

Relationships among Career Thoughts, Career Interests, and Career Decision State

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Abstract

This study investigated the relationships among negative career thoughts, profile elevation and differentiation scores on the Self-Directed Search, and career decision state, including level of decidedness and satisfaction with choice. Participants were 226 undergraduate students enrolled in a career course. Measures included the Career Thoughts Inventory (CTI) for career thoughts, the Self-Directed Search (SDS) for profile elevation and differentiation, the Occupational Alternatives Question (OAQ) for career decidedness, and the Satisfaction with Choice item for level of satisfaction with career choice. A series of multiple regression analyses were conducted to determine the amount of variance accounted for by negative career thoughts (i.e., decision-making confusion, commitment anxiety, and external conflict) in profile elevation, differentiation, career decidedness, and satisfaction with choice. Negative career thoughts were found to account for a significant amount of variance in profile elevation, career decidedness, and satisfaction with choice. Findings suggest the need to fully explore negative thinking that interferes with clients making effective career decisions.

Career professionals look for ways to use assessment instruments to the fullest. With limited time and funding, it is important to use all possible information from assessments to promote effective career exploration and decision making. Just using more tests or inventories may not produce additional useful

information, but may add to the cost and time for career interventions.

The purpose of this study was to examine negative career thoughts in relation to interest inventory results and the individual's career decision state, or level of career decidedness and satisfaction with choice. More specifically, it explored how individuals' results from the Career Thoughts Inventory (CTI; Sampson, Peterson, Lenz, Reardon, & Saunders, 1996a), the Self-Directed Search (SDS; Holland, 1994), and two measures of career decision state, the Occupational Alternatives Question (OAQ; Slaney, 1980) and Satisfaction with Choice item, are related. The results were expected to provide information for more efficient and effective use of the CTI and the SDS.

The SDS is an interest inventory widely used in career counseling and advising. While an understanding of vocational interests and Holland's RIASEC theory are important, dysfunctional thinking can interfere with the career decision-making process and prevent individuals from making effective career choices (Reardon & Lenz, 1998; Wright, Reardon, Peterson, & Osborn, 2000). However, use of the CTI to get a more complete diagnostic profile of clients' readiness for career decision making has been shown to produce significant improvements in five measures of dysfunctional career thoughts and vocational identity (Strohm, 2009). In addition, differentiation, consistency, and coherence of an individual's SDS profile are positively related to stability of career choice (Holland, 1997), suggesting that the SDS results may not be as sta-

ble when individuals have SDS codes with negative signs on these indicators (Reardon & Lenz, 1998).

Cognitive Information Processing (CIP) Theory and the CTI

The CTI is based on CIP theory, which uses a three-level pyramid figure to display the important cognitive domains involved in career choice (Sampson et al., 2004). The model is comprised of three knowledge domains, which are represented by a pyramid. The foundation of the pyramid symbolizes the knowledge domains, which include self-knowledge and occupational knowledge. The middle level of the CIP pyramid represents the decision-making skills domain, which includes generic information-processing skills essential in gathering and using information to solve problems and make decisions. These skills include five CASVE phases for receiving external or internal signals of a gap between one's current and desired situation (Communication), interrelating problem components (Analysis), generating alternatives (Synthesis), prioritizing options or alternatives (Valuing), and forming an action plan to close the gap (Execution). At the top of the pyramid is the executive processing domain which relates to metacognitions, such as self-talk, self-awareness, and control and monitoring, that govern the choosing and sequencing of cognitive strategies career decision making.

Negative Career Thoughts

While progressing through the CASVE cycle, individuals may recog-



nize specific thoughts related to their career planning. Career thoughts include an individual's feelings, thoughts, attitudes, beliefs, and expectations related to career decision-making and problem-solving effectiveness (e.g., "I can't wait to begin work in my chosen field; I know I can succeed as a financial analyst") (Sampson et al., 2004). Negative career thoughts are those dysfunctional cognitions that have a negative impact on one's career decision-making and problem-solving abilities (e.g., "I've messed up the best opportunity of my life; I'm never going to get another job that good.") (Sampson, et al., 2004; Sampson, et al., 1996a; Saunders, Peterson, Sampson, & Reardon, 2000).

Dysfunctional cognitions mediate and change an individual's career behavior (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996b). These cognitions cause individuals to avoid or inappropriately engage in career decision-making behaviors. This behavior can result in a myriad of outcomes such as procrastination, anxiety, dependency, and/or premature foreclosure, and may limit the effectiveness of career problem solving and decision making. Therefore, it is important that negative career thoughts be identified, challenged, and altered to help individuals improve their career decision making (Sampson, et al., 1996b). A screening instrument such as the CTI may be used to evaluate the degree to which the client is likely to benefit from the use of interest inventories such as the Self-Directed Search (SDS).

RIASEC Theory and the SDS

John Holland's RIASEC theory has been touted as the most empirically sound model (Rayman & Atanasoff, 1999). The "hallmark" of Holland's theory has been the application of vocational theory to practical client concerns (Spokane & Cruza-Guet, 2005), and the SDS is a basic tool in this process. Holland's RIASEC theory posits that vocational interests are an expression of one's personality, and the main goal is a good "fit" between individuals and their environments. This theory is based on four key assumptions (Holland, 1997). First, most people can be categorized as one of six personality types: Realistic, Inves-

tigative, Artistic, Social, Enterprising, or Conventional (RIASEC). Each type has been described through preferences for activities and occupations, values, view of self, self-perception of competence and ability, perception by others, and what is avoided (Gottfredson & Holland, 1996). Second, most environments (e.g., jobs, leisure activities, and education or training programs) can also be categorized in the same way. It is assumed that people with a particular personality type tend to dominate the corresponding environment. For example, an Artistic environment is most likely to be comprised of Artistic personalities. Third, people search for environments that are compatible with their personality style, values, and skills, and fourth, peoples' behavior is determined by an interaction between their personality style and environment.

Primary and Secondary Constructs

The RIASEC theory assumptions and the hexagon provide a foundation for primary and secondary constructs that have informed research and practice (Holland, 1997). These constructs are thought to be diagnostic of individuals' career situations and their potential for successful career decision making. They are helpful in providing additional information regarding a client's decision-making process (Reardon & Lenz, 1998, 1999). The two primary constructs include personality type (RIASEC three-letter code) and congruence (the degree of match between a person and an environment).

The secondary constructs of interest to this study are (a) differentiation, "the level of definition or distinctiveness of a personality or occupational profile" (Holland et al., 1994 p. 262), and (b) profile elevation, the sum of the six RIASEC scores across all sections of the SDS (Fuller, Holland, & Johnston, 1999).

Differentiation

Differentiation is "the level of definition or distinctiveness of a personality or occupational profile" (Holland et al., 1994, p. 262). Differentiation can also be thought of as how well individuals know their likes and dislikes. A person with a highly differentiated SDS summary score will have a relatively large discrepancy between the highest and

lowest code scores, whereas an undifferentiated person earns similar scores across all six areas. Differentiation is commonly calculated by subtracting the lowest score from the highest (Holland, 1997) or by using the Iachan index (Iachan, 1984). The Iachan index, used in this study, takes into account the first, second, and fourth summary scores when calculating differentiation, and is considered to be more sensitive to the shape of the profile (Holland et al., 1994).

An individual's level of differentiation can affect any prediction a counselor might make from the person's code (Zunker & Osborn, 2005). Well-differentiated interests are unlikely to switch drastically, while those individuals with lower differentiation might be unclear as to what really interests them. High differentiation is positively correlated with more stability in work history and the directions of career preferences or work histories (Reardon & Lenz, 1998).

Profile Elevation

Profile elevation is the sum of the six section scores on the SDS, ranging from 14 to 300 and indicates an overall level of endorsement that is not specific to any RIASEC domain (Fuller et al., 1999). Gottfredson and Jones (1993) indicated profile elevation (PE) has been subsumed under the professional judgment of a counselor, but Fuller et al. noted that researchers have never completely understood its validity. In addition, Fuller et al. (1999) noted that profile elevation has not been accurately understood. Exploring profile elevation could provide counselors with additional information about clients that would help them tailor interventions to clients' needs. If high and low PE is determined by calculating one standard deviation above and below the normative sample, high PE are: (men, 150 >; women, 147 >), average range: (men, 129-149; women 128-146), and low: (men, < 128; women, < 127) (Holland, Fritzsche, & Powell, 1994). Yet, it has been suggested that more clinically relevant ranges be developed (Bullock & Reardon, 2008).

Differentiation and profile elevation are related, but not equivalent con-



structs. Individuals can have the same profile elevation (PE) whether they are highly differentiated or not. Research emphasizes the importance of not evaluating those with low PE and undifferentiated profiles and those with high PE and undifferentiated profiles in the same way (Swanson & Hansen, 1986). Undifferentiated individuals with high PE may be multipotential or indecisive, while undifferentiated individuals with low PE may need more help to identify skills, interests, and possible negative self-talk.

The contribution of profile elevation has been an area of focus for researchers. There has been some speculation about the relationship between low PE and depression for years (Spokane, Luchetta, & Richwine, 2002). Counselors often notice when a client does not have many interests and draw conclusions about an individual's personality or attitude. Lehberger (1989) concluded that those with lower SDS scores may require more intensive counseling than those with higher scores and distinct profile shapes.

Higher PE has been found to positively correlate with extraversion and openness to experience, extraversion, an expressive style, conscientiousness, and lower depressive personality traits (Holland, Johnston, & Asama, 1994; Gottfredson & Jones, 1993; Bullock & Reardon, 2008). Thus, individuals with higher PE would likely be more open and receptive to career counseling. Hirschi and Lage (2007) found meaningful connections between profile elevation and career exploration and career planning, which suggested that high profile elevation was positively related to degree of overall career-choice readiness attitudes.

There has been some discussion about a "general factor" impacted by PE that affects areas of interest and ability (Darcy & Tracey, 2003). They described this factor as similar to Spearman's "g" in intelligence. In the same way that intelligence is thought to be multifaceted, but still has an overarching g, they proposed that profile elevation might serve as an overarching or general factor of vocational interest. Profile elevation may "bias the relations with other variables or be related to other variables in a substantive manner"

(p. 227). In addition, there is speculation, based on prior research, that perhaps profile elevation is not just another secondary construct, but a superordinate construct that accounts for much of the variance in SDS profiles (Bullock & Reardon, 2008).

The constructs of negative career thoughts and profile elevation may account for variation in career decidedness and satisfaction, which are described in the next two sections.

Career Decision State

The concept of decision state in this study was based on level of career decidedness and satisfaction with occupational choice.

Decidedness

In order to provide effective career counseling services, counselors must examine an individual's career decision state, i.e., how decided and satisfied the person is about the career choice.

Decided individuals are those who can "provide a choice of occupation or a first choice with secondary alternatives" (Peterson et al., 1991, p. 174). Decided adolescents are more likely to have higher levels of career planning/exploration, career decision-making self-efficacy, less career indecision, and higher levels of self-esteem and vigilance (Creed, Pridaoux, & Pattoon, 2005). Undecided individuals are those who "...have not made a commitment to a specific occupational choice due to gaps in the knowledge necessary for choosing" (p. 82). An analysis by Lucas and Epperson (1988) found that undecided students differed with respect to their particular concerns and it would be beneficial to distinguish between types of undecided individuals.

In contrast, *indecisive* individuals cannot generate occupational alternatives and lack sufficient self- and occupational knowledge to carry out the decision-making process. Tyler (1969) was one of the early psychologists to distinguish between career indecision and indecisiveness. He regarded undecided individuals as having problems coming up with a plan of action, where indecisiveness stems from personal issues. The term *indecisive* can be used similarly to the "chronically undecided

student" (Fuqua & Hartman, 1983).

They tend to exhibit a lack of sense of identity and possess a maladaptive approach to problem solving, self-perceptual problems, and externalized attribution, along with a high level of anxiety (Fuqua & Hartman, 1983; Holland & Holland, 1977; Peterson et al., 1991). Additionally, decided individuals reported less control and more autonomy support from their peers and less control from their parents than individuals in a chronically undecided group (Guay, Ratelle, Senecal, Larose, & Deschenes, 2006). Finally, in a study of college attrition, Lounsbury, Saudargas, and Gibson (2004) found a significant negative relationship between career decidedness and intention to withdraw from college. Research shows that a feeling of decidedness and commitment to a career choice is an important facet of overall career-choice readiness (Creed, Pridaoux, & Patton, 2005; Powell & Luzzo, 1998).

Satisfaction with Choice

An individual's satisfaction with career choice can also help to conceptualize career decidedness. An early study by Zener and Schnuelle (1972) reported the use of a single item in the form of a question, "How satisfied are you with your first choice?" followed by six levels of positive to negative responses. Kleiman et al. (2004) found satisfaction with occupational choice was negatively correlated with career decision-making difficulties in college students.

The Present Study

Negative career thoughts, profile elevation, differentiation, and career decidedness have received attention by researchers, but minimal research has directly explored how dysfunctional career thoughts are related to an individual's SDS code and secondary constructs in RIASEC theory. One study (Wright et al., 2000) examined these relationships and did not find significant zero order correlates between differentiation and negative career thoughts.

Holland's theory has generated abundant research examining primary and secondary constructs within the theory, but these constructs have not been



examined in relationship to negative career thoughts, differentiation, career decidedness, and satisfaction with choice. This study used a co-relational research design to focus on four questions of interest: the relationships between career thoughts and (a) profile elevation, (b) differentiation, (c) career decidedness, and (d) satisfaction with career choice. It was hypothesized that as career thoughts decreased profile elevation, differentiation, career decidedness, and satisfaction with career choice would increase.

Methods

Participants

The sample consisted of 226 undergraduate students enrolled in a college-level career course. Common reasons for enrolling in this course are to explore career options and learn more about career decision making. Participant ages ranged from 18 to 38 years, $M = 20.9$ years, $SD = 2.2$ years, with 49.6% female and 50.4% male. According to the student data sheets, the demographic breakdown of the sample was 65.9% Caucasian, 20.4% African-American, 6.6% Hispanic/Latino, 2.7% other, and 1.8% Asian. As for academic class, the sample was dominated by seniors 53%, followed by juniors, 15%; sophomores, 23%; and freshman, 9%. While no participants asked to withdraw from the study, 30% of the initial sample did not complete the full protocol. Data collection was conducted during the first week of class, and some students dropped the class before the university drop-add process for registration process was complete. Additional students took the course for partial credit (one or two credit hours) which prevented their completion of all research instruments. Inspection of demographic characteristics of completers and non-completers revealed no pattern of differences.

Instruments

Career thoughts inventory. The CTI is a 48 item self-report inventory designed to measure negative career thoughts that impede career decision making. The CTI yields three subscale scores, Decision-Making Confusion (DMC), Commitment Anxiety (CA),

and External Conflict (EC). The DMC scale (14 items) measures "an inability to initiate or sustain the decision making process as a result of disabling emotions and/or a lack of understanding about the decision making process itself" (Sampson et al., 1996a, p. 2). The CA scale (10 items) measures "an inability to make a commitment to a specific career choice, accompanied by generalized anxiety about the outcome of the decision making process, with anxiety perpetuating the indecision" (Sampson et al., 1996a, p. 2). The EC scale (5 items) measures "an inability to balance the importance of one's own self-perceptions with the importance of input from significant others, resulting in a reluctance to assume responsibility for decision making" (Sampson et al., 1996a, p. 2). The three subscale scores, and not the CTI total score, were used in the present study's analyses.

Internal consistency for the CTI has been shown to range from .96 for college students (Sampson et al., 1996b) with the three subscale alpha coefficients ranging from .94 to .77. Test-retest reliability at four weeks for a college sample was as follows: Total Score = .86, DMC = .82, CA = .79, EC = .74 (Sampson et al., 1996b). The convergent validity of the CTI has been supported with correlations from Indecision Scale of the Career Decision Scale at .70 (Sampson et al., 1996a), the Career Decision Profile (Jones, 1989), the Neuroticism domain on the NEO PI-R (Costa & McCrae, 1992), and the Career Decision Making Difficulties Questionnaire (Gati, Krausz, & Osipow, 1996) total and subscale scores (Kleiman et al., 2004). In another sample, the CTI was administered to 199 clients and 149 non-clients at two universities and the client population had significantly higher scores on the total scales and three construct scales than the non-client group (Sampson et al., 1996b).

Self-directed search (SDS; Holland, Fritzsche, & Powell, 1994). The SDS is based on Holland's RIASEC theory and is self-administered in 35-45 minutes. The SDS *Assessment* booklet includes a measure of expressed interests or vocational aspirations (the Daydreams Section) and a measure of

assessed interests. The latter is obtained when users respond to SDS items in four sections: Activities (11 questions per RIASEC section that are endorsed *like* or *dislike*); Competencies (11 questions per RIASEC section that are endorsed *yes* or *no* to assess skills assess); Occupations (14 occupations per RIASEC section that are endorsed *yes* or *no* to assess occupations of interest or dislike interests); and Self-Estimates (12 Likert-scale ratings (1 is *low* and 7 is *high*) to indicate self-estimates of skills and abilities as compared to those of similar age across each RIASEC type). An individual's three-letter summary or Holland code is calculated by summing the positive or score responses from each of the four sections included in the *Assessment* booklet (Holland, 1994). Profile elevation and differentiation scores will be derived for each participant's SDS responses. Profile elevation is calculated by summing the six RIASEC summary scores. Differentiation was calculated using the previously described Iachan Index (Iachan, 1984).

Intercorrelations among the SDS: Form R results (Holland, 1994) and measures of vocational aspiration and college major indicate concurrent validity for male and female college students ranging from .32 to .39 (Holland, Fritzsche, & Powell, 1994). Substantial reliability for the summary scales on the SDS are indicated by the internal consistency coefficients (KR-20) ranging from .90 to .94, and test-retest reliability coefficients ranged from .76 to .89 (Holland et al., 1994). Overall, support exists for documenting both the reliability and validity of the SDS.

Occupational alternatives question (OAQ; Zener & Schnuelle, 1972; modified by Slaney, 1980). The OAQ is a measure of occupational decidedness which asks respondents the number of occupations they are considering and the level of decidedness pertaining to these occupations. The OAQ includes two parts: (a) "List all of the occupations you are considering right now" and (b) "Which occupation is your first choice? If undecided, write undecided." The OAQ is scored on a scale from one to four and is rated as follows: 1 = a first choice is given with no alternatives; 2 = a first choice is given with al-



ternatives listed as well; 3 = no first choice is given, only alternatives; and, 4 = no choices or alternatives are given. Therefore, the higher the OAQ score, the less decided the individual. Individuals who report having one occupational choice with no alternatives are said to be decided individuals, while those who are unable to list any career choices are classified as undecided. The OAQ has been found to have convergent validity with other measures of career indecision, including the Satisfaction with Career Scale, the Vocational Decision Making Difficulties Scale, and the Career Decision Scale (Slaney, Stafford, & Russell, 1981). Slaney (1978) found stability of OAQ responses over a 6-week time period.

Satisfaction with choice question (SCQ; Zener & Schnuelle, 1972; modified by Holland, Gottfredson, & Nafziger, 1975). This instrument asks a single question, "How well satisfied are you with your first choice?" and is used to assess one's level of satisfaction with career choice. This item is rated on a scale from one to six, and is scored as follows: 1 = well satisfied with choice; 2 = satisfied, but have a few doubts; 3 = not sure; 4 = dissatisfied and intend to remain; 5 = very dissatisfied and intend to change; and, 6 = undecided about my future career. Similar to the OAQ, the higher the score on the SCQ, the greater the degree of dissatisfaction with choice. Slaney, Stafford, and Russell (1981) reported average correlations of .43, .53, and .44 between the Satisfaction Question and other measures of career decidedness, including the OAQ, Vocational Decision Making Difficulty Scale, and the Career Decision Scale.

Student data sheet. The student data sheet served as a demographic questionnaire and included information such as age, sex, year in school, major, previous work experience, extracurricular activities, and ethnicity, as well as the OAQ and the SCQ. This form was used to describe the study sample.

Procedures

Approval for this study with human participants was obtained from the university institutional review board. During the first week of class, students were

recruited to participate voluntarily in the study. The students were made aware verbally and through written informed consent that choosing not to participate would in no way affect their course grade. Participants were administered the research packet, including the CTI and Student Data Sheet. This phase of data collection lasted approximately 30 minutes. In the third week of class, as part of the normal class procedure, students completed the paper and pencil version of the SDS. Data from the SDS were entered and scored using the computer software program Self-Directed Search Software Portfolio for Windows® (Reardon & PAR Staff, 2001) by course instructors.

Results

The means, standard deviations, and ranges for the variables of interest are presented in Table 1. The DMC, CA, and EC scales from the CTI, the profile elevation and differentiation scores from the SDS, the OAQ, and the Satisfaction with Choice items were analyzed.

item structure, an index of reliability could not be calculated for the Occupational Alternatives Question (OAQ) or Satisfaction with Choice item. Scale reliabilities for the SDS were not calculated, as individual item responses were not available for this sample.

The statistical program, PASW (Predictive Analytics SoftWare) 18 was used to complete the statistical analysis of the data. Preliminary analyses revealed that assumptions of normality were not violated. Specifically, there were no violations of skewness or kurtosis. In addition, there were no violations of multicollinearity or linearity. The correlations between all predictor and criterion variables are presented in Table 1.

Career Thoughts and Profile Elevation

Inspection of the correlation matrix revealed no significant relationships between profile elevation and any of the three individual predictor variables (DMC, CA, or EC). A multiple regression was used to examine the combined effect of the three predictor variables.

Table 1

Variable correlations, Means, SD, and Range

	<i>Decision-Making Confusion</i>	<i>Commitment Anxiety</i>	<i>External Conflict</i>	<i>Profile Elevation</i>	<i>Differentiation</i>	<i>Career Decidedness</i>	<i>Satisfaction with Choice</i>
DMC	1	.662**	.617**	-.114	-.129	.302**	.307**
CA		1	.553**	.055	-.139*	.318**	.333**
EC			1	-.012	-.137*	.12	.092
PE				1	-1.57	-.011	.021
Differentiation					1	-.046	-.047
Career Decidedness						1	.823**
Satisfaction							1
M	10.67	13.08	4.69	133.26	6.25	2.42	3.47
SD	7.64	5.84	2.97	31.98	2.87	.80	2.26
Participant Range	0-38	0-27	0-13	41-250	1-16	1-4	1-6

*-p<.05; **p<.001

Scale and subscale reliability analyses were conducted for the CTI. The reliability estimates for the CTI total were calculated as follows: DMC = .93, CA = .87, and EC = .67. These estimates were consistent with previous studies (Sampson et al., 1996b; Reed, 2006) for DMC and CA. There was a .10 difference between this sample's EC estimate (.67) and the standardization sample (.77) (Sampson et al., 1996b). Given their 1-

The overall model was significant beyond the .05 level ($F(3, 222) = 3.456, p = .017$). The model R^2 , reflecting the overall strength of the relationship between the profile elevation and the predictor variables, was .045, meaning that 4.5% of profile elevation can be explained by negative career thoughts (Table 2). The adjusted R^2 , compensating for the positive bias of the R^2 , was .032.



Table 2

Summary of Multiple Regression Analyses

	Total R^2	Adj. R^2	β
Profile Elevation	.045	.032	
DMC ^a			-.288**
CA ^b			.222*
EC ^c			.043
Differentiation	.025	.012	
DMC ^a			-.032
CA ^b			-.076
EC ^c			-.076
Career Decidedness	.132	.121	
DMC ^a			.238**
CA ^b			.253**
EC ^c			-.167*
Satisfaction with Choice	.153	.142	
DMC ^a			.254**
CA ^b			.288**
EC ^c			-.224**

** Beta weight is significant at the 0.01 level (2-tailed). * Beta weight is significant at the 0.05 level (2-tailed). ^a Career Thoughts Inventory: Decision-Making Confusion. ^b Career Thoughts Inventory: Commitment Anxiety. ^c Career Thoughts Inventory: External Conflict.

Although not directly related, it is interesting to note that as DMC decreased profile elevation increased, but this was not the case with regard to EC and CA. CA increased as profile elevation increased, and the relationship with EC was not significant.

Career Thoughts and Differentiation

Inspection of the correlation matrix revealed significant relationships (one-tailed) between differentiation and CA (-.139), as well as differentiation and EC (-.137). The relationship between differentiation and DMC was non-significant.

A multiple regression analysis was used to examine the combined effect of the three predictor variables. Negative career thoughts were inversely related to differentiation, decreasing with every single unit increase in differentiation (DMC = -.012, CA = -.037, EC = -.073). However, the overall model was not significant ($F(3, 222) = 1.903, p = .130$).

Career Thoughts and Decidedness

Inspection of the correlation matrix revealed significant relationships between career decidedness and DMC ($r = .302$), and career decidedness and CA ($r = .318$), but not between career decidedness and EC ($r = .120$).

To examine the combined effect of the three CIP cognitive constructs, DMC, CA, and EC, a multiple regression analysis was used. The overall

model was significant beyond the .01 level ($F(3, 222) = 11.295, p = .000$). The model R^2 , reflecting the overall strength of the relationship between career decidedness and the predictor variables, was .132 (Table 2), meaning that 13.2% of career decidedness can be explained by negative career thoughts. The adjusted R^2 , compensating for the positive bias of the R^2 , was .121.

However, it may be noted that EC increased when the OAQ score decreased (indicating a greater degree of decidedness). Conversely, both DMC and CA increased as the OAQ score increased, indicating a lesser degree of career decidedness.

Career Thoughts and Satisfaction

Inspection of the correlation matrix revealed significant relationships between satisfaction with choice and DMC ($r = .307$) and satisfaction with choice and CA ($r = .333$), but not between satisfaction with choice and EC ($r = .092$).

To examine the combined effect of the three predictor variables, DMC, CA, and EC, on the prediction of satisfaction with choice, a multiple regression analysis was used. The overall model was significant beyond the .01 level ($F(3, 222) = 13.396, p = .000$). The model R^2 , reflecting the overall strength of the relationship between satisfaction with choice and the predictor variables was .153, meaning that 15.3% of satisfaction

with choice can be explained by negative career thoughts (Table 2). The adjusted R^2 , compensating for the positive bias of the R^2 , was .142.

As scores on the Satisfaction with Choice item increased (indicating less satisfaction with one's first career choice), DMC and CA also increased. However, this was not true for EC, which increased as the Satisfaction with Choice score decreased (indicating more satisfaction with one's first career choice).

Discussion

Career Thoughts and Profile Elevation

Previous research and theory led us to speculate that as negative career thoughts decreased profile elevation would increase. Simple correlations were examined and revealed no significant relationships between profile elevation and any of the negative career thoughts predictor variables (i.e., DMC, CA, or EC). However, a multiple regression exploring the relationships between the predictor variables of DMC, CA, and EC and criterion variable (profile elevation) supported the overall regression model, with decision-making confusion decreasing and commitment anxiety increasing as profile elevation increased. The relationship between PE and DMC may have been expected, given the discussion of low profile elevation and depression (Spokane, Luchetta, & Richwine, 2002), the positive correlation between DMC and depression found in previous research (Sampson et al., 1996b), and the problems one might have making decisions while in a depressed state. Previous research indicated that high profile elevation is positively related to the degree of overall career-choice readiness attitudes (Hirschi & Lage, 2007) and that individuals with lower profile elevation scores may require more counseling (Lehberger, 1989). Bullock and Reardon (2005) suggested that clients with high profile elevation scores would be more open to considering options and conscientious about tasks presented to them.

Perhaps profile elevation increases as people become aware of all the possi-



ble options available to them. With regards to the unexpected findings between PE and CA, once an individual has a working list of options, it is possible that commitment anxiety would increase because the person is now becoming less tentative and closer to making a commitment. Someone who has low profile elevation may not be anxious about committing to a specific option because a list of possible options has not yet emerged.

It is important not to overgeneralize these results. Although the regression model did reach statistical significance, negative career thoughts only account for 4.5% of the variation in profile elevation. Therefore, many other factors likely influence profile elevation, and counselors should be careful not to assume the client possesses high levels of negative career thoughts based on low profile elevation. When working with clients who have low profile elevation on the SDS, counselors should listen for negative self-talk and consider administering the CTI to identify, alter, and challenge these thoughts (Sampson et al., 2004).

Career Thoughts and Differentiation

Previous research and theory led us to expect that as negative career thoughts decreased differentiation would increase. Differentiation refers to the distinctiveness of an interest profile but can also be conceptualized as how well individuals know their likes and dislikes. A multiple regression analysis revealed that negative career thoughts as defined by DMC, CA, and EC did not account for a significant amount of variation in differentiation. One possible explanation for this unexpected lack of a relationship is that differentiation has received less empirical support and is viewed as a weaker indicator than other constructs (Holland, 1997). These results are also consistent with a study by Wright et al. (2000) that did not find a significant correlation between differentiation and negative career thoughts.

For practical purposes, counselors should refrain from using differentiation on the SDS to predict clients' thoughts about making a career decision. The findings of this study and previous research indicate that there is insufficient

evidence to suggest a significant relationship between differentiation and negative career thoughts (Wright et al., 2000).

Career Thoughts, Decidedness, and Satisfaction

Negative career thoughts accounted for a significant amount of variation in career decidedness and satisfaction. Specifically, DMC and CA decreased, while EC increased, as career decidedness and satisfaction increased. The relationship decidedness and satisfaction demonstrated with DMC and CA makes intuitive sense in that once you have made a decision you are satisfied with, you have likely already dealt with anxiety about committing to the choice and believe you possess decision-making skills. It is possible that EC's lower level of reliability in this study (.67) was a factor in the unexpected relationship EC demonstrated with decidedness and satisfaction. High EC scores indicate a compromised ability to balance the opinions of self with the opinions of significant others. An alternate explanation may be that individuals outwardly commit to or 'decide' on a career choice in order to avoid conflict with significant others, but they are actually undecided or indecisive. This is consistent with the concept of the "decided-conflict avoidant" individual in Sampson et al.'s taxonomy (2004).

As individuals become more decided about their career choice, they may also become more confident and positive about their ability to make decisions. However, with increased decidedness, concern about the values of significant others' input, views of society, or culture may also increase. The relationship between external conflict and career decidedness may indicate that as an individual approaches making a decision, they may begin looking at their options on a deeper and more sophisticated level. Counselors may work with clients who appear decided or confident about making a decision, but they should also check with these clients about the importance of balancing input from significant others with their own values. For example, the counselor could question how individuals arrived

at their decision, how the decision was influenced by significant others, and how the decision fits the individuals' values.

Limitations of this Study

There were several factors in the sample that limited generalizability. First, the sample was primarily Caucasian, which limits the generalizability of the sample to other ethnic groups. Second, the sample was dominated by students in the upper division, 68%, while only 32% were in the lower division. At this university, students are required to declare a major by their sophomore year and the upper division students were probably more decided than those in the lower division with respect to career planning and decision making. Specifically, they are more likely to have made a career decision and to be in the Execution phase of the CASVE cycle. By signing up for the course, it is assumed that students are looking for assistance in making a career choice on some level, and students that are openly seeking career assistance may be inherently different from those who are not. Lastly, while the mean scores on DMC and CA were consistent with the standardization norms, EC was higher ($M = 4.69$ as compared to 3.32). Since this group had higher levels of EC than the standardization group, this may have affected the relationship between EC and other variables. Additionally, the internal consistency of EC ($\alpha = .67$) was lower than found in previous studies and may have affected the overall reliability of the findings associated with this construct. A possible limitation of the data analysis is the attrition rate caused by students dropping the course or taking fewer than three credits of this variable credit course; however, the demographic characteristics of completers and non-completers did not appear to vary.

Implications for Practice

This study also provides additional support for the importance of career interventions that target negative career thoughts (Strohm, 2009). Given the relationship between negative career thoughts and career decidedness, as well as satisfaction with choice, interventions



(such as the CTI Workbook, Sampson, et al., 1996c) designed to restructure cognitions that impede one's ability to engage in the career decision-making process are especially important. Finally, it may be noted that while the American English version of SDS-Form R was used in this study, the instrument is also available in Canadian English and French. More information about these versions of the SDS-Form R is available at <http://www4.parinc.com/>.

As individuals become more decided about their career choice, they are likely to also become more confident and positive about their ability to make decisions. However, with increased decidedness, it is possible that concern about the views of significant others and the views of society become more important. This relationship may indicate that as an individual approaches making a decision, they may begin looking at their options on a deeper and more sophisticated level while considering the views of others. Counselors may work with clients who appear decided or confident about making a decision, but they may want to check with these clients about the importance of balancing input from significant others. These findings suggest that just because clients may present as very decided, this does not universally mean that they could not benefit from additional counseling or that they are not concerned how their career decision could impact others.

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