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Relationship of College Students' Response Styles on the Strong Interest Inventory to Scores on the Beck Depression Inventory and the Career Thoughts Inventory

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To the Graduate Council:

I am submitting herewith a dissertation written by Martha C. Dagenhart entitled "Relationship of College Students' Response Styles on the Strong Interest Inventory to Scores on the Beck Depression Inventory and the Career Thoughts Inventory." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

Marla Peterson, Major Professor

We have read this dissertation and recommend its acceptance:

Teresa A. Hutchens, Sky Huck, P. Gary Klukken, Bill Calhoun

Accepted for the Council:

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Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

To the Graduate Council:

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Accepted for the Council:

Vice Chancellor and Dean of Graduate Studies

RELATIONSHIP OF COLLEGE STUDENTS' RESPONSE STYLES ON THE STRONG INTEREST INVENTORY TO SCORES ON THE BECK DEPRESSION INVENTORY AND THE CAREER THOUGHTS INVENTORY

A Dissertation
Presented for the
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Martha C. Dagenhart
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DEDICATION

This dissertation is dedicated to my parents for instilling in me the desire to follow my dreams, and to my husband, Brian, and my son, Jake, for making many of those dreams come true.

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There are many individuals that contributed to making this vision a reality. I am first and foremost indebted to Dr. Marla Peterson, who not only chaired my committee, but also provided immense emotional support to me throughout this venture. I am also grateful to all of my committee members, Dr. Teresa Hutchens, Dr. Sky Huck, Dr. Bill Calhoun, and Dr. Gary Klukken. Without their guidance, patience, and understanding, this research would never have been possible.

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I am particularly grateful for the encouragement, support, and unconditional love of my husband and son throughout this endeavor. The joy they have brought to my life has inspired me to accomplish more than I ever imagined possible.

ABSTRACT

The purpose of this study was to examine the relationships among college students' response styles on the Occupations section of the Strong Interest Inventory (SII), as indicated by the "Like," "Dislike," and "Indifferent" percent indexes, and their scores on the Career Thoughts Inventory (CTI) and the Beck Depression Inventory – Second Edition (BDI-II). The SII is a career interest inventory that measures a person's level of interest across a wide range of areas including occupations and leisure activities. When presented with an item on the SII, an individual indicates whether he or she likes, dislikes, or is indifferent to that particular occupation or activity. The CTI measures dysfunctional thinking in career problem solving and decision making. The higher a person's scores on the CTI, the more dysfunctional are his or her career thoughts. The BDI-II is a self-report instrument for measuring the severity of depression in adolescents and adults. The higher a person's scores on the BDI-II, the more severe is his or her level of depression. This study also explored gender differences among the aforementioned variables. The participants were 170 college students who had enrolled in a First Year Studies course during Fall 2003. This study was primarily correlational in design, and the statistical methods used were the Pearson product moment correlation and regression analysis.

Results indicated that there was a significant positive relationship between the BDI-II and the CTI ($r = .405$, $p < .01$). There was a significant positive relationship between the CTI total score and the Occupations "Like" percent index of the SII ($r =$

.184, p = .016), and a significant negative relationship between the CTI total and the Occupations "Dislike" percent index (r = - .194, p = .011).

There was a significant negative relationship between the Decision Making Confusion subscale of the CTI and the Occupations "Dislike" percent index of the SII (r = -.155, p = .044). In addition, there was a significant positive relationship between the Commitment Anxiety subscale of the CTI and the Occupations "Like" percent index (r = .235, p = .002), and a significant negative relationship between the Commitment Anxiety subscale and the Occupations "Dislike" percent index (r = -.206, p = .007). Analyses revealed that there were no significant gender differences between the BDI-II and the CTI total score. However, females scored significantly higher than males on the Commitment Anxiety subscale of the CTI (M_m = 51.96, M_f = 55.50, p = .022). Results also indicated that males endorsed more items as "Indifferent" on the SII higher than females (M_m = 25.93, M_f = 21.43, p = .036). Analyses revealed that the BDI-II, the CTI total and subscales, and gender do not significantly interact to predict the response style of students on the Occupations Scales of the SII.

It was concluded that career counselors and counseling psychologists should consider the influence of a student's career thoughts and depression when interpreting the SII and throughout the career decision-making process. Implications for practitioners and university training programs, and directions for future research were discussed.

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CHAPTER I

Introduction

The focus of this study was on how the Strong Interest Inventory, the Career Thoughts Inventory, and the Beck Depression Inventory – Second Edition relate to one another. The need for the study, the theoretical bases for the study, the problem statement, research questions, and definitions of terms will be presented in this chapter.

Deciding on one's career is often an anxiety-provoking endeavor. Add to this the reality of fluctuating economic conditions and an increase in corporate downsizing, and the pressure to choose a stable and secure profession becomes even greater. Young adults entering college are particularly susceptible to the stressful effects of career decision making in the ever-changing world of work (Mitchell & Krumboltz, 1996). The college years are filled with personal and developmental challenges, transitions, and adjustments. As Schultheiss (2000) noted, young college students "are intimately involved in self-definition in both the personal and vocational realm as they renegotiate their familiar bonds with parents and establish new ones with friends and intimates" (p. 52). Many students entering college experience for the first time a completely novel environment separate from the familiar emotional, social and instrumental supports of home, all of which may greatly affect their ability to progress effectively in their career exploration (Schultheiss, 2000).

Career counselors can be particularly helpful to students who are deciding upon which field of work to pursue. Peterson, Sampson and Reardon (1991) described the goals of career counseling as follows, "Career counselors typically listen to individuals' concerns about making career decisions; seek to understand these concerns in the light of

related problems; and assist in drawing bridges between self-knowledge by means of interest inventories, test batteries, or computer-assisted career guidance systems" (p. 4). Career counselors then use the information obtained from these measures to help their clients develop career alternatives by matching individual interests, values and skills with those that are considered necessary to perform certain jobs. The ultimate aim of career counseling has been traditionally to help individuals evaluate the occupational alternatives they have formulated and arrive at a tentative first choice (Peterson et al., 1991). This type of "test-and-tell" approach to career counseling, however, has come under scrutiny in the last several years, and contemporary researchers and practitioners have suggested a more comprehensive approach to career counseling that takes into account the psychosocial factors associated with adjustment to college life and career exploration. As Schultheiss (2000) stated, "Although one might hypothesize that a positive relationship exists between the student's social-emotional functioning and ability to progress within the career realm, research is lacking to support this contention. In fact, empirical research examining the association between college adjustment and progress in career development clearly is needed" (p.53).

Contemporary researchers have also noted the importance of addressing gender differences in career choice when counseling college students since the vocational needs, goals, motivations, and problems of college women often are very different from those of college men (Fassinger & O'Brien, 2000; Fitzgerald, Fassinger, & Betz, 1995). For example, career counseling with women can be impeded if they have experienced external barriers to vocational success such as gender role stereotyping and gender discrimination as well as internal barriers such as low self-esteem, low self-efficacy, and

other internalized beliefs (Betz & Fitzgerald, 1987). On the other hand, while research has suggested that men tend to associate career choice and career success with sense of self-worth, they also tend to express more negative stigma toward career counseling services than women (Rochlen, Mohr, & Hargrove, 1999). Newman, Fuqua and Minger (1990) concluded that gender differences in career development exist along various dimensions and recommended using multiple measures which include a broader range of cognitive variables. Gender differences are further evidenced by the fact that many career development measures and psychological instruments provide results based on separate norms.

Gati, Osipow and Givon (1995) stated that: "Locating and explaining gender differences in career decision making is significant for both theory and practice…A better understanding of gender differences may help career counselors improve the quality of the career decisions made by their counselees, both men and women" (p. 212). It could easily be proposed, therefore, that in order to be truly effective in the career decision making process, counselors need to be aware of the psychosocial differences between men and women in terms of career development, adjustment to college life, and career expectations.

Much of what occurs in career counseling today is based on the work of Frank Parsons, often regarded as the father of career guidance, who theorized that there were three main factors involved in career decision making: (a) self-knowledge, (b) occupational knowledge, and (c) the ability to draw relationships between the two via true reasoning (Parsons, 1909).

Over the last several decades a number of psychological theories have emerged addressing the integration of self-knowledge and occupational knowledge. Hartung and Niles (2000) identified two established theories of career choice and development that have the most direct applications to college students: John Holland's (1973) theory of vocational personalities and work environments, and Donald Super's (1957) theory of life career development. These two theories, "are comprehensive and widely applicable approaches for understanding and fostering educational and career choice, adjustment, and satisfaction of college students" (p. 19). These theories are considered by many to be benchmarks in college career counseling because of their relative longevity, prominence, strong empirical support, and perceived usefulness in conceptualizing and promoting career development and vocational behavior (Brown & Brooks, 1996).

Career counselors often use psychological tests to gather information about their client's needs in the career exploration process. As Carson and Dawis (2000) noted, "Counselors seeking to aid college students with career-related problems frequently choose to administer some form of assessment in the context of counseling, if only to decide which type of nonassessment intervention will follow" (p.95). Crites (1974) noted that assessment has been incorporated into all major approaches to career counseling as an integral component of client self-exploration. It is therefore no wonder that millions of career assessment instruments are administered each year (Betz, 1992).

One of the most popular forms of career assessment has been in the form of interest inventories. Harmon, Hansen, Borgen, and Hammer (1994) stated that interest inventories serve two purposes: (a) "to provide people with information about themselves and their relationship to the working world, information that will lead them to greater

self-understanding and to better decisions about the course of their lives," and (b) "to provide people who must make decisions about others (e.g., counselors, teachers, administrators, human resources managers, supervisors) with comparable information as well as strategies for interpreting it, so that the decisions these people make are ones that consider the unique qualities of each individual"(p.3).

The Strong Interest Inventory, commonly referred to as the SII or the Strong, is the most widely used interest inventory within the career counseling profession (Donnay, 1997). Developed by E.K. Strong in 1927, the inventory is based on the idea that "the day-to-day activities typical of a specific occupation are reflected in the interests of the people who are employed in it" and that "those who have a similar pattern of interests will be satisfied in that occupation if they have compatible values and the necessary knowledge and abilities" (Harmon et al., 1994, p.2). Thus, successful job placement may be related to how well an individual's interests match the interests of those in a given occupation. Strong based his approach on the idea that interests were on a continuum that ranged from liking to disliking, and that the different patterns of likes and dislikes could be used to discriminate among different occupational groups.

The latest revision of the Strong contains 317 items that measure a person's level of interest across a wide range of areas including occupations, leisure activities, and school subjects (Harmon et al., 1994). An individual's pattern of responding to these items is then compared to the patterns of responses of people in 109 different occupations. A person's interests can be interpreted within the framework of General Occupational Themes (GOT), Basic Interest Scales (BIS), Occupational Scales (OS), Personal Style Scales, and the Administrative Indexes (Harmon et al., 1994).

The Administrative Indexes are statistics provided by the computer such as the number of total responses in order to make sure that the completion of the test is sufficient for interpretation. These indexes also provide information to the counselor interpreting the results about the client's response style, or the way in which an individual responds to the items on each section of the Strong (Harmon et al., 1994). The percent of "Like," "Indifferent," and "Dislike" responses that a person selected in each section of the Strong provides a general view of an individual's response distribution and is given in the summary of item responses section of the inventory.

The vast majority of career counselors who use the Strong have traditionally focused on the profiles reflecting the pattern of interests on the GOT, BIS, and OS. It has been argued, however, that much information can be gained by taking into account a person's response style via the "Like," "Dislike," and "Indifferent" percent indexes when interpreting the Strong (Creaser, 1985; Greene, 2002). Prince and Heiser (2001) advised career counselors to review the summary of item responses before interpreting any of the Strong scales, noting that "extreme response percentages will affect the overall elevation of the profile's scores, particularly the General Occupation Themes and the Basic Interest Scales," (p.30).

The case can certainly be made, therefore, that attention to response style is an important piece of the career assessment process that is, regrettably, often neglected. The question remains, however, as to what causes a client to respond a certain way on the Strong. Is it primarily due to cognitive variables? Is it perhaps related to affective variables like depression? Could it be a combination of cognition and depression? Are there gender differences associated with response style?

The Career Thoughts Inventory (CTI) was developed in 1996 to measure dysfunctional thinking in career problem solving and decision making (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996). It is theoretically based on the cognitive information processing (CIP) approach to career development. The CTI can be used in conjunction with the CTI Workbook, which is based on a cognitive therapy approach to mental health.

The inventory consists of 48 items made up of statements designed to measure dysfunctional thinking in both global and specific terms. All of the items reflect dysfunctional career thoughts. The more statements a person endorses, the higher the person's total CTI score and the more dysfunctional his or her career thoughts. Clients taking this instrument obtain a total CTI score as well as scores on three construct scales – Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC).

The DMC scale consists reflects an inability to initiate or sustain the decision making process, which may be due to disabling emotions such as depression or anxiety, or may be due to a lack of understanding about the decision-making process itself. The CA scale reflects an inability to commit to a specific career choice and is usually accompanied by generalized anxiety about the outcome of the decision making process. The EC scale reflects an inability to balance one's self-perceptions with input from significant others and often results in a client's reluctance to assume responsibility for making decisions (Sampson et al., 1996).

The Beck Depression Inventory —Second Edition (BDI-II) is a self-report instrument for measuring the severity of depression in adolescents and adults (Beck et al.,

1996). The BDI-II is actually the third version of the inventory, having replaced the BDI-IA (Beck et al., 1979). The first version of the inventory was developed by Beck and his colleagues in 1961, and, over the last 40 years, the BDI has become one of the most widely accepted instruments for measuring depression in clinical settings (Arbisi, 1999; Beck et al, 1996; Piotrowski & Keller, 1992).

The inventory consists of 21 items with four options under each item, ranging from not present (0) to severe (3). Clients are asked to rate each item based on how they have felt over the last two weeks. Each item represents a depressive symptom or attitude such as sadness, pessimism, loss of pleasure, self-criticalness, agitation, and irritability. The ratings for each item are then tabulated to determine a total score. Total scores fall into four categories and are suggestive of depression level: minimal, 0-13; mild, 14-19; moderate, 20-28; and severe, 29-63. According to Beck et al. (1996) the BDI-II was specifically designed to address the symptoms of major depression described in the Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition (DSM-IV; American Psychiatric Association, 1994).

The focus of this study was on how the Strong, the CTI, and the Beck Depression Inventory – Second Edition relate to one another. In other words, are there relationships among dysfunctional thinking, as measured by the CTI, depression level, as measured by the BDI-II, and how a student responds on the Strong? Furthermore, are there gender differences among these relationships? This study examined the relationships among these three instruments.

Need for the Study

There are five reasons why this research was needed. First, numerous studies have confirmed that the transition into college life is often very stressful for first-year students (Chickering & Reisser, 1993; Mitchell & Krumboltz, 1996). Part of this stress stems from the pressure placed on first-year students to begin thinking about choosing a career. Career counseling on college campuses can help alleviate some of the anxiety these students endure through the career exploration process. Researchers have concluded that looking at psychosocial variables during the career decision-making process may make career counseling more effective (Schultheiss, 2000). This study has expanded on the existing literature by examining the cognitive and affective variables that may exist when first-year students try to decide on a career. Examining depression as well as the cognitive variables in the career counseling process has hopefully provided vital information toward achieving this goal.

Second, researchers have concluded that gender differences exist in terms of psychosocial adjustment to college life as well as within the context of career counseling (Betz & Fitzgerald, 1987; Fassinger & O'Brien, 2000). Furthermore, since gender differences have been shown to exist for two of the instruments of this study, the Strong and the BDI-II, logic dictated that an examination of gender should be included in the proposed research.

Third, it has been established that testing is a major component in career counseling (Betz, 1992; Carson & Dawis, 2000; Watkins & Campbell, 2000). Furthermore, the Strong Interest Inventory is used more often than any other career interest inventory (Watkins, Campbell, & Neiberding, 1994). Giving the BDI-II as well

as the CTI in conjunction with the Strong could enable a career counselor to make better use of the Strong results by shedding light on the client's emotional state and cognitive processes. The counselor might then be able to assist the clients in examining how they approach the inventory as well as how they approach life and career problem solving in general.

Fourth, although the Strong Interest Inventory has generated a great number of research studies (Donnay, 1997), very few studies focus on participants' response styles. Yet researchers have concluded that examining clients' response styles on the Strong is an essential part of interpreting the results (Greene, 2002; Hansen, 2000; Prince & Heiser, 2001; Harmon et al., 1994). The research that has been conducted in this area has focused primarily on response style and personality characteristics (Armatas & Collister, 1962; Ohlde, 1979). Most of these studies, however, were conducted more than twenty years ago and did not examine the cognitive and affective variables associated with response style.

One research study conducted by Greene (2002), however, showed that there is, in fact, a relationship between dysfunctional thinking as measured by the CTI and response styles on the Strong. Greene examined the relationship between college students' scores on the CTI and their response styles on the Occupations and School Subjects sections of the SII as indicated by the Administrative Indexes. In the study, 164 students who had enrolled in a career exploration course were given the CTI and the Strong within two weeks of one another. Results indicated that the CTI total score was positively correlated with the Occupations "Indifferent" percent index and negatively correlated with the Occupations and School Subjects "Dislike" percent indexes. The

results also suggested relationships between the CTI subscale scores and response style on the Strong. The Commitment Anxiety subscale, for example, was positively correlated with both the Occupations and School Subjects "Like" percent indexes and negatively correlated with the Occupations and School Subjects "Dislike" percent indexes. Furthermore, the External Conflict subscale was positively correlated with the Occupations and School Subjects "Indifferent" percent indexes.

Greene (2002) concluded that the more dysfunctional a student's career thoughts, the more the student tends to respond with "Indifferent" on the Occupations section of the Strong, and the less the student tends to respond with "Dislike" on both the Occupations and School Subjects portions of the Strong. Greene recommended that career counselors consider the influences of students' career thoughts when interpreting the Strong, and that counselors need to be aware of the effect that response style has on the interest profiles generated by the SII.

The study did not, however, examine whether depression is associated with dysfunctional thinking and response style, nor did it address what gender differences may exist when looking at the relationships among these variables. In fact, no research study has been designed to examine the relationship among participants' response style, career thoughts, level of depression, and gender. This study, therefore, is needed because it will investigate relationships that have yet to be explored in the literature.

Finally, this study has provided much needed research on the CTI. The CTI is a relatively new instrument and has not been the focus of many studies. It is hoped that this research project has contributed to a growing knowledge base by looking at the relationships among this recently developed instrument and the Strong, an instrument that

has become a cornerstone the field of career counseling, and the BDI-II, the latest revision of a well-established depression inventory.

Theoretical Bases for the Study

Many would argue that the transition to college can be overwhelming for first-year students. Yet traditional career counseling methods often overlook many of the psychosocial factors that may be present when undertaking the career exploration process. As Schultheiss (2000), for example, stated "a call is made for a more focused research and practice agenda that attends to the interconnected nature of students' developmental, psychological, and social issues within the career development process" (p. 43).

Cognitive Information Processing

There has been a great deal of evidence supporting the emphasis of addressing decision making in providing career counseling services (Krumboltz, 1996; Mitchell & Krumboltz, 1996; Peterson et al., 1991; Sampson et al., 1996). One could argue that counseling methods that match clients' interests and abilities to occupational positions work well for clients who are ready to make decisions. Decisive clients can use the results of interest inventories and aptitude tests to make realistic career choices. However, clients who are not ready to make decisions often encounter difficulty when they try to make career choices. In fact, after discussing test results and occupational information, they often become even more overwhelmed and confused about their career choices because they have more data than they are ready to use. One way of helping clients who are indecisive about their careers is to examine their decision-making skills.

The cognitive information-processing (CIP) approach is made up of several domains. Niles and Hartung (2000) concluded that the first three domains are those traditionally included in career theories. The developers of the approach use a pyramid model to describe the important domains of cognition involved in a career choice. The base of the pyramid contains the knowledge domain which consists of: (a) *self-knowledge*, which includes an individual's values, interests, and skills; and (b) *occupational knowledge*, which reflects an individual's understanding of specific occupations and educational/training opportunities. As you move up the pyramid, the second level holds one domain, *decision-making skills*, which reflect an individual's understanding of how one typically makes decisions. The fourth domain, at the top of the pyramid, is called the *executive processing* domain. It contains *metacognitions* that can be described as self-talk, self-awareness, and the monitoring and control of cognitions (Sampson, Peterson, Lenz, & Reardon, 1992). In other words, knowledge of self and of occupations forms the foundation of the pyramid, and the decision-making skills and metacognitions build on that foundation.

Within the decision-making domain is a model which can help career counselors who wish to utilize the CIP approach. According to Peterson et al. (1991), this model is a cycle that involves *communication, analysis, synthesis, valuing, and execution skills* (CASVE). The first phase of the CASVE cycle, *communication*, begins with the realization that a gap exists between a real state (career indecision) and an ideal state (career decidedness). Becoming aware of such gaps can occur internally through the existence of ego-dystonic emotional states such as depression or anxiety; the occurrence of avoidance behaviors such as excessive tardiness or absenteeism; or the existence of

physiological symptoms such as headaches or gastrointestinal problems. People also can become aware of such gaps through external demands such as the need to select a curriculum of study in college or the need to make a decision to accept or reflect a job offer. Career problems, therefore, involve cognitive, affective, behavioral, and psychological components (Peterson, et al., 1991).

In the second phase, *analysis*, clients form a mental model of the problems and look at relationships among the components. Often during this phase, clients relate self-knowledge with occupational knowledge to better understand the necessary characteristics of the occupation they are interested in. During this phase clients go through a recurring cycle of obtaining new information or clarifying existing knowledge, followed by a period of reflection and integrating what has been learned, which then lead to more complex models. One objective of this phase is to help clients gain an understanding of how metacognitions and decision-making style influence their approach to career problem solving (Sampson et al., 1992).

In the third phase, *synthesis*, clients first expand their occupational alternatives in a process called *elaboration*, and then narrow their alternatives through a process called *crystallization*. Elaboration often involves self-assessment instruments that allow for freeing the mind to create as many solutions as possible. The aim of crystallization, on the other hand, is to eliminate options that are inconsistent with the client's values, interests, and skills. The objective of this phase is eventually narrow down the alternatives to somewhere between three and five plausible options (Sampson et al., 1992).

The fourth phase, valuing, is designed to help the client narrow down the final alternatives to a first choice. This is done when clients evaluate the costs and benefits of each option to themselves, significant others, and their culture. Tentative primary and secondary choices are finalized and, after adequate preparation, reality testing, and job seeking is complete, a first choice is selected (Sampson et al., 1992).

The final phase, *execution*, involves the client developing and committing to a plan of action for implementing their choice. This process may take a short amount of time or extend over a period of years as when an advanced degree is needed for the chosen occupation. Upon completion of this step, the client returns to the communication phase to determine whether or not the gap between an existing and desired state of affairs has been eliminated; hence, the cyclical nature of the CASVE approach (Sampson et al., 1992).

Cognitive Theory

The developers of the CTI (Sampson et al., 1996) stated that the inventory and its accompanying workbook are based on the cognitive theoretical approach to mental health first described by Beck in 1979. The underlying rationale of this theory is that a person's affect and behavior are largely determined by his or her cognitions. Cognitions in this model are viewed as verbal or pictorial events in a person's stream of consciousness that are based on assumptions or attitudes developed from past experiences. These assumptions and attitudes are in the form of schemata. A schema, or memory representation, is used to screen out, differentiate, and code incoming stimuli. Unfortunately, schemata can become maladaptive for people as a result of their experience, and subsequent incoming stimuli can be distorted to fit their dysfunctional

schemata. Dysfunctional thinking in turn can lead to negative emotions which can affect a person's behavior. As a person behaves in response to their dysfunctional schemata and resulting feelings, the reactions from significant others may further reinforce their schemata, thus propagating the cycle. In time, using dysfunctional schemata can lead to errors in systematic thinking which can become automatized and very difficult for an individual to change (Beck, Rush, Shaw, & Emery, 1979).

Sampson et al. (1996) cited six systematic thinking errors described by Beck, Emery, and Greenberg (1985) that relate to problem solving and decision making within the career counseling process. First, individuals may reach conclusions in the absence of evidence or in the presence of contrary evidence. This type of error is referred to as *arbitrary reference.* In terms of career counseling, an individual may think that a parent wants him or her to make a specific career choice even though the parent has said that the individual is free to choose whatever occupation he or she wants.

The second error occurs when an individual attends only to input that supports his or her original cognition. This type of error is called *selective abstraction* (Beck et al., 1985). For example, an individual who has had previous negative experiences with career counseling may not attend to any of the messages from the current career counselor that successful career decision making is indeed possible (Sampson et al., 1994). The third error can occur when an individual reaches a conclusion based on only a limited number of isolated incidents and then generalizes that conclusion across the board to both related and unrelated situations. This type of error is referred to as *overgeneralization* (Beck et al., 1985). It can apply to career counseling when an individual who disagrees with the

results of prior aptitude testing concludes that the use of all career instruments and information resources are a waste of time.

A fourth type of error, known as *magnification and minimization*, can occur in career decision making and problem solving when an individual distorts factors or events out of proportion to their actual significance (Beck et al., 1985). An example of this would be when an individual magnifies the importance of satisfying a particular value, like variety, or minimizes the importance of taking into consideration the wishes of his or her spouse in the career decision-making process.

A fifth type of error in systematic thinking occurs when an individual relates external events to himself or herself when there isn't any logical basis for such a conclusion. This type of error is known as *personalization* (Beck et al., 1985). This can occur in career counseling when an individual concludes that a computer-assisted career inventory system failed because of his or her incompetence, when, in reality, it was simply because the printer was not turned on at the time (Sampson et al., 1996).

One final type of error in systematic thinking that can occur in career decision making happens when an individual places all of his or her experiences into either/or absolute categories. This type of dysfunctional thinking is called *dichotomous reasoning* (Beck et al., 1985). An example of this would be when an individual perceives that occupational alternatives will be either perfectly satisfying or totally inappropriate, rather than seeing them as somewhere in between, which actually characterizes most options (Sampson et al, 1996).

Such dysfunctional thinking errors often result in intense negative affect, such as depression and anxiety, which can divert an individual from productively focusing on the

actual reality-based problems in his or her life (Beck et al., 1979). As the capacity to solve problems becomes restricted by dysfunctional thinking, the inability to solve problems further reinforces the dysfunctional thinking. The result is a vicious cycle, and for positive change to occur, the cycle needs to be broken; thus, the aim of cognitive therapy. Through a process called cognitive restructuring, individuals learn to monitor negative automatic thoughts, examine the evidence for and against these thoughts, and eventually substitute more reality-based interpretations for these biased thoughts. Sampson et al. (1996) noted how helpful cognitive therapy can be in career problem solving adding that, "By reducing the negative impact of dysfunctional cognitions, affect becomes more positive, and the individual can use his or her resources more productively to solve the problems" (p.10).

Problem Statement

Contemporary career theorists have established a need for more comprehensive approaches to career counseling. Specifically, there is a need for career counselors to take into account psychosocial as well as cognitive factors when working with clients involved in career exploration (Schultheiss, 2000). Since testing is such an integral part of the career counseling process, one could argue that expanding the types of assessments used to include both depression measures and cognitive information processing instruments would aid in developing a more comprehensive approach to career exploration. Examining depression as well as cognitive variables in the career counseling process would provide vital information toward achieving this goal.

The case has also been made that the examination of response styles on career inventories is crucial in sufficiently interpreting the results for clients (Hansen, 2000).

Despite the fact that the Strong Interest Inventory is the most widely used assessment instrument of its kind, very few studies have focused on the response styles of the Strong Interest Inventory as indicated by the "Like," "Dislike," and "Indifferent" percent indexes. Greene (2002) found that there is a relationship between dysfunctional career thinking as measured by the total score on the CTI and the response style of college students on the Strong. Other researchers have also examined personality variables and response style on the Strong (Armatas & Collister, 1962; Ohlde, 1979); however, an examination of the relationship of both cognitive and affective variables and response style on the Strong has yet to be found in the literature. An examination of depression, as measured by the BDI-II and dysfunctional thinking, as measured by the CTI is warranted, especially as related to students' response styles on the Strong. Gender links within depression would also suggest an examination of gender effects to be warranted.

Research Questions

Due to the lack of research on the CTI, the BDI-II and on the response styles of the Strong, this study was designed to answer the following research questions:

1. What is the relationship between depression as measured by the BDI-II and dysfunctional thinking as measured by the CTI among First Years Studies students?
2. What is the relationship between depression as measured by the BDI-II and the response style of First Year Studies students on the Occupations Scale of the SII, as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?
3. What is the relationship between dysfunctional thinking as measured by the CTI and the response style of First Year Studies students on the Occupations

Scale the SII, as indicated by the "Like, "Dislike," and "Indifferent" percent indexes?

4. What is the relationship between the CTI subscale scores (Decision Making Confusion, Commitment Anxiety, External Conflict) on the CTI and the response style of First Year Studies students on the Occupations Scales of the SII, as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?
5. Are there gender differences among First Year Studies students with regard to depression as measured by the BDI-II and dysfunctional thinking as measured by the CTI?
6. Are there gender differences among First Year Studies Students with regard to dysfunctional thinking as measured by the CTI subscale scores?
7. Are there gender differences among First Year Studies students with regard to response style on the Occupations Scales on the SII as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?
8. How does depression as measured by the total score on the BDI-II, dysfunctional thinking as measured by the total score on the CTI, and gender predict the response style of First Year Studies students on the Occupations Scales of the SII as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?
9. How do the total score on the BDI-II, the subscale scores (Decision Making Confusion, Commitment Anxiety, External Conflict) on the CTI, and gender relate to predict the response style of First Year Studies students on the

Occupations Scales on the SII as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?

Definition of Terms

The introduction section of this chapter provided definitions for most of the terms that will be used throughout this study. The definitions provided below further clarify the terms in the research questions.

Beck Depression Inventory – Second Edition: The 1996 version of the depression assessment instrument published by The Psychological Corporation. It consists of 21 items and is objectively scored.

Depression Level: The number and severity of depression symptoms endorsed by the respondent as indicated by the total score on the BDI-II (0-13 Minimally Depressed; 14-19 Mildly Depressed; 20-28 Moderately Depressed; 29-63 Severely Depressed).

Dysfunctional Thinking: Occurs when career thoughts become negative and hinder effective decision making and problem solving. A high total score on the CTI is indicative of dysfunctional thinking.

Career Thoughts Inventory (CTI): The 1996 version of the instrument published by Psychological Assessment Resources, Inc. The CTI is designed to measure dysfunctional thinking in career problem solving and decision making.

CTI Total Score: A global measure of dysfunctional thinking. The respondent's score over all 48 items. The higher the score the more dysfunctional the career thinking.

Decision Making Confusion (DMC): A construct scale of the CTI consisting of 14 items that reflects the inability to initiate or sustain the decision making process.

Commitment Anxiety (CA): A construct scale of the CTI consisting of 10 items that reflects the inability to make a commitment to a specific career choice.

External Conflict (EC): A construct scale of the CTI consisting of five items and reflects an inability to balance the importance of one's self-perceptions with the importance of input from significant others.

Strong Interest Inventory (SII): The 1994 version of the occupational interest assessment instrument published by Consulting Psychologists Press, Inc.

Strong: The shortened name for the Strong Interest Inventory.

Response Style: An aggregation of the way the respondent answered all of the items on the Strong Interest Inventory.

Administrative Indexes: Computer-generated checks for the scoring accuracy of Strong profiles. The five administrative indexes are: Total Responses, Infrequent Responses, "Like" Percent Indexes, "Indifferent" Percent Indexes, and "Dislike" Percent Indexes. The "Like," "Indifferent," and Dislike indexes are reported in eight categories: occupations, school subjects, activities, leisure activities, types of people, personality characteristics, preferences between two activities, and preferences in the world of work. The Administrative Indexes of the Occupations Scale of the SII were the focus of this study.

"Like" Percent Index: The percent of the items in each of the eight Strong categories that a respondent endorses as liking.

"Dislike" Percent Index: The percent of the items in each of the eight Strong categories a respondent endorses as disliking.

"Indifferent" Percent Index: The percent of the items in each of the eight Strong categories that a respondent endorses as being indifferent.

First Year Studies Students: Individuals, primarily freshmen, who are new to the university and are enrolled in courses designed to address their needs during this transition.

The focus of this study is on how the Strong Interest Inventory, the Career Thoughts Inventory, and the Beck Depression Inventory – Second Edition relate to one another. In this chapter, the researcher has established the need for the study, summarized the theoretical bases for the study, presented the problem statement, and provided a definition of terms. The literature review in Chapter II will provide additional background information.

CHAPTER II

Literature Review

This chapter includes a review of the scientific literature that is relevant to the present study. The review is organized around the following constructs: response style, cognitive information processing, dysfunctional career thinking, and depression and career counseling. Research findings pertaining to gender differences are included in the discussion of each construct.

Response Style

Over the last 50 years, the nature of response style and its influence on interest and personality measures has been the subject of debate. Jackson and Messick (1958) theorized that response style might tell more about a person than obtained scores. Prediger (1982) proposed that 40% of the variance on preference tests could be related to response style. Rorer (1965), however, suggested that response style had no effect on the results of personality inventories since it had yet to be proven that that response styles were not related to a specific personality variable or it appeared to be inconsistent from test to test. Despite this debate, few studies have been conducted specifically looking at response styles on the Strong Interest Inventory as indicated by the "Like," "Dislike," and "Indifferent" percent indexes.

One of the first studies was Ohlde's (1979) examination of gender, self-esteem and response style on the Strong-Campbell Interest Inventory (SCII). The subjects were 90 undergraduate college students who had been divided into three groups based on their responses to a self-esteem inventory (30 high, 30 middle, 30 low). Discriminant analyses were conducted and results indicated that "Like" and "Dislike" response styles

discriminated between self-esteem groups across all sections of the SCII, but not between gender groups. Those students in the high and middle self-esteem groups responded more often with "Like" preferences, while those students in the low self-esteem group responded more often with "Dislike" preferences. Furthermore, the students in the low self-esteem group generated profiles that yielded less helpful information in terms of facilitating an understanding of their particular vocational interests.

Wiglington (1985) examined the relationships among response style, occupational choice, academic comfort, and introversion-extroversion personality styles on the SCII. The subjects were 1,140 female and 993 male college students, ranging in age from 18 to 42, who had sought career counseling. Results indicated that the response styles for these subjects were almost identical to those given for the SCII norm groups, and that the General Occupational Themes (GOT) scores were positively related to "Like" responding. It is interesting to note that the study's author found correlations between academic comfort, introversion-extroversion, and "Like" response styles were higher than had been anticipated.

That same year Creaser (1985) published a study examining the "Like," "Indifferent," and "Dislike" response styles of college students on the Occupations Scales (OS) of the SCII. The study's author coined the term *skeleton* to refer to a profile containing all "Like," "Dislike," or "Indifferent" on each scale because it showed the "bare bones" of the test construction. The stated purpose of this investigation was to establish a criterion cutting score for response percentages that could provide a "red flag" for career counselors as to potential problems. He fabricated some extreme response sets to see if they had any affect on the OS of the Strong and found that while the results

looked like distinct patterns of client interests, they were instead a reflection of test construction. He concluded that a 60% response style should be the critical level for investigating extreme responding on the SCII.

Bonynge (1991) took Creaser's work one step further by creating a nonwork-oriented response style for the SCII and examining how it would affect the scores on all of the scales. Bonynge theorized that some test takers approach career interest inventories like the Strong with a "no work, all play" response style which would be manifested in a profile containing the following response percentages on the SCII indexes: 100% "Dislike" for occupations and schools subjects, 100% "Indifferent" for activities, 100% "Like" for leisure activities, 100% "Indifferent" for types of people, 100% "Indifferent" for types of peoples, 100% Equal for preferences, and 100% Yes to personality characteristics. The fabricated answer sheet was then sent to the SCII's publishing company to be scored. Surprisingly, the results indicated that the profile was valid, and 10 to 13 Occupational Scale scores were at a level recommended for consideration as a career choice. It is important to note that the results showed a substantial discrepancy of Like and Dislike responses in the Administrative Indexes. This finding led Bonynge to suggest that career counselors who interpret the Strong should "check the first four Administrative Indexes response percentages and to be particularly sensitive to the effect that a low level of work significance might have on the Occupational scales" (p. 276).

Two other studies examining response style on the Strong were conducted by Broday (1990a, 1990b). Each involved correlating subjects' total response percentages with their scores on the OS. In the first, Broday (1990a) studied the Strong results of 70 college males who presented for career counseling at a university counseling center. The

results suggested that high "Like" and "Indifferent" responding was associated with leadership occupations; and the low "Dislike" responding was related to health-related occupations. Broday (1990b) then examined the response style of 153 college females and discovered that high "Like" responding was strongly associated with social and leadership occupations; that low "Dislike" responding was related to armed forces and leadership occupations; and that high "Indifferent" responding was associated with armed forces and health-related occupations.

The study that is most pertinent to the present investigation was conducted by Greene (2002). She examined the relationship between college students' scores on the CTI and their response styles on the Occupations and School Subjects sections of the SII as indicated by the Administrative Indexes. In the study, 164 students who had enrolled in a career exploration course were given the CTI and the Strong, within two weeks of one another. Results indicated that the CTI total score was positively correlated with the Occupations "Indifferent" percent index ($r = .216$, $p = .005$) and negatively correlated with the Occupations and School Subjects "Dislike" percent indexes ($r = -.184$, $p = .018$; $r = -.198$, $p = .011$, respectively). The results also suggested relationships between the CTI subscale scores and response style on the Strong. The Commitment Anxiety subscale, for example, was positively correlated with both the Occupations and School Subjects "Like" percent indexes ($r = .243$, $p = .002$; $r = .294$, $p < .001$, respectively) and negatively correlated with the Occupations and School Subjects "Dislike" percent indexes ($r = .236$, $p = .002$; $r = -.220$, $p = .005$, respectively). Furthermore, the External Conflict subscale was positively correlated with the Occupations and School Subjects "Indifferent" percent indexes ($r = .211$, $p = .007$; $r = .175$, $p = .025$, respectively). The

Decision Making Confusion subscale did not significantly correlate with the response styles of the students who volunteered for this study. In addition, multiple regression analyses revealed that the three CTI subscales did not interact to predict response styles on the Occupations and School Subjects portions of the Strong (Greene, 2002).

Greene (2002) concluded that the more dysfunctional a student's career thoughts, the more the student tended to respond with "Indifferent" on the Occupations section of the Strong, and the less the student tended to respond with "Dislike" on both the Occupations and School Subjects portions of the Strong. Greene recommended that career counselors consider the influences of students' career thoughts when interpreting the Strong, and that counselors need to be aware of the effect that response style has on the interest profiles generated by the SII. Greene did not focus on gender differences in response style in her study, but did include it as a recommendation for future research.

In summary, there have been relatively few studies conducted examining response styles on the Strong, and only one study, Greene (2002) addressed dysfunctional thinking and response style. One of the aims of the present investigation is to build on Greene's findings by addressing affective variables and gender differences that may influence response styles on the Strong and by using a slightly different population, i.e., First Year Studies students rather than students taking a career exploration course and who may be actively engaged in the career decision-making process.

Cognitive Information Processing

Symes and Stewart (1999) examined the relationship between metacognition and vocational indecision. The 100 college students who participated in the study were asked to take the Cornell Critical Thinking Test, a measure of metacognition, and the Career

Decision Scale, a measure of vocational indecision. Results suggested that those students who indicated a higher level of metacognitive activity also indicated a higher degree of vocational decidedness and vice versa. Regression analysis revealed that metacognitive component of deduction was a strong predictor for decidedness.

Gati, Osipow, and Givon (1995) used the CIP model as a theoretical framework when they examined possible reasons for the observed differences in the career choices of women and men. Gati and his colleagues focused solely on the self-knowledge domain of the CIP pyramid proposed by Sampson et al. (1992). Within this domain, three facets of career-related preferences were investigated: (a) the relative importance attributed to career-related aspects; (b) the within-aspect preferences, such as desirable characteristics of occupations; and (c) the structure of aspects derived from these within-aspect preferences. The term *aspect* in this study referred to any personal factor or criterion an individual considers relevant when comparing and evaluating alternatives during the career decision-making process. Examples of aspects included work values, interests, abilities, and preferred work conditions.

The participants were 1,252 women and 751 men who were in the career decision making process. Career-related preferences were elicited via their dialogues with a computer-assisted career guidance system. The results indicated gender differences across all three facets of career preferences, with the greatest amount of gender differences in the third group. Gati et al., (1995) acknowledged the fact that their study focused on only one component of the CIP pyramid and encouraged future research focusing simultaneously on all three levels: "(a) the information used by men and women to make the decision (basic level), (b) the processes they use to transform the information

into a decision (the middle level), and (c) the metacognitive skills that guide the career decision-making process (the highest level)" (p. 213). The researchers also added that investigating and explaining gender differences in career decision making is significant for both theory and practice since it would help career counselors improve the quality of the career decisions made by both their male and female clients.

Dysfunctional Career Thinking

Several researchers have investigated the impact dysfunctional career thoughts can have on the career exploration process. The Career Thoughts Inventory (CTI) has been the primary instrument used to measure dysfunctional career thinking in most of these studies. For example, Lustig and Strauser (2002) examined the relationship between sense of coherence and dysfunctional career thoughts in a sample of 145 college students. The term "sense of coherence" was defined as a belief system that the world is comprehensible, manageable, and meaningful (Antonovsky, 1987). *Comprehensibility* refers to the degree to which a person perceives the world as predictable, ordered, and explicable. *Manageability* refers to the degree to which a person believes that he or she possesses the personal resources to handle a demand or dilemma. *Meaningfulness* refers to the belief that demands are challenges that are worthy of investment and commitment.

Participants in the study were given the Sense of Coherence Scale (SOCS; Antonovsky, 1987) and the Career Thoughts Inventory. Statistical analyses revealed that individuals who reported a strong sense of coherence had lower levels of dysfunctional career thoughts. No significant gender or ethnic differences were found. Lustig and Strauser (2002) concluded that students with a strong sense of coherence would be better able to engage in the career exploration process since such individuals typically believe

that stressors are challenges rather than burdens and that they have the personal and social resources to meet life's demands. Thus, they would be more likely to believe that the difficulties associated with making a career decision are manageable and persisting in the career counseling process is worthwhile. The researchers recommended that career counselors consider structuring counseling tasks to strengthen their clients' sense of coherence. They suggest using cognitive-behavioral interventions to accomplish this goal and add that this would be consistent within the framework of CIP theory.

Lustig and Strauser (2003) also used the Career Thoughts Inventory in a nonexperimental descriptive study examining dysfunctional career thinking in individuals with disabilities. The participants in this study were 132 individuals who received job placement services from a community-based job placement program funded by a state division of rehabilitation. Each of the participants had a DSM-IV diagnosis of depression, anxiety, schizophrenia, or bipolar disorder. Cluster analysis of the CTI identified three groups of participants: (a) those with dysfunctional thoughts, (b) those with external conflict, and (c) those with productive thoughts. No significant differences were found among the three clusters on age, gender, ethnicity, or education.

Lustig and Strauser (2003) concluded that individuals with a significant level of dysfunctional career thoughts, as in the first two identified clusters, need in-depth intervention such as individual counseling, while those with low levels of dysfunctional career thoughts, as in the third identified cluster, need only minimal interventions such as making career resources available. The study recommended that researchers determine whether the intervention strategies typically used with individuals with career decision-making problems are effective for individuals with anxiety, depression, schizophrenia,

and bipolar disorder, and suggested that more research is needed to examine if the CTI produces reliable and valid data on career thoughts for individuals with these conditions.

Dipeolu, Reardon, Sampson, and Burkhead (2002) investigated the relationship between dysfunctional career thinking and the adjustment to disability experienced by college students with learning disabilities. The participants were 153 college students who had been diagnosed with learning disabilities. They were given the Reaction to Impairment with Disability Inventory (RIDI) as well as the CTI. Their scores were compared to a sample of 595 general college students. Results indicated that the students with learning disabilities had lower CTI total scores as well as on the Decision Making Confusion and Commitment Anxiety subscales than the normative sample but had higher scores on the External Conflict subscale. Results also indicated that for students with learning disabilities, as dysfunctional thinking decreased, the positive adjustment to learning disability increased.

The CTI was also used in a study conducted by Dodge (2001) examining the relationship between family of origin dynamics and career outcomes. The 243 college student participants were given the Personal Authority in the Family System Questionnaire (PAFS-QVC; Bray & Harvey, 1992), My Vocational Situation (MVS; Holland, Daiger, & Powell, 1980), the Career Decision-Making Self-Efficacy Scale, short form (CDMSE-SF; Betz, Klein, & Taylor, 1996), the Family Environment Scale (FES; Moos & Moos, 1994), and the CTI. Multiple regression analyses revealed that conflict in the family of origin was associated with greater levels of dysfunctional career thoughts, and lower career decision-making self-efficacy, as well as with lower individuation from

the family of origin. Dodge suggests that family systems therapy may be beneficial for young adults who may be experiencing difficulties in the career exploration process.

Family of origin and developmental issues were also at the heart of Voight's (1999) examination of the relationships among parental attachment, ego identity, and career identity. The 131 college students who participated in the study were given the Parental Bonding Inventory (PBI; Parker, Tupling, & Brown, 1979), the Extended Objective Measure of Ego Identity (EOMEIS; Bennion & Adams, 1986), The Career Confidence Scale (CCS; Fassinger, 1990), and the CTI. The participants were first placed into four ego identity classification groups based on their EOMEIS scores: diffusion, foreclosure, moratorium, and achievement. Statistical analyses revealed that those in the diffusion status group had significantly higher levels of decision-making confusion and commitment anxiety than those in the other three status groups. Furthermore, the diffusion status group had higher levels of external conflict than the moratorium and achievement status groups, and lower levels of confidence than the achievement status group.

Self-efficacy and dysfunctional career thinking was also examined by Wright (2001) in her study on interest, career decidedness and satisfaction with occupational choice. The participants for this study were 239 college students enrolled in psychology courses. The instruments used were the Self Directed Search (SDS), the Skills Confidence Survey (SCI) the Occupational Alternatives Questionnaire (OAQ), the Satisfaction with Occupational Choice, and the CTI. Self-efficacy, interests, and dysfunctional thinking scores were entered directly into a series of multiple regression analyses to determine the amount of variance contributed by each construct across

RIASEC type to level of career decidedness and satisfaction with occupational choice. Results showed significant relationships for the Social and Investigative models. Furthermore, decision-making confusion was the only variable that captured significant variation within the models, and was inversely related to Skills Confidence across all six Holland types. Wright's results suggest that decision-making confusion is related to satisfaction and decidedness and that career counselors should be willing to explore negative feelings associates with states of confusion when clients are unhappy with career choices.

Van Haveren (2000) investigated the relationships between athletic status, gender, and academic class on levels of career decidedness and negative career thoughts in college students. The participants were 84 college athletes and 116 non-athletes. The measures used were the CTI, the CDS, and a demographic information sheet. A MANOVA procedure was used to analyze the data. The results showed that freshmen and sophomores reported higher levels of commitment anxiety and lower levels of certainly regarding their career/major choice than juniors and seniors. Furthermore, men reported higher levels of career indecision, decision-making confusion, and external conflict than women. Finally, male athletes reported higher levels of external conflict regarding their career/major choice compared with female athletes.

Strausberger (1999) investigated the relationships among state-trait anger, dysfunctional career thinking, and vocational identity in 123 college students. Each participant was given the CTI, the MVS, and the State-Trait Anger Expression Inventory (STAXI). Interestingly enough, the results showed that neither dysfunctional career thinking nor vocational identity were significantly related to state-trait anger.

Supplemental analyses revealed, however, a small significant relationship between state anger and the CTI total score. Furthermore, the male participants score significantly higher on both state and trait anger than the female participants.

Osborne (1999) examined the relationships among perfectionism, dysfunctional career thoughts, and career indecision in 123 undergraduate students. Participants were given the CTI, the CDS, the State-Trait Anxiety Inventory-Form Y, and the Frost Multidimensional Perfectionism Scale (FMPS). Multiple regression analyses indicated that dysfunctional career thoughts accounted for a large part of the variance (53%) while perfectionism did not. Furthermore, a significant relationship was found between dysfunctional career thoughts and perfectionism. Osborne concluded that dysfunctional career thoughts contribute to career indecision and that further research was needed on how perfectionism, career indecision, and dysfunctional career thoughts are related.

Depression and Career Counseling

Hinkelman and Luzzo (2001) proposed that mental health and career development have the potential to affect each other reciprocally, but made the point that very little has been written about the combined effect of mental health and the career development of college students. They note that students seeking career exploration services often manifest symptoms of anxiety or depression, and recommend that correlational studies between mental health and career development variables affecting college students be conducted. Furthermore, they suggest that a theoretical model addressing the interaction of college mental health and career development be developed based on the work of researchers and practitioners alike.

Interestingly, despite the need for research examining depression within the context of career counseling, very few studies have been conducted. Lucas, Skokowski, Cheri, and Ancis (2000) explored the conditions associated with career decision making among 18 women who had sought counseling services for depressive symptoms at a university counseling center. Qualitative analyses of the progress notes of the counseling sessions with the subjects revealed themes suggesting familial relationships and those with significant others provided the context through which career decision making difficulties were discussed.

Saunders, Peterson, Sampson and Reardon (2000) investigated the role of depression and dysfunctional career thinking in career indecision. The subjects for the study were 215 college students enrolled in an undergraduate psychology course. Since previous studies on career indecision had found that locus of control, trait anxiety, state anxiety, and vocational identity had all been correlated with career indecision, these constructs were statistically controlled in the analysis. The participants were given packets containing the Career Decision Scale (CDS; Osipow, Carney, Winer, Yanico, & Koschir, 1987), the Beck Depression Inventory (Beck et al., 1979), the Career Thoughts Inventory, the Vocational Identity (VI) Scale of My Vocational Situation (MVS; Holland et al., 1980), the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Luschene, 1970), and the I-E Scale (Rotter, 1966) to measure locus of control. Regression analyses revealed that while depression was by itself significantly associated with career indecision, it did not capture a significant amount of the independent variation in the model. Only vocational identity and dysfunctional career thoughts captured significant amounts of independent variation in career indecision.

The findings of the study indicated that career indecision does indeed include both cognitive and affective variables. The researchers concluded that dysfunctional thinking in the career decision-making process needs to be addressed in career counseling to aid clients in effectively obtaining and using the information that they need for career exploration. Furthermore, Saunders et al. (2000) suggested that, "depression, like anxiety, may lead to inability to effectively consider educational and career options," and that "when strong emotions are exhibited by those expressing career indecision, clients may be best served by first addressing the affect and secondly the career choice process" (p.296).

Smith and Betz (2002) examined structural models of efficacy and esteem variables in the prediction of the degree of depressive symptoms reported by college students. Furthermore, the researchers used career indecision and shyness as intermediate indicators of the degree of adaptation to the developmental challenges facing college students. Participants were 405 students enrolled in undergraduate psychology classes. Participants were asked to complete the Scale of Perceived Social Self-Efficacy (PSSE; Smith & Betz, 2000), the Career Decision Self-Efficacy Scale (CDMSE-SF; Betz, Klein, & Taylor, 1996), the Self-Efficacy Scale (CDMSE; Taylor & Betz, 1983), the Revised Cheek and Buss Shyness Scale (Cheek & Buss, 1981), the Career Decision Scale (CDS; Osipow et al., 1980), the Unconditional Self-Regard Scale (USRS; Betz, Wohlgemuth, Serling, Harshbarger, & Klein, 1995) and the BDI-II.

Smith and Betz (2002) found that women reported significantly more depressive symptomatology on the BDI-II than did the men, but no significant gender differences were evident on the measures of social self-efficacy, career decision self-efficacy,

shyness, career indecision, or self-esteem. The researchers determined that their first model show that both efficacy and esteem variables are related to depressive symptoms indirectly through their relationships to career indecision and shyness. Conversely, career indecision and shyness were found to be directly related to depressive symptoms. The researchers concluded that future research examining how perceived self-efficacy for other domains of behavior interacts with social and career decision self-efficacy to contribute causally to depression would be important contributions to the literature.

Betz and Hackett (1981) examined self-efficacy beliefs influence career behavior. They concluded that 235 college students' beliefs about their capabilities to achieve educational and occupational goals were significantly related to the nature and range of career options that the students considered. Specifically, females reported significantly higher levels of self-efficacy with regard to traditional female occupations; they reported significantly lower levels of self-efficacy with regard to nontraditional occupations. In contrast, males reported equivalent levels of self-efficacy when regarding both traditional and nontraditional expectations. Hackett and Betz (1981) concluded that self-efficacy influenced a person's success and persistence in his or her chosen career option.

Eisenhart and Holland (1992) conducted a longitudinal study of university women found that many of the women who started college with interests in math and science showed decreased commitment to their majors as they progressed through college. Betz (1997) suggested that women need a greater expectation of efficacy.

In this chapter, the researcher has provided additional background for this study. The scientific literature that is relevant to this study was summarized and presented. In

the next chapter, the researcher will describe the methods and procedures that will be used in this study.

CHAPTER III

Methods and Procedures

In this chapter, the researcher will describe the participants, research design, procedures, instrumentation, and data analysis that will be used in the study to answer the following research questions:

1. What is the relationship between depression as measured by the BDI-II and dysfunctional thinking as measured by the CTI among First Years Studies students?
2. What is the relationship between depression as measured by the BDI-II and the response style of First Year Studies students on the Occupations Scale of the SII, as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?
3. What is the relationship between dysfunctional thinking as measured by the CTI and the response style of First Year Studies students on the Occupations Scale the SII, as indicated by the "Like, "Dislike," and "Indifferent" percent indexes?
4. What is the relationship between the CTI subscale scores (Decision Making Confusion, Commitment Anxiety, External Conflict) on the CTI and the response style of First Year Studies students on the Occupations Scales of the SII, as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?
5. Are there gender differences among First Year Studies students with regard to depression as measured by the BDI-II and dysfunctional thinking as measured by the CTI?

6. Are there gender differences among First Year Studies Students with regard to dysfunctional thinking as measured by the CTI subscale scores?
7. Are there gender differences among First Year Studies students with regard to response style on the Occupations Scales on the SII as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?
8. How does depression as measured by the total score on the BDI-II, dysfunctional thinking as measured by the total score on the CTI, and gender predict the response style of First Year Studies students on the Occupations Scales of the SII as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?
9. How do the total score on the BDI-II, the subscale scores (Decision Making Confusion, Commitment Anxiety, External Conflict) on the CTI, and gender relate to predict the response style of First Year Studies students on the Occupations Scales on the SII as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?

Subjects

Assuming that a relationship between two variables already exists, power analysis shows that in order to detect a correlation of .22, 155 cases are needed. This researcher obtained 170 subjects. The subjects in this study were traditionally-aged college students who attended a land grant university located in the Southeast during Fall semester 2003. All subjects were voluntarily enrolled in a First Year Studies course offered through the university during this semester. In partial fulfillment of this course, all students were required to complete the Strong Interest Inventory (SII). Students were asked to volunteer

to take the Career Thoughts Inventory (CTI) and the Beck Depression Inventory – Second Edition (BDI-II), since it was not a course requirement. Additional demographic data on the participants are provided in Chapter IV.

Research Design

The research design that was used in this study is classified as a quantitative descriptive design. Heppner et al. (1999) defined this type of design as one that "enables the investigator to describe the occurrence of variables, the underlying dimensions in a set of variables, or the relationship between or among variables" (p. 200). Much of the data was analyzed via a series of correlations. While it is understood that correlation is not the same as causation, such designs are useful in ruling out causal hypotheses. Campbell and Stanley (1963) noted: "Such data are relevant to causal hypotheses inasmuch as they expose them to disconfirmation. If a zero correlation is obtained, the credibility of the hypothesis is lessened…the absence of such a correlation can rule out many simple, general, causal hypotheses" (p. 64).

Quantitative descriptive designs fall into one of three categories: survey or epidemiological research; classification or data reduction research; and passive research. This study fell into the passive design category because the researcher neither formed groups through random assignment nor actively manipulated an independent variable. Heppner et al. (1999) noted: "passive designs are extremely important, especially in early stages of investigating phenomena. With these designs, in contrast to experimental designs, a researcher can quickly and relatively easily describe possible relationships among variables…and can suggest possible causal connections among variables that can be examined in a subsequent experimental design" (p.224). In this study, the researcher

will collect data on three variables and will then use statistical techniques to describe the relationship among these variables.

Procedures

The institution with which the researcher is affiliated offers a series of courses each fall and spring semesters called First Year Studies. One of these courses, First Year Studies 101, is designed to help new students with their integration into academic life on campus and includes the organization of university disciplines, career planning, and assessment of special needs in the areas of time-management, study skills, counseling, and financial aid. The course meets twice weekly during the semester and is graded on a scale of A-F. In partial fulfillment of course objectives, students must complete the Strong Interest Inventory. It is available free of charge to currently enrolled students and can be taken either on-line with a password, or in person at the Career Services office.

At the beginning of the semester, the researcher obtained permission for testing from volunteer students in sections of the First Year Studies course. During the same two-week period that the students were required to take the SII outside of class, the researcher administered the CTI and BDI-II at the time that these sections normally met. This was done to ensure that all three instruments are administered as closely together as possible, contributing to the validity of the results of the study. Furthermore, the sessions in which the BDI-II and the CTI were all at approximately the same time of day. Since the Career Services office keeps all students' SII results in a client database, permission was obtained from the Director of Career Services to access the data from those students who had volunteered for the study.

When compiling the data from the three instruments, the researcher assigned participant numbers to designate each data set and stripped the data of all identifiers. Thus, in analyzing the data and reporting the results, no names or other identifying features were used. No responses on the SII and the CTI were analyzed on an individual basis. Due to the delicate nature of some of the questions on the BDI-II, however, two items were monitored for response severity – question #2 and question #9. According to Beck et al. (1996) high ratings on these two items may be suggestive of suicidal ideation, and appropriate referrals to counseling agencies should be recommended to respondents who strongly endorse these items. Therefore, at the completion of the instruments, participants were given a debriefing statement detailing the nature and purpose of the study and were provided referral information for student counseling services. Permission to implement this procedure was obtained from the university's Committee on Research Participation.

Instrumentation

Strong Interest Inventory

The 1994 version of the Strong Interest Inventory is a self-report vocational interest inventory consisting of 317 items that measure an individual's interest across a wide variety of areas which include occupations, school subjects, and leisure activities (Harmon et al., 1994). Hansen (2000) stated that the Strong could be used in career counseling, "to stimulate respondents to think about activities and occupations that match their interests. The instrument helps them to objectively identify their interests in an efficient manner. The results are organized to provide a framework for relating the

interests to career possibilities and for encouraging the individual to consider options that may have been ignored previously" (p. 242).

A person's interests can be interpreted within the framework of General Occupational Themes (GOT), Basic Interest Scales (BIS), Occupational Scales (OS), Personal Style Scales, and the Administrative Indexes. The six GOT are based on Holland's (1985) theory of vocational choice. The General Occupational Themes are identified as follows: (a) Realistic, (b) Investigative, (c) Artistic, (d) Social, (e) Enterprising, and (f) Conventional. These six GOT represent areas commonly recognized as important for understanding the organization and structure of interests as well as the world of work (Hansen, 2000). Critics have noted that the GOT have consistently shown the ability to predict occupational choice over the past 25 years (Donnay & Borgen, 1996). Furthermore, the GOT in the latest version of the Strong have been shown to produce one of the best fits with Holland's theoretical hexagon (Tracey & Rounds, 1996).

While the GOT describe a person's interests from a broader, more diverse perspective, the 25 BIS describe a person's interests within more specific areas. One way to conceptualize the BIS would be as subdivisions of the GOT. The 211 OS items compare a person's responses with the responses of people employed and satisfied in a variety of occupations. Here again, the idea is that those individuals who share the same interests as others in a particular job may experience greater satisfaction in their careers. The Personal Style scales measure tendencies about how an individual generally prefers to learn, work, and play.

Although the SII has several different sections, this study focused only on the "Indifferent" percent index which is included as part of the Administrative Indexes. By

indicating the percent of "Like," "Indifferent," and "Dislike" responses that a person selects in each part of the SII, these indexes reflect a person's response style.

The items on the SII are categorized into eight parts. For Parts I-V and Part VIII, respondents answer to "Like," "Indifferent," and "Dislike." Part I, which was the focus of this study, pertains to Occupations and consists of 135 items with the names of various vocations. The items on this scale are quite varied and the scores increase when clients respond "Like," "Indifferent," or "Dislike" to the items that are weighted positively. Conversely, the scores decrease when clients respond "Like," "Indifferent," or "Dislike" to negatively weighted items.

Part II pertains to School Subjects and consists of 39 items naming subjects in different areas of academic and vocational training. Part III consists of 46 items describing a number of different types of Activities such as "Doing research work" and "Interviewing job applicants." Part IV consists of 29 items that list Leisure Activities such as games and hobbies. Part V has 20 items pertaining to Types of People that respondents might enjoy being around on a daily basis such as "Artistic people" and "High school students" (Harmon et al., 1994).

Parts VI and VII do not ask the respondents to select "Like," "Dislike," or "Indifference." Instead, they are in a forced-choice format. Part VI asks respondents to contrast two activities or circumstances. This part, called Preference Between Two Activities, consists of 30 items of choices displayed opposite of one another. The respondents then choose which activity they like better, or may select "=" if they like the choices equally or cannot decide. Part VII consists of 12 items and is called Your

Characteristics. Respondents are asked to choose "yes," "no," or "?" to these items which measure work-related personality characteristics (Harmon et al., 1994).

Part VIII consists of six items which measure a respondent's Preference in the World of Work. These items represent different pairs of work dimensions such as ideas, people, data, and things, and respondents are asked to choose which they prefer. As with Parts I-V, respondents can choose "Like," "Dislike," or "Indifference" (Harmon et al., 1994).

While most people who take the Strong have an equal response rate across all three indexes, some clients will heavily endorse one or two. If a person has an extremely high or an extremely low response rate, the result is likely to be an elevated or depressed profile, respectively. Hansen (2000) noted that although the profile in this case is an accurate reflection of the client's interests, the interpretation may need to be modified to accommodate the extreme response rate. A flat or depressed profile often is the result of a low response rate on the "Like" index and may indicate that a client has narrow or well-defined interests, has limited knowledge about the world of work, or is either indecisive or apathetic in the career exploration process (Hansen, 1984). In contrast, people with a high number of responses on the "Like" index will have elevated profiles which reflect diversity in a person's interests, but may also indicate a reluctance to choose one area over another.

Clients with high "Indifferent" index response rates may be indecisive or genuinely confused about their interests and the choices available to them. Hansen (2000) suggested that these clients may need to accumulate additional experience and to learn more about the world of work before proceeding with the decision-making process. A

recent longitudinal study indicated that students with undifferentiated profiles as college freshmen may have more difficulty in selecting college majors and may feel more career uncertainty while in college than do college students with differentiated Strong profiles (Sackett & Hansen, 1985).

People-in-general have an average response rate across the three indexes of about 32% with a standard deviation of about 12%. Most people respond "Like" to somewhere between 14% and 50% of the item pool. If a person has an extremely high (say 65% or higher) or an extremely low (10% or lower) response rate, the result is likely to be an elevated or depressed profile, respectively. Although the profile is an accurate reflection of the individual's interests, the interpretation may need to be modified to accommodate the extreme response rate (Hansen, 2000).

Occasionally an individual's profile configuration will appear *flat* — the scores will be primarily in the average interpretive ranges — or *depressed,* with scores below average on the General Occupational Themes and Basic Interest Scales and below the mid-range on the Occupational Scales. A flat or depressed profile usually is the result of a low *like* response rate, say, less than 10%. Flat or depressed profiles may be diagnostic of several different career decision-making situations. For example, people with narrow or well-defined interests may score high on only the one or two scales that correspond to their interests, and as a result, their profiles will appear to be flat or depressed. For others, the flat or depressed profile is symptomatic of limited knowledge about the world of work, indecisiveness or unreadiness to make a career commitment, or simply apathy toward the concept of working (Hansen, 1984). A recent longitudinal study indicated that students with undifferentiated profiles as college freshmen may have more difficulty in

selecting college majors and may feel more career uncertainty while in college than do college students with differentiated Strong profiles (Sackett & Hansen, 1985).

Hansen (2000) noted that extra care is needed when faced with depressed or flat profiles based on response styles. "The key to remember during the interpretation of flat or depressed profiles is to continuously assess how much "sense" the emerging pattern of interests makes. If the profile appears integrated and if the same pattern of interests emerges across the GOT, BIS, and Occupational Scales, then proceeding with the profile interpretation is legitimate. If the results appear random and the interests from one section of the profile to another are unrelated, then caution is advised" (Hansen, 2000, p. 257).

Likewise, a profile with many scores above average usually is the result of a high "Like" response rate. Hansen (2000) concluded that the GOT and BIS are affected more by an elevated response rate than are the Occupational Scales because only the "Like" responses determine high scores on those scales, whereas both "Like" and "Dislike" responses contribute to high scores on the Occupational Scales. Usually an elevated profile reflects diversity in a person's interests or a wide range of interests (Hansen et al., 1994).

People with elevated profiles may find it difficult to make career decisions because of their many interests, and they may be reluctant to choose one area over another. They can be encouraged, however, to explore several alternatives such as (a) pursuing a job that provides contact with a diversity of people or a position that incorporates a variety of tasks and responsibilities, (b) engaging in a range of leisure activities and hobbies that may be quite different from their vocational activities, or (c) planning a career path that will allow changes in jobs periodically (Hansen, 1984).

Hansen et al. (1994) explicitly stated that considerable attention was given to the wording of the items of the Strong with the goal of eliminating gender-role bias. The revisions made to the Strong over the last several decades have included combining the male and female forms into one, norming the GOT and BIS on samples of both men and women, and expanding the OS scales for men and women. The Strong developers have acknowledged, however, that gender differences exist and should be addressed when interpreting the inventory. Profile information includes interpretive comments on the GOTs and BISs that compare the client's scores with the scores of other individuals of the same gender and box-and-whisker graphs show approximately how the client's scores compare with those of other persons of the same and opposite gender.

The GOT scales have standard scores, with standard score means of 50 and standard deviations of 10. Internal consistency estimates for the 6 General Occupational Themes ranged from .90 for the Social scale to .94 for the Artistic scale; the test—retest reliabilities for the six scales over 3- to 6-month intervals ranged from .84 for Enterprising to .92 for Realistic (Harmon et al., 1994). These scales have standard scores, with standard score means of 50 and standard deviations of 10. Internal consistency estimates for the GOT ranged from .90 for the Social scale to .94 for the Artistic scale; the test—retest reliabilities for the six scales over 3- to 6-month intervals ranged from .84 for Enterprising to .92 for Realistic (Harmon et al., 1994). The GOT have been evaluated for concurrent validity against similar interest measures such as the Vocational Preference Inventory (Hansen, 1986) and they separate occupations in accordance with Holland's theoretical types (Donnay & Borgen, 1996).

Beck Depression Inventory

The Beck Depression Inventory—Second Edition (BDI-II) is a self-report instrument for measuring the severity of depression in adolescents and adults (Beck, Steer, & Brown, 1996). The first version of the inventory, the BDI-II, was developed by Beck, Ward, Mendelson, Mock, and Erbach (1961) and over the last 40 years it has become one of the most widely accepted instruments for measuring depression in clinical settings (Arbisi, 1999; Beck et al, 1996; Piotrowski & Keller, 1992).

The BDI-II is actually the third version of the inventory, having replaced the BDI-IA (Beck, Rush, Shaw, & Emory, 1979), and represents "a significant improvement over the original instrument across all aspects of the instrument including content, psychometric validity, and external validity" (Arbisi, 1999, p.291). The inventory consists of 21 items with four options under each item, ranging from not present (0) to severe (3). Clients are asked to rate each item based on how they have felt over the last two weeks. Each item represents a depressive symptom or attitude such as sadness, pessimism, loss of pleasure, self-criticalness, agitation, and irritability. The ratings for each item are then tabulated to determine a total score. Total scores fall into four categories and are suggestive of depression level: minimal, 0-13; mild, 14-19; moderate, 20-28; and severe, 29-63. According to Beck et al. (1996) the BDI-II was specifically designed to address the symptoms of major depression described in the *Diagnostic and Statistical Manual – Fourth Edition* (DSM-IV; American Psychiatric Association, 1994).

Norming groups for the BDI-II consisted of samples from four different psychiatric outpatient clinics ($N = 500$) and one group of college students ($N = 120$). All of the outpatients were diagnosed by experienced psychologists or psychiatrists according

to the DSM criteria as having mood disorders, anxiety disorders, and adjustment disorders, among others. The college sample was made up of students in an introductory psychology course and served as a comparative normal group (Beck et al., 1996).

Of the 120 students in the sample, 67 were women and 43 were men and of the outpatient sample, 317 were women and 183 were men. Statistical analyses of the responses made by both the college and outpatient samples suggested significant mean differences with respect to gender (Beck et al., 1996). The mean BDI-II total scores for women in both samples were significantly higher than those for the men.

In terms of reliability, the internal consistency alpha coefficient of the BDI-II for the outpatients was .92 and for the college students was .93. Test-retest reliability was established using outpatients in sessions one week apart. The test-retest correlation of .93 was significant (Beck et al., 1996).

The developers of the BDI-II describe three types of validity established with the BDI-II – content validity, convergent validity, and factorial validity. Content validity was based on the aforementioned fact that the inventory was developed specifically to assess the depressive symptoms listed as criteria for depressive disorders in the DSM-IV. Thus, items were reworded and new items added to more fully fit the DSM criteria (Beck et al., 1996).

Convergent validity was established by comparing the BDI-II to the BDI-IA which resulted in a correlation of .93, a significant finding. Correlations were also run between the total scores on the BDI-II and other psychological instruments such as the Beck Hopelessness Scale (Beck & Steer, 1988) and the Hamilton Psychiatric Rating Scale for Depression (Hamilton, 1960), yielding strong relationships. Factorial validity

was established by examining the intercorrelations among the 21 BDI-II items and the responses of the outpatient sample. Kaiser's measure of sampling adequacy (Dziuban & Shirkey, 1974) for the intercorrelation matrix was an impressive .95. The intercorrelation matrix for the college students' 21 item responses was equally strong at .91 and "represents a value that Kaiser...would have considered marvelous" (Beck et al., 1996, p. 31).

Career Thoughts Inventory

The Career Thoughts Inventory (CTI) was developed to address the integration of assessment and intervention within the career counseling domain (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996). The inventory is "a theory-based assessment and intervention resource intended to improve the quality of career decisions made by adults, college students, and high school students, and the quality of career services delivered to these individuals" (Sampson et al., 1996, p.1). The CTI measures dysfunctional thinking in career problem-solving and decision making. The authors state three primary uses of the CTI and its corresponding CTI Workbook: (a) as a screening instrument to identify students who have difficulty making career choices due to dysfunctional thinking; (b) as a needs assessment measure to identify and address the specific nature of the student's dysfunctional thinking; and (c) as a learning resource to help students challenge and modify their dysfunctional thought patterns (Sampson et al., 1996).

The CTI is based on two theoretical perspectives. The first is Cognitive Information Processing theory (CIP), which focuses on enhancing an individual's capacity to solve problems (McLennan & Authur, 1999). The CTI is also based on cognitive therapy approaches to mental health counseling that addresses how an

individual's perceptions of his or her environment and dysfunctional thinking affect emotion and behavior (Bandura, 1974; Beck, 1976).

The range for CTI total scores is a minimum of zero and a maximum of 144. The first of the CTI construct scales is the Decision Making Confusion (DMC) scale. It contains 14 item statements and scores range from zero to 42. The Commitment Anxiety (CA) construct scale consists of 10 item statements and scores range from zero to 30. The third construct scale, External Conflict (EC), contains five item statements, and scores range from zero to 15.

Sampson and his colleagues (1996) stated that the items on the CTI were selected on the basis of freedom from gender and ethnic bias since the select core of dysfunctional thoughts measured by the instrument were common to all individuals. The authors concluded that "there is little or no relationship between either gender or ethnicity with response to CTI Total scores and, thus, there was no need to provide separate norms for either of these variables,"(p.50).

The inventory was normed on a national sample of adults (n = 571), upper level high school students (n = 396), and college students (n = 595). Internal consistency coefficients for the CTI total score are reported by Sampson et al. (1998) as ranging from .97 to .93. Alpha coefficients for the DMC scale range from .97 to .93, for the CA scale range from .91 to .79, and for the EC scale range from .81 to .74. Test-retest reliability for the CTI total score was conducted over a four-week interval and resulted in a stability coefficient of .86. The stability coefficients for the construct scales are .82 for the DMC scale, .79 for the CA scale, and .74 for the EC scale.

Sampson et al., (1998) reported that the content validity for the CTI is high because they used cognitive information processing content dimensions as specific criteria for developing the item statements. These dimensions are occupational knowledge, communication, analysis, synthesis, valuing, self-knowledge, execution, and executive processing. The developers report that the construct validity for the CTI total score was based on a series of factor analyses with two different samples and established that DMC, CA, and EC were indeed three orthogonal factors. The developers also found that the CTI total score is highly correlated with the DMC scale, ranging from .89 to .94. DMC accounted for a large percentage of the variance, ranging from 24.8% to 44.9%. The developers conclude that this confusion factor is the most pervasive in the process of career problem solving and decision making.

Convergent validity, or how the CTI correlates with measures of similar constructs, was established using My Vocational Situation (Holland et al., 1980), the Career Decision Scale (Osipow et al., 1987) the Career Decision Profile (Jones, 1989), and the NEO-PI-R (Costa & McCrae, 1992). Sampson et al. (1996) reported that these measures were chosen because they related to the "perceived status of current decision making," such as certainty and decidedness; "perceived individual career decision making characteristics," such as self-knowledge, occupational knowledge, identity, and decisiveness; and "general personality characteristics that influence decision making," such as neuroticism (p. 58). Across all three norming groups, constructs with positive connotation such as vocational identity, decisiveness, and occupational knowledge were inversely correlated with the CTI. Furthermore, measures of constructs with negative

connotation, such as indecision, neuroticism, and depression were positively correlated with the CTI.

Criterion-related validity, or the extent to which the CTI accurately discriminates between individuals seeking career services and individuals not seeking career services was determined via studying groups of students from Florida State University and the Ohio State University. Statistical analyses showed significant differences between those college students seeking career services and those who did not. Furthermore, those students seeking services scored significantly higher on all 48 items of the CTI.

Statistical Design

This study examined the relationships among the BDI-II Total Score; the CTI Total Score, DMC score, CA score, and EC score; and the "Like", "Dislike," and "Indifferent" percent indexes on the Occupations portion of the SII. All scales were checked for departures from normality.

In order to address any potential flaws in the procedural design of this study, a pilot study was conducted using approximately 15 advanced undergraduate students enrolled in a Personality Theory course in the summer of 2003. The procedures used were identical to the ones mentioned previously and permission to conduct this research was obtained by the course instructor and from the university's Committee on Research Participation. Due to the small number of participants, however, statistical analyses were not conducted.

This study was primarily correlational in design. The Pearson product-moment correlation was used to answer the first four research questions. The first question addressed the relationship between the BDI-II and the CTI. The second question

addressed the relationship between the BDI Total Score and response style on the Occupations Scales of the SII. The third and fourth questions addressed the relationship between the CTI scores (total as well as subscale), and response styles on the Occupations Scales of the SII. The fifth, sixth, and seventh questions addressed the effects of gender on the aforementioned relationships. T-tests, MANOVAs and individual ANOVAs were used to answer these questions. Regression analyses were used to answer the final two questions which addressed whether the CTI scores (total as well as subscale), interact with the BDI-II total score and gender to predict response styles on the Occupations Scales of the SII. An alpha level of .05 was used. All analyses were run on SPSS version 11.

In this chapter, the researcher has explicated the methods and procedures that were used in the study. A description of participants, research design, instrumentation, and statistical design was provided. In the next chapter, the researcher will present the results of the data analysis and provide answers to the research analysis.

CHAPTER IV

Results

In this chapter, the researcher will present the results of the data analysis. The chapter begins with some demographic data that describe the research participants. The remainder of the chapter addresses the answers to this study's research questions.

Description of the Study Population

Data on gender and age of the 170 subjects who participated in this study is provided in Table 1.

Table 1

Description of Study Population by Gender and Age

Variable	Raw Frequency	Percent Frequency
Gender		
Male	72	42.4
Female	98	57.6
Age		
18	147	86.5
19	10	5.9
20 +	4	2.4
Not reported	9	5.2

As can be seen from Table 1, a little more than half of the participants were female. In addition, almost all the participants who volunteered their age were either 18 or 19 at the time the study was conducted. Four participants were between the ages of 20 and 23. Nine participants did not volunteer their age. Gender composition was reflective of the university population at which the study was conducted. The range of scores for the "Like," "Dislike" and "Indifferent" percent indexes of the Occupations scale of the SII, the BDI-II, and the CTI total score and subscales is shown in Table 2.

Table 2

Range of Scores for SII Occupations Scale, BDI-II, and CTI (N = 170)

	Minimum	Maximum	*M*	*SD*
SII-Like	1	72	18.70	11.319
SII-Indifferent	0	67	23.34	13.858
SII-Dislike	13	99	57.95	19.184
BDI-II	0	29	8.26	6.433
CTI-Total	29	71	51.75	9.757
CTI-DMC	35	71	51.12	9.761
CTI-CA	27	78	54.00	9.968
CTI-EC	35	80	53.32	11.394

Research Questions and Results

Question One

What is the relationship between depression as measured by the BDI-II and dysfunctional thinking as measured by the CTI among First Years Studies students?

Results

The Pearson product moment correlation was used to answer this research question. Results of this analysis indicated a significant positive relationship between the BDI-II and the CTI total score ($r = .405, p < .01$). There were also significant positive correlations between the BDI-II and the subscales of the CTI; specifically, for DMC ($r = .339, p < .01$), for CA ($r = .342, p < .01$), and for EC ($r = .355, p < .01$). The researcher was curious as to how the participants who fell in the moderate to severe ranges of the BDI-II, that is, who scored 20 or above ($n = 12$), compared with those who scored in the high range of the CTI ($T > 65$; $n = 13$). A significant positive relationship was found between the BDI-II moderate to severe scoring group and the CTI total score ($r = .631, p < .05$); however, there was not a significant relationship between the high CTI scoring group and the BDI-II. It should be noted, however, that due to the small number of participants that fell into these two groups, any statistical results should be interpreted with caution.

Question Two

What is the relationship between depression as measured by the BDI-II and the response style of First Year Studies students on the Occupations Scale of the SII, as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?

Results

The Pearson product-moment correlation was used to answer this research question. Correlation coefficients and significance levels are presented in Table 3. Results of this analysis indicated that there were no significant relationships between the BDI-II and the response styles on the Occupations Scale of the SII, as indicated by the "Like," "Dislike," and "Indifferent" percent indexes.

Question Three

What is the relationship between dysfunctional thinking as measured by the CTI and the response style of First Year Studies students on the Occupations Scale the SII, as indicated by the "Like, "Dislike," and "Indifferent" percent indexes?

Results

The Pearson product-moment correlation was used to answer this research question. Correlation and significance levels are presented in Table 4. Results of this

Table 3

Correlations between BDI-II Total Score and SII Occupations Percent Indexes

	r	*p*
Like	.051	.513
Indifferent	.013	.863
Dislike	-.039	.614

Table 4

Correlations between CTI Total Score and SII Occupations Percent Indexes

	r	*p*
Like	.184*	.016
Indifferent	.120	.119
Dislike	-.194*	.011

*$p < .05$ level (2-tailed)

analysis indicated that there was a significant positive correlation between CTI total score and the Occupations "Like" percent index ($r = .184, p = .016$). Results also showed a significant negative correlation between CTI total and the Occupations "Dislike" percent index ($r = -.194, p = .011$). The CTI total score was not significantly correlated with the Occupations "Indifferent" percent index of the SII.

Question Four

What is the relationship between the CTI subscale scores (Decision Making Confusion, Commitment Anxiety, External Conflict) on the CTI and the response style of First Year Studies students on the Occupations Scales of the SII, as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?

Results

The Pearson product-moment correlation was used to answer this research question. Correlation coefficients and significance levels are presented in Table 5. Results of this analysis indicated a significant negative relationship between the DMC

Table 5

Correlations between CTI Subscale Scores and SII Occupations Percent Indexes

Percent Index		DMC	CA	EC
Like	*r*	105	.235**	.132
	p	.171	.002	.086
Indifferent	*r*	.130	.094	.042
	p	.092	.224	.586
Dislike	*r*	-.155*	-.206**	-.107
	p	.044	.007	.164

**$p < .01$ level (2-tailed).
*$p < .05$ level (2-tailed).

subscale scores and the Occupations "Dislike" percent index (r = -.155, p = .044). Scores on the DMC subscale were not significantly correlated with the Occupations "Like" or "Indifferent" percent indexes.

Results also indicated a significant positive relationship between the CA subscale scores and the Occupations "Like" percent index (r = .235, p = .002), and a significant negative relationship between the CA subscales scores and the Occupations "Dislike" percent index (r = -.206, p = .007). Scores on the CA subscale were not significantly correlated with the Occupations "Dislike" percent index.

The results of this analysis indicated that there were no significant relationships between the EC subscale scores and response styles on the Occupations Scale of the SII as indicated by the "Like," "Dislike," and "Indifferent" percent indexes.

Question Five

Are there gender differences among First Year Studies students with regard to level of depression as measured by the BDI-II and dysfunctional thinking as measured by the CTI?

Results

A t-test was run to answer this research question. Results are shown in Table 6. No significant differences were found between BDI-II (t (168) = -1.22, p = .223), and CTI (t (168) = -1.11, p = .268).

The mean score for males on the BDI-II was 7.56 and for females was 8.78. The mean score on the CTI for males was 50.78 and for females was 52.46. These scores are consistent with those of college students not seeking assistance in the criterion-related validity study conducted by the developers of the CTI (Sampson et al., 1996). While the

Table 6

T-Test for Equality of Means between BDI-II and CTI Total

	t	*df*	*p* (2-tailed)	Mean Difference
BDI-II	-1.223	168	.223	-1.220
CTI	-1.111	168	.268	-1.681

results suggested that females endorsed more depressive symptoms and dysfunctional thinking than males, the differences were not significant.

Question Six

Are there gender differences among First Year Studies students with regard to dysfunctional thinking as measured by the CTI subscale scores?

Results

To determine if gender effects exist among any CTI subscale scores, a MANOVA was run. Results of this analysis indicated that at least one subscale demonstrated gender effects (F (3.166) = 4.98, p = .002).

In order to determine which subscales differed on gender, individual ANOVA's were run. Results are shown in Table 7. The results of this analysis indicated a significant difference was found with the CA subscale scores (males = 51.96, females = 55.50, p = .022), suggesting females have more Commitment Anxiety than males. No significant

Table 7

ANOVA Between-Subjects Effects for Gender and CTI Subscales

Source	Dependent Variable	*df*	*MS*	*F*	*p*
Gender	DMC	1	133.616	1.406	.237
	CA	1	520.625	5.381*	.022
	EC	1	261.238	2.025	.157

*$p < .05$

differences were found with the DMC subscale ($p = .237$) or with the EC subscale scores ($p = .157$).

Question Seven

Are there gender differences with regard to the response style of First Years Studies students on the Occupations Scales of the SII as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?

Results

To determine if gender effects exist among any percent indexes of the Occupations Scales, a MANOVA was run. Results of this analysis indicate that at least one index demonstrated gender effects ($F(3, 166) = 3.48, p = .017$).

In order to determine which percent indexes differed on gender, individual ANOVA's were run. The results of this analysis are shown in Table 8 and indicate a

Table 8

ANOVA Between-Subjects Effects for Gender and SII Percent Indexes

Source	Dependent Variable	*df*	*MS*	*F*	*p*
Gender	Like	1	418.714	3.822	.052
	Indifference	1	841.235	4.470*	.036
	Dislike	1	47.950	.130	.719

*$p < .05$

significant difference was found with the "Indifferent" index (males = 25.93, females = 21.43, $p = .036$), suggesting males endorse "Indifferent" more often than females when presented with items on the Occupations Scale of the SII. A marginal difference was found with regard to the "Like" percent index ($p = .052$). No significant differences were found with regard to the "Dislike" percent index ($p = .719$).

Question Eight

How does depression as measured by the total score on the BDI-II, dysfunctional thinking as measured by the total score on the CTI, and gender predict the response style of First Year Studies students on the Occupations Scales of the SII as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?

Results

To answer this eighth research question, three separate regression analyses were run using the BDI-II, the CTI, and gender as the predictor variables and the "Like," "Dislike," and "Indifferent" percent indexes as the dependent variables.

When predicting the Occupations "Like" percent index, a significant regression model was obtained (F (3, 166) = 3.10, p = .028). As Table 9 shows, five percent of the variability in "Like" could be explained by this model (R^2 = .053). As Tables 10 shows, the CTI total score was the only predictor variable that is significantly related to the Occupations "Like" percent index (B = .218, p = .024).

The regression model for the Occupations "Dislike" percent index was not significant (F (3, 166) = 2.39, p = .071). The regression model for the Occupations "Indifferent" percent index was not significant (F (3, 166) = 2.59, p = .055).

Table 9

ANOVA for Occupations "Like" Percent Index Regression with CTI Total

Model	Sum of Squares	*df*	*MS*	*F*	*p*
Regression	1147.517	3	382.506	3.096*	.028
Residual	20506.183	166	123.531		
Total	21653.700	169			

*p < .05

Table 10

Regression Coefficients for Occupations "Like" Percent Index with CTI Total

Model	*B*	*SE B*	*β*	*t*	*p*
Constant	6.183	4.731		1.307	.193
BDI-II	-.068	.146	-.038	-.464	.643
CTI-Total	.218	.096	.188*	2.270	.024
Gender	3.123	1.735	.137	.137	.074

$R^2 = .053$, $*p < .05$

Question Nine

How do the total score on the BDI-II, the subscale scores (Decision Making Confusion, Commitment Anxiety, External Conflict) on the CTI, and gender relate to predict the response style of First Year Studies students on the Occupations Scales on the SII as indicated by the "Like," "Dislike," and "Indifferent" percent indexes?

Results

To answer this ninth research question, three separate regression analyses were carried out using the BDI-II, the CTI subscales (CA, DMC, EC), and gender as the predictor variables, and the "Like," "Dislike," and "Indifferent" percent indexes as the dependent variables.

As Table 11 shows, when predicting the Occupations "Like" percent index, the regression model was significant (F (5, 164) = 2.97, p = .014). Eight percent of the variability in "Like" can be explained by this model. As 12 shows, the CA subscale score was the only predictor variable that is significantly related to the Occupations "Like" percent index (B = .358, p = .011).

The regression model for the Occupations "Dislike" percent index was not significant (F (5, 164) = 1.637, p = .153). The regression model for the Occupations "Indifferent" percent index was not significant (F (5, 164) = 1.751, p = .126).

Table 11

ANOVA for Occupations "Like" Percent Index Regression with CTI Subscales

Model	Sum of Squares	*df*	*MS*	*F*	*p*
Regression	1796.764	5	359.353	2.968*	.014
Residual	19856.936	164	121.079		
Total	21653.700	169			

*$p < .05$

Table 12

Regression Coefficients for Occupations "Like" Percent Index with CTI Subscales

Model	*B*	*SE B*	β	*t*	*p*
Constant	4.032	5.382		.749	.455
BDI-II	-.071	.145	-.040	-.488	.626
CTI-DMC	-.195	.136	-.168	-1.435	.153
CTI-CA	.358	.139	.315*	2.578	.011
CTI-EC	.080	.091	.080	.881	.380
Gender	2.773	1.792	.121	1.548	.124

$R^2 = .083$, $*p < .05$

Summary of the Results

Answers to this study's research questions are summarized as follows:

1. There was a significant positive relationship between depression as measured by the BDI-II and dysfunctional thinking as measured by the CTI among First Years Studies students.
2. There was no significant relationship between depression as measured by the BDI-II and the response style of First Year Studies students on the Occupations Scale of the SII, as indicated by the "Like," "Dislike," and "Indifferent" percent indexes.

3. There was a significant positive relationship between the CTI total score and the Occupations "Like" percent index of the SII, and a significant negative relationship between the CTI total and the Occupations "Dislike" percent index.
4. There was a significant negative relationship between the Decision Making Confusion subscale of the CTI and the Occupations "Dislike" percent index of the SII. In addition, there was a significant positive relationship between the Commitment Anxiety subscale of the CTI and the Occupations "Like" percent index, and a significant negative relationship between the CA subscale and the Occupations "Dislike" percent index.
5. There were no significant gender differences among First Year Studies students with regard to depression as measured by the BDI-II and dysfunctional thinking as measured by the CTI.
6. A significant gender difference existed on the Commitment Anxiety subscale of the CTI. Females scored significantly higher than males.
7. A significant gender difference existed with regard to response style on the Occupations "Indifferent" percent index on SII. Males scored significantly higher than females on this index.
8. Although a significant model was obtained between the CTI total and the SII "Like" percent index, the variability accounted for by the model was insufficient to suggest that the BDI-II, the CTI total and gender interact adequately to predict the response style of First Year Studies students on the SII.
9. Similarly, although a significant model was obtained between the CA subscale score and the "Like" percent index, it was insufficient to suggest that the total

score on the BDI-II, the subscale scores (Decision Making Confusion, Commitment Anxiety, External Conflict) on the CTI, and gender interact to adequately predict the response style of First Year Studies students on the Occupations Scales on the SII as indicated by the "Like," "Dislike," and "Indifferent" percent indexes.

In this chapter, the researcher has presented the results of the data analysis and provided answers to the research questions. In the next chapter, the researcher will discuss the results and the implications of these results for career counseling.

CHAPTER V

Discussion

In this chapter, the researcher will address general conclusions from the results of the study, implications for practitioners, implications for counseling training programs, limitations of the study, and directions for future research.

General Conclusions

The results of this study yield some insights into the relationships that may exist among First Year Studies students with regard to depression, as measured by the Beck Depression Inventory – Second Edition, dysfunctional career thinking, as measured by the Career Thoughts Inventory, and their response style on the Occupations Scale of the Strong Interest Inventory. It appears that there is a significant relationship between depression, as indicated by the BDI-II score and dysfunctional thinking, as measured by the CTI total score. In other words, the more a student reports having dysfunctional career thoughts, the more depressed he or she reports to be.

Furthermore, depression appears to be significantly related to all three subscales of the CTI, suggesting that students who report having difficulty within the decision-making process of determining a career choice (DMC), who report having anxiety relating to which career choices to make (CA), or who report having problems differentiating their own career desires from those of significant others (EC), also report being depressed.

These are not surprising findings when considering the two theoretical perspectives on which the CTI is based: Cognitive Information Processing (CIP) and Cognitive Therapy. To review, the CIP approach takes into account where an individual

is in terms of career exploration and decision making, and focuses on enhancing an individual's capacity to solve problems. The cognitive therapy approaches upon which the CTI is also based address how an individual's perceptions of his or her environment and dysfunctional thinking affect emotion and behavior and lend credence to the idea that career problems involve cognitive, affective, behavioral, and psychological components (Bandura, 1974; Beck, 1976; Peterson, et al., 1991).

It does not appear, however, that depression alone is related to how college students respond to the Occupations Scales of the Strong Interest Inventory as indicated by the "Like," "Indifference," and "Dislike" percent indexes. Rather, it appears that the more dysfunctional a student's career thoughts, as measured by the CTI total score, the more he or she tends to respond to the "Like" percent index of the Occupations Scale of the Strong. Conversely, the more dysfunctional a student's career thoughts, the less likely he or she tends to respond with "Dislike" when presented with items from the Occupations Scale. An examination of the relationships among the CTI subscales and response style reveals possible reasons for these results.

With regard to the specific subscales of the CTI, it appears that students who score high in Decision Making Confusion do not tend to respond with "Dislike" when presented with items from the Occupations Scale of the Strong. The DMC scale reflects an inability to initiate or sustain the decision-making process, and may be due to disabling emotions, such as depression and anxiety, or a lack of understanding about the decision-making process itself.

When considering that Sampson et al. (1998) found that the CTI total score is highly correlated with the Decision Making Confusion subscale, and in light of the fact

that the present study found a strong relationship between the BDI-II and CTI total score, it is possible that depression may be a part of the reason why some students endorsed fewer items as "Dislike" on the Occupations Scale of the Strong. However, since the BDI-II did not correlate directly with any response style on the Strong, it is possible that other students chose not to respond with "Dislike" due to a lack of understanding about the process of career decision making, regardless of their emotional state at the time they took the inventory.

Sampson et al. (1998) noted that decision making confusion can also stem from being so overwhelmed by the magnitude of deciding upon a career that an individual will forego beginning the decision-making process altogether. It is possible that the nature of this research sample contributed to this effect. The participants in this study were all in their first year at a large land grant institution that offers numerous majors. As was previously noted, many students entering college experience for the first time a completely novel environment separate from the familiar emotional, social and instrumental support from home, all of which can greatly affect their ability to progress effectively in their career exploration (Schultheiss, 2000). Furthermore, the First Year Studies course is designed to help these new students get acclimated to the university and to introduce them to the plethora of services and resources offered by the university that can help students as they navigate through the university system and hopefully on a career path. It is also possible, therefore, that students with a higher degree of confusion may be overwhelmed by the transition into a large university and the pressure to begin thinking about which career path to take. As a consequence they may avoid making definitive decisions by "ruling out" career options, and thus may select "Like" and

"Indifferent" more often than "Dislike" when presented with Occupations items on the SII.

Upon further examination of the relationship between the response style of First Year Studies students and the CTI subscales, it appears that students who feel a greater degree of commitment anxiety, as indicated by higher scores on the CA scale, tend to respond with "Like" when presented with items from the Occupations Scale of the SII. Conversely, students who feel a greater degree of commitment anxiety, as indicated by higher scores on the CA scale, do not tend to respond with "Dislike" when presented with items from the Occupations Scale of the SII. The CA subscale was designed to measure an individual's inability to make a commitment to a specific career choice, which is usually accompanied by generalized anxiety about the outcome of the decision-making process. Sampson et al. (1998) stated that commitment anxiety is often characterized by the inability to let go of less appropriate alternatives in favor of a potentially more appropriate choice. If a student has a lot of commitment anxiety stemming from a fear of "making the wrong career choice," it is understandable that he or she would keep as many options open as possible by endorsing several Occupation items as "Like," rather than eliminating them by responding "Dislike." These findings may lend credence to the conclusions made by Hansen (2000) that people with a high number of responses on the "Like" index have elevated profiles that may reflect diversity in a person's interests or may indicate a reluctance to choose one area over another.

It is also interesting to note that Van Haveren's (2000) study that freshmen and sophomores reported higher levels of commitment anxiety and lower levels of certainly regarding their career/major choice than juniors and seniors. It is not surprising,

therefore, that CA was also high among participants in this study, since they were enrolled in First Year Studies classes.

It is important to note that Greene (2001) also found that students with high CA scores on the CTI tend to respond with "Like" when presented with items from the Occupations Scale of the SII, and do not tend to respond with "Dislike" when presented with items on the same scale. The participants in Greene's study differed from those in the present study since they had voluntarily enrolled in a career exploration course and were actively involved in investigating possible majors and career options. Furthermore, the participants in Greene's study included sophomore and junior students who may have had the chance to get acclimated to the university and may not have been facing the same psychosocial stressors associated with transition as the participants in the present study. The fact that similar findings were found with two different groups of participants adds to the generalizability of Greene's results (Heppner et al., 1999).

When examining gender differences and dysfunctional career thinking, it appears that women are more likely than men to have commitment anxiety. This is not a surprising finding considering the fact that contemporary researchers have noted the importance of addressing gender differences in career choice when counseling college students since the vocational needs, goals, motivations, and problems of college women often are very different from those of college men (Fassinger & O'Brien, 2000; Fitzgerald, Fassinger, & Betz, 1995). Furthermore, researchers have noted that career counseling with women can be impeded if they have experienced external barriers to vocational success such as gender role stereotyping and gender discrimination as well as

internal barriers such as low self-esteem and other internalized beliefs (Betz & Fitzgerald, 1987).

One could theorize that career self-efficacy may be related to the fact that the women in this study endorsed more commitment anxiety than the men, based on the research of Betz and Hackett (1981) examining how self-efficacy beliefs influence career behavior. To review, the females in the study reported significantly higher levels of self-efficacy with regard to traditional female occupations; they reported significantly lower levels of self-efficacy with regard to nontraditional occupations. In contrast, males reported equivalent levels of self-efficacy when regarding both traditional and nontraditional expectations.

In addition, when Eisenhart and Holland (1992) conducted their longitudinal study of university women, they found that many of the women who started college with interests in math and science, traditionally male-dominated majors, showed decreased commitment to their majors as they progressed through college. Betz (1997) suggested that women need a greater expectation of efficacy and career counselors can be helpful in this endeavor. It is not surprising, therefore, that the women in this study appear to have more commitment anxiety than the men in this study.

Nor is it surprising that the men in this study appear to prefer selecting "Indifferent" more often than women when presented with items on the Occupations subscale of the SII. To review, researchers have suggested that men tend to associate career choice and career success with sense of self-worth, they also tend to express more negative stigma toward career counseling services than women (Rochlen, Mohr, & Hargrove, 1999). This may explain why the male participants in the current study tend to

select "Indifferent" more often than women. Men may be more ambivalent or apathetic to the career exploration process if they do not feel it is worthwhile.

It should be noted, however, that researchers have concluded that clients with high "Indifferent" index response rates may be indecisive or genuinely confused about their interests and the choices available to them and may need to accumulate additional experience and to learn more about the world of work before proceeding with the decision-making process (Hansen, 2000). Thus, the male participants in this study may have been more confused about the career decision-making process. Furthermore, Sackett and Hansen (1985) concluded that students with undifferentiated profiles as college freshmen may have more difficulty in selecting college majors and may feel more career uncertainty while in college than do college students with differentiated Strong profiles. Whether it is due to motivation or confusion, it is clear that the reasons for choosing "Indifferent" should be explored within the career counseling process.

Finally, the results of this study revealed that the BDI-II, the CTI total and subscales, and gender did not significantly interact to predict response styles on the Occupations Scale of the SII. Logic dictates that this may have been due to the fact that the BDI-II and the CTI total were very strongly correlated in this study, in addition to the fact that the CTI total score and subscale scores are also highly correlated with one another. Sampson et al. (1998) reported that the CTI total score correlated highly with the DMC subscale ($r = .89$ to $.94$), and that the correlations between the DMC scale and the CA scale range from .65 to .80; the correlations between the DMC scale and the EC scale range from .55 to .72; and that the correlations between the CA scale and the EC scale range from .52 to .66. Since these variables are so closely related, therefore, and the level

of significance of any predictors was so small, one cannot conclude that any of the variables interacted sufficiently to predict the response style of First Year Studies students in this study. It is also possible that the size of participant group may also have contributed to this finding. Heppner et al. (1999) proposed that one factor that can influence regression analysis is the number of study participants. Using a larger participant group, therefore, may have yielded statistically significant results.

Implications for Practitioners

This study provides a number of implications that may assist counselors who work with college students involved in career decision making. First, given that there is a relationship between dysfunctional career thinking and response style on the SII, and between dysfunctional career thinking and depression, it may be beneficial for counselors to consider using cognitive and affective measures such as the BDI-II and the CTI along with the Strong Interest Inventory when engaging in career counseling. Furthermore, it would be beneficial for counselors to discuss response style with their clients when one index appears to be overendorsed compared to the other two. One approach might be to first examine a client's response style on the Strong. If an elevated or depressed profile is evident, then the CTI could be administered to determine if any dysfunctional career thinking could be occurring. If, in fact, the client's CTI score is high (> 65), then the BDI-II could be administered to determine if depression may be a factor. Going over the results with the client individually would then yield even more information that could be helpful to the career counselor in determining the next step to take within the career decision-making process. As Saunders et al. (2000) suggested "depression, like anxiety, may lead to inability to effectively consider educational and career options, …and when

strong emotions are exhibited by those expressing career indecision, clients may be best served by first addressing the affect and secondly the career choice process" (p.296).

In addition to addressing emotional concerns, career counselors need to be mindful of the fact that dysfunctional thinking on a metacognitive level can have an adverse effect on career decision making. This may be particularly relevant when a student scores high on both the CTI and the BDI-II. Based on their comfort and skill level, career counselors may wish to refer their clients for individual counseling in addition to career exploration, or may wish to address the depression within the career counseling framework. Using the CIP approach may also prove valuable, especially in conjunction with the CTI workbook. To review, the model described by Sampson et al. (1992) is a cycle that involves communication, analysis, synthesis, valuing, and execution skills (CASVE). In the communication phase, clients begin to realize that a gap exists between a real state (career indecision) and an ideal state (career decidedness). Career counselors can help students become aware that such gaps are a product of internal factors which are manifested via emotional states such as depression or anxiety; through avoidance behaviors such as excessive tardiness or absenteeism; and through somatic symptoms such as headaches or gastrointestinal problems. Counselors can also help their clients become aware such gaps occur in the presence of external demands such as the need to declare a major in college or the need to make a decision about which career path to pursue.

During the analysis phase, clients form a mental model of the problems and look at relationships among the components. Career counselors can help clients relate self-knowledge with occupational knowledge to better understand the necessary

characteristics of the occupation they are interested in. During this phase clients go through a recurring cycle of obtaining new information or clarifying existing knowledge, followed by a period of reflection and integrating what has been learned, which then lead to more complex models. Career counselors can be particularly effective in helping clients gain an understanding of how metacognitions and decision-making style influence their approach to career problem solving (Sampson et al., 1992).

In the synthesis phase, clients first expand their occupational alternatives in a process called elaboration, and then narrow their alternatives through a process called crystallization. Elaboration often involves self-assessment instruments that allow for brainstorming as many solutions as possible. Through the crystallization process, on the other hand, career counselors can help clients eliminate options that are inconsistent with the client's values, interests, and skills. The objective of this phase is eventually narrow down the alternatives to somewhere between three and five plausible options (Sampson et al., 1992).

As clients progress through the valuing phase, career counselors can help the client narrow down the final alternatives to a first choice. This is done when clients evaluate the costs and benefits of each option to themselves, significant others, and their culture. Tentative primary and secondary choices are finalized and, after adequate preparation, reality testing, and job seeking is complete, a first choice is selected (Sampson et al., 1992).

The final phase is execution, in which career counselors assist the client in developing and committing to a plan of action for implementing his or her choice. This process may take a short amount of time or extend over a period of years as when an

advanced degree is needed for the chosen occupation. Upon completion of this step, the client returns to the communication phase to determine whether or not the gap between an existing and desired state of affairs has been eliminated, a process through which career counselors can also be helpful (Sampson et al., 1992).

Career counselors can also use cognitive therapy to address client concerns. To review, the underlying rationale for this type of therapy is that a person's affect and behavior are largely determined by his or her cognitions. Cognitions in this model are viewed as verbal or pictorial events in a person's stream of consciousness that are based on assumptions or attitudes developed from past experiences. These assumptions and attitudes are in the form of schemata. A schema, or memory representation, is used to screen out, differentiate, and code incoming stimuli. Unfortunately, schemata can become dysfunctional for people as a result of their experience, and subsequent incoming stimuli can be distorted to fit their dysfunctional schemata. Dysfunctional thinking in turn can lead to negative emotions which can affect a person's behavior. As a person behaves in response to their dysfunctional schemata and resulting feelings, the reactions from significant others may further reinforce their schemata, thus propagating the cycle. In time, using dysfunctional schemata can lead to errors in systematic thinking which can become autonomous and very difficult for an individual to change (Beck, Rush, Shaw, & Emery, 1979).

Thus, career counselors can help their clients identify the dysfunctional thinking that is interfering with their efforts to decide upon a career. Furthermore, through a process called cognitive restructuring, career counselors can help clients learn to monitor negative automatic thoughts, examine the evidence for and against these thoughts, and

eventually substitute more reality-based interpretations for these biased thoughts. Sampson et al. (1996) note how helpful cognitive therapy can be in career problem solving adding that, "By reducing the negative impact of dysfunctional cognitions, affect becomes more positive, and the individual can use his or her resources more productively to solve the problems" (p.10).

Beck's (1979) cognitive theory emphasized the idea that there is, in fact, a relationship between negative self-talk within the metacognition framework and negative emotions such as anxiety and depression. Common examples of negative self-talk described by Leahy (1996) include the following – "He thinks I'm a loser," (Mind-Reading), "If I fail to get this job, I'll fail at other things, too" (Overgeneralizing), and "I do nothing right" (All-or-nothing-thinking). Techniques for addressing these self-defeating thoughts include challenging the underlying assumptions of each thought, examining the evidence to support each thought, and looking at alternative explanations to reframe the thought (Leahy, 1996).

Keller, Biggs, and Gysbers (1982) offered a number of suggestions for helping students who may fall into this category. First, counselors should help their clients identify dysfunctional schemata and beliefs. In other words, counselors can assist their clients in becoming aware of any self-defeating or misguided beliefs they may have about themselves or the world of work. Second, counselors can help their clients begin using positive self-talk through the use of think-aloud procedures and reframing techniques. When clients berate or minimize their problem-solving and decision-making abilities, counselors can challenge these beliefs and affirm their clients' strengths and effort. Third, counselors can help clients replace negative all-or-nothing thinking about themselves in

the career decision-making process by addressing their concerns as situation specific. The client then begins to see perceive his or her difficulties as a matter of degree, rather than as an absolute, generalized personality deficit. Finally, counselors can teach self-control strategies to help deal with the anxiety and depression associated with dysfunctional thinking. These strategies include relaxation breathing and using calming mental imagery when stressed (Keller et al., 1982).

Implications for University Training Programs

In light of the aforementioned recommendations for practitioners, university programs for preparing counselors and counseling psychologists would also benefit from being aware of the potential relationships between depression, dysfunctional career thinking, and response style. Robitschek and DeBell (2002) recently called for the reintegration of vocational issues into the counseling psychology paradigm, and that "vocational factors be viewed as primary issues and contextual factors in counseling theory, research, practice, and teaching" (p. 807). The authors suggested that broadening the topics included in vocational coursework within counseling psychology programs would aid in changing the current paradigm. Specifically, the authors recommended that vocational coursework include content devoted to addressing new technologies associated with the world of work and to the treatment of individuals from diverse populations within the context of the cultural and sociological influences on career development. Furthermore, Robitschek and DeBell (2002) recommended that instructors of career courses integrate vocational with personal counseling, and to teach vocational psychology as an advanced topic in psychotherapy.

Likewise, Robitschek and DeBell (2002) offered suggestions for expanding the topics included in nonvocational coursework in counseling training programs. First, research methods courses could include vocational examples. Second, instructors of multicultural coursework could include topics addressing unique factors that affect working class, rural, and older workers. Third, courses addressing psychopathology could explore the possible effects of mental disorders, such as depression and anxiety, on vocational functioning. Fourth, developmental psychology courses could address career development as part of their course focus. Finally, history and systems instructors could examine the role of vocational psychology within counseling psychology.

Bingham (2002) added that "Counseling psychologists must understand that there is no separation of personal issues from career issues by those people who are our clients" (p.889). It is clear, therefore, that just as career counseling programs would benefit from teaching their students the skills to address affective and cognitive concerns in career decision making, counseling psychology and counselor education programs would benefit from teaching their students to be aware of how career issues and personal adjustment affect one another.

Limitations of the Study and Directions for Future Research

While this study resulted in some important findings, there were limitations that may have influenced the results and should be addressed. One of the limitations of this study was that the measurement of cognitions and emotions is primarily subjective. One can only infer from the responses of the subjects who volunteer for this study what they may be truly thinking and feeling. For example, the authors of the CTI acknowledge that dysfunctional thinking in career problem solving cannot be measured directly; however,

they conclude that inferences about such thinking can be made from a client's endorsement of the test items (Sampson et al., 1996).

A second limitation of this study was the size of the sample. Although power analysis showed that the size of the sample was adequate (Cohen, 1988), future research would benefit from a larger sample size. This is especially important in light of the fact that the number of participants that fell into the high scoring groups on the BDI-II and the CTI was too small to explore any significant relationships. A larger sample size might yield more individuals who would fall into these categories, so these relationships can be examined further. A larger sample size would also allow for greater generalizability to the larger population (Heppner et. al, 1999). Since the data used in this study were derived from only one university, future studies would be enhanced by expanding data collection to other universities across the nation, perhaps even around the world.

A third limitation of this study was that the participants were not randomly selected. Instead, they were all students who had volunteered for this study having enrolled in First Year Studies classes led by instructors who had selected to participate in the study. Heppner, Kivlinghan, and Wampold (1999) strongly suggest that researchers consider employing random sampling methods to eliminate the effects of sample characteristics.

A fourth limitation of this study was that the subjects did not take the SII at the exact time as the CTI and the BDI-II, since students in the First Year Studies course take the SII on-line rather than in class. Even though the students in the sample took CTI and BDI within two weeks of taking the SII, it would have been ideal to have the participants take all three instruments on the same day. The researcher did attempt to control for the

time of day that the participants took the BDI-II and the CTI, but the time of day in which participants took the Strong could not be controlled.

Another limitation is the number and type of the assessment instruments used in the study. The three instruments used were objective, self-report measures. Newman, Fuqua and Minger (1990) concluded that differences in career development exist along various dimensions and recommended using multiple measures which include a broader range of cognitive variables. Future research in this area, therefore, would benefit from the use of multiple measures such as interviews, objective assessments, and observations.

One final limitation to this study was that some of the variables that the researcher acknowledged can play an important role in career decision making, such as socioeconomic background, familial expectations and vocational maturity were not measured, which was another limitation. This study only attempted to provide a "snapshot" of how some college students may have been thinking and feeling while responding to a career inventory during a certain window of time in their lives.

There are other avenues of research related to this study which should be explored. For example, another line of inquiry which could be pursued by future researchers would be to expand on the findings of Lustig and Strauser (2002), who examined the relationship between sense of coherence and dysfunctional career thinking in college students. To review, the term "sense of coherence" was defined as a belief system that the world is comprehensible, manageable, and meaningful. Comprehensibility refers to the degree to which a person perceives the world as predictable, ordered, and explicable. Manageability refers to the degree to which a person believes that he or she possesses the personal resources to handle a demand or dilemma.

Meaningfulness refers to the belief that demands are challenges that are worthy of investment and commitment. The initial results of their research revealed that individuals who reported a strong sense of coherence had lower levels of dysfunctional career thoughts, and the researchers concluded that students with a strong sense of coherence would be better able to engage in the career exploration process since such individuals typically believe that stressors are challenges rather than burdens and that they have the personal and social resources to meet life's demands. Thus, they would be more likely to believe that the difficulties associated with making a career decision are manageable and persisting in the career counseling process is worthwhile. The researchers recommended that career counselors consider structuring counseling tasks to strengthen their clients' sense of coherence. They suggest using cognitive-behavioral interventions to accomplish this goal and add that this would be consistent within the framework of CIP theory.

Finally, previous research has shown that dysfunctional thinking errors, such as overgeneralization, selective abstraction, and personalization often result in intense negative affect, such as depression and anxiety, which can divert an individual from productively focusing on the actual reality-based problems in his or her life (Beck et al., 1979). While this study did not focus on determining what type of dysfunctional thinking errors may have occurred within the sample, the results of this study suggest that there are indeed relationships between dysfunctional career thinking and depression, and future research would benefit from examining these specific variables. It is recommended, therefore, that future researchers consider using participants from a clinical population such as students seeking treatment at university counseling centers, to further examine these variables.

In conclusion, the results of this study suggest that career counselors need to be aware of the potential relationships among depression, dysfunctional career thinking and how college students respond to career inventories. Based on the reality that these relationships may exist, career counselors need to be prepared with these skills to assess and treat the affective and cognitive factors that may impede the career exploration process. Furthermore, counseling training programs should consider facilitating the acquisition of these skills by incorporating coursework on cognitive-behavioral interventions into their curriculum. It is hoped that research into this area will continue so that counselors working with this population will gain new insights into how to be even more effective in helping their clients through the career decision-making process.

REFERENCES

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders (4th ed.). Washington, DC: Author.

Antonovsky, A. (1987). Unraveling the mystery of health. San Francisco: Jossey-Bass.

Arbisi, P.A. (1999). Review of the Beck Depression Inventory – II. In J.C. Impara & B.S. Plake (Eds.), The fourteenth mental measurements yearbook (pp.291-292). Lincoln, NE: The Buros Institute of Mental Measurements.

Armatas, J.P., & Collister, E.G. (1962). Personality correlates of the SVIB patterns. Journal of Counseling Psychology, 9, 149-154.

Bandura, A. (1974). Behavior theory and the models of man. American Psychologist, 29, 859-869.

Beck, A.T. (1976). Cognitive therapy and the emotional disorders. NY: International Universities Press.

Beck, A.T., Emery, G., & Greenberg, R.L. (1985). Anxiety disorders and phobias: A cognitive perspective. New York: Guilford.

Beck, A.T., & Steer, R.A. (1990). Manual for the Beck Anxiety Inventory. San Antonio, TX: The Psychological Corporation.

Beck, A.T., Steer, R.A., & Brown, G.K. (1996). Manual for the Beck Depression Inventory – Second Edition. San Antonio, TX: The Psychological Corporation.

Beck, A.T., Rush, A.J., Shaw, B.F., & Emery, G. (1979). Cognitive therapy of depression. New York: Guilford Press.

Beck, A.T., Ward, C.H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. Archives of General Psychiatry, 4, 561-571.

Bennion, L.D., & Adams, G.R. (1986). A revision of the extended version of the Objective Measure of Ego Identity Status: An identity instrument for use with late adolescents. Journal of Adolescent Research, 1, 183-197.

Betz, N.E. (1992). Career assessment: A review of critical issues. In S.D. Brown and R.W. Lent (Eds.), Handbook of Counseling Psychology (pp. 453-484). New York: John Wiley & Sons, Inc.

Betz, N.E., & Fitzgerald, L.F. (1987). The career psychology of women. New York: Academic Press.

Betz, N.E., & Hackett, G. (1981). The relationship of career-related self-efficacy expectations to perceived career options in college women and men. Journal of Counseling Psychology,28, 399-410.

Betz, N.E., Klein, K.L., & Taylor, K.M. (1996). Evaluation of a short form of the Career Decision-Making Self-Efficacy Scale. Journal of Career Assessment, 4, 47-57.

Betz, N.E., Wohlgemuth, E., Serling, D., Harshbarger, J., & Klein, K.L. (1995). Evaluation of a measure of self-esteem based on the concept of unconditional self-regard. Journal of Counseling and Development, 74, 76-83.

Bingham, R. P. (2002). The issue may be the integration of personal and career issues. Counseling Psychologist, 30, 885-890.

Bonynge, E.R. (1991). No work and all play: An analysis of a response style on the Strong-Campbell Interest Inventory. Journal of Counseling and Development, 69, 275-276.

Bray, J.H., & Harvey, D.M. (1992). Intimacy and individuation in young adults: Development of the young adult version of the Personal Authority in the Family System Questionnaire. Journal of Family Psychology, 6, 152-163.

Brody, S.F. (1990a). Relationship between response style on the Strong-Campbell Interest Inventory and occupational scales (for men). Psychological Reports, 66, 374.

Brody, S.F. (1990b). Relationship between response style on the Strong-Campbell Interest Inventory and occupational scales (for women). Psychological Reports, 66, 94.

Brown, D., & Brooks, L. (Eds.). (1996). Career choice and development: Applying contemporary theories to practice (3rd ed). San Francisco: Jossey-Bass.

Campbell, D.T., & Stanley, J.C. (1963). Experimental and quasi-experimental designs for research. Chicago: Rand McNallly College Publishing Company.

Carson, A.D., & Dawis, R.V. (2000). Determining the appropriateness of career choice assessment. In D.A. Luzzo (Ed.), Career counseling of college students: An empirical guide to strategies that work. (pp. 95-120). Washington, DC: American Psychological Association.

Cheek, J.M. & Buss, A.H. (1981). Shyness and sociability. Journal of Personality and Social Psychology, 41, 330-339.

Chickering, A.W., & Reisser, L. (1993). Education and identity. San Francisco: Jossey-Bass.

Crites, J. O. (1974). Vocational psychology. New York: McGraw-Hill.

Costa, P.T., Jr., & McCrae, R.R. (1992). Revised NEO Personality Inventory. Odessa, FL: Psychological Assessment Resources, Inc.

Creaser, J.W. (1985). Effects of response style on occupational scales of the Strong-Campbell Interest Inventory. Journal of Counseling Psychology, 32, 215-220.

Creaser, J.W. (1986). Effects of response style on SCII interscale relationships. Psychological Reports, 58, 50.

Dipeolu, A., Reardon, R., Sampson, J., & Burkhead, J. (2002). The relationship between dysfunctional career thoughts and adjustment to disability in college students with learning disabilities. Journal of Career Assessment, 10, 413-427.

Dodge, T.D. (2001). An investigation of the relationship between the family of origin and selected career development outcomes. Dissertation Abstracts International, 62, 1140.

Donnay, D.A.C. (1997). E.K. Strong's legacy and beyond: 70 years of the Strong Interest Inventory. Career Development Quarterly, 46, 2-22.

Donnay, D.A.C., & Borgen, F.H. (1996). Validity, structure, and content of the 1994 Strong Interest Inventory. Journal of Counseling Psychology, 43, 275-291.

Dziuban, C.D., & Shirkey, E.C. (1974). When is a correlation matrix appropriate for factor analysis? Some decision rules. Psychological Bulletin, 81, 358-361.

Fassinger, R. E., & O'Brien, K. M. (2000). Career counseling with college women: A scientist-practitioner-advocate model of intervention. In D.A. Luzzo (Ed.), Career counseling of college students: An empirical guide to strategies that work. (pp. 253-265). Washington, DC: American Psychological Association.

Fitzgerald, L.F., Fassinger, R.E., & Betz, N.E. (1995). Theoretical advances in the study of women's career development. In W.B. Walsh & S.H. Osipow (Eds.), Handbook of vocational psychology (2nd ed. pp. 67-109). Hillsdale, NJ: Lawrence Erlbaum.

Gati, I., Osipow., S.H., & Givon, M. (1995). Gender differences in career decision making: The content and structure of preferences. Journal of Counseling Psychology, 43, 510-526.

Greene, Y. L.G., (2002). Relationship of college students' response styles on the Strong Interest Inventory to scores on the Career Thoughts Inventory. Dissertation Abstracts International, 62, 3842.

Hackett, G. & Betz, N.E. (1981). A self-efficacy approach to the career development of women. Journal of Vocational Behavior, 18, 326-339.

Hamilton, M. (1960). A rating scale for depression. Journal of Neurology and Neurosurgical Psychiatry, 23, 56-62.

Hansen, J.C. (1984). User's guide for the SCIB-SCII. Stanford, CA: Stanford University Press.

Hansen, J.C. (2000). Vocational assessment. In C.E. Watkins, Jr., & V.L. Campbell (Eds.), Testing and assessment in counseling practice (pp. 227-262). Mahwah, NJ: L. Erlbaum Associates.

Harmon, L.W., Hansen, J.C., Borgen, F.H., & Hammer, A.L. (1994). Strong Interest Inventory: Applications and technical guide. Stanford, CA: Stanford University Press.

Hartung, P.J., & Niles, S. G. (2000). Established career theories. In D.A. Luzzo (Ed.), Career counseling of college students: An empirical guide to strategies that work. (pp. 3-21). Washington, DC: American Psychological Association.

Heppner, P.P., Kivlighan, D.M., & Wampold, B.E. (1999). Research design in counseling. Belmont, CA: Brooks/Cole.

Hinkleman, J.M., & Luzzo, D.A. (2001). Mental health and career development of college students. Paper presented at he Annual Meeting of the American Psychological Association (109th, San Francisco, CA, August 24-28, 2001).

Holland, J.L. (1973). Making vocational choices: A theory of careers. Englewood Cliffs, NJ: Prentice-Hall.

Holland, J.L., Daiger, D., & Power, P. (1980) My Vocational Situation. Palo Alto, CA: Consulting Psychologists Press.

Holland, J.L. (1985). Making vocational choices: A theory of vocational personalities and work environments (2nd ed.) Englewood Cliffs, NJ: Prentice-Hall.

Holland, J.L. (1985). The self-directed search: Professional manual. Odessa, FL: Psychological Assessment Resources.

Jackson, D., & Messick, S. (1958). Content and style in personality assessment. Psychological Bulletin, 55, 243-252.

Krumboltz, J.D. (1996). A learning theory of career counseling. In M.L. Savickas & W.B. Walsh (Eds.), Handbook of career counseling theory and practice (pp. 55-80). Palo Alto, CA: Davies-Black.

Lucas, M. S., Skokowski, C.T., & Ancis, J.R. (2000). Contextual themes in career decision making of female clients who indicate depression. Journal of Counseling and Development, 78, 316-325.

Lustig, D.C., & Strauser, D.R. (2002). The relationship between sense of coherence and career thoughts. Career Development Quarterly, 51, 2-11.

Lustig, D.C, & Strausser, D.R. (2003). An empirical typology of career thoughts of individuals with disabilities. Rehabilitation Counseling Bulletin, 46, 98-107.

McClennan, N,A, & Arthur, N. (1999). Applying the cognitive information processing approach to career problem solving and decision making to women's career development. Journal of Employment Counseling, 36, 82-96.

Mitchell, L.K., & Krumboltz, J.D. (1996). Krumboltz's learning theoroy of career choice counseling. In D. Brown, L.Brooks, & Assoc. (Eds.), Career choice and development (3rd ed., pp.233-276). San Francisco: Jossey-Bass.

Newman, J.L. Fuqua, D.R., & Minger, C. (1990). Further evidence for the use of career subtypes in defining career status. Career Development Quarterly, 39, 178-188.

Niles, S.G., & Hartung, P.J. (2000). Emerging career theories. In D.A. Luzzo (Ed.), Career counseling of college students: An empirical guide to strategies that work. (pp. 23-42). Washington, DC: American Psychological Association.

Ohlde, C.D. (1979). Relationship between self-esteem and response style. Journal of Counseling Psychology, 26, 455-458.

Osborn, D.S. (1999). The relationships among perfectionism, dysfunctional career thoughts and career indecision. Dissertation Abstracts International, 59, 3746.

Osipow, S.H., Carney, C.G., Winer, J.L., Yanico, B.J., and Koschir, M. (1987). Career Decision Scale (3rd Rev.). Odessa, FL: Psychological Assessment Resources.

Parker, G. & Tupling, H., & Brown, L.B. (1979). A parental bonding instrument. British Journal of Medical Psychology, 52, 1-10.

Parsons, F. (1909). Choosing a vocation. Boston: Houghton Mifflin.

Peterson, G.W., Sampson, J.P., and Reardon, R.C. (1991). Career development and services: A cognitive approach. Belmont, CA: Wadsworth.

Piotrowski, C., & Keller, J.W. (1992). Psychological testing in applied settings: A literature review from 1982-1992. Journal of Training & Practice in Professional Psychology, 6, 74-82.

Prediger, D.J. (1982). Dimensions underlying Holland's hexagon: Missing link between interests and occupations? Journal of Vocational Behavior, 21, 259-287.

Prince, J.P., & Heiser, L.J. (2000). Essentials of career interest assessment. New York: John Wiley & Sons, Inc.

Rochlen, A.B., Mohr, J.J., & Hargrove, B.K. (1999). Development of the Attitudes Towards Counseling Scale. Journal of Counseling Psychology, 46, 196-206.

Rorer, L.G. (1965). The great response-style myth. Psychological Bulletin, 63, 129-156.

Sackett, S. A., & Hansen, J. C. (1995). Vocational outcomes of college freshmen with flat profiles on the Strong Interest Inventory. Measurement and Evaluation in Counseling and Development, 28, 9-24.

Sampson, J.P., Peterson, G.W., Lenz, J.G., & Reardon, R.C. (1992). A cognitive approach to career services: Translating concepts into practice. Career Development Quarterly, 41, 67-74.

Sampson, J.P., Peterson, G.W., Lenz, J.G., Reardon, R.C., & Saunders, D.E., (1996). Career Thoughts Inventory: Professional manual. Odessa, FL: Psychological Assessment Resources.

Saunders, D. E., Peterson, G.W., Sampson, J.P., & Reardon, R.C. (2000). Relation of depression and dysfunctional career thinking to career indecision. Journal of Vocational Behavior, 56, 288-298.

Schultheiss, D.P. (2000). Emotional-social issues in the provision of career counseling. In D.A. Luzzo (Ed.), Career counseling of college students: An empirical guide to strategies that work. (pp. 43-62). Washington, DC: American Psychological Association.

Smith, H.M., & Betz, N.E. (2000). Development and validation of a scale of perceived social self-efficacy. Journal of Career Assessment, 8, 283-301.

Smith, H.M., & Betz, N.E. (2002). An examination of efficacy and esteem pathways to depression in young adulthood. Journal of Counseling Psychology, 49, 438-448.

Straussberger, S. J. (1999). The relationship of state-trait anger to dysfunctional career thinking and vocational identity. Dissertation Abstracts International, 59, 3747.

Super, D. E. (1957). The psychology of careers. New York: Harper and Row.

Symes, B.A., & Stewart, J.B. (1999). The relationship between metacognition and vocational indecision. Canadian Journal of Counselling, 33, 195-211.

Taylor, K.M. & Betz, N.E. (1983). Applications of self-efficacy theory to the understanding and treatment of career indecision. Journal of Vocational Behavior, 22, 63-81.

Tracey, T.J.G., & Rounds, J. (1996). The spherical representation of vocational interests. Journal of Vocational Behavior, 48, 3-41.

Van Haveren, R.A. (2000). Levels of career decidedness and negative career thinking by athletic status, gender, and academic class. Dissertation Abstracts International, 61, 1622.

Voight, L. (1999). Parental attachment and ego identity as antecedents of career identity. Dissertation Abstracts International, 60, 2992.

Watkins, C.E., & Campbell, V.L. (2000). Testing and assessment in counseling practice. Mahwah, NJ: Lawrence Erlbaum Associates.

Watkins, C.E., Campbell, V.L., & Nieberding, R. (1994). The practice of vocational assessment by counseling psychologists. Counseling Psychologist, 22, 115-128.

Wiglington, J.H. (1985). The Strong-Campbell Interest Inventory in college counseling: A comparison of data and theory. Journal of College Student Personnel, 26, 43-46.

Wright, L.K. (2001). The effects of self-efficacy, interest, and dysfunctional thoughts on level of career decidedness, and satisfaction with occupational choice. Dissertation Abstracts International, 61, 3889.

Zunker, V.C (1998). Career counseling: Applied concepts of life planning. Pacific Grove, CA: Brooks/Cole Publishing Company.

APPENDIXES

Appendix A

Test Publisher Contact Information

The Strong Interest Inventory, the Career Thoughts Inventory, and the Beck Depression Inventory – Second Edition are all copyrighted instruments. Copies of these assessments may be obtained by contacting the publishers.

Strong Interest Inventory

Consulting Psychologists Press, Inc.
3803 East Bayshore Road
Palo Alto, CA 94303
(800) 624-1765 or (630) 969-8901

Career Thoughts Inventory

Psychological Assessment Resources, Inc.
16204 North Florida Avenue
Lutz, FL 33549
(813) 968-3003

Beck Depression Inventory – Second Edition

Harcourt Assessment, Inc.
19500 Bulverde Road
San Antonio, TX 78259
(800) 211-8378

Appendix B

Research Permission Statement

April 14, 2003

PERMISSION TO CONDUCT RESEARCH

I am aware that Martha C. Dagenhart will be conducting research for her dissertation entitled "Relationship of College Students' Response Styles on the Strong Interest Inventory to Scores on the Beck Depression Inventory and the Career Thoughts Inventory." I understand that she will be assessing data from students enrolled in sections of the First Year Studies course during Fall semester, 2003. Martha C. Dagenhart understands that no names or other identifying information will be used when analyzing the data or reporting the results. I grant permission to Martha C. Dagenhart to compile the data she needs from the database at the University of Tennessee Career Services.

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Dr. Robert Greenberg
Director, Career Services

VITA

Martha Catherine Dagenhart was born in Winston-Salem, North Carolina, but spent much of her early childhood in Southeast Asia. Her family returned to the United States when she was ten years old, and she graduated from Reynolds High School in 1986. She then attended the University of North Carolina at Chapel Hill, and spent her junior year studying abroad at the University of Seville in Spain. She received a Bachelor of Arts degree in Journalism and International Studies in 1991, and worked for several months at a market research firm in London before returning to North Carolina in 1992. She received a Master of Arts in Education in Counseling from Wake Forest University in 1995 and became a Licensed Professional Counselor in 1996. Later that year she entered the Ph.D. program in Counseling Psychology at the University of Tennessee, subsequently obtaining graduate assistantships at The Assessment Center in the College of Education, and at the Student Services Counseling Center. She also served as an outplacement counselor in 1997 during the Levi Strauss plant closings in Knoxville, Tennessee. She obtained an internship in Clinical Psychology at Cherokee Health Systems in July 2003 and completed the doctoral program in Counseling Psychology in August 2004.