making career decisions (Chartrand et al., 1993; Sampson et al., 1993; Di Fabio &

Palazzeschi, 2009; Martincin & Stead, 2015). Based on previous research, MCCI social and

confident scales may be correlated with CTI scores.

       Hypothesis 3: It was expected that MCCI personality scales, specifically the social and

       confident scales, would explain additional variance in CTI total scores beyond that

       explained by scales measuring the FFM.

       The Emotional and Personality-Related Aspects of Career-Decision-Making Difficulties

(EPCD; Saka et al., 2008) assists in helping to delineate specific emotional and personality

aspects associated with career indecision. Individuals who score lower on the EPCD suggest

they are further along in the process of deciding on a career. Conversely, higher scores are

indicative of individuals who may experience more difficulties in the decision-making process.

Given the EPCD evaluates more emotional and personality related issues; the MCCI can likely

explain more of the variance in EPCD traits than the FFM. Confident, conscientious, and

sociable MCCI scales may be associated with lower scores on the EPCD scale.

       Hypothesis 4: It was expected that MCCI personality scales would explain additional

       variance in EPCD total scores beyond that explained by scales measuring the FFM.

       MCCI confident, conscientious, and sociable scales were expected to be most related to

       EPCD scores.

       As previously mentioned, the MCCI includes the career confusion scale with the purpose

of identifying students who experience general indecision, confusion associated with career

choices, and either lacking support from their family or experiencing feeling torn between what

one wants and the ideals of their parents (Millon, Strack, et al., 2006). However, the scale only

has three questions and the lowest internal consistency reliability ($\alpha = .58$) as compared to the

other scales on the MCCI (Millon, Strack, et al., 2006). Moreover, little evidence of convergent validity is available for this scale, so it is uncertain if it is assessing aspects of indecision related to personality and/or negative thinking. Thus, a secondary research question for the current study is what is the evidence of convergent validity of the MCCI career confusion scale? The EPCD is a measure based on Gati et al.'s (2008) taxonomy that assesses career decision-making difficulties relative to pessimistic views, anxiety, and self-concept and identity. Higher scores reflect increased difficulties in the subcategories of the measure. Based on the scales from the MCCI, a high correlation between the MCCI career confusion scale and the EPCD scales, followed by a strong relationship with negative career thoughts assessed on the CTI were expected. Additionally, the SDS and CDSE-SF scores also were expected to be correlated with the MCCI career confusion scale.

Hypothesis 5a: The MCCI career confusion scale would be positively correlated with CTI, and EPCD scores, as well as negatively correlated with interest profile elevation on the IPSF and CDSE-SF scores.

Hypothesis 5b: A significant portion of variance in MCCI career confusion scores would be explained by CTI, EPCD, and CDSE-SF scores, and interest profile elevation on the IPSF.

CHAPTER II Method

Participants

      To evaluate the aforementioned hypotheses, data were collected from 317 undergraduate student participants enrolled at a southern university, with a final total sample of 254 after deleting 63 invalid cases. A university sponsored recruitment system, SONA, was used to collect data from students via a web-based survey (i.e., Qualtrics). Participants were compensated for their participation by receiving research credit in a psychology course that participates in the SONA system. The final sample was 63% female and 37% male with a mean age of 20.70 years ($SD = 4.09$). The sample was comprised of 46.9 % Black/ African American, 42.1% White/European American, and 11% Multi-ethnic/Other (i.e., American Indian/Alaskan Native, Asian/Pacific, Hispanic, and Other) individuals. The class standing of the sample was 37.8% freshman, 24.8% junior, 21.7% sophomore, 15.4% senior, and 0.4% other (e.g. graduate students).

Instruments

      Career Decision Self-Efficacy Scale-Short Form (CDSE-SF; Taylor & Betz, 2012). The Career Decision Self-Efficacy Scale-Short form is a shorter version of the 50-item CDSE. The CDSE-SF is a 25-item assessment that measures individuals' confidence in their ability to complete major career development tasks. The CDSE-SF employs a 5-point Likert scale that ranges from *1-I have no confidence at all* to *5-I have complete confidence.* Five subscales assess self-efficacy in specific aspects of career decision making such as: self-appraisal, occupational information, goal selection, planning, and problem solving. A total score is calculated by summing the 25 items; higher scores (given the possible range of 25-125) are indicative of greater overall career decision self-efficacy. Internal consistencies ranging from .73 to .83 and a total Cronbach's alpha of .84 for the short form has been found (Betz & Luzzo, 1996). The total

scale has a high reliability, finding an alpha .91, with subscale Cronbach's alphas ranging

between .66 to .73 in a sample of high school students (Makransky, Rogers, & Creed, 2014).

Supportive evidence of content validity has been found given correlations between CDSE-SF

scores and Career Decision Scale (Taylor & Betz, 1983) scores. For this study, the CDSE-SF

total scale alpha was .93, with subscale alphas ranging from .73 to .82.

Career Thoughts Inventory (CTI; Sampson et al., 1996). The CTI uses a 4-point Likert

scale that consists of 48-items that seeks to measure negative thoughts that impede the career

decision-making process, with responses to items ranging from 0 = *strongly disagree* to 3 =

strongly agree. The measure produces a total score and three subscale scores that measure:

Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC).

Higher total scores indicate more dysfunctional thinking or negative thoughts associated with

career decision making. Some of the sample items include questions such as: "No field of study

or occupations interests me," "Whenever I become interested in something, important people in

my life disapprove," and "I worry a great deal about choosing the right field of study or

occupation." Standardization norms were collected for 11th and 12th grade high-school students

(n = 396), college students (n = 595), and adults (n = 571) with a slightly higher representation

of females (66%) than males (34%).

Sampson et al., (1996) determined the internal consistency of the total score for the CTI

was high given Cronbach's alpha coefficients ranging from .93 to .97. The subscales of DMC (α

= .90-.94), CA (α = .79-.91), and EC (α = .74-.84) all have adequate internal consistency as well

(Sampson et al., 1996). Test-retest reliability over a four-week period for college students for the

total score was .86, and test-retest reliability for DMC, CA, and EC was .82, .79, and .74,

respectively. For this study, reliabilities were high. Total score reliability was α = .97, DMC α =

.95, CA α = .90, and EC α =.79.

Content validity was established given the congruence of CTI items with the CIP theory dimensions (self-knowledge, occupational knowledge, communication, analysis, synthesis, valuing, execution, and executive processing) and all intercorrelations for items were between .85 and .92 with the total score (Sampson et al., 1996). Evidence of convergent and discriminant validity was established given correlations with assessments that measure persons' vocational situation, their career decision issues, and personality characteristics, finding the expected relationships between CTI scores and these constructs (Sampson et al., 1996). To establish criterion validity, Sampson et al. (1996) sought to determine the difference between students who were seeking career services versus those who were not. Results indicated there were significant differences between the college students seeking career services and the students who were not seeking services (Hotelling's T^2 = .77, F (48) = 1.83 p < .01).

O*Net Interest Profiler Short Form (IPSF; Rounds, Su, Lewis, & Rivkin, 2010). The purpose of the O*Net IPSF is to help individuals uncover their work-related interests and relate their interests to possible occupations. The short-form includes 10-items for each of the RIASEC themes, for a total of 60 items. The response scale includes, *Like, ?, and Dislike*. Internal consistency estimates from the IPSF long version (alphas ranging from .78 to .90) indicated adequate reliability (Rounds et al., 2010). For this study, the reliabilities ranged from .77 to .85. Cronbach alpha's are as follows: realistic (.81), investigative (.85), social (.78), enterprising (.77), conventional (.84), and artistic (.85). Test-retest reliability (amount of time not provided) coefficients for the RIASEC scales ranged from .78 to .86 (M = .82; Rounds et al., 2010). Evidence for discriminant validity was found by comparing the IPSF with the Interest-Finder RIASEC Scales (Wall & Baker, 1997) and found correlations between the two different measures of .74 to .82 (cross-correlations on main diagonal) and .12 to .48 (off-diagonal correlations; Rounds et al., 2010).

Profile elevation is typically calculated by summing each of the six Holland RIASEC types get a total score indicative of one's level of interests overall (Fuller, et al., 1999). Thus, higher scores indicate higher profile elevation. Per documentation by Rounds et al., scoring of the IPSF is done by assigning a value of 1 to all item responses of *Like* and then summing item scores by each RIASEC theme (assessed by 10 questions each) and then taking their average to arrive a possible range of scores of 0 to 1 for each RIASEC theme. Profile elevation was then calculated by summing an individual's scores across the six RIASEC themes, for possible range of profile elevation scores being 0 to 6.

Emotional and Personality-related Career Decision-Making Difficulties (EPCD, Saka et al., 2008). The EPCD is a 53-item questionnaire that assess 11 scales on a 9-point Likert-type scale (1 = *does not describe me* to 9 = *describes me well)* and includes two validity items. The EPCD is comprised of three clusters: pessimistic views, anxiety, and self-concept and identity. It was normed on an Israeli internet sample (N = 728) and American college student sample (N = 276). The three major clusters have high internal validity (.80, .96, and .89, respectively), with reliability of the total score of .95. Construct reliability was supported in the original article from Saka and Gati (2007). Cronbach's alpha internal consistency reliability for the 53-item measure was .94 for the total score, with reliabilities for the three major clusters (i.e., Pessimistic views, Anxiety, and Self-Concept and Identity) reported as .79, .93, and .89, respectively (Saka, Gati, & Kelly, 2008). For this study, reliabilities of .97 for total score, .85 for pessimistic views, .97 for anxiety, and .93 for self-concept and identity for the sample. Thus far, no clinical cut off has been established. However, the lower the score, the further one is in the career decision process.

International Personality Item Pool (IPIP; Goldberg et al., 2006). The IPIP was first developed in 1996 as a web based personality measure that assesses the traits associated with the FFM (Goldberg et al., 2006). The 50-item IPIP measure was used for this study, a version of the

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NEO-PI-2 (McCrae & Costa, 2010). The questionnaire contains 10 items for each of the five factors (i.e., openness, conscientiousness, extraversion, agreeableness, and emotional stability) that are rated from 1 (*very inaccurate*) to 5 (*very accurate*). Internal consistency in a veteran sample has been noted to be high with Cronbach's alpha estimates from Bullock et al. (2009), as follows: openness (.72), conscientiousness (.77), extraversion (.85), agreeableness (.77), and emotional stability (.85). For this study, Cronbach's alphas ranged from .73 to .87 and are listed with their corresponding scale: openness (.75), conscientiousness (.87), extraversion (.84), agreeableness (.73), and emotional stability (.81).

     Millon Career Counseling Inventory (MCCI; Millon, Strack, et al., 2006). The MCCI is a multidimensional self-report measure that was developed specifically for the college population. The MCCI is a 150-item measure that has 32 scales that are grouped into three different categories: personality scales, expressed concerns, and clinical signs. Reliability estimates are based on 200 individuals with an overall mean alpha of .77 (26 scales had alphas of .70 or higher, 5 had alphas in the .60-.69 range, and one had an alpha of .58; Millon, Strack, et al., 2006). The only expressed scale that was used in the study was career confusion, which has three items and had the lowest alpha of .58 (Millon, Strack, et al., 2006). Thus far, test-retest reliability for the measure has not been examined. As noted in the MCCI manual, content validity for the MCCI was established using counselor ratings of the constructs, as well as, examining relations between MCCI scores and scores on the Beck Depression Inventory-II (BDI-II), the State-Trait Anxiety Inventory (STAI), and the Alcohol Use Inventory (AUI). Supportive evidence of convergent validity given intercorrelations among MCCI scales ranging from .03 (unruly scale) to .40 (sociable and romantic distress scales), with an average correlation of .23 between personality scales being found. Reliabilities for this study are listed in Table 2.

Raw scores (rather than base rates) were used for analyses, which were calculated from item

responses, entered into a database, using the MCCI scoring procedures.

Table 2

MCCI scale reliabilities for the current sample

Scale Name	Cronbach's Alpha
Introverted	.77
Inhibited	.79
Dejected	.86
Needy	.84
Sociable	.61
Confident	.59
Unruly	.76
Conscientious	.63
Oppositional	.71
Denigrated	.79
Borderline	.85
Career Confusion	.61

Procedure

The study was advertised on SONA, a psychological research recruitment system. With

exception of the MCCI, all measures were collected online. Due to copyright guidelines by

Pearson, the publishers of the MCCI, and financial restrictions, the paper and pencil version of

the MCCI was used. After enrolling in the study via SONA, individuals were required to come in

person to a campus computer lab to complete the study. Individuals were presented with the

consent form first via Qualtrics. After the student consented to participate in the study, online

measures were presented. Once the online portion was completed (i.e., demographic

questionnaire, CDSE-SF, CTI, IPSF, and EPCD), the MCCI was administered. Participants were

asked to provide their student ID numbers, to assure the paper measure (i.e., MCCI) could be

connected with their online data. The MCCI was scored and entered into the data set.

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Meade and Craig (2012) suggests adding up to three validity items (i.e., "I have never brushed my teeth", "Answer this question as 'very true'") to assure the participant is being attentive and not responding carelessly. Therefore, three directed response items were interspersed in the Qualtrics survey. If participants responded correctly to all three of the validity questions that were incorporated in the survey, they proceeded to complete the paper version of the MCCI, while those failing these validity checks were terminated from the study, asked not to complete the MCCI, and received no incentives. The researcher was notified of individuals who failed validity questions by a pop-up screen set to notify the participant when they did not attend to the questions appropriately ($n = 14$). The entirety of the survey took approximately 45-60 minutes and was required to be completed in one sitting. Upon completion of both the online and paper-and-pencil portion of the surveys, individuals were awarded three SONA points (i.e., 1.5 point per 30 minutes of participation) for their participation.

Data Analysis

Prior to testing the study hypotheses, data were cleaned. Missing data were replaced using liner trend at point. In situations where there were substantial missing data (e.g., 25% or more of all data points for a participant), the entire case was removed from the analyses. The validity of participants' responses was also examined during data cleaning. Cases where a participant failed validity checks in the online survey and were exited from the study were excluded ($n = 14$).

The MCCI also includes procedures to ensure valid profiles (Millon, Strack, et al., 2006). For example, if a participant leaves eight or more responses blank, the profile should not be scored. Additionally, there are three validity questions built into the measure. A scale V (validity) score of zero signifies a valid profile, a score of 1 suggests it is questionable, and a score of 2 or 3 means the profile is invalid and should not be scored. Finally, the MCCI profile

includes three other scales that assess response style, labeled disclosure, desirability, and debasement (Millon, Strack et al., 2006). Typical scores on the disclosure scale for college students fall between the 20 and 80 percentiles. If scores are ≥ 90, evidence suggests the participant was confused, overreported his/her symptoms, or attempted to self-disclose too much information (Millon, Strack et al., 2006). No cases were removed from the study based on disclosure alone, because amount of disclosure does not invalid the measure. Furthermore, desirability and debasement address a test-takers' positive and negative presentation style, respectively. While in a clinical setting, profiles with extreme scores on desirability and debasement would be considered invalid, for the purposes of this study; participant's data were not removed based on scores on these scales. The total number of cases deleted was 63, with 14 cases removed from the sample due to failing one of the three validity questions, 15 cases were deleted for failing the MCCI validity check, and 34 cases were deleted due to missing data or duplicate entries.

Multiple regression was used to assess hypotheses 1 to 4. The assumptions of multiple regression were assessed (i.e., linearity, independent errors, homoscedasticity, normally distributed errors, quantitative or categorical variables, no multicollinearity, and non-zero variance; Field, 2013). However, the assumption of multicollinearity was questionable due to four scales on the MCCI (e.g., dejected, denigrated, inhibited, borderline) being highly related (e.g., $r > .66$). Additionally, variable inflation factors (VIF) were all above 5 as follows; dejected (8.97), denigrated (5.39), inhibited (5.83), borderline (5.45). According to Field (2013), a variable inflation factor around 10 is considered problematic, such was the case for the dejected scale. As one of the main research goals was to assess the influence of all MCCI scales on career decisions difficulties as measured by various assessments beyond the FFM, a decision was made to retain all MCCI scales in the analyses, despite this multicollinearity.

Prior to conducting hypotheses testing, gender and race were examined as potential covariates. T-tests on the main variables was conducted and there were several significant differences as shown in Table 5. Both sex (0 = female, and 1 = male) and race (0 = White, 1 = Non-White) were recoded to binary variables for analyses. Sex and race were entered as the first block of regressions, followed by the FFM variables in block two, and finally the MCCI scales in block three as independent variables. Total scores of the CTI, EPCD, and CDMSE, and profile elevation were entered as the dependent variable, creating four separate multiple regression models. To evaluate if MCCI scales explained variance beyond the FFM, the significance of the change R^2 on step 3 in each regression was examined. For hypothesis 5a, correlations were calculated to determine relationships between the MCCI career confusion scale and vocational assessment measures (e.g., CTI, EPCD, CDSE-SF, and IPSF profile elevation total scores).

Finally, to address hypothesis 5b, a multiple regression was used to determine how much variance in scores on the MCCI career confusion scale were explained by the various career measures (i.e., CTI, EPCD, CDSE-SF, and IPSF profile elevation). Due to this being the first study to examine the relationship between the career confusion scale on the MCCI and other career difficulty measures, the subscales on the various career measures were entered as blocks, with no particular predictions about which measure may explain the most variance in career measures.

CHAPTER III Results

First, correlations for all the study variables were calculated to examine bivariate relationships (see Tables 3 and 4). Means, standard deviations, and ranges are also presented below (see Table 5). Second, to assess the incremental contributions of MCCI scales, beyond FFM scores in explaining career development variables, multiple regression analysis was completed to test each hypothesis. Given the high number of study variables to be examined in each regression model, the threat of familywise error was high. Therefore, the Bonferroni correction was utilized to adjust the level of significance to provide a more conservative estimate of significance (Field, 2013). For the current study, this resulted in using a level of significance of $p < 0.003$ (e.g., .05 level of significance divided by 18 variables).

Hypothesis 1: Profile Elevation

As shown in Table 6, according to the change in R^2, FFM scores explained 9% of the variance in profile elevation [$F (5, 246) = 4.90, p < .003$]. More specifically, openness to experience ($\beta = .28, p < .001$) was a significant predictor and accounted for 7.18% of the variance in profile elevation according to the partial correlation. Including the MCCI variables in the model [$\Delta F (11, 235) = 1.74, p = .07$] was not significant, and did not account for any additional variance above the FFM scores.

Hypothesis 2: Career Decision Self-Efficacy

For hypothesis two, the FFM variables accounted for 27% of the variance in career decision self-efficacy [$F (5, 246) = 17.83, p < .003$] beyond covariates. Neuroticism ($\beta = -.26$), openness to experience ($\beta = .26$), and conscientiousness ($\beta = .33$), were all significant predictors of CDSE-SF total scores and accounted for 4.45%, 5.95%, and 8.53% of the variance,

Table 3

Correlations Among FFM and MCCI Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Neuroticism															
2. Extraversion	-.41**														
3. Openness	.10	.11													
4. Agreeableness	-.28**	.25**	.13*												
5. Conscientiousness	-.27**	.27**	-.05	.33**											
6. Introverted	.47**	-.51**	.01	-.29**	-.34**										
7. Inhibited	.61**	-.55**	.07	-.31**	-.34**	.77**									
8. Dejected	.70**	-.43**	.11	-.28**	-.35**	.73**	.86**								
9. Sociable	-.46**	.70**	.04	.21**	.24**	-.57**	-.59**	-.52**							
10. Confident	-.31**	.33**	-.04	-.09	.09	-.13*	-.27**	-.26**	.38**						
11. Unruly	.28**	-.08	.01	-.41**	-.44**	.48**	.46**	.56**	-.15*	.22**					
12. Borderline	.61**	-.40**	.05	-.33**	-.41**	.77**	.77**	.83**	-.40**	-.15*	.57**				
13. Needy	.65**	-.37**	.13*	-.18**	-.36**	.60**	.78**	.83**	-.41**	-.27**	.47**	.71**			
14. Conscientious	-.21**	.14*	-.04	.32**	.62**	-.27**	-.30**	-.34**	.16*	.04	-.48**	-.42**	-.25**		
15. Oppositional	.46**	-.26**	.01	-.40**	-.42**	.61**	.62**	.63**	-.26**	.11	.71**	.71**	.64**	-.34**	
16. Denigrated	.60**	-.33**	.01	-.24**	-.39**	.69**	.77**	.84**	-.41**	-.23**	.58**	.80**	.78**	-.35**	.66**

Table 4

Correlations Among Study Variables

	INT	INH	DEJ	SOC	CON	UNR	BOR	NED	CON	OPP	DEN	CC	N	E	O	A	C
REAL.	.11	.13*	.09	-.06	.05	.19**	.10	.06	-.02	.11	.13*	.05	-.13*	-.09	-.00	-.10	-.06
INVEST.	.04	.02	.03	.06	.03	.02	.03	.03	.09	.03	.05	-.02	-.03	-.02	.14*	-.00	.12
ARTISTIC	.09	.15*	.15*	-.02	-.01	.08	.10	.18**	.04	.12	.14*	.10	.08	-.03	.48**	.05	-.05
SOCIAL	-.12	-.09	-.07	.15*	.02	-.12*	-.07	.02	.19**	-.09	-.05	-.05	-.04	.16*	.20**	.24**	.20**
ENTER	-.01	.02	-.01	.09	.13*	.05	.02	.05	.10	.11	-.04	-.01	-.02	-.00	.11	.02	.06
CONVENT.	.02	.01	-.01	.03	.04	.00	-.03	.04	.20**	.03	-.02	-.04	-.05	-.05	.07	.10	.07
PROFILE ELEVATION	.04	.06	.05	.06	.06	.05	.01	.04	.10	.15*	.08	.06	-.04	-.01	.27**	.08	.09
CTI TOTAL	.44**	.55**	.51**	-.27**	-.20**	.40**	.57**	.58**	-.32**	.52**	.54**	.73**	.41**	-.29**	-.08	-.23**	-.46**
CTI DMC	.41**	.51**	.46**	-.25**	-.20**	.37**	.53**	.49**	-.33**	.43**	.51**	.69**	.36**	-.27**	-.11	-.21**	-.44**
CTI CA	.34**	.46**	.42**	-.23**	-.19**	.31**	.48**	.51**	-.24**	.44**	.42**	.66**	.39**	-.25**	-.01	-.18**	-.40**
CTI EC	.34**	.45**	.44**	-.11	-.07	.38**	.50**	.49**	-.20**	.52**	.51**	.65**	.31**	-.16**	-.13*	-.22**	-.33**
EPCD PV	.43**	.45**	.42**	-.24**	-.03	.35**	.48**	.43**	-.27**	.44**	.44**	.56**	.33**	-.28**	-.10	-.25**	-.42**
EPCD ANX	.35**	.45**	.42**	-.27**	-.22**	.29**	.46**	.49**	-.28**	.40**	.42**	.66**	.40**	-.29**	-.01	-.15*	-.43**
EPCD SI	.51**	.65**	.66**	-.35**	-.27**	.46**	.62**	.70**	-.27**	.58**	.69**	.70**	.60**	-.33**	-.00	-.25**	-.46**
EPCD TOT	.46**	.57**	.55**	-.32**	-.22**	.39**	.73**	.57**	.61**	-.31**	.52**	.56**	.50**	-.33**	-.03	-.22**	-.49**
CDSE-SF TOT	-.17**	-.30**	-.32**	.23**	.25**	-.24**	-.29**	-.36**	.38**	-.22**	-.33**	-.43**	-.31**	.20**	.21**	.25**	.40**

REAL = Realistic, INVEST = Investigative, ENTER = Enterprising, CONVENT = Conventional, CTI TOT = CTI total scores, CTI DMC = CTI decision making confusion, CTI CA = CTI commitment anxiety, EPCD PV = EPCD pessimistic views, EPCD ANX = EPCD anxiety, EPCD SI = EPCD self-identity and concept, EPCD TOT = EPCD total score, CDSE TOT = CDSE total score, INT = introverted, INH= inhibited, DEJ= dejected, SOC= sociable, CON= confident, UNR= unruly, BOR= borderline, NED= needy, CON=conscientious, OPP= oppositional, DEN= denigrated, CC= career confusion, N = neuroticism, E = extraversion, O = openness to experience, A = agreeableness, and C = conscientiousness. *. Correlation is significant at the 0.05 level (2-tailed).
 **. Correlation is significant at the 0.01 level (2-tailed).

Table 5

Means, Standard Deviations, and Reliabilities for Variables

	Mean (SD) Male (N =93)	Mean (SD) Female (N =161)	Mean (SD) Nonwhite (N=147)	Mean (SD) White (N = 107)	Possible Range of Scores	Alpha
Realistic	**.35 (.29) ****	**.13 (.19) ****	.19 (.24)	.23 (.26)	0-1	.82
Investigative	.42 (.33)	.38 (.31)	.39 (.29)	.41 (.34)	0-1	.85
Artistic	.54 (.30)	.46 (.34)	.47 (.32)	.52 (.33)	0-1	.85
Social	**.61 (.29) ***	**.69 (.25) ***	.68 (.27)	.34 (.27)	0-1	.78
Enterprising	.45 (.28)	.47 (.27)	**.51 (.27) ****	**.40 (.27) ****	0-1	.77
Conventional	.30 (.28)	.27 (.27)	.31 (.29)	.25 (.25)	0-1	.84
Profile Elevation	2.66 (1.11)	2.41 (1.11)	2.54 (1.16)	2.46 (1.09)	0-6	--
CTI Total	41.90 (28.65)	36.29 (24.95)	39.52 (25.72)	36.72 (27.45)	0-144	.97
CTI Decision Making Confusion	**8.48 (9.14) ***	**6.27 (7.46) ***	7.37 (7.93)	6.67 (8.51)	0-42	.95
CTI Commitment Anxiety	11.46 (7.14)	11.16 (7.36)	11.40 (7.023)	11.08 (7.36)	0-30	.90
CTI External Conflict	**4.17 (3.39) ***	**3.32 (3.16) ***	3.66 (3.19)	3.60 (3.37)	0-15	.79
EPCD Total	198.71 (87.74)	199.55 (83.10)	202.07 (84.23)	195.36 (85.49)	49-450	.97
EPCD Pessimistic Views	47.52 (19.34)	44.66 (17.35)	**47.63 (18.55) ***	**43.06 (17.25) ***	12-108	.85
EPCD Anxiety	92.18 (45.98)	97.47 (47.94)	**98.19 (46.62) ***	**91.89 (47.98) ***	21-189	.97
EPCD Self and Identity	59.01 (30.29)	57.42 (28.18)	56.25 (28.89)	60.41 (2.92)	9-153	.93
CDSE-SF Total	3.95 (.62)	4.00 (.63)	4.01 (.62)	3.94 (.63)	1-5	.94
Introverted	16.22 (9.37)	14.83 (9.29)	**16.42 (9.66) ***	**13.84 (8.67) ***	0-56	.77
Inhibited	11.39 (9.77)	10.06 (9.19)	10.90 (9.28)	10.07 (9.61)	0-56	.79
Dejected	11.36 (10.74)	10.29 (10.01)	10.08 (9.85)	11.50 (10.82)	0-48	.86

Table 5 (continued)

	Mean (SD) Male (N =93)	Mean (SD) Female (N =161)	Mean (SD) Nonwhite (N=147)	Mean (SD) White (N = 107)	Possible Range of Scores	Alpha
Sociable	33.29 (7.76)	33.15 (7.76)	33.00 (7.74)	33.48 (7.79)	0-48	.84
Confident	**29.05 (8.71) ***	**25.70 (8.17) ***	27.03 (8.44)	26.79 (8.63)	0-56	.61
Unruly	**19.03 (10.75) ****	**10.99 (8.54) ****	**12.66 (9.63) ***	**15.69 (10.63) ***	0-56	.59
Borderline	10.06 (8.82)	8.98 (8.19)	9.70 (8.64)	8.93 (8.14)	0-44	.76
Needy	12.77 (10.70)	12.35 (10.02)	11.67 (10.06)	13.64 (10.46)	0-44	.63
Conscientious	**35.08 (9.19) ****	**38.42 (7.04) ****	37.45 (7.99)	36.86 (8.15)	0-52	.71
Oppositional	**17.25 (8.27) ***	**14.90 (8.89) ***	15.31 (8.85)	16.37 (8.55)	0-48	.79
Denigrated	8.52 (8.18)	6.83 (7.03)	**6.41 (6.92) ***	**8.88 (8.05) ***	0-40	.85
Career Confusion	5.71 (5.85)	4.67 (5.03)	4.86 (5.15)	5.33 (5.64)	0-24	.61
Neuroticism	**21.31 (6.63) ****	**24.98 (7.54) ****	23.28 (6.78)	24.13 (8.23)	1-50	.80
Openness to Experience	37.72 (6.48)	36.99 (6.04)	37.43 (5.95)	37.02 (6.56)	1-50	.75
Agreeableness	**38.33 (4.75) ****	**39.99 (5.05) ****	39.62 (5.14)	39.06 (4.80)	1-50	.73
Conscientiousness	**36.43 (7.83) ****	**39.11 (6.92) ****	38.55 (7.30)	37.54 (7.45)	1-50	.87
Extraversion	35.03 (7.73)	34.49 (7.67)	34.15 (7.45)	35.43 (7.97)	1-50	.84

respectively. The MCCI variables accounted for 10% additional variance [F (11, 235) =
.44, $p < .003$, $\Delta R^2 = .10$] in CDSE-SF scores. Openness to experience ($\beta = .29$) was still
significant predictor. However, no specific MCCI scales were significant.

Hypothesis 3: Career Thoughts Inventory

The FFM variables accounted for 33% of the variance in CTI total scores [F (5,
246) = 24.82, $p < .003$, $\Delta R^2 = .33$]. Neuroticism ($\beta = .36$) and conscientious ($\beta = -.36$)
were significant predictors of CTI total score. Neuroticism accounted for 8.53% of the
variance, whereas conscientiousness accounted for 10.11%. When the MCCI scales were
included, an additional 17% of the variance was accounted for [ΔF (11, 235) = 7.27, $p <$
.003, $\Delta R^2 = .17$], with needy ($\beta = .32$) being a significant predictor in the model and
accounting for 2.25% of the variance. In addition, conscientiousness ($\beta = -.26$) remained
a significant predictor and openness ($\beta = -.15$) also became significant.

Hypothesis 4: Emotional and Personality Career Difficulties Scale

In the first block, sex and race were not significant predictors, as shown in Table
6. However, the FFM accounted for 40% of the variance in EPCD total scores [F (5,
246) = 32.72, $p < .003$]. Both neuroticism ($\beta = .41$) and conscientiousness ($\beta = -.38$)
were significant predictors, and accounted for 10.96% and 11.36% of the variance,
respectively.

Additionally, when MCCI variables were added, an additional 12% of the
variance was accounted for [ΔF (11, 235) = 5.26, $p < .003$, $\Delta R^2 = .12$), which was
considered a significant increase, although only conscientiousness was a significant
predictor ($\beta = -.30$) in the model.

Table 6 *Examining Variance Explained in IPSF PE, CDSE-SF, CTI, and EPCD scores using scores from FFM and MCCI Personality Traits*

	IPSF PE		CDSE-SF		CTI		EPCD	
	B	β	B	β	B	β	B	β
Block 1.	$F(2, 251) = 1.76$		$F(2, 251) = .61$		$F(2, 251) = 1.71$		$F(2, 251) = .20$	
	$\Delta r^2 R^2 = .01$		$\Delta R^2 = .01$		$\Delta R^2 = .01$		$\Delta R^2 = .00$	
Sex	.26	.11	-.05	-.04	5.66	.10	-.75	.00
Race	-.08	-.04	-.07	-.06	-2.88	-.05	-6.71	-.04
Block 2.	$\Delta F(5, 246) = 4.90^*$		$\Delta F(5, 246) = 17.83^*$		$\Delta F(5, 246) = 24.82^*$		$\Delta F(5, 246) = 32.72^*$	
	$\Delta R^2 = .09$		$\Delta R^2 = .27$		$\Delta R^2 = .33$		$\Delta R^2 = .40$	
Sex	.28	.12	-.07	-.50	7.81	.14	7.24	.04
Race	-.02	-.01	-.01	-.01	-5.23	-.10	-14.32	-.84
N	-.01	-.04	-.02	-.26*	1.27	.36*	4.62	.41*
E	-.02	-.10	.00	-.03	-.15	-.04	-.69	-.06
O	.05	.28*	.03	.26*	-.62	-.15	-1.25	-.09
A	.01	.03	.00	.03	.21	.04	.77	.05
C	.02	.12	.03	.33*	-1.28	-.36*	-4.33	-.38*
Block 3.	$\Delta F(11, 235) = 1.74$		$\Delta F(11, 235) = 3.44^*$		$\Delta F(11, 235) = 7.27^*$		$\Delta F(11, 235) = 5.26^*$	
	$\Delta R^2 = .07$		$\Delta R^2 = .10$		$\Delta R^2 = .17$		$\Delta R^2 = .12$	
Sex	.16	.07	-.02	-.02	3.50	.06	-8.75	-.05
Race	-.10	-.04	.05	.04	-5.32	-.10	-18.54	-.11
N	-.02	-.14	-.01	-.09	.21	.06	1.47	.13
E	-.03	-.19	-.01	-.09	.07	.02	-.14	-.01
O	.05	.29*	.03	.28*	-.66	-.15*	-1.29	-.10
A	.01	.03	.01	.09	.21	.04	.68	.04

Table 6 (continued)

	IPSF PE		CDSE-SF		CTI		EPCD	
	B	*β*	*B*	*β*	*B*	*β*	*B*	*B*
C	.02	.08	.02	.21	-.94	-.26*	-3.42	-.30*
Introverted	-.01	-.07	.02	.23	-.41	-.15	-1.05	-.12
Inhibited	.00	.03	.00	-.04	.78	.28	1.75	.20
Dejected	-.01	-.10	.00	.00	-.89	-.35	-1.85	-.23
Needy	.01	.12	-.02	-.30	.81	.32*	2.30	.28
Sociable	.02	.13	.01	.08	.15	.04	.16	.02
Confident	.01	.04	.01	.15	-.38	-.12	-.91	-.09
Unruly	.01	.08	.00	-.04	.17	.07	.90	.11
Conscientious	.03	.21	.01	.18	.21	.06	.69	.07
Oppositional	.01	.06	.01	.10	.36	.12	.77	.08
Denigrated	.02	.15	.00	.03	.05	.01	.75	.07
Borderline	.01	.04	.00	-.04	.95	.30	1.58	.16

* = Significant at the 0.003 level

Hypothesis 5a: MCCI Career Confusion and Study Variables Correlations

A Pearson correlation was computed to assess the relationship between the MCCI Career Confusion scale with Interest Profile Elevation, CTI total score, EPCD total score, and CDSE-SF total score (see Table 4). There was a positive correlation between Career Confusion and CTI total score ($r = 0.73$, $p = 0.01$) and EPCD total score ($r = 0.56$, $p = 0.01$). CDSE-SF total score and MCCI Career Confusion were negatively correlated ($r = -0.43$, $p = 0.01$).

Hypothesis 5b: MCCI Career Confusion Multiple Regression

Sex and race were not significant predictors of the MCCI Career Confusion scale, as shown in Table 7. The study variables in block two accounted for 57% of the variance in Career Confusion [ΔF (4, 247) = 83.90, $p < .01$]. EPCD total scores ($\beta = .39$) and CTI total scores ($\beta = .40$) were both significant predictors in the model. More specifically, EPCD accounted for 3.61% and CTI accounted for 3.57% of unique variance the model, given their partial correlations.

Table 7

Examining Variance Explained in the MCCI Career Confusion Scale using EPCD, IPSF PE, CTI, and CDSE-SF scores

	Career Confusion	
	B	*β*
Block 1.	F (2, 251) = 1.36 $\Delta R^2 = .00$	
Sex	1.04	.09
Race	.46	.04
Block 2.	ΔF (4, 247) = 83.90* $\Delta R^2 = .57$	
Sex	.64	.06
Race	.84	.08
EPCD Total	.02	.39*
IPSF PE	-.01	-.02
CTI Total	.08	.40*
CDSE-SF Total	-.06	-.01

CHAPTER IV Discussion

The purpose of the current study was to examine the value of Millon's theory, beyond that of the FFM, in understanding career development issues in college students. The results indicated that in the first hypothesis, Millon's personality scales did not explain additional variance in interest profile elevation, measured by the IPSF total score, beyond that explained by the scales measuring the FFM, therefore hypothesis 1 was not confirmed. However, Millon's personality theory variables explained additional variance beyond what was explained by the FFM in career decision making self-efficacy, negative career thoughts, and emotional and personality related career problems. As such, hypothesis 2-4 were confirmed. Despite this, assumptions about specific scales on the MCCI predicted to account for significant variance in career variables were not confirmed. More specifically, in only one case did a specific MCCI scale account for significant unique variance in career variables (e.g., MCCI needy scale was a significant predictor of CTI total scores). In regards to hypothesis 5a, the MCCI career confusion scale was positively correlated with CTI and EPCD total scores, and negatively correlated with CDSE-SF total scores. However, it was not significantly correlated with IPSF scores. Finally, hypothesis 5b was partially supported in that a significant portion of variance in MCCI career confusion scores was explained by CTI and EPCD total scores, although CDSE-SF and profile elevation did not provide significant individual contributions.

Study findings suggest there is an overlap between the personality traits conceptualized by the FFM and Millon's theory. There were several significant correlations (i.e., ranging between $r = .59$ to $.86$) between FFM and MCCI scales as

presented in Table 5. The neuroticism scale was correlated with every single one of the MCCI scales, and had high positive relationships (e.g., $r > .60$) with inhibited, dejected, borderline, and denigrated, and was highly negatively correlated with the MCCI scale, sociable. Extraversion and conscientiousness were both also correlated with almost all of the MCCI scales. For instance, there was a moderately high positive correlation between extraversion and sociable, as well as, a negative correlation with inhibited. Finally, openness to experience was correlated with needy. Due to the high correlations between some of the FFM and MCCI scales (e.g., neuroticism with dejected $r = .70$, extraversion with sociable $r = .70$, and conscientiousness with conscientious $r = .62$), these scales may have enough overlapping content to be used as loose proxies for each other. In other words, should an individual elevate the dejected, sociable, or conscientious scales then it may be assumed that he or she would also score high on the FFM scale previously mentioned. Although the regressions suggested that Millon's personality theory did account for some variance in the models, it is likely that this overlap of variables (e.g., neuroticism scale of FFM) accounted for such a large portion of the variance that little unique variance on the MCCI scales remained, of which was not significantly related to career variables. Given this overlap between scales on the FFM and MCCI scales, had the MCCI scores been entered in the model first, or independently, then it would be likely more individual MCCI scales would have been significant predictors of career variables, although overlapping in content with FFM traits. Moreover, despite this substantial overlap, collectively the scales accounted for unique significant variance in EPCD, CTI, and CDSE-SF scores beyond what was shared with the FFM.

Interestingly, the MCCI needy scale added unique variance in explaining career problems. As mentioned in the MCCI manual (Millon et al., 2006), an individual who elevates the needy scale on the MCCI is described as someone with an easy-going personal style. Those who score higher on the MCCI needy scale can be described as someone who attempts to please others by adapting behaviors to the standards of others. They seek attention, approval, are often cooperative, considerate of others, and occasionally naïve. Additionally, someone who elevates the needy scale relies on others, may feel insecure, alone, and look to others for leadership when faced with difficult situations. Finally, they are agreeable, reliable, and uncomfortable being assertive with others (Millon et al., 2006). As such, an elevation on the needy scale may be suggestive of chronic indecision, as well as negative thinking due to insecurities and lack of assertiveness. Furthermore, CTI total scores were also moderately correlated $(r > .50)$ with several MCCI scales, including: inhibited, borderline, needy, oppositional, and denigrated. Elevations on these MCCI scales, may be linked to negative thought processes, as evidenced by the correlations with the CTI measure, more so than with career difficulties, confidence in career decision-making, or interest endorsement (e.g., EPCD, CDSE-SF, IPSF and profile elevation). Given that negative thinking is at the core of many mental health diagnoses (American Psychiatric Association, 2013) and the Millon's theory specifies more pathological rather than typical, normal personality traits, this finding is not surprising. Moreover, these findings illustrate that the MCCI is able to detect career concerns beyond the FFM, and thus a useful tool in a college counseling setting where career concerns are prevalent.

Additionally, EPCD total score was moderately correlated ($r > .50$) with MCCI scales of inhibited, dejected, borderline, needy, conscientious, and denigrated. The main purpose of the EPCD is to assess where an individual is in their decision-making process in relation to emotion and personality aspects. More specifically, the EPCD measures pessimistic views, anxiety, and self-concept and identity aspects of an individual. Therefore, the correlations between the aforementioned scales suggest that those MCCI scales are tapping into traits such as pessimism, anxiety, and lack of self-knowledge. As previous findings from Gati and colleagues (2010) suggest, higher scores on the EPCD were associated with higher levels of neuroticism, agreeableness, perfectionism, and lower levels of extraversion and openness to experience. This previous research may coincide with current research and illustrate that the cluster of MCCI scales that are correlated with EPCD scales as measuring those similar concepts. Additionally, the unique contributions of Millon's theory in explaining increased negative career thinking and personality-related career concerns may allude to these issues being more closely related to enduring personality traits rather than more temporary situations.

This study also provides some evidence of construct validity for the MCCI career confusion scale. For example, substantial bivariate correlations between the career confusion scale and the other career measures (e.g., CTI, EPCD, and CDSE-SF) provide evidence of convergent validity. However, despite these correlations, the scale is only three questions and was found to have suboptimal reliability (e.g., $\alpha = .61$). On the other hand, the career confusion scale was not correlated with profile elevation, which suggests discriminant validity due to profile elevation being associated with career interests, and not career decision making. Moreover, EPCD and CTI total scores were found to

account for a significant amount of variance in the career confusion scale on the MCCI. These findings suggest that the MCCI career confusion scale is adequately assessing common vocational concerns. According to MCCI manual (Millon et at., 2006), someone who elevates the career confusion scale "may experience general indecision and confusion, feel that they lack adequate support in formulating their choice, and feel torn between what they want and what their family wants" (p. 16). Given a high correlation with the CTI external conflict scale, it appears the career confusion scale is adequately assessing what was intended.

Taken together, this research illustrates that Millon's Theory, operationalized using the MCCI, in general may be helpful in explaining career development problems in a college student sample. Moreover, the findings suggest that unique aspects of Millon's theory, assessed by the MCCI needy scale, are particularly associated with negative career thinking. Millon's theory is also relevant, beyond the FFM, given results of the current study, in explaining lower career decision self-efficacy and higher career difficulties.

Practice Implications

The findings from this study can be useful in college counseling centers, as Millon's theory may be helpful in determining some career decision-making difficulties an individual is encountering concerns. For instance, this may suggest that individuals with continued career issues may be best assisted by exploring possible personality related issues by using the MCCI to uncover possible additional problematic personality traits that may also need to be addressed in counseling. Considering an individual with a high needy scale, which correlates with negative career thoughts, interventions such as

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assertiveness training, decision-making skills, and encouragement to move into leadership may also be warranted. Further, this may suggest individuals elevating the MCCI needy scale, signal having personality characteristics that are more prone to negative thought processes. Generally, using Cognitive Behavioral Therapy (CBT; Beck, 2011) may help target negative core beliefs associated with insecurity, common for individuals elevating the needy scale (Millon et al., 2006). Furthermore, these students that have more negative career thoughts also would benefit from a treatment protocol that targets negative cognitions associated with career decisions. For instance, Sampson et al. (1999) developed the Career Thoughts Inventory Workbook to address issues related with negative career thoughts. The workbook can be used independently, or in conjunction with other counseling interventions and utilizes cognitive restructuring to help individuals initially identify negative thoughts associated with the career decision process. Then the workbook helps to challenge and alter any negative career thoughts.

Additionally, when an individual elevates the career confusion scale, one can hypothesize that the student may be experiencing specific career concerns (e.g., emotional, personality, or cognitive dilemmas in the career decision-making process). Thus, the career confusion scale, albeit only three questions and with low reliability, may be a useful screener for career problems as intended. The career confusion scale may alternatively be useful in research when longer measures are not feasible, but at the cost of reduced reliability. Finally, these findings suggest that the MCCI could be a valuable tool for use in a college career counseling center to aid in identifying and narrowing in on specific career concerns. For instance, if the career confusion scale was elevated, then it may be suggestive of someone experiencing negative career thoughts or pervasive

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emotional problems. Therefore, a practitioner would benefit from doing further

vocational testing using the CTI and EPCD because those measures specifically address

negative career thoughts and emotional problems in individuals with vocational

indecision.

Limitations

Due to the MCCI never being utilized to examine career development issues alone

or in conjunction with FFM traits, this study was exploratory in nature and therefore,

there are several limitations to consider. For instance, the sample was from one southern

university. As such, demographically, the sample was not be representative of the nation

as a whole, and thus lack generalizability to other college student populations.

Furthermore, the sample did not use a treatment seeking or clinical sample, and thus

score ranges on scales were restricted. Instead, the sample was of college students

receiving credit for their participation in the study. Consequently, the findings from this

study would not necessarily be generalizable to a treatment seeking sample of college

students seeking services in a college counseling center or career services office.

However, despite using a non-treatment seeking population, Millon's theory of

personality appears relevant to career issues. Finally, the large number of variables

included in the study, and issues with multicollinearity were also limitations to the study.

Future Research

Finally, future research on the applicability of Millon's theory to career

development would benefit from using samples seeking mental health or career services.

Using a clinical sample may provide more insight into the personality characteristics that

are most associated with career development difficulties, because inherently, individuals

who seek services at a college counseling center are experiencing difficulties. Other future research examining gender differences using the MCCI measure may also add to the literature. This may help determine if there are personality traits specific to males or females that are associated with more career decision making difficulties. The original sample of the MCCI consisted of 78% female and 22% males and there were statistically significant differences between males and females on 11 of the 32 scales (Millon et al., 2006). Thus, it would be beneficial to compare genders in future research to allow for comparison to the normative sample.

Additionally, a person-centered approach may be beneficial with this type of research. This type of approach, using a latent profile statistical analysis, identifies groups of individuals with similar personality characteristics who have share similar traits or attributes (Laursen & Hoff, 2006). Therefore, a study utilizing latent profile analysis to determine personality traits related to specific career difficulties would also add to the literature. Because Millon's theory has so many personality traits and it was so highly correlated with the negative career thoughts, using those two measures to do a latent profile analysis may be highly informative in identifying groups of individuals with similar attributes at various stages of the career-decision making process.

In general, there is very limited research using the MCCI in research, therefore any additional studies would add to the limited literature on Millon's widely known theory. Furthermore, as overall research on the MCCI scales are scant, additional research on all the MCCI scales (e.g., expressed concerns and clinical signs), that were not included in this study, with vocational measures may also add to the literature. Using all the scales of Millon's theory may uncover additional traits or characteristics that are

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associated with career indecision. For instance, scales such as identity quandaries, peer alienation, and family disquiet may all be associated with difficulties in the career process.

In sum, the goal of the current study was to examine the applicability of Millon's theory of personality in explaining career development constructs, above the FFM traits, in a college student sample. Results indicated that Millon's theory, using the MCCI, explained additional variance beyond the FFM traits in negative career thoughts, career decision-making self-efficacy, and emotional and personality related career aspects. Most specifically, the MCCI needy scale explained the largest amount of variance in negative career thought scores. The MCCI career confusion scale was correlated with emotional and personality related aspects, which may suggest that the career confusion scale picks up on variables that are measured by the EPCD such as; pessimistic views, anxiety, and self-concept and identity. Additionally, the MCCI career confusion scale was also correlated with CTI scores, which suggested that the scale is picking up on negative career thoughts associated with career decision making. Conversely, it appears that the career concerns scale is less indicative of low self-efficacy in career decision making or low interests. The findings of this study have illustrated that there is another personality theory, Millon's, that can explain career decision making difficulties, and that the MCCI may be a useful tool in college campus career counseling settings in identifying problematic personality traits that are most associated with career difficulties. Furthermore, study findings indicated that the MCCI career confusion scale has evidence of construct validity (with a low reliability) and may be an alternative screening tool when longer measures are not feasible.

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NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 16031402
PROJECT TITLE: The Role of Personality Using the Millon College Counseling Inventory in Explaining a Variety of Career Decision-Making Issues
PROJECT TYPE: New Project
RESEARCHER(S): Carly Chadick, Sarah Christensen, and Richard Ladner
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Psychology
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 03/29/2016 to 03/28/2017
Lawrence A. Hosman, Ph.D.
Institutional Review Board

You are invited to participate in a study measuring personality characteristics and career decision-making difficulties. You were selected as a possible participant because you are a current undergraduate college student. We ask that you read this form before agreeing to be in the study. The researchers conducting this study are Carly Chadick, Doctoral student in Counseling Psychology, who is supervised by Dr. Melanie Leuty from the University of Southern Mississippi, Department of Psychology.

The purpose of the study is to examine the relationship between personality and career development to gain a better understanding of potential career problems. You will be asked to complete a survey online. Once you are finished with the online survey, you will be asked to complete one final survey on paper. Quality assurance checks will be used to make sure that participants are reading each question carefully and answering thoughtfully. Participants who do not pass these checks will NOT receive credit for completing the study and will not be asked to complete the final survey on paper.

You most likely will not receive any benefits from participating in this study, other than gaining the experience of being a participant. The questionnaires are about some of your career-decision making difficulties and may help you become more aware of those and if additional assistance is needed.

There are no foreseeable physical risks associated with your participation in this research other than the possibility of becoming fatigued or bored when completing the surveys. The risks associated with your participation are minimal. You may find that a few of the questions are sensitive in nature (e.g., questions about your mental health or career development), which may result in some distress. Also, some of the questions may be difficult to answer or you may find that you become fatigued when completing questions.

The records of this study will be kept confidential. After the study has been completed, a unique number will be assigned to your information. In any sort of report that might be published from this data, no information will be included that will make it possible to identify a participant. Research records will be stored securely on computer devices. For the measure that requires you to complete via pen-and-paper, you will not be required to put identifying information other than your student ID to be able to match your data to your online survey. Upon completion, the forms will be kept in a secured file cabinet. Only the researchers involved in this study will have access to the research records.

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Southern Mississippi or the Department of Psychology. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

The project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Manager of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in Project Information Section above.

Contact information for local community health services if needed: USM Counseling Center (601-266-4829), Pine Belt Mental Healthcare Resources (601-544-4641), Pine Grove Recovery Center (601-288-4900), and Suicide Crisis Hotline (1-800-223-4357).

I consent to participate in this study, in doing so I am agreeing that:
1. I am at least 18 years of age,
2. I am being asked to complete a set of questionnaires, which will take about 45-60 minutes and for which I will receive 3 SONA credits in a participating course. Should I fail quality assurance checks, I will be asked not finish my participation and will not receive any SONA credit for my participation, and
3. All information I provide will be used for research purposes and will be kept confidential.

I understand that my participation in this research is voluntary. If I decide to participate in the study, I may withdraw my consent and stop participating at any time without penalty or loss of benefits to which I am otherwise entitled.

I have read and understand the information stated, am at least 18 years of age, and I willingly sign this consent form.

<u>Directions</u>: Please fill in the blank or check the response that best applies to you.

1. Student ID (without the W)

2. Age: _____

3. Sex:

☐ Male

☐ Female

☐ Transgender

4. Racial/Ethnic Background:

☐ American Indian/Alaskan Native

☐ Asian/Pacific Islander

☐ Black (Non-Hispanic

☐ Hispanic

☐ White (Non-Hispanic)

☐ Other: (please specify) _____

5. Marital Status

☐ Single

☐ Married

☐ Divorced

☐ Widowed/Widower

☐ Other: (please specify) _____

5. How many semesters have you been in college? _____
(Please count summer even if you did not take classes. Please count current semester.)

6. Have you declared a major yet?   ☐Yes   ☐No   (If no, will skip next two questions.)

7. Current Major

_____

8. How many semesters have you been in your current major? _____

9. Current Standing
☐ Freshman
☐ Sophomore
☐ Junior
☐ Senior
☐ Other: _____

10. Current GPA
USM GPA: _____

11. Do you currently work?
☐ Yes
☐ No

12. Are you currently seeking mental health services?
☐ Yes
☐ No

13. Are you currently receiving career counseling services?
☐ Yes
☐ No

APPENDIX D – Emotional and Personality Career Difficulties Scale

Please begin by filling out the following information:

Age: _____   Number of years of education: _____

Sex: Female / Male

Have you considered what field you would like to major in or what occupation you would like to choose?

Yes / No

If so, to what extent are you confident of your choice?

Not confident at all   1   2   3   4   5   6   7   8   9   Very confident

Next, you will be presented with a list of statements concerning the career decision-making process. Please rate the degree to which each statement applies to you on the following scale:

Strongly disagree   1   2   3   4   5   6   7   8   9   Strongly agree

Circle 1 if you strongly disagree with the statement and 9 if you strongly agree with it. Of course, you may also circle any of the intermediate levels.

Please do not skip any question.

Please circle the number which best represents the degree to which you agree with each statement.

1. Recently I have been thinking about choosing a career.

Strongly disagree   1   2   3   4   5   6   7   8   9   Strongly agree

2. It seems impossible for me to investigate all the relevant occupations in depth because there is so much information.

Strongly disagree   1   2   3   4   5   6   7   8   9   Strongly agree

3.   I can't find out enough about all the occupations to make the right choice.

   Strongly disagree _1 2 3 4 5 6 7 8 9_ Strongly agree

4.   I can't take all the relevant considerations into account when choosing a career.

   Strongly disagree _1 2 3 4 5 6 7 8 9_ Strongly agree

5.   What you study is rarely related to the actual work you do.

   Strongly disagree _1 2 3 4 5 6 7 8 9_ Strongly agree

6.   Few careers are really interesting.

   Strongly disagree _1 2 3 4 5 6 7 8 9_ Strongly agree

7.   In most careers you do <u>not</u> get fair compensation for your investment.

   Strongly disagree _1 2 3 4 5 6 7 8 9_ Strongly agree

8.   Most people do not like their jobs.

   Strongly disagree _1 2 3 4 5 6 7 8 9_ Strongly agree

9.   In most areas it is very difficult to find a job.

   Strongly disagree _1 2 3 4 5 6 7 8 9_ Strongly agree

10.   I have no control over the career possibilities that will be available for me in the

   future.

   Strongly disagree _1 2 3 4 5 6 7 8 9_ Strongly agree

11.   Choosing the right career mainly depends on luck.

   Strongly disagree _1 2 3 4 5 6 7 8 9_ Strongly agree

12. I have very little influence over the career I will finally have.

   Strongly disagree _1 2 3 4 5 6 7 8 9_ Strongly agree

13. Finding a good job is mainly a matter of coincidence.

   Strongly disagree _1 2 3 4 5 6 7 8 9_ Strongly agree

14. I am satisfied when something good happens to me.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

15. The career decision-making process causes me stress because it requires a great deal of effort and is complicated.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

16. I am worried about having to deal with the complex process involved in career decision-making.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

17. I am worried about the decision making process because I want to make sure I consider all relevant factors.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

18. I am worried about the decision making process because I want to make sure I gather all the relevant information.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

19. I am worried because I still don't know what I will do in the future (e.g., after graduating from college).

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

20. I am worried that I still don't know what I'll study or what sort of job I will have.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

21. I am afraid that my preferences and wishes may change, so that a decision I make today may not be appropriate for me in the future.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

22. The world changes so fast that I'm afraid to make such a major decision like choosing a career at this point.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

23. I am worried about choosing a course of study or a career because it might cause many changes in my life.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

24. Choosing a career is not a clear-cut decision, so I am worried that unpredictable things might happen.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

25. I am concerned that I might not choose the best career for me.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

26. I am afraid to commit to a career which might not be perfect for me

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

27. I am afraid I might overlook a suitable career.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

28. I am concerned about committing to one career because I may be disregarding other suitable careers.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

29. I am afraid I might make a mistake in my career decision, and not choose the right career for me.

       Strongly disagree <u>1 2 3 4 5 6 7 8 9</u> Strongly agree

30. I am afraid to commit to a career because I might regret this choice later, and feel

   responsible for the mistake.

        Strongly disagree   1   2   3   4   5   6   7   8   9   Strongly agree

31. I am afraid to commit to a certain career because if it isn't the right one, it will be my

   responsibility.

        Strongly disagree   1   2   3   4   5   6   7   8   9   Strongly agree

32. I am already considering a certain career, but am afraid that it might not suit my

   skills.

        Strongly disagree   1   2   3   4   5   6   7   8   9   Strongly agree

33. I am already considering a certain career, but am afraid it might not suit my

   personality.

        Strongly disagree   1   2   3   4   5   6   7   8   9   Strongly agree

34. I am already considering a certain career, but am afraid it might not suit my

   preferences.

        Strongly disagree   1   2   3   4   5   6   7   8   9   Strongly agree

35. I am already considering a certain career, but am afraid it might be different from

   what I expect.

        Strongly disagree   1   2   3   4   5   6   7   8   9   Strongly agree

36. I don't mind whether my expectations are realized or not.

        Strongly disagree   1   2   3   4   5   6   7   8   9   Strongly agree

37. I often worry about many things in life.

        Strongly disagree   1   2   3   4   5   6   7   8   9   Strongly agree

38. I often find it difficult to get rid of worries or disturbing thoughts.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

39. I often regret things I have done, or feel stressed about them.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

40. I often feel that I am unsuccessful.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

41. I often feel inferior to others.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

42. I feel that I lack important vocational skills.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

43. I feel I don't have adequate skills to succeed in many occupations.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

44. I still don't know what my values are and what I believe in.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

45. My estimate of my skills and abilities changes very often.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

46. I still do not know what my vocational interests are.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

47. I still do not understand myself enough to know which career is best for me.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

48. I am concerned that important people in my life will not support my decisions if they

   do not approve of them.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

49. Important people in my life are often displeased with the things that interest me.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

50. My family tends to interfere with my affairs in ways that limit or frustrate me.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

51. I need approval for my choices from important people in my life.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

52. I would not like to commit to a choice that is not approved by my family

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

53. What other people think about the decisions I make is important to me.

   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

The following questions describe work activities that some people do at their jobs. Read each question carefully and decide whether or not you would like to do the activity.

TRY NOT TO THINK ABOUT:

(1) whether you have enough education or training to perform the activity, or

(2) how much money you would make performing the activity.

SIMPLY THINK ABOUT WHETHER YOU WOULD "LIKE" OR "DISLIKE"

PERFORMING THE WORK ACTIVITY.

For each item:

- mark "L" if you think you would like the work activity

-mark "D" if you think you would dislike the work activity

-mark "?" if you are unsure whether you would like the work activity

1. Build kitchen cabinets	L	?	D
2. Teach an individual an exercise routine	L	?	D
3. Buy and sell stocks and bonds	L	?	D
4. Manage a retail store	L	?	D
5. Develop a spreadsheet using computer software	L	?	D
6. Proofread records or forms	L	?	D
7. Lay brick or tile	L	?	D
8. Help people with personal or emotional problems	L	?	D
9. Operate a beauty salon or barber shop	L	?	D
10. Repair household appliances	L	?	D
11. Develop a new medicine	L	?	D
12. Write books or plays	L	?	D
13. Play a musical instrument	L	?	D

14. Load computer software into a large computer network	L	?	D
15. Study ways to reduce water pollution	L	?	D
16. Give career guidance to people	L	?	D
17. Raise fish in a fish hatchery	L	?	D
18. Compose or arrange music	L	?	D
19. Operate a calculator	L	?	D
20. Assemble electronic parts	L	?	D
21. Drive a truck to deliver packages to offices and homes	L	?	D
22. Perform rehabilitation therapy	L	?	D
23. Do volunteer work at a non-profit organization	L	?	D
24. Conduct chemical experiments	L	?	D
25. Draw pictures	L	?	D
26. Teach children how to play sports	L	?	D
27. Create special effects for movies	L	?	D
28. Teach sign language to people with hearing disabilities	L	?	D
29. Manage a department within a large company	L	?	D
30. Keep shipping and receiving records	L	?	D
31. Study the movement of planets	L	?	D
32. Help conduct a group therapy session	L	?	D
33. Calculate the wages of employees	L	?	D
34. Examine blood samples using a microscope	L	?	D
35. Investigate the cause of a fire	L	?	D
36. Paint sets for plays	L	?	D
37. Start your own business	L	?	D
38. Negotiate business contracts	L	?	D
39. Inventory supplies using a hand-held computer	L	?	D
40. Represent a client in a lawsuit	L	?	D

41. Develop a way to better predict the weather	L	?	D
42. Work in a biology lab	L	?	D
43. Write scripts for movies or television shows	L	?	D
44. Market a new line of clothing	L	?	D
45. Test the quality of parts before shipment	L	?	D
46. Invent a replacement for sugar	L	?	D
47. Perform jazz or tap dance	L	?	D
48. Take care of children at a day-care center	L	?	D
49. Sell merchandise at a department store	L	?	D
50. Record rent payments	L	?	D
51. Repair and install locks	L	?	D
52. Sing in a band	L	?	D
53. Manage a clothing store	L	?	D
54. Keep inventory records	L	?	D
55. Set up and operate machines to make products	L	?	D
56. Put out forest fires	L	?	D
57. Do laboratory tests to identify diseases	L	?	D
58. Edit movies	L	?	D
59. Teach a high-school class	L	?	D
60. Stamp, sort, and distribute mail for an organization	L	?	D