

CHARACTER STRENGTHS, SELF-SCHEMAS, AND PSYCHOLOGICAL
WELL BEING: A MULTI-METHOD APPROACH

APPROVED BY SUPERVISORY COMMITTEE

Dean Bert Moore, PhD, Chair

Marion Underwood, PhD

Monty Evans, PhD

Gerald Casenave, PhD

Randall Schumacker, PhD

DEDICATION

For Grandpa Sol, who lavished me with love before I knew what it meant and
who modeled for me a life of tender kindness.

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CHARACTER STRENGTHS, SELF-SCHEMAS, AND PSYCHOLOGICAL
WELL BEING: A MULTI-METHOD APPROACH

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JASON SCOTT BERMAN

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Jason Scott Berman, M.A.

The University of Texas Southwestern Medical Center at Dallas, 2007

Bert Moore, Ph.D

Abstract: Positive Psychology is a recent movement within academic psychology that broadens the scope of psychological science to include the correlates and causes of human flourishing as credible topics for investigation. One major area of inquiry in positive psychology is the study of character strengths and virtues. Character strengths are virtuous, nomothetic traits, such as kindness, gratitude, vitality and hope some of which each person individually possesses much like a written signature leading to the name, "signature strengths." The current research investigated ways that such signature strengths were integrated into an individual's overall self-concept through self-schemas. Self-schemas are personally important, domain specific, self-definitions that organize and guide the processing of self-related information from the individual's social experience. The content of self-schemas (e.g. "I am independent" "I am kind" "I am lovable") varies widely among individuals (because past experiences vary) and therefore people have divergent views of self chronically accessible or salient to guide current life experience. The primary research question of this study was whether individuals for whom signature character strengths were a salient or highly accessible part of their self-schemas would

experience increased psychological well-being and decreased depressive symptoms. Self-schemas are assessed through both self-report and non-self-report measures (e.g. reaction time, free recall, recognition, likert self-description scales) which are helpful for character strengths research that has typically relied on self-report data. Psychological well-being, an outcome variable in the current study, is a concept similar to life satisfaction. Reaction time, free recall, recognition memory and self-report measures were used to assess the salience of strengths within participant self-schemas. Participants were 298 university students. Results largely indicated that individuals with character strengths highly accessible within their self-schemas predicted increased well-being and decreased depressive symptoms with self-report methods as the most consistent predictors. These results demonstrated that character strengths operate at the level of self-referential processing and that signature strengths, highly salient within self-schemas, meaningfully related to increased emotional well-being and global happiness. Ideas are discussed of ways to open clinical psychology's traditional focus on the pathological self to include a self rich in character strengths and virtues.

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Prior Publications

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When laws and ethics collide: What should psychologists do?
Professional Psychology: Research and Practice.
- Koren, D, Norman D., Cohen, A, Berman, J., Klein, E. (2005). Increased PTSD
Risk With Combat-Related Injury: A Matched Comparison Study of
Injured and Uninjured Soldiers Experiencing the Same Combat Events
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CHAPTER ONE

Introduction

Individuals who powerfully display outstanding moral traits—whether the self-sacrificing courage of a Holocaust rescuer, the unyielding perseverance of a coalition soldier in Iraq, or the anonymous generosity of an American tsunami relief donor for Southeast Asia—elevate our imaginations and inspire our highest emotions about people with excellence of character. With the twin goals of easing suffering and promoting human welfare, the field of psychology has recently turned to these and other positive personality traits as valuable topics for investigation (Seligman & Csikszentmihalyi, 2000).

Researchers have classified twenty-four positive traits as character strengths in the model of *DSM* nosology (Peterson & Seligman, 2004). Proponents of the new psychological focus on character strengths have argued that each person possesses some “signature strengths”—like social intelligence or honesty—developed to varying degrees within the crucible of their own personality akin to the way an autograph marks individuality and that cultivating these strengths will lead to increased psychological well-being (Seligman, 2002, p. 134).

The core message of signature strengths asserts that anyone who identifies, cultivates and deploys their unique expression of strengths in all aspects of life—career, relationships, adverse circumstances, response to suffering—will experience increased resilience, flexibility and authentic

happiness (Seligman, 2002; Aristotle, 1988; Peterson & Seligman, 2004; Diener & Seligman, 2002). The primary aim of the present study was to contribute to research data on the intrapersonal properties of character strengths by investigating whether individuals for whom signature strengths were highly accessible or salient within their self-schemas—assessed by multiple methods from cognitive psychology—experienced decreased depressive symptoms and increased psychological well-being. Happiness or well-being has been previously linked with multiple positive outcomes including strong relationships (Russell & Wells, 1994), career success (Staw, Sutton & Peled, 1994), effective coping (Aspinwall, 1988), physical health (Kubzansky, Sparrow, Vokonas, & Kawachi, 2001) and overall mental health and flourishing (Keyes, 2007).

Previous studies have found strong correlations between rating oneself as high on character strengths (e.g. vitality, kindness, love, hope) and high psychological well-being and even though most of these studies exhibited enormous samples (e.g. $N=100,000+$) and high statistical power most of the research has relied solely on self-report assessment measures (Otake, Shimai & Tanaka-Matsumi, 2006; Park, Peterson & Seligman, 2004). Using a single source of assessment, however, has left such results vulnerable to an interpretation of statistical artifact (e.g. shared method variance, Salzer, 1988).

Self-schema, a concept and related methods borrowed from cognitive psychology, provided the necessary research approach—assessments

outside of self-report sources alone—to study the relationship between character strengths as salient within individual self-concepts and psychological well-being. Self-schemas were defined as “cognitive generalizations about the self [based on past experience] that organize and guide the processing of self-related information” (Markus, 1977. p.64).

The content of self-schemas (e.g. “I am independent” “I am kind” “I am inadequate” “I have a strength in leadership” “I am strong in humor”) varies widely among individuals (partially because past experiences vary) and therefore people have divergent views of self chronically accessible or salient to guide them through current life experiences (Markus, 1977; Greenberg & Beck, 1989).

Depressed individuals, for example, were much more likely to have negative traits (e.g. inadequate, deficient, weak, gloomy, hopeless, disturbed) salient within their self-schemas (Greenberg & Beck, 1989). A recent study found a negative self-schema (i.e. individuals whose self-schemas contained highly accessible negative content) to be a significant risk factor for the onset of depression in women (Evans, Heron, et. al., 2005). The content of self-schemas or “chronically accessible information” was also robustly predictive of life satisfaction or psychological well-being (Schimmack & Oishi, 2005, p. 404).

The salient or highly accessible content of an individual’s self-schemas—which focused on signature strengths in the present study—significantly relates to that person’s experience of depression, well-being or other

state according to previous research (Markus, 1977; Evans, Heron, et. al., 2005). In all, findings from this literature suggested that individuals differentially access parts of their selves (e.g. being independent, overweight, humorous, depressed) throughout daily life and that the accessibility of such characteristics appears to mediate information processes such as memory about self-related topics (Markus, 1977).

In the present study, it was proposed that because chronically accessible or salient negative traits within self-schemas relates to depression, then positive traits, namely signature strengths, highly accessible within individual self-schemas should relate meaningfully to psychological well-being and positive adjustment (Greenberg & Beck, 1989; Evans, Heron, et. al., 2005). The self-schema literature provided useful methods for assessing character strengths using both self-report and non-self-report methods.

Measures such as reaction time, incidental free recall and recognition memory all assessed participant self-schemas outside of the typical self-report measures of the new strengths research (Park, Peterson & Seligman, 2006; Park, Peterson & Seligman, 2004). That is, these non-self-report measures helped to evaluate the accessibility or salience of character strengths within individual self-schemas by measuring reaction time to self-referential stimuli (e.g. “does X trait basically describe you?”) followed by surprise free recall and recognition memory tests about self-related personality dimensions (Markus,

1977). The faster that individuals responded to self-endorse strengths (compared to their endorsement of non-strengths stimuli) and the more strength words they recalled and recognized, the more they were considered to have strengths highly accessible within their self-schemas following previous conventions (Markus, 1977; Rogers, Rogers, & Kuiper, 1979).

A conceptual distinction is important here. A trait that is highly accessible or salient within a person does not necessarily indicate that the person possesses the trait objectively. The current study, therefore, examined the salience of the strengths within individual self-schemas but did not provide evidence about whether or not individuals possessed the strengths in real life. Nevertheless, individuals with certain traits or characteristics (e.g. being athletic) as highly salient within their self-schemas have been linked with future behaviors in those domains including assertiveness (Bruch, Kaflowitz & Berger, 1998), sexual behavior (Anderson, Cyranowski, Espindle, 1999), dieting (Kendzierski, 1988; 2007), exercise (Estabrooks & Courneya, 1997), eating disorders (Stein, 1996), and smoking (Shadel & Cervone, 2006).

The architects of the recent character strengths classification described twenty-four strengths as emanating from six categories of virtues represented across cultures (e.g. wisdom, courage, justice, humanity, temperance and transcendent strengths, Peterson & Seligman, 2004; Dahlsgaard, Peterson, & Seligman, 2005; Biswas-Diener, 2006). [See Appendix A]. For example, the

humanity category consists of the character strengths love, kindness and social intelligence. Previous research has suggested that the happier a person feels, the more loving and kind behaviors he or she exhibits (Diener & Seligman, 2002).

The transcendent virtue category consists of the strengths, appreciation of beauty, gratitude, hope, humor and spirituality and they were similarly a focus of interest in the present study (Peterson & Seligman, 2004). Hypotheses three and four contained the prediction that having humanity and transcendent strengths—in particular—as salient within self-schemas would predict increases in emotional well-being and diminished depressive experiences.

The present study also investigated previously established links between the specific strengths of gratitude, vitality, hope, curiosity, and love and overall well-being (Shimai, Otake & Park, et. al., 2006; Park & Peterson, 2006; Park, Peterson & Seligman, 2004). Researchers have informally categorized these characteristics as *key strengths* because of their robust associations with life satisfaction (Park, Peterson & Seligman, 2004; Shimai, Otake & Park, et. al., 2006). A study of parental descriptions of young children's strengths also found a correlation among vitality, hope, love and happiness (Park & Peterson, 2006). Therefore, hypotheses five and six delineated below consist of the predictions that having these key strengths *highly or chronically accessible* within self-schemas would be associated with increased psychological well-being and reduced depressive symptoms.

In the current study, it was predicted that individuals with signature strengths as *salient* or *highly accessible* content within their self-schemas would predict increased psychological well-being—an issue directly relevant to Positive Psychology. The following section is a review of the psychological literature pertaining to character strengths, psychological well-being and self-schemas ending in specific hypotheses. An analytic strategy for assessing those hypotheses is presented in the results section.

CHAPTER TWO

Review of the Literature

For centuries, Western and Eastern societies have viewed strengths of character and virtues (e.g. courage, kindness, gratitude, curiosity, hope)—cultivated authentically and uniquely within individual personalities like signatures—as both the highest expression of human excellence and the most direct path to a thriving existence (Aristotle, 1988). Since the time of ancient philosophers, thousands of writings have explored the relationship between these praiseworthy qualities and experiences of human flourishing (Peterson & Seligman, 2004; Dahlsgaard, Peterson, & Seligman, 2005).

Over the past century, psychologists have developed sophisticated knowledge about human behavior by developing a clinical science around assuaging human suffering which understandably pushed character strengths outside of the realm of psychological investigation (Seligman & Csikszentmihalyi, 2000). Nevertheless, some psychologists have recently kindled a scientific interest in the correlates and conditions of personal and national thriving—coalescing a movement called Positive Psychology (Seligman & Csikszentmihalyi, 2000; Keyes, 2007). The expertise that psychologists bring to the study of character strengths involves a recent proposition that each person contains within themselves “signature strengths”—their phenotype of character

strengths—similar to the way a written signature designates personal distinctiveness (Seligman, 2002, p. 134).

Self-schemas, another construct in the current study, were described as cognitive mechanisms about the self that have developed within each person based on past experiences and that mediate and guide the processing of self-related information in the present (Markus, 1977). Previous research has demonstrated that individuals with clinical depression exhibited profoundly dysphoric content within their self-schemas (Greenberg & Beck, 1989; Evans, Heron et. al., 2005). If negative schema content related strongly to depression, then positive content—character strengths, for example—may correlate meaningfully with emotional well-being. Therefore, the primary goal of the present study was to investigate whether individuals for whom character strengths played a highly visible role (i.e. were salient) within their self-schema content would experience increased psychological well-being analogous to depressed people for whom negative traits populated their accessible self-schema content (e.g. hopeless, defeated, inadequate, Greenberg & Beck, 1989).

Character strengths—based on a recent classification of positive personality traits—constituted an important instantiation of Positive Psychology research (Peterson & Seligman, 2004). This classification was a proposed taxonomy of positive traits similar to the *DSM-IV* in structure and presentation (e.g. inclusion/exclusion criteria for what defines a strength, empirically based,

scientifically descriptive, Peterson & Seligman, 2004). Following the *DSM-IV-TR* approach, researchers generated ten criteria they considered indicative of a character strength (Peterson & Seligman, 2004). These researchers noted that their criteria did not represent the final list of definitions, “but rather pertinent features that, taken together, capture a ‘family resemblance’” of what constitutes a character strength (cf. Wittgenstein, 1953; Peterson and Seligman, 2004, p.17).

An attribute was a character strength according to this framework if it met most or all of the following criteria: **Criterion 1, Fulfilling and Ubiquitous:** Character strengths contribute to one’s experience of thriving because they are characteristics with which an individual typically behaves in accord with his or her best qualities. Additionally, the proposed character strengths are ubiquitously recognized and valued in cultures across the world and throughout history (Peterson & Seligman, 2004; Park, Peterson & Seligman, 2004; Dahlsgaard, Peterson, & Seligman, 2005; Biswas-Diener, 2006).

Criterion 2, Morally Valued: If individuals act consistently with their strengths (e.g. generously, lovingly, curiously), then their social environment will likely value and praise those characteristics inherently rather than for the positive outcomes that can be associated with those strengths. This criteria suggests that character strengths are esteemed in society because of their inherent worth rather than being useful for personal gain.

Criterion 3, Does not diminish other people in the vicinity:

When a person exhibits a strength, researchers propose that people in close proximity feel less self-denigrated (e.g. “I feel inferior to that person”) compared to observing someone who exhibits high talent (e.g. brilliant scientist, musical genius). This criterion requires further investigation to compare social perceptions of strengths versus talents.

Criterion 4, Non-felicitous opposite: The ability to articulate a clear, negative antonym for a positive trait is considered evidence for considering it a character strengths as opposed to being a composite of several characteristics. For example, meanness is an obvious negative antonym of kindness suggesting that kindness is a unitary characteristic, not a composite of multiple characteristics, according to this criteria.

Criterion 5, Traitlike and Measurable: A strength is theoretically similar to a trait which has some degree of stability across time and situations. Also, strengths, like traits, are amenable to psychological measurement which is critical for a science of Positive Psychology (Park, Peterson & Seligman, 2004).

Criterion 6, Distinctiveness: According to this criteria, a characteristic counted as a strength only if the terms cannot be broken down conceptually into more parsimonious sub-parts. For example, patience was not viewed as a fundamental strength in this classification because the term arguably

consists of self-regulation, persistence, and open-mindedness—a cluster of more basic strengths (Peterson & Seligman, 2004).

Criterion 7, Consensual Paragons: Strengths exist in stories, ideas, and creeds in the society about individuals who exhibit positive traits in a robust manner. Such individuals can include real people (e.g. Mother Theresa for her kindness; Winston Churchill and his leadership) or fictional figures passed orally from generation to generation in moral stories (e.g. Robin Hood and justice). Individuals might also find these paragons in those who brilliantly display a strength in one's social setting.

Criterion 8, Prodigies: This criterion is a hypothesis about people who could exhibit moral genius on a given strength while being relatively normal on other traits. Researchers posited the empirical question of whether certain children are precocious *in strengths* such as social intelligence or gratitude independently of being a traditional prodigy in a talent like music or spelling (Peterson & Seligman, 2004).

Criterion 9, Selective Absence: Some people exhibit a complete absence of a particular strength. An obvious example of this criteria was the selective absence of kindness in Hitler and Stalin.

Criterion 10, Institutions and Rituals: Strengths are taken as traits for which the culture provides institutions and rituals to develop and to

sustain these characteristics. Examples include high school government to foster leadership and catechism class to cultivate spirituality.

Seligman and Peterson (2004) have assimilated previous versions of strength inventories into a nosology of six virtues that break down into twenty-four separate strengths. [See Appendix A]. The first virtue category in the classification is **wisdom and knowledge**, which consists of strengths related to learning and knowledge (i.e. creativity, curiosity, open-mindedness and love of learning). The second virtue category, **courage**, involves emotionally based strengths related to overcoming internal and external obstacles in order to accomplish a goal (i.e. bravery, persistence, honesty and vitality). **Justice** strengths, citizenship, leadership and fairness, are characteristics with a common theme of facilitating healthy communities and groups. The **temperance** virtue category consists of strengths related to the restraint of maladaptive behaviors (i.e. forgiveness, humility, prudence and self-regulation).

The final two categories are **humanity** and **transcendence** strengths. The humanity domain describes character strengths related to positive interpersonal relationships (i.e. love, kindness and social intelligence, Peterson & Seligman, 2004). The transcendence strengths are traits with a theme of building connections to the world beyond oneself as a path to meaning (i.e. appreciation of beauty, gratitude, hope, humor, spirituality). The humanity and transcendent strengths categories received special focus in the present study. Whereas the first

two hypotheses involved the entire set of twenty-four character strengths, the second two hypotheses predicted that individuals self-schematic with humanity and transcendent strengths in particular, would exhibit increases in psychological well-being (Corsano, Majorano & Champretavy, 2006; Frazier, Mintz & Mobley, 2005).

The strengths researchers originally organized the classification around these five virtue categories (i.e. wisdom, courage, humanity, justice, temperance and transcendence) because of their ubiquitous presence across cultures and history (Peterson & Seligman, 2004; Dahlsgaard, Peterson, & Seligman, 2005; Biswas-Diener, 2006). Nevertheless, they subsequently found five factors within the set of twenty-four traits: cognitive strengths (e.g. creativity, curiosity, love of learning,); conative strengths (e.g. open-mindedness, perseverance, prudence, and self-regulation); emotional strengths (e.g. humor, vitality, love, and hope); interpersonal strengths (e.g. leadership, forgiveness, kindness and teamwork, social intelligence, love, humility) and transcendence strengths (e.g. awe, gratitude, spirituality, humor).

Strengths and Psychological Well-Being

Individuals who consistently implement their unique phenotype of character strengths in activities of daily living—vocation, relationships, stress, hardship—will experience increases in lasting happiness or well-being, argued a

recent proponent of character strengths research (Seligman, 2002). Two essential propositions emanate from this assertion and were critically relevant to the present study of character strengths and psychological well-being: First, each individual possesses character strengths that have both nomothetic and idiographic qualities. Character strengths are not disembodied ideals but rather they emerge from the unique genotypic and phenotypic personality constellation of each person analogous to the personal contours of a written signature—hence, each person has “signature strengths” (Seligman, 2002, p. 134).

Mere possession of signature strengths, however, does not automatically produce authentic well-being no more than having a high intelligence inexorably leads to a medical degree. Rather, individuals, through consistent acts of will which virtue ethicists say become easier with practice, must identify, gradually develop, and meaningfully deploy their signature strengths regularly and deeply, forging the path to sustained happiness and psychological flourishing (Seligman, 2002; Fowers, 2005; Hursthouse, 1999; Keyes, 2007). This argument for the psychological connection between signature strengths and well-being provided the contextual purpose for the present study: to understand and advance the strength-centered human self.

At least two approaches to the study of well-being have developed in the psychological literature: a) subjective well-being and b) psychological well-being (Diener, et. al, 1999; Ryff & Keyes, 1995; Ryff, Shmotkin & Keyes, 2002;

Keyes, 2007). Some researchers have viewed these two streams as having different emphases rather than being mutually exclusive (Ryff, Shmotkin & Keyes, 2002). The subjective well-being tradition described psychological phenomena pertaining to both affective and cognitive attributions related to the experience of global life satisfaction (Diener, Suh et. al., 1999). Moreover, subjective well-being meant having a healthy combination of positive and negative affect coupled with high life satisfaction (Ryff, Shmotkin & Keyes, 2002). Many studies have focused on the relationship between positive and negative emotions in subjective well-being and considerable evidence points to the independence of the two constructs (Cacioppo et. al., 1999; Diener et. al., 1995).

Whereas the subjective well-being approach described affect and life satisfaction as constituents of well-being, the psychological well-being model pointed more to conceptions of human development and existential sources of meaning (Ryff, 1989). According to this model, psychological well-being occurs when individuals possess some of the following six characteristics: 1) significant, nurturing relationships; 2) high self-efficacy and autonomy, 3) accepting of imperfections about self (i.e. self-acceptance); 4) environmental mastery; 5) personal growth; and 6) meaningful existential purpose (Keyes, Shmotkin & Ryff, 2002). This operational definition of well-being incorporated previous ideas from psychology (e.g. Maslow's hierarchy; Jung's concept of human individuation and

Allport's idea of maturity, Ryff, 1995). Although previous psychological ideas of wellness existed, such theories made little impact on empirical research because they generally lacked psychometrically sound measures and clearly delineated operational definitions (Ryff, 1995). A recent articulation of mental health at the national level included the six constituents of well-being listed above as essential dimensions of flourishing (Keyes, 2007). The present study, therefore, used Ryff's psychological well-being model and assessment instrument, the Scales of Psychological Well-being.

Numerous studies have established a connection between psychological well-being and positive life outcomes. These studies include links between happiness and positive relationships (Russell & Wells, 1994), vocational success (Staw, Sutton & Peled, 1994), healthy coping (Aspinwall, 1988), physical health (Kubzansky, Sparrow, Vokonas, & Kawachi, 2001) and flourishing (Keyes, 2007).

Multiple studies have directly examined the relationship between character strengths and well-being defined in terms of life satisfaction (Isaacowitz, Valliant & Seligman, 2003; Park, Peterson & Seligman, 2004). The first of these studies found that in a large sample of young, middle age and older adults, increased levels of various character strengths correlated strongly and positively with life satisfaction (Otake, Shimai, et. al., 2006; Isaacowitz, Valliant & Seligman, 2003). Interestingly, higher levels of the perspective and kindness

strengths correlated with life satisfaction in the younger and older samples but no correlation was found between these character strengths and life satisfaction for the middle age sample (Isaacowitz, Valliant & Seligman, 2003). In the key strength study presented above, humility and the intellectual strengths (i.e. appreciation of beauty, creativity, open-mindedness) were only weakly correlated with life satisfaction among the more than five-thousand participants who took the measures through internet administrations (Park, Peterson & Seligman, 2004).

An important finding from character strength research was a group of positive characteristics considered key strengths because of their ostensibly robust relationship with life satisfaction in an enormous sample of adults: *curiosity, vitality, love, gratitude and hope* (N= over 100,000, Shimai, Otake & Park, 2006; Park, Peterson & Seligman, 2004, See Appendix BB). A recent survey of over five-thousand adults showed that these strengths, controlling for age, gender and US citizenship, exhibited strong correlations with overall well-being (Park, Peterson & Seligman, 2004). Such correlations were not found with the other twenty-one strengths in the classification presented above. Researchers hypothesized that these characteristics might form a direct pathway to conditions of human happiness (e.g. positive relationships, self-worth, personal meaning) whether or not an individual possessed these naturally (i.e. as signature strengths, Park, Peterson & Seligman, 2006; Park, Peterson & Seligman, 2004). The present study tested the role of the key strengths in psychological well-being by

examining their presence *in particular* as salient within participant self-schemas (i.e. hypotheses five and six presented below).

Previous research demonstrated that negative content within individual self-schemas was a risk factor for depression (Greenberg & Beck, 1989; Evans, Heron et. al., 2005). In the presented study, the role of highly accessible *positive content*—signature character strengths—within individual self-schemas as a predictor of psychological well-being was investigated.

Self-report instruments as the sole measure of character strengths

Despite the evidence for a significant relationship between character strengths and well-being, the methodologies of many such studies have exhibited at least one deficiency: sole reliance on self-report assessment, which raises two methodological issues. First, self-report measures are susceptible to bias from participants who have generally limited insight or who feel compelled to provide answers for external reasons only (e.g. social desirability or demand characteristics, Teige et. al., 2004). The second problem with using self-report as the only research method is the increased probability of shared method variance among the findings of those studies (Salzer, 1998). Shared method variance occurs when researchers find a correlation or causal chain between psychological constructs only because the researcher used one type of assessment method or data from a single source (Salzer, 1998).

For example, a researcher hypothetically wants to investigate the relationship between student satisfaction with a counseling center therapist and the course of that student's depressive symptoms. The researcher might give each depressed student in the study self-report instruments designed to measure therapist satisfaction and depressive symptoms. A possible finding is that students who reported a more positive therapeutic experience also experienced fewer symptoms of depression after the therapy. If a respondent is in a particularly good mood on the day of the study (what Salzer calls the thank-you-very-much factor) and he or she feels appreciative of the services rendered, then the participant could easily rate both the services and his or her clinical status positively (1988, p. 12). In this scenario, the relationship between positive therapeutic experience and reduced depressive symptoms could have been merely the result of the student's mood rather than being a genuine connection between the constructs tested. This inability to assess true relationships among variables is often a result of shared method variance and can easily occur in studies that rely only on self-report methods.

Although using self-report measures alone in research creates some problems, self-report as one of the multiple methods of assessment has advantages. The first advantage of self-report is that researchers can obtain data about the inner experience of research participants. Only observing participants or taking physiological measures leaves researchers without the critically important

data of each person's perspective on his or her own psychological problems or successes. Another advantage of self-report methods is that psychometrically sound self-report measures exist in the psychological literature (e.g. Minnesota Multiphasic Personality Inventory-II; Personality Assessment Inventory; VIA Inventory of Strengths) that allow for reliable and valid measurements of what individuals report about themselves. Because using multiple methods produces comprehensive assessment of the dimensions being investigated, the current study used reaction time, free recall and recognition methods from the self-schema literature *in addition* to self-report measures all of which are discussed in the next section.

Self-Schema Methods and Character Strengths

Self-schema, a framework in which researchers have studied the self empirically, is a potentially useful concept for elaborating research in character strengths and well-being (Markus, 1977). Researchers have found that self-schemas affect the “filtering, encoding, processing, interpretation, storage and retrieval of information” (Dozois & Dobson, 2003, p. 934). Further, self-schemas are described as mental networks one possesses about his or herself, developed from the individuals interpersonal history, that directly influence the processing of pertinent self-related data in the person's environment (Markus, 1977). Simply, self-schemas consist of thoughts resulting from an individuals life experiences

that lead to enduring attributions about oneself (e.g. “I am independent”; “I am a generous person”, “I have the signature strength of social intelligence,” Markus, 1977).

Investigators of self-schemas rejected previous notions of a unified and universal self-concept in favor of the idea that individual differences exist in the ingredients that make up any given self-concept (Baumeister, 2006). For instance, one individual might have independence within her self-schemas, another might have dependence and a third person could have self-schema content unrelated to the independence-dependence continuum. Data have suggested that not everyone has the same content within their self-schemas (Baumeister, 2006). This feature of individual differences inherent in the self-schemas notion was useful for the present study of character strengths and well-being because research participants were placed along a continuous scale ranging from high salience or accessibility of character strengths within self-schemas to low salience.

Another reason self-schema research was valuable for the current investigation was the non-self-report, information processing methods that derive from this literature: reaction time, incidental free recall and recognition memory (Markus, 1977). The first method, reaction time, derives from a rich source of empirical investigations. Evidence has indicated that individuals react faster to traits subsequently endorsed as self-descriptive compared to other traits which has been taken as evidence of increased accessibility of the self-described traits within

individual self-schemas (Markus, 1977; Derry & Kuiper, 1981; Rogers, Kuiper & Kirker, 1977). Reaction time researchers have developed sophisticated ways to use this method as an index of self-referent processes such as interpreting reaction times to target stimulus words (e.g. character strengths) in the context of responses to related stimuli as opposed to simply recording and interpreting raw reaction times (Fazio, 1990).

One study examined whether reaction times provided information about the reliability and validity of a given response (Neubauer & Malle, 1997). Early theories suggested that very fast and very long response times were examinee attempts to deceive the tester (Neubauer & Malle, 1997). To test the reliability of scores on an instrument, researchers compared instructions to answer rapidly—assessed by single item response times— with instructions having no time requirement and found more reliable responses in the timed instructions condition (Neubauer & Malle, 1997). Further, the researchers argued that individuals who responded faster on a consistent basis likely possessed an articulated self-schema for the characteristic of interest (Neubauer & Maller, 1997). The present study included speeded instructions for all tasks as an attempt to increase valid responding.

Incidental free recall, like reaction time, consisted of another non-self-report method helpful for the current strengths and well-being study. Self-schema studies have shown that participants incidentally recalled more traits

previously endorsed as self-descriptive compared to traits not endorsed as self-descriptive (Markus, 1977; Rogers, Kuiper & Kirker, 1977; Froming, Nasby & McManus, 1998). A study from clinical psychology used a free recall method to assess depressed and non-depressed participants and found evidence of negative self-schemas (e.g. bleak, dismal, guilty, helpless, and weary self-described adjectives) among depressed individuals compared to the positive self-schema content in non-depressed participants (e.g. amiable, curious and loyal, Dozois & Dobson, 2003; Derry & Kuiper, 1981).

Other research using free recall found that the number of words recalled correlated highly with the number of adjectives endorsed as descriptive in a trait-rating task (Dent & Teasdale, 1988; Greenberg & Beck, 1989). Other researchers who used free recall have argued, based on their findings, that increased incidental recall for some self-describing adjectives implied a better encoding of those adjectives, which lead to increased accessibility (Whisman & Delinski, 2002). Incidental recall was used in the present study as an another index of the accessibility of strengths within participant self-schemas.

Recognition memory was the third, relevant method that researchers have used to assess self-referential processing of psychological variables without relying solely on self-report measures (Yanhua & Yukai, 2006). Investigators examined self-schemas with content related to illness using a recognition memory task (Clemmey & Nicassio, 1997). These researchers found

that depressed individuals falsely recognized (i.e. endorsed a novel stimulus word as previously seen) more negative words than non-depressed individuals which was taken as evidence of increased accessibility to negative content within the self-schemas (Clemmey & Nicassio, 1997). One recognition memory theorist developed a mathematical formula, used in the present study, to calculate both recognition and false alarm rates on a continuous scale (Smith, 1995). [See Appendix U for a bivariate correlation matrix among self-schema and strength measures].

Methods for assessing self-schemas have also included self-report instruments. These instruments involved giving participants adjectives and asking them to state whether the word was self-descriptive. Using adjectives for self-description preceded the beginning of self-schema research (Potkay & Bem, 1973). However, the early self-schema researchers developed the innovation of asking participants about the *importance to self* of those adjectives and then called the individual who rated the adjective as self-descriptive *and* important as schematic on that trait (Markus, 1977).

Another advantage of the self-schema literature is the multiple links found between salient self-schema content and external behaviors in those domains. Researchers have demonstrated that salience within self-schemas related to behavioral outcomes in the following areas: assertiveness (Bruch, Kaffowitz & Berger, 1998), sexual behavior (Anderson, Cyranowski, Espindle, 1999), dieting

(Kendzierski, 1988; 2007), exercise (Estabrooks & Courneya, 1997), eating disorders (Stein, 1996), and smoking (Shadel & Cervone, 2006). The relationship between self-schemas and behaviors is important for assessing the connections between strengths within self-schemas and strength-consistent behaviors.

A limitation of the self-schema literature was that several studies have been unable to classify high percentages of their participants into relevant schematic categories (Bruch et. al., 1988). That is, participants considered unclassifiable according to self-schema assessment methods were excluded from the data analysis despite having completed the experiments. This problem in the self-schema literature was the reason that participants in the present study were placed along a continuum of strength-schema accessibility rather than as a dichotomous schematic or non-schematic designation. Self-schema measures—reaction time, free recall, recognition memory and self-report scales—offered a valuable, multi-method approach to conceive of and to assess the salience of character strengths within individual self-schemas in the present study.

Conclusion

Those who consistently implement their representation of that which is best within them—their signature strengths—in various domains of living (e.g. family, career, adversity) will experience increases in lasting happiness and existential meaning, said some positive psychologists (Seligman,

2002; Peterson & Seligman, 2004). Another researcher defined the concept and assessment of psychological well-being as deriving from previous notions of human development, Ryff, 1989). Multiple published studies have examined the relationship between well-being and character strengths but most of these studies remain susceptible to shared method variance effects due to their sole reliance on self-report methods (Otake, Shimai, 2006; Park, Peterson & Seligman, 2006; Shimai, Otake & Park, 2006; Park, Peterson & Seligman, 2004; Salzer, 1998). Given this problem, the current study examined the role of character strengths as mediated within individual self-schemas in predicting psychological well-being using the multiple methods of self-schema research as additional tools for indexing strengths. The super-ordinate question of this study was whether or not individuals who showed high accessibility to their own character strengths within their self-schema content would exhibit fewer depressive symptoms and high levels of psychological well-being.

Hypotheses

- 1) Participants with high accessibility to character strengths within their self-schemas will exhibit high levels of overall psychological well-being.
- 2) Participants with high accessibility to character strengths within their self-schemas will exhibit few symptoms of depression.

- 3) Participants for whom the humanity strengths (i.e. love, kindness and social intelligence) and transcendence strengths (i.e. appreciation of beauty, gratitude, hope, humor, spirituality) are salient (i.e. highly accessible) within their self-schemas compared to their other character strengths will exhibit high levels of psychological well-being.
- 4) Participants for whom the humanity strengths and transcendence strengths are salient (i.e. highly accessible) within their self-schemas compared to their other character strengths will exhibit few symptoms of depression.
- 5) Participants for whom the key strengths (i.e. curiosity, vitality, love, gratitude, & hope) are salient (i.e. highly accessible) within their self-schemas will exhibit high levels of psychological well-being.
- 6) Participants for whom the key strengths are salient (i.e. highly accessible) within their self-schemas will exhibit few symptoms of depression.

CHAPTER THREE

Methodology

Participants

Participants were 298 college students from the University of Texas at Dallas (210 women, 88 men; 52% ages 18-22-range, ages 18-85) who completed this study for experimental credit in fulfillment of a UTD psychology course requirement. The gender imbalance in this sample was likely representative of women being the majority of psychology majors at UTD. Participants arrived to the experimental lab for one session only.

A preliminary power analysis determined the appropriate number of participants for adequate statistical power (Rossi, 1990; Cohen, 1988). The power analysis revealed that a sample of 242 would provide adequate statistical power based on a 5% margin of error; 95% confidence level and 15,000 in the UTD population (<http://www.raosoft.com/samplesize.html>). Another power analysis showed that with a 95% confidence level, 6% confidence interval and 15,000 in sample population, an adequate sample would be 262 participants (<http://www.surveysystem.com/sscalc.htm>).

Design

As presented above, several researchers have developed various measures to assess the content and information processing qualities of self-

schemas (Markus, 1977; Rogers, Kuiper & Kirker, 1977; Derry & Kuiper, 1981; Clemmey & Nicassio, 1997; Dozois & Dobson, 2003). Three non-self report measures were used in the current study to assess the accessibility of character strengths in self-schemas: response time, incidental free recall, recognition memory in addition to two self-report measures of self-schemas—a likert scale instrument of the self-description and importance to self of each character strength. Correlational analyses examined how each of these four self-schema measures related to each other and to three self-report psychological inventories (i.e. character strengths, psychological well-being and depression). [See Appendix U for Bivariate Correlational Analyses among all the study measures].

Measures and Procedures

Student participants were asked to sign-up for the present study on the UTD website according to departmental procedures. The student was then instructed to choose one of the times listed on the UTD research website (<https://utdallas.sona-systems.com>). At the listed time, the student came to a computer laboratory on the UTD campus to meet the experimenter.

Informed Consent

When the student arrived for his or her research appointment, the experimenter presented the informed consent information. [See Appendix B].

Students were told that the study was about attention and the ability to focus because such a title obscured the true purpose of the study and was meant to minimize demand characteristics. Next, participants were asked to respond to words on a computer and press a key stating whether or not the stimulus word was self-descriptive. They were also instructed that the second half of the study involved completing three surveys on computer. Upon completion, the primary investigator debriefed each of the participants on the actual content of the study (i.e. character strengths and self-schemas).

Response Time Measure and Procedure

The response time task was the first non-self report measure used in the present study to assess the salience of character strengths within the self-schemas of participants. [See Appendix U for correlations among measures]. Individuals who endorsed a character strength as self-descriptive at a significantly faster rate compared to their response time to similar characteristics were considered as having character strengths more accessible in their self-schemas. An individual, however, may objectively possess a character strength but not have the strength accessible within his or her self-schemas. This issue is most problematic in a study that relies exclusively on self-report measures. Requiring participants to make self-referent endorsements of traits in slightly more than

500ms might tap implicit processes outside the psychological province of meticulous self-reflection (Neubauer & Malle, 1997; Fazio, 1990).

Participants were presented with twenty-four character strengths, twenty-four strength antonyms (i.e. provided in Peterson & Seligman, 2004) and seventy-one control words (words of factual self-description and related words) one at a time on a computer screen and were asked to press the Y or N keys to indicate whether the trait was self-descriptive or not. The related terms used in this reaction time task were similar to the character strength target words in that they were also personality descriptors but slightly different in that they were not one of the character strength terms (e.g. neat, ambitious, aloof, apathetic) and were derived from a previous classification of more than one-hundred trait terms (Bochner & Van Zyl, 1985). Words for all response time trials are presented in Appendix E. Participants received the following instructions on a computer screen and subsequently the experimenter announced them:

In this task you will see a word or words in the center of the screen. Please press the Y key if the word or words more or less DESCRIBES YOU (Think Y for 'Yes like me'). Press the N key if the word(s) generally DOES NOT DESCRIBE YOU (Think N for 'NOT like me'). Do this task as QUICKLY and ACCURATELY as you can. When instructed, press enter to begin.

The order of words presented was randomized for each participant. Also, each participant was presented with practice trials prior to each task to ensure that he or she understood the procedure. Following previous research, each trial was

separated by three seconds (Fazio, 1989). The responses of the participants were recorded along with the reaction time for each response. All participant reaction times were recorded to the nearest millisecond on approximately thirty Dell desktop computers using SuperLab Pro Reaction Time Software (Cedrus Corp, San Pedro, CA). The participants viewed five practice words and then five experimental blocks of approximately twenty-four stimulus words or phrases. The first three and last four words served as non-experimental buffer words provided for the purpose of minimizing the influence of primacy and recency effects in the recall task (Ingram, et. al., 1994; Kelvin, Goodyer et. al., 1999). These buffer items were not included in the analyses. Participants were required to answer no faster than 500 milliseconds to protect against random responding. If the participant took longer than 3500 milliseconds to give a response, then he or she received an error message (i.e. "Response too slow please answer more quickly").

The words presented for this task consisted of stimulus target words (i.e. character strengths) and control/filler words (e.g. height, hair color, eye color, nationality, size of hometown, siblings, university, antonyms of character strengths and orthogonally related words). Reaction times to the control/filler terms served as a baseline measure of reaction time for each participant because they consisted of words similar in category to the strength terms (e.g. personality trait descriptors or factual self-descriptions) but were not themselves characteristics from the strengths classification.

Requiring fast responses to stimulus words in response time tasks increased the measure's reliability (Neubauer & Malle, 1997). One study found that faster responses to stimulus words in a reaction time task demonstrated higher reliability of response scores (Fekken & Jackson, 1988). In the same study, participants' fast responses showed a better test-retest reliability compared to the same participants slow responses (Fekken & Jackson, 1988). Another aspect of response time reliability concerned the need for a highly precise and consistent measurement instrument (Neubauer & Malle, 1997). The SuperLab pro reaction time software provided standardized and precise measurement for each stimulus presented which increased reliability.

All reaction times to target traits were transformed into z-scores for comparisons between baseline and target traits because raw test data was expectedly skewed and z-scores provided a standardized way to compare responses to target and control words (Fazio, 1990). The more reaction times for strength words were statistically above the mean (i.e. baseline measure) the more accessible were character strengths considered to be in that participant's self-schemas (Markus, 1977; Rogers, Kuiper & Kirker, 1977; Fazio, 1990; Dozois & Dobson, 2003).

Scoring and interpreting response times have some particular features according to the literature. More than one previous study left the outliers out of the calculation and transformed the scores into a z-score using a

standardization procedure (Siem, 1998; Tetrick, 1989; Popham & Holden, 1990). A consensus in the literature suggested recoding latencies less than 300ms as 300ms and latencies above 3500ms as 3500ms (Fazio, 1990). In order to reduce the influence of reaction time outliers, the present study followed previous scoring conventions by transforming reaction times into a reciprocal transformation (i.e. 1000 divided by latency) prior to inferential analyses (Bronstein, 2005). Cronbach's Alpha for reaction times to each of the twenty-four strengths in the current sample was .79. Descriptive statistics for the standardized reaction times to each of the twenty-four strengths in the current sample is presented in Appendix D.

Free Recall Measure and Procedure

The free recall task was the second of three non-self-report measures designed to assess the salience of character strengths within the self-schemas of participants. [See Appendix U for correlations among measures]. Free recall worked measured the number of target traits individuals remembered incidentally (i.e. without previous learning or preparation) after a first exposure. After a three minute delay following the reaction time task, participants were presented with a surprise free recall test in which they were asked to write down as many words as they could recall from the reaction time task within a three minute time period.

A ratio was calculated of the number of self-endorsed character strength words *recalled* divided by the number of character strengths self-endorsed in the reaction time task (Froming, Nasby & McManus, 1998). This ratio provided a comparable score for each participant of the prominence of character strengths self-endorsed in the reaction time task that were also recalled in the incidental free recall task. Participants who recalled significantly more of their self-endorsed strengths compared to other participants—as a continuous variable—were considered as having increased accessibility to the character strengths within their self-schemas (Froming, Nasby & McManus, 1998; Markus, 1977; Clemmey & Nicassio, 1997; Kuiper & Rodgers, 1979).

The free recall task used in the current study followed previous administrations of free recall tasks that have produced valid methods. Previous studies have found that recall of particular self-schema target words (e.g. illness/health words) were significantly related to other measures of that target self-schema (e.g. self-report endorsement of illness in one's self-concept, Clemmey & Nicassio, 1997; Rogers, Kuiper & Kirker, 1977). Descriptive statistics for free recall data in the current sample is provided in Appendix F.

Recognition Task Measure and Procedure

The recognition task was the third non-self-report measure (i.e. together with response time and free recall) designed to assess the salience of

character strengths within participant self-schemas. [See Appendix U for correlations among measures]. The recognition task measured which words the person recognized after first exposure in the reaction time task and, if available, which words the individual falsely recognizes (i.e. conceptually related but novel words the person endorses as previously seen). The recognition memory score in this study was calculated following a procedure in the recognition memory literature, called A'' , which takes into account mathematically both the number of strengths correctly recognized (hits) and the number of novel words falsely recognized (false alarms, Smith, 1995).

Participants were again asked to respond to a series of words presented on the computer. The list for this task consisted of forty-two words previously seen (e.g. strengths, antonyms, and orthogonally related words) and forty-two conceptually related but novel words. In this task, participants were given the following instructions on computer and they were spoken aloud by the experimenter:

Again, you will see words in the center of the screen. This time, however, Press Y if you HAVE previously seen the word in the LAST COMPUTER TASK Press N if you HAVE NOT previously seen the word in the LAST COMPUTER TASK. Please answer as QUICKLY and ACCURATELY as possible. When instructed, press enter to begin.

Words for all recognition trials, descriptive statistics and frequencies of scores on the A'' variable are presented in Appendices F and G, respectively.

Values in Action Inventory of Strengths (VIA-IS)

The instrument is a 240 item self-report measure of positive behavioral items designed to rank the examinee's character strengths as defined by *Character Strength and Virtues* (CSV) classification presented above. [See Appendix U for correlations among measures]. The instrument was designed for English speakers, takes about thirty minutes to complete and nearly 200,000 individuals have taken the measure through web-based administrations (Rashid & Seligman, 2004). The VIA instrument provided the following instructions to participants:

The following questionnaire contains questions about how people can behave. All of the questions reflect statements that many people would find desirable, but we want you to answer only in terms of **whether the statement describes what you are like**. Please be honest and accurate! Because the questionnaire is long, work quickly, and trust your first response.

Participants were given answer options on a five-point scale: “very much like me” (1), “like me” (2), “neutral” (3), “unlike me” (4) and “very much unlike me” (5).

Sample items of the VIA Strengths Inventory include:

- 13. I always admit when I am wrong.
- 15. I have no trouble eating healthy foods.
- 45. I do not like to stand out in a crowd.
- 116. In the last 24 hours, I have spent 30 minutes in prayer, meditation or contemplation.
- 157. I refuse to take credit for work I have not done.
- 164. I believe that each person has a purpose in life.
- 209. I often have a craving to experience great art, such as music, drama, or paintings.

Additionally, each of the twenty-four strengths represent a corresponding subscale on the VIA Inventory of Strengths (e.g. love subscale, leadership subscale).

Descriptive statistics of VIA Inventory items and reliability analyses for the current sample are provided in Appendices H and I, respectively.

The *CSV* classification delineates the psychometric properties of the VIA measure including that all scales exhibit alphas $> .70$ and shows test-retest correlations of $> .70$ (Peterson & Seligman, 2004). A measure of social desirability (i.e. Marlow-Crowne social desirability scale) compared to VIA items revealed that only two VIA scales were susceptible to the examinees desire to appear virtuous (i.e. prudence, $r=.44$ and spirituality, $r=.30$, Peterson & Seligman, 2004). Researchers have found few ethnic differences on the instrument except that African Americans have demonstrated elevated spirituality scores (Peterson & Seligman, 2004). Reliability analyses of the VIA Inventory of Strengths scores for the current sample revealed a range in Cronbach Alphas from .70 to .88. [See Appendix I].

The issue of factors within the classification relates to the independence of the strengths. In the current sample, most of the individual strengths were positively correlated with one another at the .05 level (i.e. 97% of bivariate correlations among the twenty-four strengths were positive). That is, only sixteen correlations among the twenty-four strengths (out of a total of 576) were not correlated as presented in Table 2.1.

Table 3.1

The Sixteen Non-Significant Bivariate Correlations among the Twenty-Four Strengths

humility and	appreciation of beauty (.08) brave (-.10) creative (-.03) curious (-.02) hope (.07) humor (.00) learner (.08) love (.04) social intelligence (.03) vitality (-.03)
bravery and	prudent (.09) forgiveness (.08)
spirituality and	creativity (.10) learner (.03)
appreciation of beauty and	perseverance (.03)
humor and	prudent (.02)

Since most of the strengths correlated with one another in the present sample, the overall mean was taken as a measure of each participants level of strengths on the VIA Inventory of Strengths.

Scales of Psychological Well-Being (Ryff, 1989)

This outcome self-report instrument has six subscales each consisting of fourteen items. First, the self-acceptance subscale involves embracing positive and

negative aspects of the self whereas the positive relations subscale includes having meaningful, nurturing relationships with others (Ryff, 1995). The person scoring high on the positive relations scale will likely have concern for the good of others. The third subscale, autonomy, describes a person who can withstand pressure from the environment in favor of acting according to positive internal dictates (Ryff, 1995). Environmental mastery is the ability to exert influence on the environment for healthy purposes. The purpose in life subscale assesses whether someone has internalized a sense of direction and goal-directed meaning for his or her life. The sixth subscale, personal growth, captures whether a person sees him or herself as continually developing and living in accordance with his or her potential (Ryff, 1995). A score of overall well-being, used as a primary outcome variable in the present study, derives from a mean of the six aforementioned subscales. Participants rate their answers along a six point likert scale: ‘strongly disagree’ (1), ‘disagree somewhat’ (2), ‘disagree slightly,’(3), ‘agree slightly,’(4), ‘agree somewhat’(5) and ‘strongly agree’(6). The higher a participant scored on any scale (after reverse scoring) the higher the individual rated on that scale. The instrument instructions were presented as follows:

The following set of questions deals with how you feel about yourself and your life. Please remember that there are no right or wrong answers.

Here are some sample items from the Ryff Scales of Psychological Well-Being:

- 6. When I look at the story of my life, I am pleased with how things have turned out.
- 17. I tend to focus on the present, because the future nearly always brings me problems.
- 25. It is important to me to be a good listener when close friends talk to me about their problems.
- 32. I tend to be influenced by people with strong opinions.

49. People would describe me as a giving person, willing to share my time with others.
 63. I get frustrated when trying to plan my daily activities because I never accomplish the things I set out to do.
 83. In the final analysis, I'm not so sure that my life adds up to much.

The Scales of Psychological Well-being have sound psychometric properties (Ryff, 1989; Ryff & Keyes, 1995). According to the literature, several subscale scores of this instrument have coefficients of internal consistency at or above .90: self-acceptance, .93, positive relations with others, .91, environmental mastery and purpose in life both with .90. The final two subscale scores, autonomy and personal growth are .86 and .87 respectively. The test-retest reliability coefficients of the subscale scores ranged from .81 to .88 (Ryff, 1989).

Reliability analyses were conducted for the Ryff Scales of Psychological Well-being scores in the current sample (N=298) and were found to be good. The Ryff positive relations subscale score showed a Cronbach's Alpha of .88 and the autonomy subscale score was .85. The reliability calculations for environmental mastery and personal growth subscale scores were both .85. The purpose in life subscale score showed a Cronbach's Alpha of .88 and the self-acceptance subscale score, .91. The entire instrument analyzed together—yielding a score of overall well-being—exhibited a reliability assessment of .96 (N of items=84). [See Appendices N-P for descriptive statistics, instrument items and further reliability details.]

A previous study established the validity of the scales of psychological well-being (Ryff, 1989). The instrument positively and significantly correlated with previous measures of psychological adjustment including life satisfaction ($r=.73$ with self-acceptance subscale), self-esteem ($r=.49$ with purpose in life subscale) and internal control ($r=.38$, Ryff, 1989).

Center for Epidemiological Studies – Depression Scale (Radloff, 1977)

The instrument is a twenty item self-report inventory about symptoms and negative emotions related to depression (Radloff, 1977). The instructions to participants for this measure were presented as follows:

Using the scale below, indicate the number which best describes how often you felt or behaved this way – DURING THE PAST WEEK.

- 0 = Rarely or none of the time (less than 1 day)
- 1 = Some or a little of the time (1-2 days)
- 2 = Occasionally or a moderate amount of time (3-4 days)
- 3 = Most or all of the time (5-7 days)

Items in the Center for Epidemiological Studies-Depression Scale (CES-D)

include:

- 3. I felt that I could not shake off the blues even with help from my family or friends.
- 6. I felt depressed.
- 9. I thought my life had been a failure.
- 12. I was happy.
- 15. People were unfriendly.
- 20. I could not get “going.”

Established norms have indicated that a score of sixteen or greater suggests a moderately depressed mood and a score of twenty-four or more points to

severe depression (Myers & Weissman, 1980). The CES-D has well established normative, reliability, and validity data. Specifically, inter-item reliability estimates for scale scores are greater than .80 and test-retest reliability coefficients for scale scores range from approximately .40 to .70 (Roberts, 1980; Mahard, 1988). This test has been used successfully as a sensitive depression screening device (e.g. discriminant validity for depression) and as a meaningful measure of mood change in clinical and research settings (Mosciki et al., 1989). The reliability analysis conducted for the CES-D instrument scores using data from the current sample (N=298) exhibited a Cronbach's Alpha of .90 [See Appendices Q-T for descriptive statistics, instrument items and further reliability details.]

Self-Description and Importance-to-Self Measures and Procedure

Two self-description tasks supplemented the three non-self-report measures of self-schemas (i.e. response time, free recall and recognition) by assessing the level to which individuals endorse traits as self-descriptive and personally important according to previous self-schema research methods (Markus, 1977). [See Appendix U for correlations among measures]. After completing the psychological inventories described above, each participant was given a computer list of five point likert scales ranging from 'Very much like me' (1) through 'Very much unlike me' (5) and 'Very important/unimportant to me' for each of the character strengths (Peterson & Seligman, 2004; Markus, 1977). The higher a

participant scored on these scales, the less they endorsed self-description or self-importance of the characteristic assessed. Participants who rated their character strengths as increasingly self-descriptive and important were considered to have increased accessibility to character strengths in their self-schemas.

Reliability analyses for the likert self-description scale scores used in the current study revealed a Cronbach's Alpha of .85 (N of Items=24). Similarly, the likert self-importance scale score exhibited a reliability rating of .89. [See Appendices J-M for descriptive statistics, instrument items and further reliability details for the schema scales.] [See Appendix U for bivariate correlation matrices between predictors and the two primary outcome variables, overall well-being and depressive symptoms.]

CHAPTER FOUR

Results

Analytic Strategy

This study used multiple regression models to investigate six major propositions. First, do individuals with signature character strengths salient (or accessible) within their self-schemas predict increased psychological well-being? Second, do people with strengths salient within their self-schema content predict decreased depressive symptoms? Third, do those with humanity and transcendent strengths accessible within their self-schemas predict increased well-being? Fourth, do individuals with humanity and transcendent strengths salient within their self-schemas predict decreased depressive symptoms? Fifth, do individuals with key strengths (i.e. curiosity, vitality, love, gratitude and hope) salient within their self-schema content predict increased well-being? Last, do individuals with key strengths highly accessible within their self-schemas predict decreased depressive symptoms?

High accessibility or salience of character strengths was statistically defined as the continuous variables of reaction time, free recall, recognition memory, self-report schema scales and overall score on the VIA Inventory of Strengths (i.e. higher scores on these indices was interpreted as increased accessibility). These variables were inserted as independent variables into regression models to examine their ability to account for the variability in

psychological well-being and depressive symptoms (according to Ryff and CES-D instruments). That is, well-being and depressive symptoms were modeled as a linear function of the accessibility of strengths within self-schemas (Markus, 1977; Clemmey & Nicassio, 1997; Fazio, 1990). Following the full analyses, significant coefficients only were subsequently inserted into regression analyses for the purpose of examining these parsimonious models. Table 4.8, presented in the Discussion section below, contains the results of these parsimonious models.

The data for regression models pertaining to all six research hypotheses presented below were assessed for continuity and linearity and met requisite assumptions required for parametric tests (Cone & Foster, 1993). First, the data were found to be normally distributed according to scatterplots checked for each variable. Second, the data were found to exhibit homogeneity of variances with appropriately scattered residual statistics for each regression equation. [See Appendix V for one of the scatterplots of residual statistics]. Additionally, tests showed minimal multicollinearity among predictor variables. Last, according to the research design, participant responses were independent from one another.

Each of the following six hypotheses shared **eleven predictor variables** consisting of **six** self-schema measures: X1, reaction time to self-endorsed strengths; X2, incidental free recall of strengths; X3, recognition of strengths; X4 & X5, likert schema self-description and self-importance of

strengths; X6, score on the VIA Inventory of Strengths, **three** demographic factors, X7, age; X8, gender and X9, marital status and **two** interaction terms, X10 and X11 (i.e. gender by age and schema self-description by schema self-importance). Demographic factors of gender and marital status were separated into categorical levels using dummy variables for the purpose of regression analyses (e.g. gender was divided into male (1) and female (0); marital status was divided into married (1) and never married(0)). [See Appendix W for further explanation of each predictor variable].

The first two hypotheses used all twenty-four character strengths as the content of the predictor variables (e.g. reaction time to endorse all of the strengths; likert self-description of all of the strengths) based on previous research (Park & Peterson, 2004). The second two hypotheses relied on the same self-schema and VIA measures except that they focused only on the eight strengths within the humanity (i.e. love, kindness & social intelligence) and transcendent (appreciation of beauty, humor, gratitude, hope & spirituality) strength categories (e.g. free recall of humanity strengths) because previous studies evinced a relationship between these strengths and the outcome variables (Diener & Seligman, 2002). Analyses for the final two hypotheses again incorporated the eleven predictor variables except that the self-schema and VIA Inventory variables were calculated using only the key strengths (e.g. reaction time to self-endorse curiosity, vitality, love, gratitude & hope).

The **two outcome variables** for all six hypotheses consisted of an overall well-being score on the Ryff scales of Psychological Well-Being (e.g. significant results for the six Ryff well-being subscales self-acceptance, positive relations, environmental mastery, personal growth, purpose in life & autonomy are presented in Appendices Y-AA) and one total depression score on the CES-D measure of depression. The six regression analyses all exhibited significant F tests and they contained a total of seventeen significant regression coefficients (out of eighty-nine coefficients examined with overall well-being and depressive symptoms as outcome variables) at the .05 level. Only the regression analyses for overall psychological well-being and depressive symptoms are presented here for each hypothesis because the subscales of the well-being measure were found to be positively correlated and the overall score was an adequate summary statistic of the subscales (results for the subscales of the Ryff well-being instrument as outcome measures are presented in Appendices Y-AA). Table 4.1 provides the correlation matrix of accessibility measures with the outcome variable, overall well-being.

Table 4.1

Bivariate Correlation of Accessibility Measures with Outcome Variable, Overall Well-Being

	<u>Well-being</u>	<u>Reaction Time</u>	<u>Recall</u>	<u>Recognition</u>	<u>Self-Description</u>	<u>Self-Importance</u>	<u>Total Score on VIA</u>
Well-being		.01	.04	.06	-.61*	-.39*	-.63*
Reaction Time			-.01	.00	-.05	-.10	-.02
Recall				.24*	-.05	-.16*	-.03
Recognition					.05	-.08	.06
Self-Description						.62*	.78*
Importance to Self							.57*
Total Score on VIA							

***p<.01**

Hypothesis One

Participants with greater accessibility to character strengths in their self-schemas will exhibit higher levels of overall psychological well-being.

The first regression examined whether the predictor variables schema accessibility (e.g. reaction time to strengths, recognition memory, free recall, self-description and self-importance, VIA Inventory score) predicted overall psychological well-being. The number of predictors was deemed adequate because of the large sample size (e.g. $N=19$ required for each predictor). To examine whether having increased accessibility to strengths within one's self-schemas predicted increased overall well-being, a regression analysis was conducted using the total score on the Ryff scales of psychological well-being as the outcome variable and was found significant, $F=17.8 (13, 282) p<.001, R^2=.45$. The regression analysis revealed that the model explained 45% of the variance in overall psychological well-being.

The non-self report schema measure of recognition and the total score on the self-report VIA Inventory were significant coefficients at the .05 level. In support of this hypothesis, a one unit increase in the recognition score predicted an increase of 80.7 in overall psychological well-being. Additionally, a one unit increase toward a "very unlike me" self-endorsement on the VIA Inventory of Strengths predicted a decrease of 59.2 in overall well-being. Results for this hypothesis are presented in Table 4.2.

Table 4.2

Hypothesis one significance levels for regression coefficients and standardized beta weights for outcome variable, Overall Well-Being

<u>Predictor Variables</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	<u>Sig.</u>
Intercept	488	57.2		8.5	.000
Reaction Time	-1.2	4.8	-.01	-.25	.80
Recognition	80.7	35.6	.11	2.3	.02*
Free Recall	-3.9	32.7	-.01	-.12	.91
Schema Self-Description of Strengths	-.94	.91	-.18	-1.0	.30
Schema Importance to Self of Strengths	1.5	1.1	.27	1.3	.20
VIA Inventory	-59.2	11.2	-.39	-5.3	.00*
Married	6.9	7.9	.05	.88	.38
Male	3.4	19.6	.03	.17	.86
Age	.22	.50	.03	.44	.66
Interaction of Gender and Age	.02	.78	.01	.03	.98
Interaction	-.03	.02	-.37	-1.1	.27

of Self-
report
Schema
Measures
***p<.05**

Hypothesis Two

Participants with greater accessibility to character strengths within their self-schemas will exhibit fewer symptoms of depression. To test whether having increased accessibility to strengths within one's self-schemas predicted decreased depressive symptoms, a regression analysis was conducted using the total score on the CES-D Depression Instrument as the outcome variable and was found significant, $F=3.7$ (13, 282) $p<.001$, $R^2=.14$. This regression model explained 14% of the variance in depressive symptoms. Note that having strengths accessible within one's self-schemas is not necessarily synonymous with having the strengths objectively (i.e. in real life).

Only the variables of likert endorsement of importance to self and gender were significant at the .05 level. An increase in the endorsement of character strengths as *not* being important to an overall sense of self-identity predicted a -.65 decrease in depressive symptoms. Similarly, being male predicted a 8.91 decrease in depressive symptoms. Table 4.3 provides the relevant regression coefficients for this hypothesis.

Table 4.3

Hypothesis two significance levels for regression coefficients and standardized beta weights for outcome variable, Depressive Symptoms

<u>Predictor Variables</u> <u>Sig.</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	
Intercept	39.1	12.5		3.2	.001
Reaction Time	.16	1.1	.01	.15	.88
Recognition	-2.0	7.8	-.02	-.26	.80
Free Recall	-.12	7.1	.00	-.02	.99
Schema Self-Description of Strengths	-.15	.20	-.16	-.75	.45
Schema Importance to Self for Strengths	-.65	.25	-.70	-2.6	.01*
VIA Inventory	4.6	2.4	.17	1.9	.06
Married	-1.7	1.7	-.06	-.98	.33
Male	-8.9	4.3	-.44	-2.1	.04*
Age	-.21	.11	-.15	-1.9	.05
Interaction of Gender and Age	.26	.17	.33	1.5	.13

Interaction of Self- report Schema Measures * $p < .05$.01	.01	.84	2.0	.05
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Hypothesis Three

Participants for whom the humanity strengths (i.e. love, kindness and social intelligence) and transcendence strengths (i.e. appreciation of beauty, gratitude, hope, humor, spirituality) are salient (i.e. highly accessible) within their self-schemas will exhibit high levels of overall psychological well-being. To investigate the hypothesis that increased accessibility of humanity and transcendent strengths within an individual's self-schemas would predict increased overall well-being, a regression analysis was conducted using the total well-being score on the Ryff well-being scales and was found significant, $F=11.7$ (20, 264), $p < .001$, $R^2 = .47$. This model explains 47% of the variance in overall psychological well-being.

The variables of reaction time, likert self-description, importance to self and score on the VIA Inventory for humanity strengths (i.e. love, kindness & social intelligence) were significant at the .05 level. Score on the VIA Inventory of Strengths for the transcendent strengths (i.e. appreciation of beauty, humor, gratitude, hope & spirituality) was also significant the .05 level. Contrary

to hypothesis three, a one unit increase toward a faster reaction time to humanity strengths predicted a decrease of 12.4 in overall well-being. In support of hypothesis one, however, a unit increase in scores (i.e. toward “very unlike me” self-endorsements) on the self-description scale, importance to self scale (i.e. toward “very unimportant to me” and on the scales of the humanity and transcendent of the VIA Inventory predicted decreases in total psychological well-being by 14.3, 28.2 and 24.8, respectively. Table 4.4 displays the values of the regression coefficients for this equation.

Table 4.4

Hypothesis three significance levels for regression coefficients and standardized beta weights for outcome variable, Overall Well-being

<u>Predictor Variables</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	<u>Sig.</u>
Intercept	489.2	47.0		10.4	.00
Reaction Time to Humanity Strengths	-12.4	4.3	-.14	-2.9	.00*
Reaction Time to Transcendent Strengths	6.5	4.5	.07	1.4	.15
Recognition of Humanity Strengths	22.5	14.6	.07	1.6	.12
Recognition of Transcendent	-3.0	24.6	-.01	-.12	.90

Strengths					
Free Recall of Humanity Strengths	-9.4	10.2	-.04	-.92	.36
Free Recall of Transcendent Strengths	18.8	16.3	.06	1.2	.25
Likert Schema Importance to Self Humanity Strengths	-14.3	5.7	-.46	-2.5	.01*
Likert Schema Self- Description of Transcendent Strengths	-.88	1.8	-.04	-.48	.63
Likert Schema Importance to Self Humanity Strengths	-10.7	6.0	-.28	-1.8	.07
Likert Schema Importance to Self of Transcendent Strengths	5.3	4.2	.29	1.3	.21
VIA score for Transcendent Strengths	-25.0	10.2	-.21	-2.4	.02*
VIA score for Humanity Strengths	-28.2	9.8	-.22	-2.9	.00*
Age	.70	.55	.08	1.3	.20
Number Self- Endorsed Strengths	1.8	1.2	.08	1.5	.15
Number of Reaction Times Censored	-.79	4.1	-.01	-.20	.90

Male	16.5	20.8	.14	.79	.43
Married	6.0	8.2	.04	.73	.46
Interaction of Gender by Age	-.25	.83	-.06	-.30	.76
Interaction of Likert Schema measures for Humanity Strengths	1.4	1.1	.34	1.2	.23
Interaction of Likert Schema measures for Transcendent Strengths	-.17	.18	-.19	-.91	.37

***p<.05**

Hypothesis Four

Participants for whom the humanity and transcendence strengths are salient (i.e. highly accessible) within their self-schemas will exhibit few depressive symptoms. To test the hypothesis that increased accessibility of humanity and transcendent strengths within one's self-schemas would predict decreased depressive symptoms, a regression was conducted and was found significant, $F=2.8$ (20, 264), $p<.001$, $R^2=.18$. This model explained 18% of the variance in depressive symptoms.

The variables of endorsed importance to self of transcendent strengths, age, and gender were significant at the .05 level. As evidence against this hypothesis, a one unit increase in the score on schema self-importance of transcendent strengths (i.e. in the “very unimportant to my self-identity” direction) predicted a 2.2 decrease in depressive symptoms. An increase in age predicted a decrease of .30 in depressive symptoms and being male predicted a decrease of 10.2 in depressive symptoms. Table 4.5 displays the coefficient values for this regression equation.

Table 4.5

Hypothesis four significance levels for regression coefficients and standardized beta weights for outcome variable, Depressive Symptoms

<u>Predictor Variables</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	<u>Sig.</u>
Intercept	19.9	10.3		1.9	.05
Reaction Time to Humanity Strengths	.53	.93	.03	.57	.57
Reaction Time to Transcendent Strengths	-.50	.98	-.03	-.51	.61
Recognition of Humanity Strengths	-3.5	3.2	-.064	-1.1	.27
Recognition of Transcendent Strengths	10.7	5.4	.12	2.0	.05
Free Recall of Humanity Strengths	.33	2.2	.01	.15	.88
Free Recall of Transcendent Strengths	-1.8	3.6	-.03	-.50	.61
Likert Schema Self-Description of Humanity Strengths	2.3	1.3	.41	1.8	.07
Likert Schema Self-Description of Transcendent Strengths	.56	.40	.16	1.4	.16

Likert Schema Importance to Self of Humanity Strengths	1.7	1.3	.26	1.3	.18
Likert Schema Importance to Self of Transcendent Strengths	-2.2	.91	-.70	-2.4	.02*
Score on VIA Instrument Transcendent Strengths	-.26	2.2	-.01	-.12	.91
Score on VIA Instrument for Humanity Strengths	3.9	2.1	.17	1.8	.07
Age	-.30	.12	-.21	-2.5	.01*
Number Self- Endorsed Strengths	.13	.27	.03	.48	.63
Number of Reaction Times Censored	-1.0	.88	-.07	-1.2	.24
Male	-10.2	4.5	-.50	-2.3	.02*
Married	-.71	1.8	-.03	-.39	.69
Interaction of Gender by Age	.29	.18	.35	1.5	.13
Interaction of Likert Schema measures for Humanity Strengths	-.28	.24	-.40	-1.2	.24
Interaction of Likert Schema measures for Transcendent Strengths	.07	.04	.48	1.8	.07

***p<.05**

Hypothesis Five

Participants for whom the “key strengths” (i.e. gratitude, vitality, hope, curiosity, capacity to love and be loved) are salient in their self-schemas compared to other character strengths or non-strengths will exhibit high levels of psychological well-being. As a means of testing the hypothesis that being self-schematic with key strengths would predict increased overall psychological well-being, a regression was conducted and was found significant, $F=25.0$ (13, 281), $p<.001$, $R^2=.54$. This model explained 54% of the variance in overall psychological well-being.

The variables of schema self-description and score on the VIA Inventory for the key strengths (i.e. curiosity, vitality, love, gratitude & hope) were significant at the .05 level. In support of this hypothesis, a one unit increase in the scores of both schema self-description and the VIA Inventory score for key strengths predicted decreases in overall psychological well-being of 6.7 and 60.7, respectively. Table 4.6 displays the coefficient values for this equation.

Table 4.6

Hypothesis five significance levels for regression coefficients and standardized beta weights for outcome variable, Overall Well-being

Predictor Variables	<u>B</u>	Standard <u>Error</u>	Beta <u>Weight</u>	<u>t</u>	<u>Sig.</u>
Intercept	527.2	35.0		15.1	.000
Reaction Time to Key Strengths	-6.8	4.0	-.07	-1.7	.09
Free Recall of Key Strengths	-11.6	14.9	-.03	-.78	.44
Recognition of Key Strengths	14.0	15.1	.04	.93	.35
Likert Schema Self-Description of Key Strengths	-6.7	2.7	-.34	-2.5	.01*
Likert Schema Importance to Self of Key Strengths	-1.7	3.2	-.08	-.53	.60
VIA score Key Strengths	-60.7	7.6	-.50	-8.0	.00*
Married	3.8	7.3	.03	.52	.60
Age	.24	.45	.03	.53	.60
Number Self-Endorsed Strengths	1.4	1.0	.06	1.3	.18
Number of Reaction Times Censored	-7.1	3.7	-.08	-1.9	.06
Male	4.9	18.0	.04	.27	.78

Interaction of Gender by Age	.01	.71	.00	.02	.99
Interaction of Likert Schema measures for Key Strengths	.21	.32	.16	.70	.51

***p<.05**

Hypothesis Six

Participants for whom the key strengths are salient in their self-schemas compared to other character strengths or non-strengths will exhibit few depressive symptoms. The sixth multiple regression was conducted to test the hypothesis that being self-schematic with regard to the key strengths would predict decreased depressive symptoms. The regression was found significant, $F=6.13$ (13, 281), $p<.001$, $R^2=.22$. This model explained 22% of the variance in the outcome variable, depressive symptoms.

The score on the VIA Inventory for key strengths and age were the two continuous variables significant at the .05 level in this regression equation. The categorical variable of gender and the interaction between schema self-description and importance to self for the key strengths were also both significant at the .05 level. In support of this hypothesis, the VIA Inventory score, when increased by one unit, predicted a 7.1 unit increase in the score for depressive symptoms. Additionally, an increase in age predicted a decrease of .21 units in this outcome variable. Moreover, being male in this sample predicted a decrease of 8.8 in the score on the CES-D instrument for depression. The interaction in this regression equation indicates that the self-description scale score for key strengths affected positively (in valence) the importance to self score for the key strengths in prediction of depressive symptoms. [See Appendix X for graphs of self-

description by importance to self interaction] Table 4.7 contains the coefficient values for this regression analysis.

Table 4.7

Hypothesis six significance levels for regression coefficients and standardized beta weights for outcome variable, Depressive Symptoms

Predictor Variables	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	<u>Sig.</u>
Intercept	28.9	7.9		3.8	.000
Reaction Time to Key Strengths	.42	.91	.03	.46	.64
Free Recall of Key Strengths	-4.8	3.4	-.08	-1.4	.16
Recognition of Key Strengths	1.5	3.4	.02	.44	.66
Likert Schema Self-Description of Key Strengths	-.52	.61	-.15	-.85	.39
Likert Schema Importance to Self of Key Strengths	-2.0	.73	-.54	-2.7	.01
Score on the VIA Instrument for Key Strengths	7.1	1.7	.34	4.1	.00*
Married	-1.2	1.7	-.05	-.75	.46
Age	-.21	.10	-.15	-2.1	.04*
Number Self-	.10	.23	.03	.43	.67

Endorsed Strengths

Number of Reaction Times Censored	-.40	.84	-.03	-.50	.63
Male	-8.8	4.1	-.44	-2.2	.03*
Interaction of Gender by Age	.22	.16	.30	1.4	.16
Interaction of Likert Schema measures for Key Strengths	.15	.07	.63	2.1	.04*

*p<.05

Summary of Results

The examination of hypothesis one—which involved all the strengths as potentially salient within participant self-schemas—revealed that both a non-self-report predictor, recognition memory, and a self-report measure, increased self-referent rating of strengths on the VIA Inventory, predicted increased overall psychological well-being. This finding provided convergent evidence in support of hypothesis one. The test of hypothesis two, prediction of decreased depressive symptoms, exhibited some evidence for rejecting this hypothesis, namely, that higher endorsement of strengths as *important* to one's overall self concept predicted an *increase* in depressive symptoms.

Hypothesis three—which focused on humanity and transcendent strengths—provided divergent results in that the significant non-self-report measure, more rapid reaction time to self-endorse humanity strengths, predicted *decreased* overall well-being. However, schema self-description and elevated VIA scored indicating increased identification with humanity and transcendent strengths predicted *increased* well-being.

In the test of hypothesis four—involving humanity and transcendent strengths as predictive of reduced depressive symptoms—non-self-report and self-report schema sources converged again but this time as evidence for rejecting the hypothesis. That is, increased recognition and likert rating of importance to self (e.g. “this strength is important to my overall self-concept”) of

transcendent strengths (i.e. appreciation of beauty, hope, humor, gratitude & spirituality) predicted an *increase* in depressive symptoms. The examination of hypothesis five—study of the key strengths in particular—revealed that two self-report measures, likert self-description and increased self-referent rating of the key strengths on the VIA Inventory, predicted increased overall well-being. Similarly, the hypothesis six result was that only the self-report rating on the VIA for the key strengths predicted decreased depressive symptoms.

Overall, results showed **convergent** (i.e. non-self-report and self-report methods agreed) **support** for hypothesis **one** (total strengths and well-being), self-report **evidence against** hypothesis two (total strengths and depressive symptoms), **divergent results** (i.e. non-self-report against and self-report in favor) for hypothesis **three** (humanity/transcendent strengths and well-being), **convergent evidence against** hypothesis four (humanity/transcendent strengths and depressive symptoms), and **single method support** (i.e. self-report methods only) for hypotheses **five** and **six** (i.e. key strengths within self-schemas for well-being and depression respectively).

Demographic factors also exhibited significant contributions among study hypotheses. In hypotheses two, four and six, being male predicted a decrease in depressive symptoms. Similarly, the results of hypotheses four and six indicated that as one's age increased, his or her level of depressive symptoms

decreased. Demographic factors were not significant in hypotheses in which overall well-being was the outcome variable.

An aim of this study was to test whether implementing non-self-report measures from the self-schema literature would augment existing self-report research methodology in the assessment of strengths and well-being. With regard to comparison of non-self-report and self-report predictors in the present study, the results for two different hypotheses, one and four, exhibited multi-method evidence in the same direction (i.e. support for hypothesis one and evidence against hypothesis four). Self-report and non-self-report results were significant in divergent directions for hypothesis three and results of hypotheses five and six revealed supportive single-method evidence (i.e. self-report). In conclusion, the self-report measures exhibited more consistent support of study hypotheses whereas the non-self-report results, although favoring study hypotheses, produced not only divergent but fewer significant predictions overall.

Discussion

The principal finding of this study was that individuals with *high accessibility* to their signature character strengths within the content of their self-schemas exhibit increased psychological well-being. Individuals with high depressive symptoms have been shown to possess self-schemas rife with dysphoric content (e.g. inadequate, unlovable, weak, gloomy, hopeless) in that they have immediate and high access to their discouraging self-views (i.e. toxic beliefs about self populated the *most salient* material available within their self-schemas, Greenberg & Beck, 1989; Ingram & Patridge, et. al., 1994; Evans, Heron, et. al., 2005). The underlying hypothesis of this study was, therefore, that people whose signature strengths—virtuous qualities processed self-referentially and potentially expressed idiosyncratically—occupied a salient or highly accessible role within their self-schemas would experience high levels of psychological well-being and conversely fewer depressive symptoms analogous to the manner that negative self-schemas animated depression (Greenberg & Beck, 1989; Kelvin & Goodyer et. al., 1999 Evans, Heron, et. al., 2005).

Overall, data of the current study replicated the finding that individuals who scored high on the character strengths assessment—both across all the strengths and on the key strengths (curiosity, vitality, love, gratitude and hope)—experienced high psychological well-being (Shimai, Otake & Park, et. al., 2006; Park, Peterson & Seligman, 2004). More specifically, results supported the

meta-hypothesis that individuals for whom signature strengths exerted a salient presence within their self-schemas predicted increased well-being with the caveat that some of the supportive evidence consisted of self-report data. Nevertheless, the present findings constitute an increased understanding of signature strengths—positive traits that function within self-referential, idiographic schema mechanisms—and well-being in that a portion of the current evidence derived from non-self-report sources (e.g. recognition memory) unlike in much previous strengths research (Shimai, Otake & Park, et. al., 2006; Park, Peterson & Seligman, 2004; Isaacowitz, Valliant, & Seligman, 2003).

As noted above, all significant coefficients from the first analyses were secondarily placed in regression analyses to investigate more parsimonious models. Tables 4.8 and 4.9 below contain the results of the secondary regression analyses followed by an integration of these subsequent findings into overall results.

Table 4.8
Results of Parsimonious Regression Models for Depressive Symptoms as Outcome Variable

<u>Hypo-thesis</u>	<u>Predictor(s)</u>	<u>Outcome Variable</u>	<u>F</u>	<u>df</u>	<u>R²</u>	<u>Partial η^2^a</u>
<u>Two</u>	Importance to Self for total strength set	Depressive symptoms	3.9	1, 296	.01	.01
	Gender (male)		1.1			.001
<u>Four</u>	Importance to Self for transcendent. str.	Depressive Symptoms	.15	1, 294	.05	.001
	Gender (male)		2.3			.01
	Age		7.1**			.02
<u>Six</u>	VIA Inven. for key str.	Depressive symptoms	17.9***	1, 296	.21	.06
	Self-Description key str.		.42			.001
	Importance to Self key str.		6.7**			.02
	Interaction of Self-Description and Self-Importance		3.5			.01
	Gender (male)		8.3***			.03
	Age		7.1**			.02

$p < .05^*$, $p < .01^{**}$, $p < .001^{***}$

^a measure of effect size; ^b humanity strengths: love, kindness, social IQ; ^c transcendent strengths: appreciation of beauty, gratitude, hope, humor, spirituality;

^d key strengths: curiosity, vitality, love, gratitude, hope

Depressive Symptoms Findings

Hypotheses one, three and five focused on *overall well-being* whereas hypotheses two, four and six consisted of *depressive symptoms* as the outcome variable. An examination of the depressive symptoms results comes first in this section followed by an exploration of results pertaining to psychological well-being. For hypotheses two, four and six—about strength self-schemas predicting depressive symptoms—parsimonious regression analyses revealed that the self-report predictors, VIA Inventory score and endorsed importance to self of the key strengths were significant—but in *opposite directions*. That is, as evidence in favor of the hypothesis, individuals who reported the key strengths (vitality, curiosity, love, gratitude and hope) as highly self-descriptive (i.e. signature strengths accessible within their self-schemas) predicted reduced depressive symptoms *replicating* previous findings of a robust association between the key strengths and life satisfaction (Shimai, Otake & Park, 2006; Park, Peterson & Seligman, 2004).

As evidence *against* this hypothesis, however, participants who reported the key strengths as highly *important* to their overall sense of self

predicted an *increase* in depressive symptoms. If self-report data alone converged in support of the study hypothesis that increased accessibility to key strengths within self-schemas predicted reduced depressive symptoms, then a methodological diagnosis of shared method variance would be hard to deny. Nevertheless, that participants who endorsed vitality, curiosity, love, gratitude and hope as worthwhile to their sense of self (but not necessarily self-descriptive) predicted *increased* depressive symptoms created a more complicated picture than describing all the current findings about strengths self-schemas and depressive symptoms as an artifact of shared method variance. Further exploration is required of the finding that high importance to self of the key strengths (e.g. “these strengths are important to my overall sense of self”) was associated with elevated symptoms of depression.

Early self-schema research offered the innovation in the field of self-concept assessment by asking research participants about the subjective *importance* of presented traits rather than only inquiring as to the degree of self-description (Markus, 1977; see Table 4.1 or Appendix U for bivariate correlation matrix of self-schemas measures). Given that likert schema self-description of key strengths was not also predictive of depressive symptoms in the present study (like self-importance was), it was possible that some of the individuals highest in considering these traits as important to their self-concepts were not necessarily individuals who considered these traits as highly self-descriptive. This potential

disparity between the level of importance to self and self-description possibly aligns with previous research on the negative affect associated with a perceived inconsistency between a real and ideal self—objective self-awareness theory (Silvia & Duval, 2001; Duval & Wickland, 1972). More specifically, some individuals who prized curiosity, vitality, love, hope and gratitude—called key strengths because of their repeated associations with high emotional well-being and happiness—as *important* for their self-concepts (e.g. their ideal selves), but *not self-descriptive* of themselves, may have experienced temporary dysphoric affect (e.g. depressive symptoms) as associated with viewing themselves as low in these subjectively valued virtues (e.g. their real selves, Shimai, Otake & Park, 2006; Park, Peterson & Seligman, 2004). Moreover, a recent study found that individuals who perceived that they did not possess certain positive traits were more likely to experience depressive symptoms (Brinker, Harris, et. al., 2006)

Previous research on objective self-awareness has revealed that individuals whose attention was focused on their real self (and not the ideal standard) attributed any discrepancy between the self and ideal standard to a deficiency in the self (Silvia & Duval, 2001). However, if the individual focused on the standard rather than on the self, then previous findings suggested that the individual attributed the cause of the real versus ideal self discrepancy to a problem with the ideal standard (e.g. rather than flaws in the self, Silvia & Duval, 2001). Researchers noted that helping individuals modify unreasonably high

standards for themselves, a prevalent therapeutic model in clinical psychology, could improve well-being among individuals (Silvia & Duval, 2001).

In the present study, participants were asked to focus on self (e.g. “does this word basically describe you?; is this [strength] important to you?”) and the standard (e.g. character strengths and virtues) was intentionally obscured for methodological reasons. Individuals may have been more likely to denigrate privately the standard (e.g. character strength classification) rather than experiencing dysphoric affect about perceived deficiencies within one’s self-concept (if they experienced negative affect at all).

In future studies, what would happen among participants if they were induced to focus on the standard rather than on themselves? For example, researchers could induce participants to focus on humanity strengths rather than on self-evaluation and then examine whether being schematic would again predict increased depressive symptoms. In all, the result that rating the key strengths as self-descriptive was predictive of reduced depressive symptoms may still derive from shared method variance. But, further investigations on key strengths imbedded within self-schemas and objective self-awareness theory are necessary to replicate this finding and to explore whether perceiving character strengths as *the best qualities within oneself* rather than as an unattainable, burdensome external standard is a critical factor in reducing one’s overall negative affect and elevating psychological well-being.

The results about depressive symptoms in this study also produced significant demographic data about the experience of depressive symptoms. Results indicated that being younger in age and female predicted increased depressive symptoms in the context of self-identification with the key strengths as description and important. This result is consistent with previous findings of a higher incidence of depression in adolescent women (21%) compared to men (11%, Kessler, McGonagle, et. al., 1993; Rao, Hammen, Daley, 1999). Further, a recent study found that young women, the majority demographic represented in the current sample, with depression suffered more losses in educational, occupational and salary opportunities compared to men (Berndt, Lorrin, et. al., 2000).

Table 4.9
Results of Parsimonious Regression Models for Overall Well-Being as Outcome Variable

<u>Hypo-thesis</u>	<u>Predictor(s)</u>	<u>Outcome Variables</u>	<u>F</u>	<u>df</u>	<u>R²</u>	<u>Partial η^2^a</u>
<u>One</u>	Recognition memory for <i>total character strengths</i> set	Overall Well-being	4.2*	1, 295	.40	.01
	VIA Inventory		195 ***			.40
<u>Three</u>	Reaction Time to <i>humanity strengths</i> ^b	Overall Well-Being	14.0***	1, 295	.39	.05
	VIA Inventory <i>humanity str.</i>		27.7***			.09
	VIA Inventory <i>transcendent str.</i> ^c		13.2***			.04
<u>Five</u>	VIA Inven. for <i>key strengths</i> ^d	Overall Well-Being	72.6***	1, 296	.52	.20
	Self-Description for key str.		17.3***			.06

p <.05*, p<.01**, p<.001***
^a measure of effect size; ^b humanity strengths: love, kindness, social IQ; ^c transcendent strengths: appreciation of beauty, gratitude, hope, humor, spirituality;
^d key strengths: curiosity, vitality, love, gratitude, hope

Well-Being Findings

The results for hypothesis one—that having character strengths as highly accessible within individual self-schemas would be predictive of psychological well-being—were in favor of the hypothesis and were subsequently confirmed in secondary analyses as seen in Table 4.9. These data indicated that having signature strengths as salient within one’s self-schemas, as assessed by recognition memory and score on the VIA Inventory, predicted increased overall psychological well-being, which is a component of human flourishing (Keyes, 2007). The findings of hypothesis one were more robust than some subsequent hypotheses because *self-report and non-report predictors converged* in support of the hypothesis. As noted above, this finding increases psychologists’ understanding of strengths and well-being by providing multi-method evidence for a positive relationship between signature strengths that are highly accessible to one’s self and individual thriving (Park, Peterson & Seligman, 2004; Isaacowitz, Valliant, & Seligman, 2003).

Through both self-report and non-self-report sources of data, the multi-method results in support of hypothesis one indicate that having one’s signature strengths—character strengths that can emerge phenotypically and idiosyncratically through the intrapersonal matrix of each personality—as highly accessible material among the content of participant self-schemas was predictive of psychological well-being, happiness and, by extension, flourishing (Keyes,

2007). These findings replicate previous links between strengths and well-being except that the present study revealed multi-method empirical support for this link (Park, Peterson & Seligman, 2004; Isaacowitz, Valliant, & Seligman, 2003). The role of recognition memory in assessing the self-referential processing of personality traits—signature strengths in the present study—was also consistent with previous research (Yanhua & Yukai, 2006).

Further support for hypothesis one—having signature strengths as salient within one’s self-schemas being predictive of well-being—derives from two components of well-being and flourishing in the present study, positive relationships with others and personal growth (See Appendix Y for subscale regression coefficients, Keyes, 2007). The results revealed that individuals who responded faster to self-endorse character strengths (along with reporting oneself as high on strengths) predicted more positive relationships with others. This finding is consistent with previous research that demonstrated the importance of positive relationships between adolescents, parents and peers for experiencing increases in psychological well-being (Corsano, Majorano, Champretavy, 2006). Satisfying marital relations were also associated with increased overall emotional well-being (Russell & Wells, 1994). Another component of well-being consists of personal growth which is the consistent movement of oneself toward increasing purpose and self-fulfillment and is a factor in flourishing (Keyes, 2007). Having signature strengths as salient within participant self-schemas predicted an increase

in personal growth—a component of psychological well-being—as assessed by two types of data: recognition memory and score on the VIA Inventory.

The data that individuals with signature strengths highly accessible within their self-schemas predicted psychological well-being (hypothesis one) added confirmatory evidence to previous theories of optimal human functioning in the history of psychology—pioneering ideas that inspired the science of positive psychology. Allport described the healthy individual as one with a positive self-view, potential for close relationships and the capacity for extending the self in the world among other characteristics (1961). Similarly, Maslow posited that people who self-actualized possessed an ability to have peak experiences and such individuals, “[possess] a nonhostile sense of humor and a deep compassion for others” (King, Eells & Burton, 2004, p. 35). Sense of humor and compassion were two positive traits described in the character strengths classification used in the present study (See Appendix A, Peterson & Seligman, 2004).

The results of hypothesis three—the prediction that humanity and transcendent strengths as salient within self-schemas would predict increased well-being—represented the first divergence among the various assessment methods employed. Faster reaction time to self-identify with humanity strengths (love, kindness & social intelligence) controlling for reaction times to other stimulus words predicted *decreased* psychological well-being. In contrast, the

increased self-endorsement of humanity and transcendent strengths on the VIA Inventory and a schema measure predicted increased well-being—yielding self-report and non-self-report data in *opposite directions*. The finding that quicker response time to self-endorse with the three humanity strengths was associated with less well-being contradicts the study hypothesis.

The finding of more rapid reaction time to humanity strengths being predictive of decreased well-being may point to a peculiar aspect of having these strengths as salient within one's self-schemas. Love, kindness and social intelligence make-up the three humanity strengths specified for hypothesis three (Peterson & Seligman, 2004). An underlying theme connecting these character strengths is that the person who displays these traits exhibits a positive concern for the well-being of others. Whether a person cultivates a caring relationship as in love or uses social intelligence to perceive the emotional states of others and then act on the information positively (e.g. include someone in a social gathering who appears to feel left out), each of these strengths arguably take the person away—at least briefly—from advancing his or her own well-being. If these strengths operate in a way as to focus on others, then possibly the individuals for whom these strengths were salient within their self-schemas actually responded *slower* to self-identify on a reaction time task. This provisional interpretation requires much more research before psychology can offer clarifying descriptions as to why responding faster to love, kindness and social intelligence correlated

with diminished psychological well-being. Overall, this discrepancy in results between self-report and non-self-report sources left the self-report findings of hypothesis three (that focused on humanity and transcendent strengths) vulnerable to an interpretation of shared method variance.

The results of hypotheses five were that individuals for whom key strengths (curiosity, vitality, love, gratitude & hope) were accessible within their self-schemas predicted increased overall well-being and decreased depressive symptoms. This finding is consistent with previous findings which categorized these five strengths as key because they were uniquely related to life satisfaction compared to other character strengths (Park & Peterson, 2006; Shimai, Otake, Park, 2006; Park, Peterson & Seligman, 2004). As in most previous research on key strengths and well-being, this finding was also vulnerable to an interpretation of shared method variance because data only derived from self-report sources.

Overall Meaning of Results

The overall finding of the current study was that signature strengths—character strengths individually nurtured—that were highly salient within individual self-schemas related to increased psychological well-being especially when the evidence included both self-report and non-self-report (e.g. recognition memory) sources of data. These data reveal that individuals differentially access their own character strengths—signature strengths—through

their self-referentially processing of current life experience. This glimpse into the intrapersonal processing of character strengths suggests that low strengths salience may be a risk factor for emotional languishing or lack of well-being (Keyes, 2007). Moreover, the salience of strengths within individual self-schemas may exert information processing effects not assessed in the present study (e.g. attention to positive self-related stimuli). *In sum, individuals with high or chronic access to signature strengths within their overall self-concepts experience increased emotional well-being, happiness and even flourishing* (Keyes, 2007).

In addition to self-report data that replicated previous links between strengths and well-being, individuals in the present study who recognized more character strengths previously seen and falsely recognized novel strengths synonyms predicted elevated happiness. The self-related processing of character strengths connected to the recognition domain of memory opens a previously unknown area for strength researchers to pursue.

Some previous findings about self-schemas help place the current results in a meaningful context. Self-schemas—“personally important, domain specific, self-definitions”—with highly salient negative content have been shown to animate experiences of depression and dysphoria (Kendzierski, 2007, p. 350; Greenburg & Beck, 1989; Ingram & Patridge, et. al., 1994; Kelvin & Goodyer, 1999; Evans, Holon, et. al., 2005). Self-schemas with various types of content as highly accessible has been linked with future behaviors in those domains such as

assertiveness (Bruch, Kaflowitz & Berger, 1998), sexual behavior (Anderson, Cyranowski, Espindle, 1999), eating disorders (Stein, 1996), smoking (Shadel & Cervone, 2006); dieting (Kendzierski, 1988; 2007) and exercise (Estabrooks & Courneya, 1997).

Moreover, psychological well-being or happiness has been connected to multiple, exceptional life circumstances including positive relationships (Russell & Wells, 1994), vocational excellence (Staw, Sutton & Peled, 1994), meaningful coping (Aspinwall, 1988) and physical well-being (Kubzansky, Sparrow, Vokonas, & Kawachi, 2001). Psychologists lack data, however, about the role of the *best kind* of salient schema content—namely, signature strengths—both as related to emotional well-being and objectively virtuous behaviors (e.g. love, courage, gratitude, leadership, humor, and perseverance).

The current results justify and motivate the direct, deep assessment of the relationship between self-schemas (and by extension, self-concepts) rich in character strengths and independent, strength-consistent, morally outstanding behaviors with the same rigorous methods that pathological and physical health related behaviors have been assessed (Stein, 1996; Kendzierski, 1988; Estabrooks & Courneya, 1997; Shadel & Cervone, 2006). The present data also highlight a new path for empirical studies of the self in the tradition of Maslow's notion of the self-actualizer. Decades ago, Maslow offered this description and admonition:

We have, all of us, an impulse toward actualizing more of our..human fulfillment. [This is] a push toward the establishment of the fully evolved and authentic self...This is also an impulse to be the best, the very best you are capable of being. If you deliberately plan to be less than you are capable of being, then I warn you that you'll be deeply unhappy for the rest of your life (Wilber, 2001, p. 107).

Individuals whose signature strengths, highly accessible and salient within their self-schemas, guide and mediate their experience of life's successes and inexorable disappointments likely constitute a preliminary empirical description of the actualized or flourishing self (Keyes, 2007).

Limitations and Strengths of the Present Study

The present study had limitations and some results should be interpreted with caution. One limitation consisted of data that was collected at a single time point as opposed to being the result of a longitudinal design. Also, participants in the study were not randomly selected as they were recruited by their desire for research credit to pass psychology courses at the University of Texas at Dallas. Last, some of the results of this study could have been due to shared method variance especially where only self-report data produced significant results. Future research on strengths should increasingly use informant ratings, overt behavioral observations, physiological measures ensconced within double-blind, placebo control designs for the purpose of measuring strengths without relying on self-report sources of data.

This study also had some positive characteristics. First, the number of participants (N=298) allowed for statistical inferences based on adequate power. Also, the use of both non-self-report and self-report predictors provided an ability to explore the relationship between signature strengths and well-being. Another advantage of the present study was that participants reported not knowing the true purpose of the study in debriefing interviews after their participation which allowed for the likelihood of minimized demand characteristics. The final chapter elaborates more possible directions for future strengths research.

CHAPTER FIVE

Recommendations for Future Research and Conclusion

Future lines of research should examine the cognitive, social, behavioral, affective and neural underpinnings of the signature character strengths as researchers already investigate areas of personality dysfunction (e.g. major depression, personality disorders). As psychological science learns more about the etiologies and ontologies of character strengths, studies should be conducted to test the effect of increasing self-awareness of personal strengths (e.g. increasing the accessibility of character strengths within individual self-schemas; investigating the role of objective self-awareness) on individuals with acute psychological disorders (e.g. clinical depression). Such research should also include a focus on non-pathological, but existentially languishing individuals (Keyes, 2007).

Gathering data on the information-processing mechanisms underlying strengths and self-schemas also has numerous potential paths for future research. “Signature strength schematics,” if there is such a construct, may reveal reduced levels of cortisol because an increase in well-being will likely accompany a decrease in stress and therefore a reduction in cortisol levels. Longitudinal data will be critically important in future research in order to understand and clarify the developmental trajectory of signature strengths within self-referential processes.

Another enormously important next step for strengths research is to connect strength self-schema concepts to intentional action in true experimental contexts. Future research could assess people along lines of self-schemas as in the current study and then randomly assign participants to an experimental or control condition. The experimental condition would involve having participants act in ways specific to their character strengths (e.g. write five thank you letters for gratitude; spend time savoring a scene in nature for appreciation of beauty). It will be instructive to investigate whether participants who act in strength consistent ways—especially as expressed through the individual contours of their own personality or self-schematically—will have concomitantly higher levels of psychological well-being compared to a control condition.

A key research question to explore is whether people with more accessibility of signature strengths within their self-schema content are *more likely* to act in strength-consistent and virtuous ways. Again, the present study did not examine whether participants possessed any of the character strengths objectively (i.e. in “real life”) but how individuals considered their signature strengths *self-referentially*. Nevertheless, previous research has linked salient content within self-schemas with external behaviors in those domains including eating disorders, sexual behavior and smoking (Stein, 1996; Anderson, Cyranowski, Espindle, 1999; Shadel & Cervone, 2006). An experimental design will provide an elegant way to test the question of whether individuals with their

signature strengths highly accessible subsequently display virtuous behaviors.

This line of research points toward the goal of helping individuals identify and cultivate their unique version of the character strengths as seen in strength-centered therapy (Wong, 2006).

Long before positive psychology or self-schema research, both Aristotle and William James viewed **habit** as a significant topic for rational and psychological inquiry. Aristotle believed that individuals could learn to be virtuous as a result of emulating teachers of virtue and subsequently developing a longstanding pattern of morally exceptional behaviors that co-occur with positive emotions about those actions. An instantiation of a virtuous habit occurred recently:

Three weeks ago, Wesley Autrey was waiting at a Harlem subway station with his two little girls when he saw a man fall into the path of a train. With seconds to act, Wesley jumped onto the tracks ... pulled the man into a space between the rails ... and held him as the train passed right above their heads. He insists he's not a hero. Wesley says: 'We got guys and girls overseas dying for us to have our freedoms. We got to show each other some love.' There is something wonderful about a country that produces a brave and humble man like Wesley Autrey. (George W. Bush 2007 State of the Union Address).

Contemporary psychological researchers also have noted that habits emanate from alterations in cognitive, neurological and motivational processes that result when individuals consistently repeat certain behaviors (Wood, Tam & Witt, 2005). These researchers described data in which individuals with strong habits act without intention or sometimes independently of

their personal norms or beliefs. The results of the present study— that signature strengths imbedded within individual self-concepts was robustly related to increased happiness—supports further and more sophisticated science about the psychological structure of signature character strengths prized subjectively and **virtuous habits** deployed objectively.

Conclusion

Studies of the self have been present in psychology for more than one-hundred years but the content of these myriad empirical studies of the self have been largely pathological in nature especially within clinical psychology (e.g. suicide, self-identity crises, negative self-schemas, self-enhancement motive, self-defeating behaviors)—Maslow’s ideas did not much penetrate empirical work until positive psychology revived them (Seligman & Csikszentmihalyi, 2000). The results of the present study not only elaborated existing strengths and well-being studies—by adding the multi-methods of the self-schema literature—but they also suggested that individuals with increased access to signature strengths within their self-schemas exhibited higher levels of psychological thriving and happiness. The present study, along with other research in positive psychology, seeks to help psychology forge a new trail—the study and advancement of the psychologically flourishing, signature strength-aware and virtue-preeminent self.

APPENDIX A

Character Strengths and Virtues

WISDOM AND KNOWLEDGE:

Creativity [originality, ingenuity]: Creativity includes “thinking of novel and productive ways to conceptualize and do things: includes artistic achievement but is not limited to it” (Peterson & Seligman, 2004, p. 29; Simonton, D.,2000; J.P Guilford (1950 presidential address before the APA).

Curiosity [interest, novelty-seeking, openness to experience]
This strength consists of being inherently interested in experiencing life rather than for an ulterior motive. An individual with this strength would probably find certain topics “fascinating” and engaging which leads to a desire for further investigation. (Peterson & Seligman, 2004, p. 29; Lowenstein, 1994; McCrae & Costa,1997).

Open-mindedness[judgment ,critical thinking]: An individual with open-mindedness thinks about the various positions a person can take on a particular subject or issue and examines all the facts before arriving at a conclusion. Such a person likely has the ability to give equal weight to different pieces of evidence and possesses the flexibility to change his or her mind if the evidence or argument warrants. (Peterson & Seligman, 2004; Stanovich,1998).

Love of learning: One with this characteristic enjoys becoming proficient at new skills, ideas, subjects or areas of expertise/knowledge. This

strength differs from curiosity in that a person with a love of learning has the proclivity and desire to add “systematically” to one’s existing knowledge base (Peterson & Seligman, 2004, p. 29; Covington, 1999).

Perspective [wisdom]: The ability to “provide wise counsel” to others is a primary ability of having this strength. Such a person possesses certain ways of seeing the world that “makes sense to oneself” and to others (Peterson & Seligman, 2004, p. 29; Baltes & Staudinger, 2000).

COURAGE

Bravery [valor] This proposed character strength consists of pursuing a goal in the face of threat, pain, or challenge. The brave individual will “stand up for what is right” even when the opinion is unpopular and holding that position creates enemies. Of course, a person can also be brave in the physical sense (Peterson & Seligman, 2004, p. 29; Putnam, 1997); Evans, 1981).

Persistence [perseverance, industriousness]: Perseverance includes finishing a task that one begins despite internal or external distractions or remaining on a course of action despite obstacles (Peterson & Seligman, 2004, p. 29; Eisenberger, 1992).

Integrity [authenticity, honesty]: This characteristic involves speaking truthfully about one’s life in a genuine and sincere manner and acting without pretense. An individual with integrity is likely responsible for his or her

behaviors and feelings (Peterson & Seligman, 2004, p. 29; Sheldon, K. et. al., 1997).

Vitality [zest, enthusiasm, vigor, energy]: The zestful individual lives life with whole-hearted excitement. This person experiences quotidian events with a sense of energy, physical and psychological well-being—“feeling alive” (Peterson & Seligman, 2004, p. 29; Ryan & Frederick, 1997).

HUMANITY

Love: A person high in this strength likely values intimate relationships in “which sharing and caring are reciprocated” (Peterson & Seligman, 2004, p. 29). The individual with this positive trait has the “ability to love and be loved” (Peterson & Seligman, 2004, p. 29; Hazan & Shaver, 1987).

Kindness [generosity, nurturance, care, compassion, altruistic love, ‘niceness’]: This characteristic involves doing good deeds, helping and taking care of others (McCullough, 2002).

Social Intelligence [emotional intelligence, personal intelligence]: One with social intelligence will be knowledgeable of the “feelings and motives of others and oneself” (Peterson & Seligman, 2004, p. 29). He or she will also know how to “fit in” with other people and know how they work (Peterson & Seligman, 2004, p. 29; Salovey, 1990).

JUSTICE

Citizenship [social responsibility, loyalty, teamwork]: This positive trait concerns “working well as a member of a group or a team,” having loyalty to one’s group and “doing one’s share” (Peterson & Seligman, 2004, p. 30; Sullivan & Transue, 1999). **Fairness:** Someone with the proposed character strength of fairness treats most if not all people the same based on common conceptions of impartiality. Such an individual does “not [allow] one’s biases intrude on decision making” (Peterson & Seligman, 2004, p. 30; Blasi, 1980).

Leadership: This quality “refers to an integrated constellation of cognitive and temperament attributes that foster an orientation toward. . .helping others” move toward a shared conception of success (Peterson & Seligman, 2004, p. 414). More specifically an individual with the leadership character strength assists a group as a whole accomplish positive goals while simultaneously facilitating good relationships among the group members. (Peterson & Seligman, 2004; Eagly & Johnson, 1990).

TEMPERANCE

Forgiveness and Mercy: The forgiving person forfeits revenge for personal insults/attacks received from a stranger or loved one and gives additional chances to wrongdoers (Enright & Coyle, 1998; McCulloch et. al., 2000).

Researchers in the literature consider forgiveness—“psychological changes vis a

vis a specific transgressor”—as a subset of mercy which is possessing a lenient or compassionate disposition toward transgressors, “someone over whom one has power or authority” or someone suffering (Peterson & Seligman, 2004, p. 446; Gove et. al., 1966). Conceptions of forgiveness and mercy exist in various religious traditions including Judaism, Christianity, Hinduism and many others (Peterson & Seligman, 2004).

Humility/Modesty: This strength describes an individual who “[allows] for one’s accomplishments to speak for themselves” who does “*not* [seek] the spotlight” and who does “*not* [regard] oneself as more special than one is” (Seligman & Peterson, 30; Tangney, 2000).

Prudence: The prudent individual makes regularly effective and cautious decisions and acts consistently in ways that are relatively free of subsequent regret. (Peterson & Seligman, 2004; Haslam, N., 1991).

Self-regulation [self-control]: The individual high on this character strength has “control over [his or her] appetites and emotions” and the self-discipline to “regulate” behaviors emanating from those appetites (Peterson & Seligman, 2004, p. 30; Bandura, 1977; Mishel, Shoda & Peake, 1988).

TRANSCENDANCE

Appreciation of Beauty and excellence [awe, wonder, elevation]: A person with this strength “[notices] and [appreciates] beauty, excellence, and/or skilled performance in various domains of life, from nature to

mathematics to science to everyday experience” (Peterson & Seligman, 2004, p. 30; Haidt, J., 2003).

Gratitude: This strength involves being thankful regularly for good deeds that one receives. (McCullough, Emmons, & Tsang, 2002).

Hope [optimism, future-mindedness, future orientation]: A person with hope or optimism has a consistent expectation or belief in the best outcome and concurrently believes that energy and effort can bring about that positive outcome (Gillham, 2000; Carver, & Scheier, 2002; Snyder, 2000).

Humor [playfulness]: The humorous individual enjoys laughing and making other people laugh and has the ability to highlight the “lighter” side of issues (Peterson & Seligman, 2005, p. 30). The character strength of humor does not include denigrating forms of humor (e.g. ridicule, hostile sarcasm, etc) (Martin, R., 1998, 2001).

Spirituality [religiousness, faith, purpose]: This characteristic involves “[h]aving coherent beliefs about the higher purpose and meaning of the universe; knowing where one fits within the larger scheme; [and] having beliefs about the meaning of life that shapes conduct and provide comfort” (Peterson & Seligman, 2004, p. 30; Allport, & Ross, 1967; Pargament, 1997).

The measure for assessing character strengths—the “Values in Action” Inventory of Strengths (VIA-IS)¹ —is posted on the “Authentic Happiness” website (Rashid & Seligman, 2002; Appendix D). Hundreds of thousands of people since 2002 have taken the strengths inventory which simply provided data for the psychometric properties of the VIA Inventory of Strengths.

¹ Named by the grant organization—the Mayerson Foundation—who supported the strengths classification project.

APPENDIX B
Informed Consent Form

University of Texas at Dallas

CONSENT TO PARTICIPATE IN RESEARCH

Title of Research Project:

Attention and Ability to Focus: An Empirical Exploration

Investigators:

Jason Berman, M.A.

Marion Underwood, PhD:

Contact Number

Purpose: The purpose of this study is to increase our understanding of attention by examining how the ability to focus can help or hinder attention.

Description of Project:

We would like to have your participation in a research study about attention and the ability to focus. The purpose of this study is to examine how individuals vary in how they focus their attention on various tasks. If you decide to participate, your involvement will take approximately 2.5-3 hours including breaks. You will be asked to rate how certain words on a computer describe you and your typical behaviors.

Number of Participants: Approximately 250-300 UTD students will participate in this study.

Possible Risks: The only foreseeable risk of participating in this study is that you could experience discomfort when answering some questions about feeling negative emotions. If you wish to talk with someone about emotional discomfort you feel while participating in this study, please feel free to talk with Jason Berman or anyone else associated with this study for assistance and possible referral for help.

Benefits to the Participant: If you choose to participate in this study and complete the testing session, you will be given three research credit hours that can be used for your psychology course research requirements.

Alternatives to Participation: You can choose to stop participating in this study for any reason without penalty.

Voluntary Participation: Your participation in completely voluntary and you will be free to leave the study at any point without penalty. Your class grade or standing will be affected in no way if you choose to stop participating. Please tell one of the investigators if you wish to stop participating.

Records of Participation in this Research:

Information Stored at the University of Texas at Dallas

All of the information you provide to investigators as part of this research will be protected and held in confidence within the limits of the law and institutional regulation. Additionally, all identifying information will be removed from your performance on experiment tasks by the use of numerical identification except for identifying information related to your consent to participate which will be stored in a locked cabinet at UTD Richardson. All subsequent analysis of answers you provide will not be associated with information that could identify you. Only investigators directly involved with this research project who have been trained in methods to protect confidentiality will have access to confidential information.

Information Available to Others:

Members and associated staff of the Institutional Review Board (IRB) of the University of Texas at Dallas may review the records of your participation in this research. An IRB is a group of people who are responsible for assuring the community that the rights of participants in research are respected. A representative of the UTD IRB may contact you to gather information about your participation in this research. If you wish, you may refuse to answer questions the representative of the IRB may ask.

Publications Associated with this Research: The results of this research may appear in publications but individual participants will not be identified.

Contact People:

Participants who want more information about this research may contact any of the investigators listed at the top of page 1 of this document. Participants who want more information about their rights as a participant or who want to report a research related injury may contact:

Sanaz Okhovat, Research Compliance Manager 972-883-4579
UTD Office of Vice President for Research & Graduate Education

Additional information, including the nature and details of the researcher's or the research entity's financial interest, are available upon request.

Signatures

A participant's signature indicates that they have read, or listened to, the information provided above and that they have received answers to their questions. The signature also indicates that they have freely decided to participate in this research and that they know they have not given up any of their legal rights.

Participant's Signature

Date

Signature of Researcher Obtaining Consent

Date

APPENDIX C

Participant Descriptive Data

Descriptive Statistics for Age

	<u>N</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Mean</u>	<u>Std. Deviation</u>
Participant Ages	298	17.00	85.00	24.1980	7.46424

Frequencies for Age (N=298)

	<u>Age</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Percent</u>
Valid	17.00	1	.3	.3
	18.00	24	8.1	8.4
	19.00	39	13.1	21.5
	20.00	39	13.1	34.6
	21.00	52	17.4	52.0
	22.00	27	9.1	61.1
	23.00	14	4.7	65.8
	24.00	11	3.7	69.5
	25.00	14	4.7	74.2
	26.00	9	3.0	77.2
	27.00	6	2.0	79.2
	28.00	2	.7	79.9
	29.00	7	2.3	82.2
	30.00	6	2.0	84.2
	31.00	5	1.7	85.9
	32.00	5	1.7	87.6
	33.00	9	3.0	90.6
	34.00	4	1.3	91.9
	35.00	3	1.0	93.0
	36.00	3	1.0	94.0
	37.00	1	.3	94.3
	38.00	2	.7	95.0
	39.00	2	.7	95.6
	41.00	2	.7	96.3
	43.00	2	.7	97.0
	45.00	2	.7	97.7

46.00	1	.3	98.0
47.00	2	.7	98.7
48.00	1	.3	99.0
49.00	1	.3	99.3
52.00	1	.3	99.7
85.00	1	.3	100.0
Total	298	100.0	

Frequency Statistics for Marital Status

<u>Marital Status</u>	<u>Frequency</u>	<u>Percent</u>
Never Married	255	85.6
Married	43	14.4
Total	298	100

APPENDIX D

Descriptive Statistics for Reaction Time Variable

Descriptive Statistics for Standardized Reaction Times

	<u>N</u>	<u>Minimu</u> <u>m</u>	<u>Maximu</u> <u>m</u>	<u>Mean</u>	<u>Std.</u> <u>Deviation</u>
RT item #1	267	-1.8	4.8	.75	1.1
RT item #2	289	-2.0	3.5	.42	1.0
RT item #3	290	-3.2	62.3	.60	3.8
RT item #4	274	-3.0	2.8	-.14	.83
RT item #5	241	-2.3	2.3	-.54	.85
RT item #6	211	-2.6	2.1	-.06	1.0
RT item #7	275	-3.0	2.3	-.17	.90
RT item #8	291	1.8	111.0	1.1	6.6
RT item #9	208	-2.8	3.1	-.36	.87
RT item #10	285	-1.7	4.1	1.0	1.0
RT item #11	292	-2.5	3.2	.78	1.1
RT item #12	266	-4.1	1.4	-.52	.71
RT item #13	275	-2.0	2.8	.24	.85
RT item #14	279	-2.5	2.7	.35	1.0
RT item #15	211	-2.3	3.1	.50	.99
RT item #16	269	-3.0	2.5	.14	1.0
RT item #17	239	-2.4	3.3	.18	1.0
RT item #18	109	-3.0	2.5	-.39	.93
RT item #19	232	-3.0	1.7	-.53	.74
RT item #20	273	-1.8	2.2	.12	.90
RT item #21	287	-2.4	2.6	.22	1.0
RT item #22	286	-3.4	3.0	.46	1.1
RT item #23	280	-2.2	4.2	.50	1.1
RT item #24	234	-2.0	3.3	.50	.99

Frequency Data for Number of Self-Endorsed Strengths in Reaction Time Task (i.e. numberlike variable)

	<u>Freque</u> <u>ncy</u>	<u>Percent</u>	<u>Percent</u>	<u>Cumulative</u> <u>Percent</u>
Valid 6.00	1	.3	.3	.3

12.00	2	.7	.7	1.0
14.00	3	1.0	1.0	2.0
15.00	3	1.0	1.0	3.0
16.00	6	2.0	2.0	5.0
17.00	9	3.0	3.0	8.1
18.00	21	7.0	7.0	15.1
19.00	32	10.7	10.7	25.8
20.00	36	12.1	12.1	37.9
21.00	59	19.8	19.8	57.7
22.00	61	20.5	20.5	78.2
23.00	50	16.8	16.8	95.0
24.00	15	5.0	5.0	100.0
Total	298	100.0	100.0	

Frequency Data for Number of Reaction Times Censored
(i.e. numbercensored variable)

		<u>Frequency</u>		<u>Cumulative</u>
		<u>y</u>	<u>Percent</u>	<u>Percent</u>
Valid	.00	248	83.2	83.2
	1.00	39	13.1	96.3
	2.00	6	2.0	98.3
	3.00	3	1.0	99.3
	4.00	2	.7	100.0
Total		298	100.0	100.0

Descriptive Statistics for Numberlike and Numbercensored Variables

	<u>numberlike</u>	<u>numbercensored</u>
N	298	298
Mean	20.7	.23
Std. Deviation	2.4	.60
Minimum	6.00	.00
Maximum	24.00	4.00

APPENDIX E

Stimulus Words for Response Time Task

Primacy: Three buffer words for primacy effects: modern, ordinary, [appropriate]²

Recency: Three buffer words for recency effects: moderate, choosy, changeable (Kelvin, Goodyer et. al., 1999, p. 962). These words will not be included in the analysis.

Block 1: Instructions

Block 2: primacy words: modern, ordinary, appropriate

Block 3:

Self-description terms

1. black hair
2. hazel eyes
3. one brother
4. only child
5. tall
6. home: Austin
7. home: Philadelphia
8. brown eyes

Character strength terms

9. open-minded
10. bravery
11. social intelligence
12. persistent
13. forgiving
14. prudent
15. love beauty
16. humorous

² Kelvin et. al. (1999) used “lively” which I replaced with appropriate for the current study. Lively may be too similar to “vitality” in the experimental trials.

Character strength antonyms

- 17. grim
- 18. pessimistic
- 19. entitled
- 20. purposeless
- 21. oblivious
- 22. impulsive
- 23. reckless
- 24. arrogant

Orthogonal terms-neutral to positive (Bochner & van Zyl, 1985)

- 25. affluent
- 26. charming
- 27. cultured
- 28. neat
- 29. ambitious
- 30. efficient
- 31. musical
- 32. sportsmanlike

Orthogonal terms-neutral to negative (Bochner & van Zyl, 1985)

- 33. authoritarian
- 34. competitive
- 35. hostile
- 36. materialistic
- 37. ignorant
- 38. quarrelsome
- 39. revengeful

Block 4:**Self-description terms**

- 40. blonde hair
- 41. hometown: Dallas
- 42. home: Los Angeles
- 43. blue eyes
- 44. born before 1980

- 45. major: business
- 46. major: history
- 47. born in 1972

Character strength terms

- 48. curious
- 49. wise
- 50. kind
- 51. a good citizen
- 52. humble
- 53. grateful
- 54. honest
- 55. fair

Character strength antonyms

- 56. unimaginative
- 57. inflexible
- 58. thoughtless
- 59. cowardly
- 60. dishonest
- 61. lifeless
- 62. lacking insight
- 63. unforgiving

Orthogonal terms-neutral to positive (Bochner & van Zyl, 1985)

- 65. conservative
- 66. liberal
- 67. easy-going
- 68. happy-go-lucky
- 69. hospitable
- 70. intelligent
- 71. logical

Orthogonal terms-neutral to negative (Bochner & van Zyl, 1985)

- 72. aggressive
- 73. dirty

- 74. sensual
- 75. shrewd
- 76. conventional
- 77. uncooperative
- 78. superstitious
- 79. stupid

Block 5:

Self-description terms:

- 80. brown hair
- 81. three siblings
- 82. red hair
- 83. born before 1973
- 84. major psychology
- 85. major: English
- 86. major: undecided
- 87. born before 1986

Character strength terms:

- 88. love learning
- 89. creative
- 90. leader
- 91. self-regulation
- 92. spiritual
- 93. vitality
- 94. loving

Character strength antonyms (except curious, a strength):

- 95. dull
- 96. alienated
- 97. insincere
- 98. lazy
- 99. anti-intellectual
- 100. disinterested
- 101. prejudiced
- 102. *curious*
- 103. selfish

Orthogonal terms-neutral to positive (Bochner & van Zyl, 1985):

- 104. alert
- 105. capable
- 106. clean
- 107. romantic
- 108. methodical
- 109. progressive
- 110. quiet
- 111. serious

Orthogonal terms-neutral to negative (Bochner & van Zyl, 1985):

- 112. aloof
- 113. apathetic
- 114. radical
- 115. stubborn
- 116. Naïve
- 117. nationalistic
- 118. unsystematic
- 119. Sly

Block 6: moderate, choosy, changeable

Block 7: Thank you

APPENDIX F

Descriptive Statistics for Free Recall and Recognition Measures

	<u>N</u>	<u>Minimu</u> <u>m</u>	<u>Maximu</u> <u>m</u>	<u>Mean</u>	<u>Std.</u> <u>Deviation</u>
Recognition-H1	297	.54	1.00	.86	.07
Recognition H2-Hum	287	.17	1.00	.85	.17
Recognition H2-Tran	296	.33	1.00	.90	.10
Recognition-H3	296	-.10	1.00	.83	.15
Free Recall-H1	298	.00	.35	.12	.08
Free Recall H2-Hum	298	.00	1.00	.20	.25
Free Recall H2-Tran	298	.00	.75	.10	.15
Free Recall-H3	298	.00	.60	.12	.15

Frequencies of A double prime recognition scores

		<u>Frequenc</u> <u>y</u>	<u>Percent</u>	<u>Percent</u>	<u>Cumulative</u> <u>Percent</u>
Valid	.54	1	.3	.3	.3
	.55	1	.3	.3	.7
	.64	1	.3	.3	1.0
	.66	1	.3	.3	1.3
	.68	1	.3	.3	1.7
	.70	4	1.3	1.3	3.0
	.71	2	.7	.7	3.7

.71	1	.3	.3	4.0
.72	3	1.0	1.0	5.1
.73	1	.3	.3	5.4
.74	1	.3	.3	5.7
.74	1	.3	.3	6.1
.74	1	.3	.3	6.4
.75	2	.7	.7	7.1
.75	2	.7	.7	7.7
.75	3	1.0	1.0	8.8
.76	3	1.0	1.0	9.8
.76	1	.3	.3	10.1
.77	2	.7	.7	10.8
.77	3	1.0	1.0	11.8
.77	1	.3	.3	12.1
.77	1	.3	.3	12.5
.78	4	1.3	1.3	13.8
.78	1	.3	.3	14.1
.78	1	.3	.3	14.5
.78	2	.7	.7	15.2
.79	3	1.0	1.0	16.2
.79	1	.3	.3	16.5
.80	3	1.0	1.0	17.5
.80	2	.7	.7	18.2
.80	7	2.3	2.4	20.5
.81	2	.7	.7	21.2
.81	5	1.7	1.7	22.9
.82	5	1.7	1.7	24.6
.83	2	.7	.7	25.3
.83	4	1.3	1.3	26.6
.83	3	1.0	1.0	27.6
.83	6	2.0	2.0	29.6
.83	1	.3	.3	30.0
.84	2	.7	.7	30.6
.84	7	2.3	2.4	33.0
.84	4	1.3	1.3	34.3
.84	2	.7	.7	35.0
.85	9	3.0	3.0	38.0
.85	6	2.0	2.0	40.1
.85	10	3.4	3.4	43.4
.86	1	.3	.3	43.8
.86	5	1.7	1.7	45.5

.86	6	2.0	2.0	47.5
.87	7	2.3	2.4	49.8
.87	6	2.0	2.0	51.9
.88	3	1.0	1.0	52.9
.88	11	3.7	3.7	56.6
.88	5	1.7	1.7	58.2
.88	1	.3	.3	58.6
.89	1	.3	.3	58.9
.89	7	2.3	2.4	61.3
.89	9	3.0	3.0	64.3
.89	6	2.0	2.0	66.3
.90	4	1.3	1.3	67.7
.90	3	1.0	1.0	68.7
.90	4	1.3	1.3	70.0
.90	9	3.0	3.0	73.1
.91	3	1.0	1.0	74.1
.91	14	4.7	4.7	78.8
.91	7	2.3	2.4	81.1
.92	4	1.3	1.3	82.5
.92	12	4.0	4.0	86.5
.92	6	2.0	2.0	88.6
.93	4	1.3	1.3	89.9
.94	6	2.0	2.0	91.9
.94	4	1.3	1.3	93.3
.94	2	.7	.7	93.9
.95	7	2.3	2.4	96.3
.95	3	1.0	1.0	97.3
.96	3	1.0	1.0	98.3
.97	2	.7	.7	99.0
.98	1	.3	.3	99.3
.99	1	.3	.3	99.7
1.00	1	.3	.3	100.0
Total	297	99.7	100.0	
Total	298	100.0		

APPENDIX G

Stimulus Words of Recognition Task

Words presented in reaction time task

Novel but synonymous words presented

Character strength terms

creativity	imaginative
curiosity	inquisitive
open-mindedness	unbiased
love of learning	enjoy new knowledge
perspective	wise
bravery	courageous
persistence	steadfast
honesty	truthful
vitality	animated
capacity to love	compassionate
kindness	unselfish
social intelligence	emotionally aware
citizenship	civic-minded
fairness	impartial
leadership	guide
forgiveness	unresentful
humility	unpretentious
prudence	careful
self-regulation	self-disciplined
appreciation of beauty	value excellence
gratitude	thankfulness
hope	optimism
humor	funny
spirituality	pious

Character strength antonyms

pessimistic	cynical
impulsive	hasty
inflexible	rigid
unimaginative	commonplace
lazy	slothful

prejudiced

biased

Orthogonal terms-neutral to positive

charming
cultured
easy-going
independent
capable
methodical

charismatic
experienced
carefree
autonomous
accomplished
organized

Orthogonal terms-neutral to negative

ignorant
hostile
shrewd
superstitious
stubborn
naïve

uninformed
argumentative
cunning
irrational
obstinate
childlike

APPENDIX H
Descriptive Statistics of the VIA Inventory of Strengths Scales

	<u>Minimum</u>	<u>Maximum</u>	<u>Mean</u>	<u>Std.</u> <u>Deviation</u>
Beauty	1.00	4.40	2.34	.69
Brave	1.00	3.80	2.21	.54
Love	1.00	4.00	1.89	.53
Prudent	1.00	4.60	2.50	.57
Creative	1.00	4.00	2.26	.60
Open-minded	1.00	3.50	2.03	.48
Curious	1.00	4.20	2.11	.52
Vitality	1.10	4.10	2.38	.57
Fairness	1.00	4.40	2.02	.50
Forgiveness	1.10	4.40	2.41	.69
Gratitude	1.00	3.70	1.99	.55
Honesty	1.00	3.60	1.95	.46
Hope	1.00	4.30	2.06	.57
Persistence	1.00	4.10	2.24	.59
Kindness	1.00	3.70	1.97	.47
Leader	1.00	3.90	2.19	.53
Learner	1.00	4.20	2.39	.65

Humility	1.00	4.70	2.63	.62
Perspective	1.00	3.80	2.11	.49
Humorous	1.00	4.30	2.02	.53
Self-regulated	1.20	4.00	2.65	.60
Social IQ	1.00	4.00	2.14	.50
Spirituality	1.00	5.00	2.34	.84
Citizenship	1.00	4.40	2.17	.50
<i>Wisdom</i>	1.10	3.48	2.18	.43
<i>Courage</i>	1.18	3.75	2.19	.43
<i>Justice</i>	1.00	3.63	2.13	.45
<i>Temperance</i>	1.40	3.93	2.55	.44
<i>Transcendent</i>	1.06	3.48	2.15	.45
<i>Humanity</i>	1.00	3.77	2.00	.41

APPENDIX I
Reliability Analyses VIA Inventory of Strengths Scales

<u>VIA Scales</u>	<u>Cronbach's Alpha</u>
1. Curiosity	.81
2. Love of Learning	.84
3. Open-Mindedness	.80
4. Creativity	.87
5. Social Intelligence	.75
6. Perspective	.78
7. Bravery	.81
8. Perseverance	.86
9. Honesty	.73
10. Kindness	.75
11. Love	.75
12. Citizenship	.75
13. Fairness	.81
14. Leadership	.80
15. Self-Regulation	.70
16. Prudence	.75
17. Appreciation of Beauty	.85
18. Gratitude	.84

19. Hope	.81
20. Spirituality	.89
21. Humility	.80
22. Humor	.83
23. Vitality	.81
24. Forgiveness	.88
All VIA Scales	.97

APPENDIX J
Descriptive Statistics of Schema Self-Description Measure

<u>Strengths</u>	<u>Minimu m</u>	<u>Maximu m</u>	<u>Mean</u>	<u>Std. Deviation</u>
Appreciation of beauty	1.00	5.00	1.77	.85
Bravery	1.00	5.00	2.28	.97
Love	1.00	5.00	1.50	.73
Caution / Prudence	1.00	5.00	2.07	.92
Creativity	1.00	5.00	1.91	.95
Critical thinking/Open- Mindedness	1.00	5.00	1.73	.82
Curiosity	1.00	5.00	1.55	.66
Enthusiasm / Vitality	1.00	5.00	1.96	.96
Fairness	1.00	5.00	1.74	.78
Forgiveness	1.00	5.00	1.95	.93
Gratitude	1.00	5.00	1.62	.72
Honesty / Authenticity	1.00	5.00	1.52	.69
Hope / Optimism	1.00	5.00	1.65	.77
Industry / Perseverance	1.00	5.00	2.01	.85

Kindness / Generosity	1.00	4.00	1.50	.58
Leadership	1.00	5.00	2.25	1.02
Love of Learning	1.00	5.00	1.68	.79
Humility	1.00	5.00	2.34	1.05
Perspective / Wisdom	1.00	5.00	1.83	.77
Playfulness / Humor	1.00	4.00	1.64	.73
Self-control	1.00	5.00	2.20	.95
Social intelligence	1.00	5.00	1.84	.93
Spirituality / faith	1.00	5.00	2.35	1.28
Teamwork / Citizenship	1.00	4.00	2.04	.80

APPENDIX K
Descriptive Statistics of Schema Self-Importance Measure

<u>Strengths</u>	<u>Minimu m</u>	<u>Maximu m</u>	<u>Mean</u>	<u>Std. Deviation</u>
Appreciation of beauty	1.00	5.00	1.94	1.01
Bravery	1.00	5.00	1.81	.82
Love	1.00	4.00	1.30	.53
Caution / Prudence	1.00	5.00	1.98	.92
Creativity	1.00	4.00	1.64	.75
Critical thinking/Open- Mindedness	1.00	4.00	1.41	.56
Curiosity	1.00	4.00	1.55	.68
Enthusiasm / Vitality	1.00	4.00	1.73	.84
Fairness	1.00	5.00	1.43	.67
Forgiveness	1.00	4.00	1.65	.80
Gratitude	1.00	5.00	1.55	.76
Honesty / Authenticity	1.00	4.00	1.27	.54
Hope / Optimism	1.00	4.00	1.49	.66
Industry / Perseverance	1.00	4.00	1.78	.76

Kindness / Generosity	1.00	4.00	1.41	.57
Leadership	1.00	5.00	2.03	.96
Love of Learning	1.00	5.00	1.60	.75
Humility	1.00	5.00	1.95	.92
Perspective / Wisdom	1.00	4.00	1.46	.63
Playfulness / Humor	1.00	5.00	1.56	.72
Self-control	1.00	5.00	1.62	.74
Social intelligence	1.00	4.00	1.64	.78
Spirituality / faith	1.00	5.00	2.16	1.30
Teamwork / Citizenship	1.00	5.00	1.97	.86

APPENDIX L

Reliability Analysis for Schema Self-Description Measure

<u>Strength</u>	Cronbach's <u>Alpha</u>
Appreciation of beauty	.85
Bravery	.84
Love	.84
Caution / Prudence	.85
Creativity	.85
Critical thinking/Open-Mindedness	.85
Curiosity	.84
Enthusiasm / Vitality	.84
Fairness	.84
Forgiveness	.85
Gratitude	.84
Honesty / Authenticity	.84
	.85

Hope / Optimism	
Industry / Perseverance	.85
Kindness / Generosity	.84
Leadership	.84
Love of Learning	.84
Humility	.85
Perspective / Wisdom	.84
Playfulness / Humor	.85
Self-control	.85
Social intelligence	.84
Spirituality / faith	.85
Teamwork / Citizenship	.84

APPENDIX M

Reliability Analysis of Schema Self-Importance Measure

<u>Strengths</u>	Cronbach's <u>Alpha</u>
Appreciation of beauty	.89
Bravery	.88
Love	.88
Caution / Prudence	.89
Creativity	.89
Critical thinking/Open- Mindedness	.89
Curiosity	.88
Enthusiasm / Vitality	.88
Fairness	.88
Forgiveness	.88
Gratitude	.88
Honesty / Authenticity	.883
Hope /	.879

Optimism	
Industry / Perseverance	.88
Kindness / Generosity	.88
Leadership	.89
Love of Learning	.88
Humility	.88
Perspective / Wisdom	.88
Playfulness / Humor	.89
Self-control	.88
Social intelligence	.88
Spirituality / faith	.89
Teamwork / Citizenship	.88

APPENDIX N
Descriptive Statistics for Ryff Scales of Psychological Well-being

Well-being <u>Scales</u>	<u>N</u>	Minimu <u>m</u>	Maximu <u>m</u>	<u>Mean</u>	Std. <u>Deviation</u>
Overall Well-being	297	228	492	388.5	52.9
Autonomy	297	24	84	60.3	10.7
Environmental Mastery	297	26	83	60.8	10.4
Personal Growth	297	32	84	70.3	8.9
Positive Relations	297	36	84	65.6	11.5
Purpose in Life	297	27	84	68.0	10.8
Self- Acceptance	297	19	84	63.5	12.7

APPENDIX O

Scales of Psychological Well-Being (Ryff, 1989)

POSITIVE RELATIONS WITH OTHERS

Definition: High Scorer: Has warm satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy, affection, and intimacy; understands give and take of human relationships.
Low Scorer: Has few close, trusting relationships with others; finds it difficult to be warm, open, and concerned about others; is isolated and frustrated in interpersonal relationships; not willing to make compromises to sustain important ties with others.

- (+) [1.] Most people see me as loving and affectionate.
- (-) [2.] Maintaining close relationships has been difficult and frustrating for me
- (-) [3.] I often feel lonely because I have few close friends with whom to share my concerns.
- (+) [4.] I enjoy personal and mutual conversations with family members or friends.
- (+) 5. It is important to me to be a good listener when close friends talk to me about their problems.
- (-) [6.] I don't have many people who want to listen when I need to talk.
- (+) 7. I feel like I get a lot out of my friendships.
- (-) [8.] It seems to me that most other people have more friends than I do.
- (+) [9.] People would describe me as a giving person, willing to share my time with others.
- (-) [10.] I have not experienced many warm and trusting relationships with others.

- (-) 11. I often feel like I'm on the outside looking in when it comes to friendships.
- (+) [12.] I know that I can trust my friends, and they know they can trust me.
- (-) 13. I find it difficult to really open up when I talk with others.
- (+) 14. My friends and I sympathize with each other's problems.
- (+) indicates positively scored items
- (-) indicates negatively scored items

Internal consistency (coefficient alpha) = .88

Correlation with 20-item parent scale = .98

AUTONOMY

Definition: High Scorer: Is self-determining and independent; able to resist social pressures to think and act in certain ways; regulates behavior from within; evaluates self by personal standards.
Low Scorer: Is concerned about the expectations and evaluations of others; relies on judgments of others to make important decisions; conforms to social pressures to think and act in certain ways.

- (-) 1. Sometimes I change the way I act or think to be more like those around me.
- (+) [2.] I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.
- (+) [3.] My decisions are not usually influenced by what everyone else is doing.
- (-) [4.] I tend to worry about what other people think of me.
- (+) [5.] Being happy with myself is more important to me than having others approve of me.
- (-) [6.] I tend to be influenced by people with strong opinions.

- (+) 7. People rarely talk me into doing things I don't want to do.
- (-) 8. It is more important to me to "fit in" with others than to stand alone on my principles.
- (+) [9.] I have confidence in my opinions, even if they are contrary to the general consensus.
- (-) [10.] It's difficult for me to voice my own opinions on controversial matters.
- (-) [11.] I often change my mind about decisions if my friends or family disagree.
- (+) 12. I am not the kind of person who gives in to social pressures to think or act in certain ways.
- (-) 13. I am concerned about how other people evaluate the choices I have made in my life.
- (+) [14.] I judge myself by what I think is important, not by the values of what others think is important.
- (+) indicates positively scored items
- (-) indicates negatively scored items

Internal consistency (coefficient alpha) = .83

Correlation with 20-item parent scale = .97

ENVIRONMENTAL MASTERY

Definition: High Scorer: Has a sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; able to choose or create contexts suitable to personal needs and values.
Low Scorer: Has difficulty managing everyday affairs; feels unable to change or improve surrounding context; is unaware of surrounding opportunities; lacks sense of control over external world.

- (+) [1.] In general, I feel I am in charge of the situation in which I live.
- (-) [2.] The demands of everyday life often get me down.
- (-) [3.] I do not fit very well with the people and the community around me.
- (+) [4.] I am quite good at managing the many responsibilities of my daily life.
- (-) [5.] I often feel overwhelmed by my responsibilities.
- (+) 6. If I were unhappy with my living situation, I would take effective steps to change it.
- (+) [7.] I generally do a good job of taking care of my personal finances and affairs.
- (-) 8. I find it stressful that I can't keep up with all of the things I have to do each day.
- (+) [9.] I am good at juggling my time so that I can fit everything in that needs to get done.
- (+) 10. My daily life is busy, but I derive a sense of satisfaction from keeping up with everything.
- (-) 11. I get frustrated when trying to plan my daily activities because I never accomplish the things I set out to do.
- (+) 12. My efforts to find the kinds of activities and relationships that I need have been quite successful.
- (-) [13.] I have difficulty arranging my life in a way that is satisfying to me.
- (+) [14.] I have been able to build a home and a lifestyle for myself that is much to my liking.
- (+) indicates positively scored items
- (-) indicates negatively scored items

Internal consistency (coefficient alpha) = .86

Correlation with 20-item parent scale = .98

PERSONAL GROWTH

Definition: High Scorer: Has a feeling of continued development; sees self as growing and expanding; is open to new experiences; has sense of realizing his or her potential; sees improvement in self and behavior over time; is changing in ways that reflect more self knowledge and effectiveness.

Low Scorer: Has a sense of personal stagnation; lacks sense of improvement or expansion over time; feels bored and uninterested with life; feels unable to develop new attitudes or behaviors.

- (-) [1.] I am not interested in activities that will expand my horizons.
- (+) 2. In general, I feel that I continue to learn more about myself as time goes by.
- (+) 3. I am the kind of person who likes to give new things a try.
- (-) [4.] I don't want to try new ways of doing things—my life is fine the way it is.
- (+) [5.] I think it is important to have new experiences that challenge how you think about yourself and the world.
- (-) [6.] When I think about it, I haven't really improved much as a person over the years.
- (+) 7. In my view, people of every age are able to continue growing and developing.
- (+) 8. With time, I have gained a lot of insight about life that has made me a stronger, more capable person.
- (+) [9.] I have the sense that I have developed a lot as a person over time.

- (-) [10.] I do not enjoy being in new situations that require me to change my old familiar ways of doing things.
- (+) [11.] For me, life has been a continuous process of learning, changing, and growth.
- (+) 12. I enjoy seeing how my views have changed and matured over the years.
- (-) [13.] I gave up trying to make big improvements or changes in my life a long time ago.
- (-) [14.] There is truth to the saying you can't teach an old dog new tricks.
- (+) indicates positively scored items
- (-) indicates negatively scored items

Internal consistency (coefficient alpha) = .85

Correlation with 20-item parent scale = .97

PURPOSE IN LIFE

Definition: High Scorer: Has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living.

Low Scorer: Lacks a sense of meaning in life; has few goals or aims, lacks sense of direction; does not see purpose of past life; has no outlook or beliefs that give life meaning.

- (+) 1. I feel good when I think of what I've done in the past and what I hope to do in the future.
- (-) [2.] I live life one day at a time and don't really think about the future.
- (-) [3.] I tend to focus on the present, because the future nearly always brings me problems.
- (+) 4. I have a sense of direction and purpose in life.

- (-) [5.] My daily activities often seem trivial and unimportant to me.
- (-) [6.] I don't have a good sense of what it is I'm trying to accomplish in life.
- (-) [7.] I used to set goals for myself, but that now seems like a waste of time.
- (+) [8.] I enjoy making plans for the future and working to make them a reality.
- (+) [9.] I am an active person in carrying out the plans I set for myself.
- (+) [10.] Some people wander aimlessly through life, but I am not one of them.
- (-) [11.] I sometimes feel as if I've done all there is to do in life.
- (+) 12. My aims in life have been more a source of satisfaction than frustration to me.
- (+) 13. I find it satisfying to think about what I have accomplished in life.
- (-) 14. In the final analysis, I'm not so sure that my life adds up to much.
- (+) indicates positively scored items
- (-) indicates negatively scored items

Internal consistency (coefficient alpha) = .88

Correlation with 20-item parent scale = .98

SELF-ACCEPTANCE

Definition: High Scorer: Possesses a positive attitude toward the self; acknowledges and accepts multiple aspects of self including good and bad qualities; feels positive about past life.
Low Scorer: Feels dissatisfied with self; is disappointed with what has occurred in past life; is troubled about certain personal qualities; wishes to be different than what he or she is.

- (+) [1.] When I look at the story of my life, I am pleased with how things have turned out.
- (+) [2.] In general, I feel confident and positive about myself.
- (-) [3.] I feel like many of the people I know have gotten more out of life than I have.
- (-) 4. Given the opportunity, there are many things about myself that I would change.
- (+) [5.] I like most aspects of my personality.
- (+) [6.] I made some mistakes in the past, but I feel that all in all everything has worked out for the best.
- (-) [7.] In many ways, I feel disappointed about my achievements in life.
- (+) 8. For the most part, I am proud of who I am and the life I lead.
- (-) 9. I envy many people for the lives they lead.
- (-) [10.] My attitude about myself is probably not as positive as most people feel about themselves.
- (-) 11. Many days I wake up feeling discouraged about how I have lived my life.
- (+) [12.] The past had its ups and downs, but in general, I wouldn't want to change it.
- (+) [13.] When I compare myself to friends and acquaintances, it makes me feel good about who I am.
- (-) 14. Everyone has their weaknesses, but I seem to have more than my share.
- (+) indicates positively scored items
- (-) indicates negatively scored items

Internal consistency (coefficient alpha) = .91
Correlation with 20-item parent scale = .99

APPENDIX P

Reliability Analyses for Ryff Scales of Psychological Well-being

Reliability Analysis of Positive Relations With Others Scale

Positive Relation s Items	Cronbach's Alpha
Item #1	.87
Item #2	.87
Item #3	.86
Item #4	.87
Item #5	.87
Item #6	.86
Item #7	.86
Item #8	.87
Item #9	.87
Item #10	.86
Item #11	.86
Item #12	.87
Item #13	.87

Item #14	.87
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Reliability Analysis of Autonomy Well-being subscale

Autono my Items	Cronbach's Alpha
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Item #1	.84
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Item #2	.84
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Item #3	.84
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Item #4	.83
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Item #5	.84
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Item #6	.84
---------	-----

Item #7	.84
---------	-----

Item #8	.84
---------	-----

Item #9	.84
---------	-----

Item #10	.84
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Item #11	.84
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Item #12	.84
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Item #13	.83
----------	-----

Item #14	.83
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Reliability Analysis of Environmental Mastery subscale

Environ mental Mastery Items	Cronbach's Alpha
Item #1	.84
Item #2	.83
Item #3	.85
Item #4	.83
Item #5	.84
Item #6	.84
Item #7	.84
Item #8	.84
Item #9	.83
Item #10	.84
Item #11	.83
Item #12	.84
Item #13	.83
Item #14	.83

Reliability Analysis of Personal Growth subscale

Personal Growth Items	Cronbach's Alpha
Item #1	.85
Item #2	.84
Item #3	.84
Item #4	.85
Item #5	.84
Item #6	.84
Item #7	.84
Item #8	.84
Item #9	.83
Item #10	.86
Item #11	.84
Item #12	.84
Item #13	.84
Item #14	.85

Reliability Analysis of Purpose in Life subscale

Purpose in Life Items	Cronbach's Alpha
Item #1	.88
Item #2	.89
Item #3	.88
Item #4	.87
Item #5	.88
Item #6	.88
Item #7	.88
Item #8	.88
Item #9	.88
Item #10	.87
Item #11	.89
Item #12	.88
Item #13	.88
Item #14	.88

Reliability Analysis of Self-Acceptance subscale

Self-Acceptance Items	Cronbach's Alpha
Item #1	.90
Item #2	.90
Item #3	.90
Item #4	.91
Item #5	.91
Item #6	.91
Item #7	.90
Item #8	.90
Item #9	.91
Item #10	.91
Item #11	.90
Item #12	.91
Item #13	.91
Item #14	.90

Reliability Analysis of Total Ryff Scales of Psychological Well-Being

Total Ryff Scale Items	Cronbach's Alpha
N=84	.96

APPENDIX Q
Descriptive Statistics of CES-D Depression Measure

Items of the CES-D	<u>Mean</u>	<u>Std. Deviation</u>
Item #1	.66	.74
Item #2	.54	.79
Item #3	.53	.82
Item #4	.69	.91
Item #5	1.19	.92
Item #6	.59	.81
Item #7	1.01	1.05
Item #8	.40	.74
Item #9	.20	.54
Item #10	.54	.81
Item #11	.97	.98
Item #12	.68	.82
Item #13	.49	.71
Item #14	.77	.87
Item #15	.31	.60
Item #16	.31	.64
Item #17	.27	.59
Item #18	.69	.82

Item #19	.34	.69
Item #20	.62	.79

APPENDIX R
Center for Epidemiological Studies – Depression Scale (Radloff,
1977)

Using the scale below, indicate the number which best describes how often you felt or behaved this way – DURING THE PAST WEEK.

- 0 = Rarely or none of the time (less than 1 day)
- 1 = Some or a little of the time (1-2 days)
- 2 = Occasionally or a moderate amount of time (3-4 days)
- 3 = Most or all of the time (5-7 days)

- ___ 1. I was bothered by things that usually don't bother me.
- ___ 2. I did not feel like eating; my appetite was poor.
- ___ 3. I felt that I could not shake off the blues even with help from my family or friends.
- ___ 4. I felt that I was just as good as other people.
- ___ 5. I had trouble keeping my mind on what I was doing.
- ___ 6. I felt depressed.
- ___ 7. I felt that everything I did was an effort.
- ___ 8. I felt hopeful about the future.
- ___ 9. I thought my life had been a failure.
- ___ 10. I felt fearful.
- ___ 11. My sleep was restless.
- ___ 12. I was happy.
- ___ 13. I talked less than usual.
- ___ 14. I felt lonely.
- ___ 15. People were unfriendly.
- ___ 16. I enjoyed life.
- ___ 17. I had crying spells.
- ___ 18. I felt sad.
- ___ 19. I felt that people disliked me.
- ___ 20. I could not get "going."

APPENDIX S **Reliability Analysis of CES-D Depression Inventory**

CES-D Depression <u>Items</u>	Cronbach's <u>Alpha</u>
Item #1	.89
Item #2	.89
Item #3	.89
Item #4	.89
Item #5	.89
Item #6	.89
Item #7	.90
Item #8	.89
Item #9	.89
Item #10	.90
Item #11	.89
Item #12	.89
Item #13	.89
Item #14	.89
Item #15	.90
Item #16	.89
Item #17	.89

Item #18	.89
Item #19	.89
Item #20	.90

APPENDIX T
Depression Rates in Current Sample

<u>Score Ranges on CES-D Depression Inventory</u>	<u>Frequency in Current Sample</u>	<u>Percent</u>
0-16 Within Normal Limits	239	80.2
16-24 Moderately Depressed	34	11.4
Over 24 Severely Depressed	25	8.4
Total	298	100

APPENDIX U

Bivariate Correlations Matrices

Bivariate Correlation of Predictors with Outcome Variable, Overall Well-Being

	<u>Well-being</u>	<u>Reaction Time</u>	<u>Recall</u>	<u>Recognition</u>	<u>Self-Description</u>	<u>Self-Importance</u>	<u>Total Score on VIA</u>
Well-being		.01	.04	.06	-.61*	-.39*	-.63*
Reaction Time			-.01	.00	-.05	-.10	-.02
Recall				.24*	-.05	-.16*	-.03
Recognition					.05	-.08	.06
Self-Description						.62*	.78*
Self-Importance							.57*
Total Score on VIA							

***p<.01**

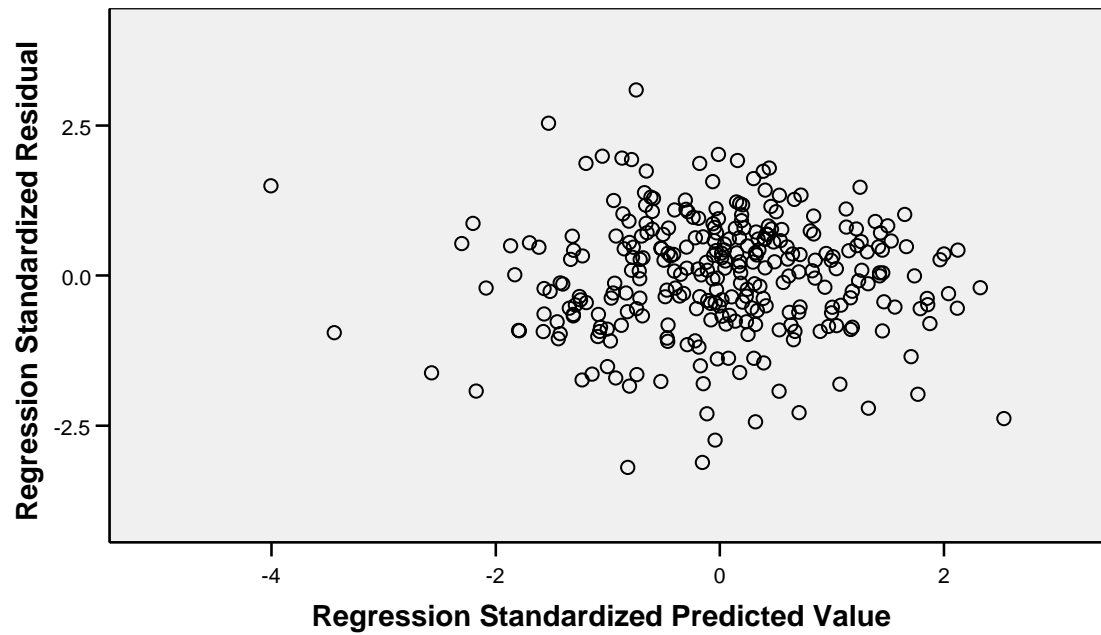
Bivariate Correlation of Predictors with Outcome Variable, Depressive Symptoms

	<u>Y₈</u> <u>Depressi</u> <u>on</u>	<u>X₁</u> <u>Reaction</u> <u>Time</u>	<u>X₂</u> <u>Recall</u>	<u>X₃</u> <u>Recognit</u> <u>ion</u>	<u>X₄</u> <u>Self-</u> <u>Descripti</u> <u>on</u>	<u>X₅</u> <u>Self-</u> <u>Importan</u> <u>ce</u>	<u>X₆</u> <u>Total</u> <u>Score on</u> <u>VIA</u>
Y ₈ Depressio n		.00	.03	.06	.23**	.03	.24**
X ₁ Reaction Time			-.00	.00	-.05	-.09	-.02
X ₂ Recall				.24**	-.05	-.17**	-.03
X ₃ Recogniti on					.05	-.08	.06
X ₄ Self- Descripti on						.62**	.78**
X ₅ Self- Importan ce							.57**
X ₆ Total Score on VIA							

****p<.01**

APPENDIX V

**Hypothesis One Outcome Variable Scatterplot of Residual Statistics:
Overall Psychological Well-Being**



APPENDIX W

Explanation of Predictor variables*

Independent Variables	<u>Hypotheses 1 & 2</u> (24 Strengths)	<u>Hypotheses 3& 4</u> (HUM and TRAN strengths)	<u>Hypotheses 5 & 6</u> (key strengths)
Reaction time variable	<p>bX1 Meanzrtvia= z score conversion of RTs and compared mathematically to “filler” RTs (Fazio, 1990)</p> <p>numbercensored=number of reaction times censored numberlike= total number of self-endorsed strengths in reaction time task</p>	<p>bX1 IV_human_z_h2 IV_trans_z_h2= same as H1 except using only Humanity or Transcendent strengths in calculation of reaction time variables</p> <p>numbercensored=number of reaction times censored numberlike= total number of self-endorsed strengths in reaction time task</p>	<p>bX1 key_str_h3= same as H1 except using key strengths in calculation of reaction time variable</p> <p>numbercensored=number of reaction times censored numberlike= total number of self-endorsed strengths in reaction time task</p>
Free recall variable	<p>bX2 Recstratio= number of self-endorsed strengths recalled divided by number of self-endorsed strengths (in RT task)</p>	<p>bX2 recstrationhum recstrationtran= same as H1 except using only Humanity or Transcendent strengths in calculation of free recall variables</p>	<p>bX2 Recstratiokey= same as H1 except using key strengths in calculation of free recall variable</p>
Recognition variable	<p>bX3 aa_prime**=recognition formula from memory literature which assesses participant “hits” and “false alarms”</p>	<p>bX3 aa_primetran aa_primehum=same as H1 except using Humanity and Transcendent strengths in calculation of recognition variables</p>	<p>bX3 aa_primekey=same as H1 except using key strengths in calculation of recognition variable</p>
Self-description schema variable	<p>bX4 Strself=self-report likert scale of self-description of strengths</p>	<p>bX4 strselfhum strselftran=same as h1 except using Humanity and</p>	<p>bX4 Strselfkey=same as h1 except using only key strengths in calculation of</p>

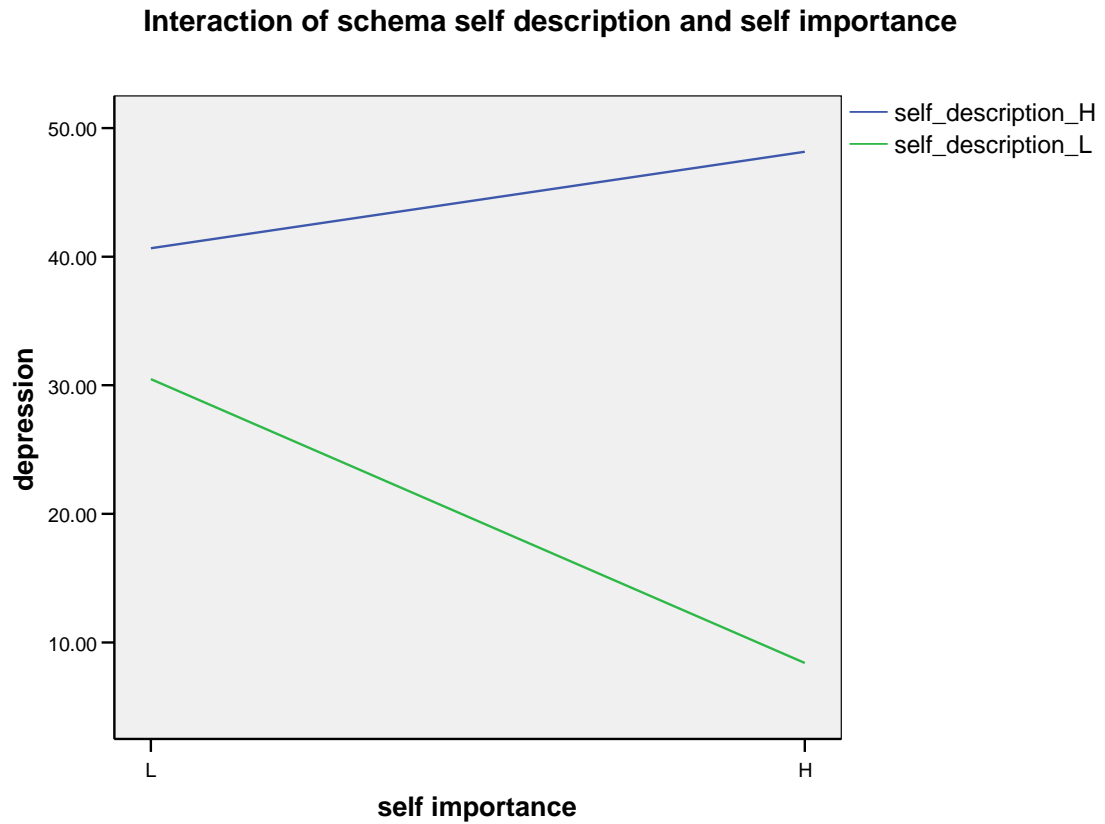
		Transcendent strengths in calculation of schema variables	schema variable
Self-importance schema variable	bX5 Strimp=self-report likert scale of self-importance of strengths	bX5 strimp hum strimp tran=same as h1 except using Humanity and Transcendent strengths in calculation of schema variables	bX5 Strimpkey=same as h1 except using key strengths in calculation of schema variable
VIA instrument	bX6 VIA mean=total mean score on VIA Inventory of Strengths	bX6 humanity trans=mean score of strengths in the Humanity and Transcendent categories	bX6 Viakey mean=mean score of each of the key strengths
Demographic Factors	bX7 Male (1), Female (0)	bX7 Male (1), Female (0)	bX7 Male (1), Female (0)
	bX8 Age	bX8 Age	bX8 Age
	bX9 Married (1), Never Married (0)	bX9 Married (1), Never Married (0)	bX9 Married (1), Never Married (0)
Interaction Terms	bX10 IA_sex_age=interaction term for gender and age IA_strslf_strimp=interaction term for self-description and self-importance likert schema scales	bX10 IA_sex_age= interaction term for gender and age IA_strslfhum_strimp hum=Interaction term for self-description and self-importance schema scales of humanity strengths IA_strslftran_strimp tran=Interaction term for self-description and self-importance schema scales of transcendent strengths	bX10 IA_sex_age interaction term for gender and age IA_strslfkey_strimpkey=Interaction term for self-description and self-importance schema scales for the key strengths

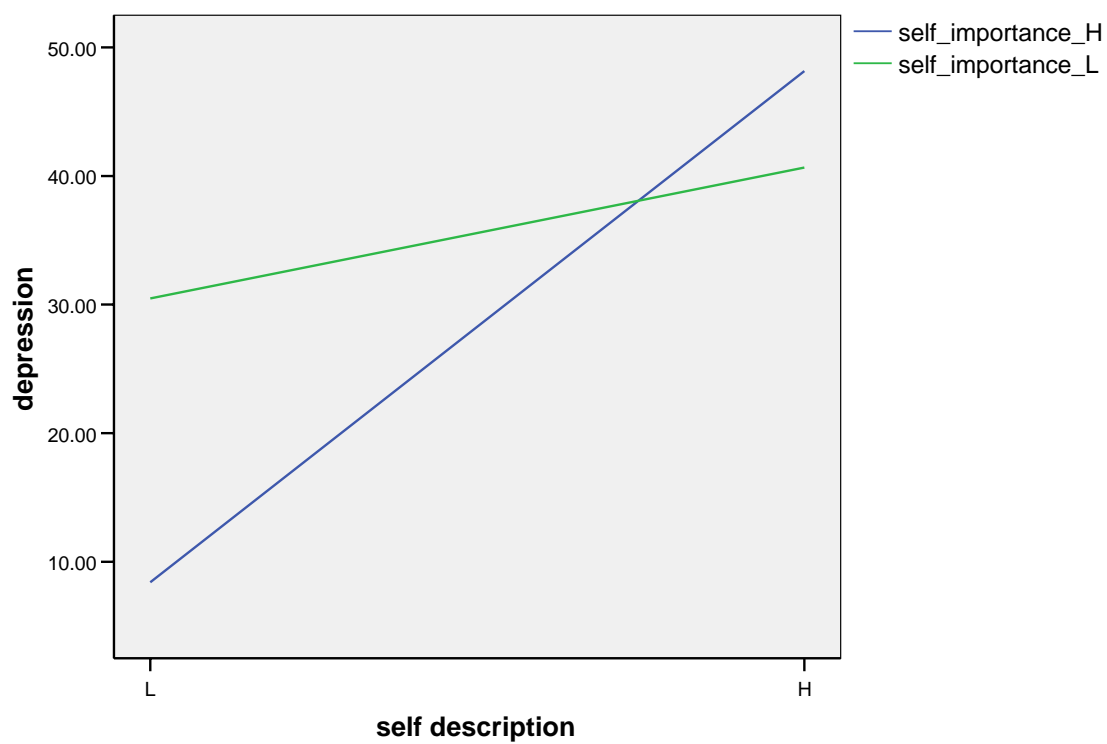
* including variable names from statistics program used

**A'' (i.e. 'A double prime' construct mathematically related to the recognition variable, $d'(d \text{ prime}) = [3+h1-f1-f1/h1]/4$ if $h1 < (1-f1)$ where h ='hits' and f ='false alarms' (Smith, 1995, p. 6)

APPENDIX X

Interaction Graphs of Schema Self-Description by Self-Importance and Schema Self-Importance by Self-Description



Interaction of schema self description and self importance

APPENDIX Y **Hypothesis One Significant F statistics and Regression** **Coefficients for Ryff Well-being subscales**

Positive Relations: $F=11.6$ (13, 282), $p<.001$, $R^2=.35$

Table 1.1

Hypothesis one significant regression coefficients and standardized beta weights for outcome variable, Positive Relations

<u>Predictor Variables</u> <u>Sig.</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	
Reaction Time	2.28				
<i>Parsimonious Model</i>	$F=5.7^{**}$	1.14	.10	2.00	.04*
	$\eta^2=.02$				
	$^{**}p<.05$ df= (1, 297)				
Score on VIA Inventory	-10.67	2.64	-.32	-4.04	.00*
*p<.05					

Autonomy: $F=5.63$ (13, 282), $p<.001$, $R^2=.21$

Table 1.2

Hypothesis one significant regression coefficients and standardized beta weights for outcome variable, Autonomy

Predictor Variables <u>Sig.</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	
Recognition	21.12	8.68	.14	2.43	.02*
Score on VIA Inventory	-8.38	2.72	-.27	-3.08	.00*
Age	.25	.12	.15	2.02	.04*
*p<.05					

Environmental Mastery: $F=11.12$ (13, 282) $p<.001$, $R^2=.34$

Table 1.3

Hypothesis one significant regression coefficients and standardized beta weights for outcome variable, Environmental Mastery

Predictor Variables <u>Sig.</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	
Score on VIA	-12.25	2.42	-.41	-5.07	.00*

Inventory

*p<.05

Personal Growth: F=12.1 (13, 282) p<.001, R²=.36

Table 1.4

Hypothesis one significance levels for regression coefficients and standardized beta weights for outcome variable, Personal Growth

Predictor Variables Sig.	<u>B</u>	Standard Error	Beta Weight	<u>t</u>	
Recognition	27.19				
<i>Parsimonious Model</i>	F=14.1** $\eta^2=.05$ **p<.01 df=(1, 295)	6.48	.21	4.20	.00*
Score on VIA Inventory	-4.98	2.03	-.19	-2.45	.02*
Age	.18	.09	.13	1.98	.04*

*p<.05

Purpose in Life: $F=13.16$ (13, 282) $p<.001$, $R^2=.38$

Table 1.5

Hypothesis one significant regression coefficients and standardized beta weights for outcome variable, Purpose in Life

<u>Predictor Variables</u> <u>Sig.</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	
Score on VIA Inventory	-11.20	2.43	-.36	-4.61	.00*
Married	3.40	1.72	.11	1.98	.04*
*p<.05					

Self-Acceptance: $F=12.7$ (13, 282) $p<.001$, $R^2=.37$

Table 1.6

Hypothesis one significant regression coefficients and standardized beta weights for outcome variable, Self-Acceptance

<u>Predictor Variables</u> <u>Sig.</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	
Score on VIA Inventory	-11.74	2.88	-.32	-4.07	.00*

***p<.05**

APPENDIX Z

Hypothesis Three Significant F statistics and Regression Coefficients for Ryff Well-being subscales

Positive Relations: $F=14.6$ (20, 264), $p<.001$, $R^2=.52$

Table 3.1

Hypothesis three significant regression coefficients and standardized beta weights for outcome variable, Positive Relations

Predictor Variables	<u>B</u>	Standard <u>Error</u>	Beta <u>Weight</u>	<u>t</u>	<u>Sig.</u>
Reaction Time to Humanity Strengths	-2.18	.87	-.11	-2.49	.01*
Reaction Time to Transcendent Strengths	1.93	.93	.10	2.10	.04*
Likert Schema Self-Description of Humanity Strengths	-3.24	1.18	-.48	-2.74	.01*
Score on VIA Instrument for Humanity Strengths	-13.01	2.02	-.46	-6.45	.00*
*p<.05					

Autonomy: $F=2.89$ (20, 264), $p<.001$, $R^2=.18$

Table 3.2

Hypothesis three significant regression coefficients and standardized beta weights for outcome variable, Autonomy

Predictor	Standard	Beta
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<u>Variables</u>	<u>B</u>	<u>Error</u>	<u>Weight</u>	<u>t</u>	<u>Sig.</u>
Reaction Time to Humanity Strengths	-2.46	1.10	-.13	-2.26	.03*
Age	.33	.14	.19	2.39	.02*

***p<.05**

Environmental Mastery: $F=5.35$ (20, 264), $p<.001$, $R^2=.29$

Table 3.3

Hypothesis three significant regression coefficients and standardized beta weights for outcome variable, Environmental Mastery

<u>Predictor Variables</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	<u>Sig.</u>
Score on VIA Instrument Transcendent Strengths	-5.24	2.33	-.23	-2.25	.03*

***p<.05**

Personal Growth: $F=6.40$ (20, 264), $p<.001$, $R^2=.33$

Table 3.4

Hypothesis three significant regression coefficients and standardized beta weights for outcome variable, Personal Growth

<u>Predictor Variables</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	<u>Sig.</u>
Free Recall of Humanity Strengths	-4.89	1.89	-.14	-2.60	.01*
	.21	.10	.15	2.05	.04*

Age

* $p < .05$ **Purpose in Life:** $F=9.15$ (20, 264), $p < .001$, $R^2 = .41$

Table 3.5

Hypothesis three significant regression coefficients and standardized beta weights for outcome variable, Purpose in Life

Predictor Variables	<u>B</u>	Standard Error	Beta Weight	<u>t</u>	<u>Sig.</u>
Reaction Time to Humanity Strengths	-2.17	.92	-.12	-2.36	.02*
Score on VIA Instrument Transcendent Strengths	-10.43	2.20	-.44	-4.74	.00*

* $p < .05$

Self-Acceptance: $F=9.93$ (20, 264), $p < .001$, $R^2 = .43$

Table 3.6

Hypothesis three significant regression coefficients and standardized beta weights for outcome variable, Self-Acceptance

Predictor Variables	<u>B</u>	Standard Error	Beta Weight	<u>t</u>	<u>Sig.</u>
Reaction Time to Humanity Strengths	-2.92	1.10	-.14	-2.75	.01*

Reaction Time to Transcendent Strengths	2.51	1.13	.11	2.23	.03*
Score on VIA Instrument Transcendent Strengths	-6.93	2.55	-.25	-2.72	.00*
Number Self- Endorsed Strengths	.60	.30	.11	1.98	.04*
Interaction of Likert Schema measures for Humanity Strengths	.64	.27	.66	2.34	.020*

***p<.05**

APPENDIX AA

Hypothesis Five Significant F statistics and Significant Regression Coefficients for Ryff Subscales

Positive Relations: $F=15.9$ (13, 281), $p<.001$, $R^2=.42$

Table 5.1

Hypothesis five significant regression coefficients and standardized beta weights for outcome variable, Positive Relations

<u>Predictor Variables</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	<u>Sig.</u>
Score on the VIA Instrument for Key Strengths	-10.38	1.83	-.40	-5.66	.00*
*p<.05					

Autonomy: $F=5.55$ (13, 281), $p<.001$, $R^2=.20$

Table 5.2

Hypothesis five significant regression coefficients and standardized beta weights for outcome variable, Autonomy

<u>Predictor Variables</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	<u>Sig.</u>
Reaction Time to Key Strengths	-3.10	1.07	-.16	-2.90	.00*
Free Recall of Key Strengths	-9.35	3.96	-.13	-2.36	.02*

Score on the VIA Instrument for Key Strengths	-7.44	2.01	-.31	-3.70	.00*
Age	.24	.12	.15	2.01	.04*

***p<.05**

Environmental Mastery: $F=13.82$ (13, 281), $p<.001$, $R^2=.39$

Table 5.3

Hypothesis five significant regression coefficients and standardized beta weights for outcome variable, Environmental Mastery

<u>Predictor Variables</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	<u>Sig.</u>
Score on the VIA Instrument for Key Strengths	-11.21	1.71	-.47	-6.54	.00*

***p<.05**

Personal Growth: $F=13.56$ (13, 281), $p<.001$, $R^2=.39$

Table 5.4

Hypothesis five significant regression coefficients and standardized beta weights for outcome variable, Personal Growth

<u>Predictor Variables</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	<u>Sig.</u>
	6.09	2.92	.10	2.09	.04*

Recognition of Key
Strengths

Score on the VIA Instrument for Key Strengths	-5.45	1.47	-.27	-3.7	.00*
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***p<.05**

Purpose in Life: $F=19.93$ (13, 281), $p<.001$, $R^2=.48$

Table 5.5

*Hypothesis five significant regression coefficients and standardized beta weights
for outcome variable, Purpose in Life*

<u>Predictor Variables</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	<u>Sig.</u>
Likert Schema Self-Description of Key Strengths	-1.33	.58	-.33	-2.28	.02*
Score on the VIA Instrument for Key Strengths	-12.40	1.64	-.50	-7.56	.00*
Number of Reaction Times Censored	-1.77	.80	-.10	-2.21	.03*

***p<.05**

Self-Acceptance: $F=20.47$ (13, 281), $p<.001$, $R^2=.47$

Table 5.6

Hypothesis five significant regression coefficients and standardized beta weights for outcome variable, Self-Acceptance

<u>Predictor Variables</u>	<u>B</u>	<u>Standard Error</u>	<u>Beta Weight</u>	<u>t</u>	<u>Sig.</u>
Likert Schema Self-Description of Key Strengths	-2.1	.68	-.45	-3.11	.002*
Score on the VIA Instrument for Key Strengths	-13.9	1.92	-.48	-7.22	.001*

***p<.05**

APPENDIX BB
Normative data sample (N=138034) for the VIA Strengths
Inventory as of January 2005

Normative Data for Character Strengths (Rashid & Seligman, 2004)

<u>Virtue</u>	<u>N</u>	<u>Label</u>	<u>Mean</u>	<u>SD</u>
Wisdom				
Strength1	138034	Creativity	3.78	0.70
Strength2	138034	Curiosity	3.97	0.58
Strength3	138034	Open-mindedness / Judgment	3.98	0.52
Strength4	138034	Learning, love of	3.87	0.64
Strength5	138034	Perspective	3.76	0.55
Courage				
Strength6	138034	Bravery	3.65	0.62
Strength7	138034	Persistence / Industriousness	3.59	0.68
Strength8	138034	Integrity / Honesty	3.94	0.48
Strength9	138034	Vitality / Zest	3.55	0.69
Humanity				

Strength10	138034	Love	3.88	0.61
Strength11	138034	Kindness	3.94	0.54
Strength12 Justice	138034	Social Intelligence	3.74	0.57
Strength13	138034	Citizenship, Teamwork	3.65	0.56
Strength14	138034	Fairness	3.98	0.50
Strength15 Temperance	138034	Leadership	3.73	0.55
Strength16	138034	Forgiveness	3.63	0.67
Strength17	138034	Humility / Modesty	3.37	0.64
Strength18	138034	Prudence	3.47	0.58
Strength19 Transcendence	138034	Self-Regulation / Self-Control	3.27	0.63
Strength20	138034	Beauty, Appreciation of	3.81	0.67
Strength21	138034	Gratitude	3.89	0.63
Strength22	138034	Hope	3.57	0.69
Strength23	138034	Humor, Playfulness	3.80	0.64

Strength24	138034	Spirituality	3.43	0.90
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BIBLIOGRAPHY

- Allport, G. (1961). *Pattern and growth in personality*. New York: Holt, Rinehart & Winston.
- Anderson, B., Cyranowski, J. & Espindle, D. (1999). Men's Sexual Self-Schema. *Journal of Personality and Social Psychology*, 76(4), 645-661.
- Anderson, N. (1968). Likeableness ratings of 555 personality trait words. *Journal of Personality and Social Psychology*, 9, 272-279.
- Aristotle (1988). *The Nichomachean Ethics*. Tr. David Ross, revised by J.I. Ackrill and J.O. Urmson. Oxford University Press.
- Aspinwall, L. (1998). Rethinking the role of positive affect in self-regulation. *Motivation and Emotion*, 22, 1-32.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review*, 84, 191-215.
- Baltes, P., & Staudinger, U. (2000). Wisdom: A metaheuristic (pragmatic) to orchestrate mind and virtue toward excellence. *American Psychologist*, 55, 122-136.
- Baumeister, R. (1987). How the self became a problem: A psychological review of historical research. *Journal of Personality and Social Psychology*, 52, 163-176.
- Baumeister, R. "Self-Concept, Self-Esteem and Identity" In *Personality: Contemporary Theory and Research* (Derlega, V, Winstead, B & Jones, W, eds.), Philadelphia,PA: Psychology Press, 2006, 246-280.
- Bem, D. & Allen, A. (1974). Predicting some of the people some of the time. The search for cross-situational consistencies in behavior. *Psychological Review*. Vol 81(6), 506-520.
- Belansky, E. & Boggiano, A. (1994). Predicting helping behaviors: The role of gender and instrumental/expressive self-schemata. *Sex Roles*, 30, 647-661.
- Bem, S. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology*, 6, (pp.1-62); New York: Academic Press.

- Bem, S. (1979). Theory and measurement of androgeny: reply to the Pedhazur-Tetenbaum and Locksley-Oten critiques. *Journal of Personality and Social Psychology*, 37, 1047-1054.
- Bem, S (1981). Gender schema theory: A cognitive account of sex-typing. *Psychological Review*, 88, 354-364.
- Bem, S. (1982). Gender-schema theory and self-schema theory compared: A comment on Markus, Crane, Bernstein, and Siladis, "Self-Schema and gender," *Journal of Personality and Social Psychology*, 43, 1192-1194.
- Belleza, F. & Hoyt, S. (1992). The self-reference effect and metal cuing. *Social Cognition*, 10, 51-78.
- Berndt, E., Lorrin, M., Koran, L., Finkelstein, S., Gelenberg, A., Kornstein, S., Miller, I. Thase, M., Trapp, G. & Keller, M. (2000). Lost of Human Capital from Early-Onset Chronic Depression. *American Journal of Psychiatry*, 157(6), 940-947.
- Biswas-Diener, R. (2006). From the equator to the North Pole: A study of character strengths. *Journal of Happiness Studies*, 7, 293-310.
- Blasi, A. (1980). Bridging moral cognition and moral action: A critical review of the literature. *Psychological Bulletin*, 88, 1-45.
- Bochner, S. & van Zyl, T. (1985). Desirability Ratings of 110 Personality-Trait Words. *Journal of Social Psychology*, 125(4), 459-466.
- Bornstein, R., Mei Ng, H., Gallagher, H., Kloss, D., Regier, N. (2005). Contrasting Effects of Self-Schema Priming on Lexical Decisions and Interpersonal Stroop Task Performance: Evidence for a Cognitive/Interactionist Model of Interpersonal Dependency. *Journal of Personality*, 73(3), 731-762.
- Brinker, J., Harris, J. Aitken; Guyitt, B; Dozois, D. (2006). The Importance of Importance: Self-Descriptors in Dysphoria. *Journal of Individual Differences*. Vol 7(4), 193-198.

- Bromley, E., Johnson, J. & Cohen, P. (2006). Personality strengths in adolescence and decreased risk of developing mental health problems in early adulthood. *Comprehensive Psychiatry*, 47, 315-324.
- Bruch, M., Kaffowitz, N & Berger, P. (1988). Self-Schema for Assertiveness: Extending the Validity of the Self-Schema Construct. *Journal of Research in Personality*, 22, 424-444.
- Bruner, J. (1957). On perceptual readiness. *Psychological Review*, 64, 123-152.
- Cacioppo, J. T., Gardner, W. L. & Berntson, G. G. (1999). The affect system has parallel and integrative processing components: Form follows function. *Journal of Personality and Social Psychology*, 76, 839-855.
- Calfas, K., Ingram, R. & Kaplan, R. (1997). Information Processing and Affective Distress in Osteoarthritis Patients. *Journal of Consulting and Clinical Psychology*, 65(4), 576-581.
- Cantor, N. & Kihlstrom, J.F. (1987). *Personality and social intelligence*. Englewood Cliffs, N.J.: Prentice Hall.
- Carver, C. & Scheier, M. (2002). The hopeful optimist. *Psychological Inquiry*, 13(4), 288-290.
- Cassandro, V. , & Simonton, D.K. (2003). Creativity and Genius. In C.L.M. Keyes & J. Haidt (Eds), *Flourishing” Positive psychology and the life well-lived* (pp. 163-183).
- Clemmey, P. & Nicassio, P. (1997). Illness Self-Schemas in Depressed and Nondepressed Rheumatoid Arthritis Patients. *Journal of Behavioral Medicine*, 20(3), 273-290.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed). Hillsdale, NJ: Erlbaum.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155-159.
- Cone, J & Foster, S. *Dissertations and Theses from start to finish: psychology and related fields*. American Psychological Association: Washington D.C., 1993.

- Cohen, J. & Cohen, P. (1994). *Applied multiple regression/correlational analysis for the behavioral sciences*. (2nd ed.). Hillsdale, NJ: Erlbaum.
- Corsano, P., Majorano, M., Champretavy, L. (2006). Psychological Well-Being in Adolescence: The Contribution of Interpersonal Relations and Experience of Being Alone. *Adolescence*, 41(152), 341-353.
- Covington, M. (1999). Caring about learning: The nature and nurturing of subject matter appreciation. *Educational Psychologist*, 34, 127-136.
- Craik, F & Tulving, E. (1975). Depth of Processing and the retention of words in episodic memory. *Journal of Experimental Psychology: General*, 11, 268-294.
- Critchfield, T., Tucker, J., & Vuchinich, R. (1998). Self Report Methods. In K. Lattal, & M. Perone (Eds.), *Handbook of research methods in human operant behavior* (pp. 435-470). New York, NY: Plenum Press.
- Dahlsgaard, K., Peterson, C. & Seligman, M. (2005). Shared virtue: The convergence of valued human strengths across culture and history. *Review of General Psychology*, 9, 203-213.
- Dent, J. & Teasdale, J. (1988). Negative cognition and the persistence of depression. *Journal of Abnormal Psychology*, 97(1), 29-34.
- Derry, P. & Kuiper, N. (1981). Schematic Processing and Self-Reference in Clinical Depression. *Journal of Abnormal Psychology*, 90 (4), 286-297.
- Deutsch, F., Kroll, J., Weible, A., Letourneau, L., & Goss, R. (1988). Spontaneous Trait Generation: A New Method for Identifying Self-Schemas. *Journal of Personality* 56(2) 327-354.
- Diener, E., Smith, H. & Fujita, F. (1995). The personality structure of affect. *Journal of Personality and Social Psychology*, 69, 130-141.
- Diener, E. & Seligman, M. (2002). Very Happy People. *Psychological Science*, 13, 80-83.
- Diener, E., Suh, E. M., Lucas, R. E. & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276-302.

- Dozois, D. & Dobson, K. (2003). The structure of the self-schema in clinical depression: Differences related to episode recurrence. *Cognition and Emotion*, 17(6), 933-941.
- Dozois, D. (2003). The Psychometric Characteristics of the Hamilton Depression Inventory. *Journal of Personality Assessment*, 80(1), 31-40.
- Duval, S. & Wickland, R. (1972). *A theory of objective self-awareness*. San Diego, CA: Academic Press.
- Eagly, A. & Johnson, B.T. (1990). Gender and leadership style: A meta-analysis. *Psychological Bulletin*, 108, 203-256.
- Estabrooks, P. & Courneya, K. (1997). Relationships Among Self-Schema, Intention, and Exercise Behavior. *Journal of Sport & Exercise Psychology*, 19, 156-168.
- Enright, R. & Coyle, C.T. (1998). Researching the process model of forgiveness within psychological interventions. In E.L. Worthington (Ed.), *Dimensions of forgiveness: Psychological research and theological perspectives* (pp. 139-161). Philadelphia: Templeton Foundation Press.
- Eisenberger, R. (1992). Learned industriousness. *Psychological Review*, 99, 248-267.
- Erikson, E. (1959). Identity and the life cycle. *Psychological Issues*, 1, 18-164.
- Evans, J., Heron, J., Lewish, G., Araya, R., Wolke, D. (2005). Negative self-schemas and the onset of depression in women: A longitudinal study. *British Journal of Psychiatry*, 186(4), 302-307.
- Evans, P. & Whote, D. (1981). Towards an empirical definition of courage. *Behaviour Research and Therapy*, 19, 419-424.
- Fava, G. & Mangelli, L. (2001). Assessment of subclinical symptoms and psychological well-being in depression. *European Archive of Psychiatry and Clinical Neuroscience*, 251(2), 47-52.
- Fazio, R. (1990). A practical guide to the use of response latencies in social

- psychological research. In c. Hendrick & M.S. Clark (Eds.), *Review of Personality and Social Psychology*, (Vol. 11, pp. 74-97). Newbury Park, CA: Sage.
- Fekken, G. & Jackson, D. (1988). Predicting consistent psychological test item responses—A comparison of models. *Personality and Individual Differences*, 9, 873-882.
- Fowers, B. (2005). *Virtue and Psychology: Pursuing Excellence in Ordinary Practices*. Washington D.C.: American Psychological Association.
- Frazier, C. Mintz, L. Mobley, M. (2005). A Multidimensional Look at Religious Involvement and Psychological Well-Being Among Urban Elderly African Americans. *Journal of Counseling Psychology*, 52(4), 583-590.
- Fredrickson, B. & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition and Emotion*, 19(3), 313-332.
- Froming, W., Nasby, W. & McManus, J. (1998). Prosocial Self-Schemas, Self-Awareness, and Children's Prosocial Behavior. *Journal of Personality and Social Psychology*, 75(3), 766-777.
- Gillham, J. (Ed.) (2000). *The science of optimism and hope: Research essays in honor of Martin E. P. Seligman*. Radnor, PA: Templeton Foundation Press.
- Greenberg, M. & Beck, A. (1989). Depression Versus Anxiety: A Test of the Content-Specificity Hypothesis. *Journal of Abnormal Psychology*, 98(1), 9-13
- Harman, G. (1999). Moral Philosophy Meets Social Psychology: Virtue Ethics and the Fundamental Attribution Error. *Proceedings of the Aristotelian Society*, 99, 315-331.
- Haidt, J. (2003). Elevation and the positive psychology of morality. In C.L.M. Keyes & J. Haidt (Eds.), *Flourishing: Positive Psychology and the life well-lived* (pp. 275-289). Washington D. C.: American Psychological Association.

- Haslam, N. (1991). Prudence: Aristotelian perspective on practical reason and self-control. *Journal for the Theory of Social Behavior*, 21, 151-169.
- Hammen, C.; Marks, T.; Mayol, A.; deMayo, R. (1985). Depressive Self-Schemas, Life Stress, and Vulnerability to Depression. *Journal of Abnormal Psychology*, 94 (3).308-319.
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52, 511-524.
- Higgins, E. & King, C. (1981). Accessibility of social constructs: Information-processing consequences of individual and contextual variability. In N. Cantor, & J.F. Kihlstrom (Eds.), *Personality, cognition, and social interaction* (pp. 69-121). Hillsdale, NJ: Erlbaum.
- Higgins, E. & Bargh, J. (1987). Social cognition and social perception. *Annual Review of Psychology*, 38, 369-425.
- Hursthouse, R. (1999). *On Virtue Ethics*. Oxford: Oxford University Press.
- Ingram, R., Patridge, S., Scott, W. & Bernet, C. (1994). Schema Specificity in Subclinical Syndrome Depression: Distinctions Between Automatically Versus Effortfully Encoded State and Trait Depressive Information. *Cognitive Therapy and Research*, 18(3), 195-209.
- Isaacowitz, D., Valliant, G, & Seligman, M. (2003). Strengths and Satisfaction Across the Adult Lifespan. *International Journal of Aging and Human Development*, 57(2), 181-201.
- James, W. (1890). *Principles of Psychology*. New York: Holt.
- Kamtekar, R. (2004). Situationism and Virtue Ethics on the Content of Our Character. *Ethics*, 114, 458-491.
- King, L, Eells, J & Burton, C. (2004). The Good Life, Broadly and Narrowly Considered. In P. Linely and S. Joseph (Eds.), *Positive Psychology in Practice* (pp. 55-67). New Jersey: Wiley.
- Kessler R., McGonagle K., Swartz M., Blazer D., Nelson C. (1993). Sex and depression in the National Comorbidity Survey, I: lifetime prevalence, chronicity and recurrence. *Journal of Affective Disorders*, 29, 85–96.

- Kelvin, R., Goddyer, I, Teasdale, J. & Brechin, D. (1999). Latent Negative Self-schema and High Emotionality in Well Adolescents at Risk for Psychopathology. *Journal of Child Psychology and Psychiatry*, 40(6), 959-968.
- Kendzierski, D. (2007). A Self-Schema Approach to Healthy Eating. *Journal of the American Psychiatric Nurses Association*. 12(6) 350-357.
- Kendzierski, D.(1988). Self-Schemata and Exercise. *Basic and Applied Social Psychology*, 9(1), 45-59.
- Kendzierski, D. & Johnson, W. (1993). Excuses, Excuses, Excuses: A Cognitive Behavioral Approach to Exercise Implementation. *Journal of Sport & Exercise Psychology*, 15, 207-219.
- Kendzierski, D. & Whitaker, D. (1997). The Role of Self-Schema in Linking Intentions with Behavior. *Personality and Social Psychology Bulletin* ,23(2), 139-147.
- Kendzierski, D. & Costello, M. (2004). Healthy Eating Self-Schema and Nutrition Behavior. *Journal of Applied Social Psychology*, 34, 2437-2451.
- Keyes, C. (2007). Promoting and Protecting Mental Health as Flourishing: A Complementary Strategy for Improving National Mental Health. *American Psychologist*, 62(2), 95-108.
- Keyes, C., Shmotkin, D., & Ryff, C. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology*, 82(6), 1007-1022.
- Klein, S., Loftus, J. & Burton, H. (1989). Two self-reference effect: The importance of distinguishing between self-descriptiveness judgments and autobiographical retrieval in self-referent encoding. *Journal of Personality and Social Psychology*, 56, 853-865.
- Klein, S. & Kihlstrom, J. (1986). Elaboration, Organization, and the Self-Reference Effect in Memory. *Journal of Experimental Psychology*, 115(1), 26-38.

- Knapp, S. & VandeCreek, L. (2004). A principle-based analysis of the 2002 American Psychological Association's Ethics Code. *Psychotherapy: Theory/Research/Practice/Training*, 41, 247-254.
- Kubzansky, L., Sparrow, D., Vokonas, P. & Kawachi, I. (2001). Is the glass half empty or half full? A prospective study of optimism and coronary heart disease in the normative aging study. *Psychosomatic Medicine*, 63, 910-916.
- Kuiper, N. & Rogers, T. (1979). Encoding of personal information: Self-other differences. *Journal of Personality and Social Psychology*, 37, 499-514.
- Linley, P. & Joseph S. eds. (2004). *Positive Psychology in Practice*. John Wiley and Sons, Inc.
- Lyubomirsky, S. & Lepper, H.S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, 46(2), 137-155.
- Mahard, R. (1988). The CES-D as a measure of depressive mood in the elderly Puerto Rican population. *Journals of Gerontology*, 43(1), 24-25.
- Markus, H. (1977). Self-schemata and processing information about the self. *Journal of Personality & Social Psychology*, 35(2), 63-78.
- Markus, H., Crane, M., Bernstein, S., & Siladi, M. (1982). Self-schemas and gender. *Journal of Personality & Social Psychology*, 42, 38-50.
- Markus, H. & Wurf, E. (1987). The Dynamic Self-Concept: A Social Psychological Perspective. *Annual Review of Psychology*, 38, 299-337.
- Matlin, M. (2005). *Cognition*. Sixth Edition, New Jersey: Wiley.
- Martin, R. (2001). Humor, laughter, and physical health: Methodological issues and research findings. *Psychological Bulletin*, 127, 504-519.
- Martin, R. (1998). Approaches to the sense of humor: A historical review. In W. Ruch (Ed.), *The sense of humor: Explorations of a personality characteristic* (pp. 15-62). New York: Mouton de Gruyter.
- McCrae, R., & Costa, P. (1997). Conceptions and correlates of openness to

- experience. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of personality psychology* (pp. 825-847). San Diego, CA: Academic Press.
- McCullough, M., Emmons, R., & Tsang, J. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology*, 82, 112-127.
- McCullough, M., Pargament, K., & Thoresen, C. (Eds.) (2000). *Forgiveness: Theory, research, and practice*. New York: Guilford.
- McGuire, W. & Padawer-Singer, A (1976). Trait salience in the spontaneous self-concept. *Journal of Personality and Social Psychology*, 33, 743-754.
- Mills, C. (1983). Sex-Typing and Self-Schema Effects on Memory and Response Latency. *Journal of Personality and Social Psychology*, 45 (1), 163-172.
- Mishel, W., Shoda, Y., & Peake, P.K. (1988). The nature of adolescent competencies predicted by preschool delay of gratification. *Journal of Personality and Social Psychology*, 54, 687-696.
- Moscicki, E. K., Locke, B., Rae, D. S., & Boyd, J. H. (1989). Depressive symptoms among Mexicans: The Hispanic Health and Nutrition Examination Survey. *American Journal of Epidemiology*, 130, 348-360.
- Mueller, J., Thompson, W., & Dugan, K. (1986). Trait Distinctiveness and Accessibility in the Self-Schema. *Personality and Social Psychology Bulletin*, 12(1), 81-89.
- Myers, J. & Weissman, M. (1980). Use of a self-report symptom scale to detect depression in a community sample. *American Journal of Psychiatry*, 137(9), 1081-1084.
- Neubauer, A. & Malle, B. (1997). Questionnaire Response Latencies: Implications for Personality Assessment and Self-Schema Theory. *European Journal of Psychological Assessment*, 13(2), 109-117.
- Otake, K., Shimai, S., Tanaka-Matsumi, J. (2006). Happy people become happier through kindness: A counting kindnesses intervention. *Journal of Happiness Studies*, 7(3), 361-375.

- Park, N.; Peterson, C.; Seligman, M. (2006). Character strengths in fifty-four nations and the fifty US states. *Journal of Positive Psychology*, 1(3), 118-129.
- Park, N.; Peterson, C. (2006). Character strengths and happiness among young children: Content analysis of parental descriptions. *Journal of Happiness Studies*, 7(3), 323-341.
- Park, N., Peterson, C., & Seligman, M.P. (2004). Strengths of Character and Well-Being. *Journal of Social and Clinical Psychology*, 23(5), 603-619.
- Pargament, K. (1997). *The psychology of religion and coping: Theory, research, & practice*. New York: Guilford Press.
- Peterson, C. & Seligman, M. (2003). Character Strengths before and after September 11. *Psychological Science*, 14(4), 381-384.
- Peterson, C. & Seligman, M. *Character Strengths and Virtues: A Handbook and Classification*. New York: Oxford University Press, 2004.
- Popham, M. & Holden, R. (1990). Assessing MMPI constructs through the measurement of response latencies. *Journal of Personality Assessment*, 54, 469-478.
- Potkay, C. & Bem, A. (1973). The Adjective Generation Technique: An alternative to adjective checklists. *Psychological Reports*, 32(2), 457-458.
- Putnam, D. (1997). Psychological Courage. *Philosophy, Psychiatry, and Psychology* 4(1), 1-11.
- Rao, U., Hammen, C., Daley, S. (1999). Continuity of depression during the transition to adulthood: A 5-year longitudinal study of young women. *Journal of the American Academy of Child & Adolescent Psychiatry*, 38(7), 908-915.
- Rachels, J. (1993). *The Elements of Moral Philosophy*. New York: McGraw Hill.
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1(3), 385-401.

- Rafanelli, C., Park, S. Ruini, C. Ottolini, F. Cazzaro, M. Fava, G. (2000). Rating Well-being and Distress. *Stress Medicine*, 16, 55-61.
- Rashid, T. (2005). Character Strengths and Well-Being. Unpublished manuscript.
- Rashid, T. & Seligman, M. (2004). Unpublished Data (publication in progress) from authentic happiness website (www.authentichappiness.org).
- Roberts, R (1980). Reliability of the CES-D scale in different ethnic contexts. *Psychiatry Research*, 2(2), 125-134.
- Rogers, T., Kuiper, N. & Kirker, W. (1977). Self-reference and the Encoding of Personal Information. *Journal of Personality and Social Psychology*, 35(9), 677-688.
- Rogers, T, Rogers, P., Kuiper, N. (1979). Evidence for the self as a cognitive prototype: The 'false alarm effect'. *Personality and Social Psychology Bulletin*, 5, 53-56.
- Rojahn, K. & Pettigrew, T. (1992). Memory for schema-relevant information: A meta-analytic resolution. *British Journal of Social Psychology*, 31, 81-109.
- Rossi, J. (1990). Statistical Power of Psychological Research: What Have We Gained in 20 Years? *Journal of Consulting and Clinical Psychology*, 58(8), 646-656.
- Russell, R. & Wells P. (1994). Predictors of Happiness in married couples. *Personality and Individual Differences*, 17, 313-321.
- Ruiz, J., Matthews, K., Scheier, M. & Schulz, R. (2006). Does Who You Marry Matter to Your Health? Influence of Patients' and Spouses' Personality on Their Partners' Psychological Well-Being Following Coronary Artery Bypass Surgery. *Journal of Personality and Social Psychology*, 91(2), 255-267.
- Ryan, R. & Deci, E. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52, 141-166.

- Ryan, R. & Frederick, C. (1997). On energy, personality, and health; Subjective vitality as a dynamic reflection of well-being. *Journal of Personality*, 65, 529-565.
- Ryff, C. (1989) Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069-1081.
- Ryff, C. (1995). Psychological well-being in adult life. *Current Directions in Psychological Science*, 4, 99-104.
- Ryff, C., & Keyes, C. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69, 719-727.
- Ryan, R. (2000). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52, 141-166.
- Sabini, J. & Silver, M. (2005). Lack of Character? Situationism Critiqued. *Ethics*, 115, 535-562.
- Salovey, P. & Mayer, J. (1990). Emotional Intelligence. *Imagination, Cognition, and Personality*, 9, 185-211.
- Salzer, M. (1998). Consumer Satisfaction. *Psychiatric Services*, 49, 1622.
- Sandage, S. & Hill P. (2001). The Virtues of Positive Psychology: The Rapprochement and Challenges of an Affirmative Postmodern Perspective. *Journal for the Theory of Social Behaviour*, 31(3), 241-260.
- Schimmack, U. & Oishi, S. (2005). The influence of chronically and temporarily accessible information on life satisfaction judgments. *Journal of Personality and Social Psychology*, 89(3), 395-406.
- Seligman, M. & Csikszentmihalyi, M. (2000). _Positive Psychology: An Introduction. *American Psychologist*, 55(1), 5-14.
- Seligman, M. (2002). *Authentic Happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York: Free Press.
- Shadel, W. & Cervone, D. (2006). Evaluating Social-Cognitive Mechanisms That

Regulate Self-Efficacy in Response to Provocative Smoking Cues: An Experimental Investigation. *Psychology of Addictive Behaviors*, 20(1), 91-96.

Sheeran, P. & Orbell, S. (2000). Self-Schemas and the theory of planned behaviour. *European Journal of Social Psychology*, 30, 533-550.

Shimai, S., Otake, K., Park, N., Peterson, C. & Seligman, M (2006). Convergence of character strengths in American and Japanese young adults. *Journal of Happiness Studies*, 7(3), 311-322.

Silvia, P & Duval, S. (2001). Objective Self-Awareness Theory: Recent Progress and Enduring Problems. *Personality and Social Psychology Review*, 5(3), 230-241.

Simonton, D.K. (2000). Creativity: Cognitive, developmental, personal and social aspects. *American Psychologist*, 55, 151-158.

Smith, W.D. (1995). Clarification of Sensitivity Measure, A'. *Journal of Mathematical Psychology*, 39, 82-89.

Snyder, C. (2000). *Handbook of hope: Theory, measures, and applications*. San Diego, CA: Academic Press.

Stanovich, K., & West, R. (1998). Individual differences in rational thought. *Journal of Experimental Psychology: General*, 127, 161-188.

Staw, B., Sutton, R. & Peled, L. (1994). Employee positive emotion and favorable outcomes in the workplace. *Organizational Science*, 5, 51-71.

Stein, K. (1996). The Self-Schema Model: A Theoretical Approach to the Self-Concept in Eating Disorders. *Archives of Psychiatric Nursing*, 10(2), 96-109.

Sullivan, J. & Transue, J. (1999). The psychological underpinnings of democracy: A selective review of research on political tolerance, interpersonal trust, and social capital. *Annual Review of Psychology*, 50, 625-650.

SuperLab Pro RT Software (Cedrus Corp, San Pedro, CA)

Tabachnick, B. & Fidell, L. *Using multivariate statistics* (2nd ed.). New York:

- HarperCollins, 1989.
- Tangney, J. (2000). Humility: Theoretical Perspectives, empirical findings and directions for future research. *Journal of Social and Clinical Psychology*, 19, 70-82.
- Teige, S., Schnabel, K., Banes, R., Asendorpf, J. (2004). Assessment of Multiple Implicit Self-Concept Dimensions Using the Extrinsic Affective Simon Task (EAST). *European Journal of Personality*, 18, 495-520.
- Tetrick, L. (1989). An exploratory investigation of response latency in computerized administration of the Marlowe-Crowne Social Desirability Scale. *Personality and Individual Differences*, 10, 1281-1287.
- Vallacher, R & Wegner, D. (1987). What Do People Think They're Doing?: Action Identification and Human Behavior. *Psychological Review*, 94(1), 3-15.
- Vallacher, R. & Wegner, D. (1989). Levels of Personal Agency: Individual Variation in Action Identification. *Journal of Personality and Social Psychology*, 57(4), 660-671.
- Whisman & Delinski (2002). Marital Satisfaction and an Information-Processing Measure of Partner Schemas. *Cognitive Therapy and Research*, 26(5)617-627)
- Wilber, K. (2001). No Boundary: Eastern and Western Approaches to Personal Growth. Boston: Shambhala.
- Wittgenstein, L. (1953). *Philosophical Investigations*. New York: Macmillan.
- Wong, J. Y. (2006). Strength-Centered Therapy: A Social Constructionist, Virtues-Based Psychotherapy. *Psychotherapy: Theory, Research, Practice, Training*, 43(2), 133-146.
- Wood, W., Tam, L. & Witt, M. (2005). Changing Circumstances, Disrupting Habits. *Journal of Personality and Social Psychology*, 88(6), 918-933.
- Yanhua, G. & Yukai, C. (2006). The Effect of Self-Reference and Friend-reference on Personality Traits Memory. *Psychological Science* 29(2), 448-450.

VITAE

Curriculum Vitae

Jason Scott Berman

E-mail: Jason.Berman@utsouthwestern.edu

EDUCATION

University of Texas, Southwestern Medical Center, Dallas, Texas
Department of Psychiatry, Division of Psychology
Ph.D. Candidate, Clinical Psychology
Dissertation: *Character Strengths, Self-Schemas and Psychological Well-Being: A Multi-Method Approach*
Chair: Dean Bert Moore, University of Texas at Dallas
Final Dissertation Defense, February 27, 2007
Graduation, June 2, 2007

Baylor University, Waco, Texas
Master of Arts, May 2001, Philosophy and Statistics
Bachelor of Arts, Magna Cum Laude, May 1998, Philosophy

University of Haifa, Israel
International Honor's Psychology Program, 2002

Study program related to the role of psychology in the context of Israeli culture and history (e.g. group processes in Arab-Israeli conflict, Holocaust survivor psychopathology; developmental effects of infant sleeping arrangements in collective farms/settlements)

University of California, Los Angeles
Undergraduate psychology courses & research on forgiveness, 2000

RESEARCH INTERESTS

Clinical interventions for increasing character strengths
Group processes and psychotherapy
Experimental designs for assessment of character strengths
International relations and Arab-Israeli conflict
Political psychology

Positive emotions
Virtue Ethics

PUBLICATIONS AND RESEARCH

- Koren, D, Norman D., Cohen, A, Berman, J., Klein, E. (2005). Increased PTSD Risk With Combat-Related Injury: A Matched Comparison Study of Injured and Uninjured Soldiers Experiencing the Same Combat Events *American Journal of Psychiatry*, 162, 228-276.
- Knapp, S., Gottlieb, M., Berman, J. & Handelsman, M (2006) What should Psychologists do when Laws and Ethics Collide?(in press *Professional Psychology: Research and Practice*)
- Berman, J. (2006). "Character Strengths, Self-Schemas and Psychological Well-Being: A Multi-Method Approach." (manuscript from dissertation in preparation for submission to the *Journal of Positive Psychology*).
- Berman, J. (2006). "Next steps for the 'Character Strengths and Virtues Classification': Lessons from Psychiatry and Virtue Ethics" (manuscript in preparation for submission to the *Journal of Positive Psychology*).

HONORS AND AWARDS

- PhD Research Fellow, University of Pennsylvania, May-August 2005,
research supervised by Professor Martin Seligman and Professor Chris Peterson (University of Michigan)
- The 2006 National Register National Psychologist Trainee Register Scholarship
- Saul Scheidlinger Scholar, American Group Psychotherapy Association, 2005
- International Rotary Ambassadorial Scholar of Goodwill in Haifa, Israel 2001-2002
- Phi Beta Kappa, Baylor University, 1998
- Honors College graduate, Baylor University, 1998
- Mortar Board National College Senior Honor Society, Laurel Chapter 1998
- Golden Key National Honor Society, 1996

TEACHING EXPERIENCE AND INTERESTS

Abnormal Psychology
Personality Psychology
Group psychotherapy
Positive Psychology
History of Psychology
Psychoanalytic thought
Research Design
Statistics
Ancient Philosophy
Philosophy of Religion
Political Psychology/ International Relations (Middle East)
Virtue Ethics

INVITED PRESENTATIONS

Myers-Briggs Type Indicator, University of Texas at Arlington, Fall 2004; Fall & Spring, 2005, Spring 2006
Strong Interest Inventory, University of Texas at Arlington, Fall, 2004; Fall & Spring, 2005. Spring 2006
Understanding Adult ADHD, University of Texas at Arlington, Fall 2004; Fall & Spring 2005, Spring 2006
Introduction to Positive Psychology, University of Texas Southwestern Medical School at Dallas, Fall 2005
Introduction to StrengthsQuest (Gallup Organization Strengths program), University of Texas at Arlington, Summer 2006
Semester course on StrengthsQuest, University of Texas at Arlington, Fall 2005
Major Decisions Workshop (career decision guidance), University of Texas at Arlington, Summer 2006
Israeli Settlements: 1967-2002, University of Haifa, Summer 2002

CLINICAL/WORK EXPERIENCE

The following are Internship experiences affiliated with the Division of Clinical Psychology's APA approved internship involving in excess of 3,500 hours of supervised clinical experience, University of Texas Southwestern Medical Center at Dallas, 2003-present

APA Internship, August 2004-August 2006

Psychology Intern/Counselor
UTA Counseling Services
University of Texas at Arlington
Arlington, Texas

Counseled individually and in groups to culturally diverse clients. Formulated and diagnosed individual problems and provided psychological treatment under the clinical supervision of Ken Farr, PhD, Director of Counseling Services (Cynthia Bing also supervised my clinical work at the UTA Counseling Center). Provided walk-in counseling to UTA students. Selected, administered, and interpreted individual and group tests. Conducted seminars and workshops related to personal, academic, and career development. Workshop topics included student strengths and talents (i.e. StrengthsQuest Program) as ways to improve psychological well-being and individual academic thriving. Consulted with UTA staff and students.

Practicum, 2003-2004

Callier Center for Communication Disorders, University of Texas at Dallas
Dallas, Texas

Personality, neuropsychological and achievement assessment of children and adolescents, interdisciplinary treatment planning, individual psychotherapy and group psychotherapy

Practicum and Internship, 2003-present

UT Southwestern Psychotherapy Referral Service/community clinic

Individual and group psychotherapy (using psychodynamic and cognitive-behavioral modalities), crisis intervention, personality and neuropsychological assessment/diagnosis

Practicum and Internship, 2003-2006

Parkland Memorial Hospital
Dallas, Texas
Psychiatric Emergency Room

Interdisciplinary emergency intake assessments and crisis interventions with individuals and families experiencing psychiatric emergencies; coordinate with social services agencies, various medical departments, and law enforcement professionals concerning care of patients

Practicum, 2003

Terrell State Hospital
Dallas, Texas
Inpatient Psychiatry Unit

Personality and neuropsychological assessment, consultation, and behavioral management planning in an inpatient unit

PROFESSIONAL ASSOCIATIONS

American Group Psychotherapy Association
American Psychological Association
Association for Psychological Science (formerly American Psychological Society)
International Society for Political Psychology

REFERENCES

H. M. (Monty) Evans, Jr., PhD
Associate Program Director
Clinical Psychology Program
University of Texas Southwestern Medical Center
5323 Harry Hines Blvd.
Dallas, Texas 75235-9044
Office: 214-648-4339
Division of Psychology: 214-648-5277
Email: hm.evans@utsouthwestern.edu

Bert Moore, PhD
Dean, School of Behavioral and Brain Sciences,
University of Texas at Dallas
P.O. Box 830688, GR41
Richardson, TX 75083-0688.
Phone: 972-883-2355
Fax: 972-883-2491
Email: bmoore@utdallas.edu

Marion K. Underwood, Ph.D.
Professor of Psychology
School of Behavioral and Brain Sciences
The University of Texas at Dallas
PO Box 830688, GR41
Richardson, TX 78083
Phone: 972-883-2470
Fax: 972-883-2491
E-mail: undrwd@utdallas.edu

Kenneth L. Farr, Ph.D. (former Director of Counseling Services UT Arlington)
Mental Health Clinic
Temple VA Medical Center
1901 Veterans Memorial Drive
Temple, TX 76504
254-743-1264 (w)
254-718-1039 (c)
E-mail: kfarr@swbell.net

Cynthia Bing, M.A.
Director of Counseling Services
The University of Texas at Arlington
P.O. Box 19156
Arlington, TX 76019
Office: 817-272-3671
E-mail: bing@uta.edu

Cheryl Cardell, Ph.D. (former Vice President for Academic Affairs at UT Arlington)
Southern Association of Colleges and Schools
1866 Southern Lane
Decatur, GA 30033
E-mail: ccardell@sacscoc.org