

**A Model for Evaluating the Effectiveness of
Cognitive Reframes of Dysfunctional Career Thoughts
Technical Report 36 - Revised**

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Abstract

Many high school students, post-secondary students, and adults of working age have difficulty making career decisions. Dysfunctional thinking about themselves, their options, and their decision-making abilities have been shown to contribute to indecision, anxiety, and depression, which may in turn inhibit career development. While assessment instruments such as the Career Thoughts Inventory (CTI) and Workbook can be used by practitioners and clients to identify, challenge, and alter dysfunctional career statements no model exists for evaluating the quality of clients' reframed thoughts, which result from such interventions. Such a schema may be helpful in determining the effectiveness of cognitive restructuring treatments like the CTI Workbook and other cognitive restructuring exercises. Furthermore, this schema may also be a useful tool in teaching practitioners and clients how to evaluate their thoughts and create more effective reframes. This report documents the creation and preliminary evaluation of such a model based upon the clinical judgments of a panel of "expert" career counselors.

A Model for Evaluating the Effectiveness of Cognitive Reframes of Dysfunctional Career Thoughts: Technical Report 36

Difficulty making career transitions is not uncommon for both adolescents and adults. For example, in interviews conducted with 1,000 youth transitioning from school to work, Mortimer, Zimmer-Gembeck, Holmes, and Shanahan (2002) identified themes of unfulfilled expectations and postponement of career-related decisions. Interview participants rarely referred to guidance practitioners as positive and constructive influences on their decision making. Similarly, "...many mid-life career changers must deal with the frustrations of having their *core issues* glossed over or even ignored..." by job search professionals (Behrens & Altman, 2000, p. 44). During their three year qualitative study, Behrens and Altman found that 95% of 92 mid-life career changers professed a lack of confidence in their ability to find mid-life career satisfaction and felt that their desire to explore such core issues was rebuffed by job search experts. The authors recommended that, "By helping them to conquer their fears, correct erroneous beliefs, and become aware of and revise negative self-talk..." practitioners can help mid-life job seekers to "...find the energy to network and project the confidence to interview successfully."

These career decision-makers, regardless of age, believe their needs are being ignored by practitioners and other career development professionals. This may in part be due to practitioners perceiving themselves as unprepared to help clients address the core issue of dysfunctional cognitions that complicate career choices. For example, at one college career center both anecdotal and qualitative data have been collected on the difficulties experienced by student practitioners using an assessment and intervention for dysfunctional career thinking with clients (Etheridge, in progress). It is not surprising that expert practitioners have been shown to have more complex schemata than those of novices for intervening with clients (Martin, Slemon,

Hiebert, Hallberg, & Cummings, 1989). However, it is somewhat surprising that experts may have difficulty defining and communicating their sophisticated yet tacit schemata to practitioner trainees and clients.

One possible method of closing this gap in expertise between practitioners, practitioner-trainees, and clients, may be to develop an “expert model” for evaluating the effectiveness of client reframes of dysfunctional career related cognitions. In an attempt to offer such an expert model, this paper will briefly review the relevant theory base, describe a combined qualitative/quantitative methodology and its derived results, and discuss these findings with respect to the empirical literature. This paper will then close with a discussion of the implications of the derived expert model for the delivery of career services, practitioner training, and additional research.

Career Problem Solving, Indecisiveness, and Dysfunctional Career Thoughts

Two fundamental realities of career problem solving are that it can be a cognitively complex and affectively unsettling task. Bruner (1985) pointed out that ordinary problems are often poorly defined; have multiple, interdependent goals; and shifting standards of success. Similarly, individuals attempting to resolve career problems are faced with ambiguous cues, interdependent alternatives, and uncertain outcomes. Furthermore, solving one career problem, usually creates only new problems requiring the client’s attention (Peterson, Sampson, & Reardon, 1991; Peterson, Sampson, Lenz, & Reardon, 2002; Sampson, Reardon, Peterson, & Lenz, 2004).

Because of this high level of cognitive complexity, many clients (like the previously mentioned transitioning adolescents and adults) have difficulty working through the career problem-solving process. However, it is the *indecisive* client who is generally thought to have a

maladaptive approach to problem solving accompanied by a dysfunctional level of anxiety (Gordon, 1998; Peterson, Sampson, Jr., Reardon, & Lenz, 1996; Peterson et al., 1991; Sampson et al., 2004). The high anxiety of the indecisive client limits cognitive capacity and motivation for career choice. Intensifying emotion has been found to further bias recall and perception, thus creating a self-perpetuating cycle of increasing cognitive dysfunction and affect (Freeman, Pretzer, Fleming, & Simon, 1990). Such a reciprocal relationship between negative thinking and mood is supported by the available evidence in empirical studies by Teasdale and other investigators (Marzillier, 1986).

The conceptual evolution of career indecision has been described by Savickas (1995) as moving from a dichotomy, to a one-dimensional continuum, to a multidimensional concept. For example, in undergraduate college students, career indecision has been found to be a, “...complex problem space of both cognitive and affective variables that are in themselves highly interrelated and ostensibly interactive. Vocational identity, state and trait anxiety, locus of control, depression, and dysfunctional career thoughts are all significantly associated with the state of career indecision and with each other” (Saunders, Peterson, Sampson, & Reardon, 2000, p. 294). Specifically, Saunders found that *dysfunctional career thoughts* captured significant amounts of independent variation in career indecision (Saunders, 1998).

Cognitive Information Processing Theory: A Descriptive and Supportive Tool

In an effort to describe and intervene in the career choice process, numerous theories of career problem solving and decision making have been created. One theory which considers the effect of dysfunctional thoughts and accompanying negative affect on choice is the *Cognitive Information Processing Approach to Problem Solving and Decision Making* (CIP) (Peterson et al., 1996; Peterson et al., 1991; Peterson et al., 2002; Sampson et al., 2004). Similar to other

theories of career development, CIP Theory describes the content and process of career choice. In this instance, the *Pyramid of Information Processing Domains* defines three content domains of knowledge, decision-making skills, and executive processing skills ([Figure 1](#)). The process component of CIP Theory is the five step *CASVE cycle* contained within the decision-making skills domain ([Figure 2](#)).

However, what is somewhat unique about CIP Theory is the Executive Processing Domain, which emphasizes the importance of *metacognitive* skills ([Figure 1](#)) (Peterson et al., 1991; Peterson et al., 2002; Reardon, Lenz, Sampson, & Peterson, 2000; Sampson et al., 2004). Assisting indecisive clients to become aware of their cognitive distortions requires that clients be aware of their metacognitions, that is to be able to “think about their thoughts.” The concept of metacognition has many different labels in the literature. These labels have included the *executive processes* of Belmont and Butterfield (1977) and what Gagne and Briggs (1974) called *cognitive strategies*. According to Wells (2000, p. 6), “...metacognition is defined as any knowledge or cognitive process that is involved in the appraisal, monitoring, or control of cognition.”

Several studies have found that young children possess limited metacognitive knowledge and ability (Flavell, 1979); thus, we must practice and develop metacognitive skills as we mature. Learning to use these metacognitive skills helps individuals “...to orchestrate cognitive aspects of problem solving” (Paris & Winograd, 1990, p. 18). Specifically, metacognitions can lead individuals to: 1) establish new goals and revise or abandon previous goals; 2) add to, delete from, or revise their metacognitive knowledge; or 3) activate strategies that generate additional cognitive or metacognitive goals (Flavell, 1979). When such metacognitive skills are limited,

dysfunctional thoughts may be frequent and subsequent efforts to resolve the content or process problems of career choice are hindered.

CIP Theory outlines three kinds of overlapping metacognitive skills which can be learned by clients as a means to becoming more effective career decision makers: self-awareness, self-talk, and monitoring and control (Peterson et al., 1996; Peterson et al., 1991; Peterson et al., 2002; Reardon et al., 2000; Sampson et al., 2004). Such a delineation provides a framework to organize the theoretical contributions of Beck and others which both describe and offer possible interventions to the indecisive career problem solver.

Self-Awareness

“Good problem solvers are aware of their feelings as they engage in information-processing tasks” (Reardon et al., 2000, p. 88). Such feelings become one of the internal cues that prompt individuals to employ their metacognitive skills. External cues (e.g., messages from significant others and peers) and one’s cognitive and affective reactions to them are also important in the decision-making process. It is also important that the career decision maker be able to sort through these often conflicting internal and external cues to be able to identify the “real” problem or problems to be solved.

For example, a college student lacking in self-awareness may choose to major in accounting to please what she perceives as a demanding father, rather than fulfill her interest in the creative arts. What is the problem to be solved here? Is it her limited awareness of the degree to which she values her creative interests? Is it her inability to balance her own needs with those of her father’s? Could it be that her perception of the messages sent by dad is distorted by her continuing to play the role of dutiful daughter? The answers may be yes to all of these questions; however, awareness of one’s own feelings and thoughts is the key to finding them.

Awareness of one's tacit assumptions and explicit thoughts is also critical to effective career decision making. Krumboltz (1983) noted that most clients are unaware of the biases, misinformation, and distorted beliefs that they bring to career choice and that these presuppositions can lead to self-defeating and disabling experiences as well as limit future learning opportunities (Krumboltz & Jackson, 1993). For example, Elliott (1995) noted that negative self-statements can impair a client's ability to utilize occupational information, lead to career indecision, and result in inappropriate choices (Thompson, 1976; Lewis & Gilhousen, 1981; Nevo, 1987). This statement is supported by Bihm and Winer (1983) who found increasing thematic intrusions (recall errors) in recall of occupational information over time for those occupations with which subjects were already familiar. Our self-knowledge is thought to be similarly influenced by biases and distortions which color our recall and perception of past events (Sampson et al., 2004). The cognitive mechanism by which this phenomenon occurs will be explored next in an attempt to understand a second important metacognitive skill, management of *self-talk*.

Self-Talk

The supposition that knowledge of the world of work and one's self is integrated into a client's preexisting and possibly biased *schemata* is supported by the previously discussed findings. Schemata are "internal models of aspects of self and the world that individuals use to perceive, store, or recall information" (Robins & Hayes, 1993, p. 205). In short, they provide a model of an individual's cognitive organization and may be either conscious or tacit to the client (Marzillier, 1986; Mahoney, 1980). The schema concept was first discussed by Bartlett (1932), who realized the action of preexisting knowledge on the learning and recall of information (Mayer, 1983). Later, schemata were empirically found to resist modification as it is easier to

assimilate information into a current schema than it is to change the schema itself (Thompson, 1976). This phenomenon, where feedback from the environment will result in adjustment always relative to the starting point, has been known as the *adjustment from an anchor heuristic* (Tversky & Kahneman, 1974), *problem-solving set* (Luchins, 1942), and by various other labels. Thus, divergent thought about a specific situation, object, option, or person is inhibited by past experience.

However, it is possible to assist clients in altering these schemata by helping them become more aware of the impact such schemata have on their automatic thoughts or *self-talk* (Beck, 1976). These thoughts are the easiest to access in therapy by both client and practitioner, are the least stable, and reflect the client's perceptions of events rather than objective appraisals due to *distortion* and *bias* from the client's schemata (Robins & Hayes, 1993). Thus, schemata can account for the genesis of negative thinking as well as its activation and maintenance (Marzillier, 1986). Since schemata also form the basis of a client's *beliefs* and *assumptions* (which Beck & Weishaar, 2000, described as the most stable and least accessible form of cognition) a goal of the career practitioner may be to uncover automatic thoughts and deeper beliefs/assumptions, as reoccurrence of indecisiveness is more likely if both are not changed.

Cognitive distortions are the link between schemata and automatic thoughts (Robins & Hayes, 1993). For example, a client may only associate high earnings with business occupations and therefore may automatically dismiss the occupation of nurse when it is suggested by an interest inventory. These distortions are inaccurate, untestable rules that mediate client responses to environmental events and are often adhered to in the face of disputing evidence or after they cease to be functional (Zettle & Hayes, 1982). These distortions tend to overemphasize negative information to the exclusion of positive information (Hammen & Krantz, 1976).

Any given automatic thought may reflect more than one cognitive distortion (Robins & Hayes, 1993). Several specific distortions or systematic cognitive errors have been identified by Beck (Beck, 1976; Beck, 1967; Beck, Emery, & Greenberg, 1979) which are summarized in [Appendix A](#). Arnkoff and Glass (1982) classified these and other cognitive distortions into two major categories, misuse of information (e.g., overgeneralization) and extreme types of thinking (e.g., dichotomous thinking). Thus, cognitive distortions are a reoccurring phenomenon in which an individual's processing of information is biased in a classifiable and predictable manner. Limited self-awareness, dysfunctional thoughts based on cognitive distortions, and inaccurate schemata may inhibit clients from executing the third metacognitive skill necessary for career problem solving, *monitoring and control*.

Monitoring and Control

Good problem solving and career decision making requires a "...thoughtful balance between compulsivity and impulsivity," knowing when to stop the decision-making process and when to move ahead (Reardon et al., 2000, p. 88). Poor metacognitive skills in monitoring and control can yield behavioral extremes, from the compulsive decision maker on a never ending search for the "perfect" career to the impulsive decision maker whose trial and error attempts result in "trying out" several college majors (Peterson et al., 2002). The anxiety and feelings of frustration that result from the fallout associated with problems in monitoring and control may then only reinforce the client's faulty schemata of themselves as poor career decision makers. Fortunately, there are interventions available that may help clients improve their metacognitive skills of self-awareness, self-talk, and monitoring and control in order to improve their underlying schemata.

A CIP-Based Intervention for Improving Metacognitions

Krumboltz (Krumboltz & Vidalakis, 2002; Krumboltz & Jackson, 1993; Krumboltz, Mitchell, & Jones, 1976; Krumboltz, 1976) noted the importance of using assessment not only for matching and evaluation purposes in career assessment, but also to promote learning in career decision making. One such assessment is the Career Thoughts Inventory and Workbook (CTI) (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996a, 1996b). The CTI is a self-administered, objectively scored measure of dysfunctional cognitions involved in career problem solving and decision making. The 48 items of the CTI were derived via factor analysis from the best performing items of a pool of 248 items generated from the eight content dimensions of Peterson et al.'s CIP Theory (e.g., self-knowledge, option knowledge, metacognitive skills, and the five step CASVE cycle shown in [Figure 1](#) and [Figure 2](#)), additional literature on dysfunctional career thinking, and actual client statements during service delivery (Sampson, et al., 1996c). The CTI has been standardized on high school, college student, and adult populations, and subsequently shown to have strong internal consistency, stability, and factorial, convergent, and predictive validity (Sampson, et al., 1996c).

The primary function of the CTI is to serve as a mechanism for screening and needs assessment (Sampson, Peterson, Lenz, Reardon, & Saunders, 1999). The CTI serves as a screening tool by assisting practitioners in making preliminary decisions about the levels of support they need to provide in relation to client needs (i.e., clients with higher levels of dysfunctional thinking are assumed to require greater levels of support). Furthermore, the CTI functions as a needs assessment tool by identifying the specific nature of a client's dysfunctional career thinking through its factor-based construct scales and the analysis of individual item responses relative to CIP Theory's eight content areas.

When combined with the companion booklet, *Improving Your Career Thoughts: A Workbook for the Career Thoughts Inventory* (workbook) (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996a), the CTI is extended from a screening and needs assessment to a learning resource. The CTI Workbook is composed of five sections that are designed to help clients identify the amount and nature of their negative career thoughts, challenge and alter these thoughts, create a plan, and then take action.

First, a wall metaphor is used to interpret the instrument's scales and describe the nature and impact of negative thinking on career decision making. Next, negative career thoughts are challenged by stimulus reframing statements which model effective thinking about career decision making for the client as recommended by Meichenbaum and Cameron (Meichenbaum, 1972; Meichenbaum & Cameron, 1974). Clients then alter their negative statements in the workbook to be more functional and they are encouraged to plan and take action based on these new statements. In addition to altering negative career thinking, workbook users are encouraged to make good use of social supports during decision making. In effect, the CTI Workbook emphasizes to the client the importance of the metacognitions of self-awareness, self-talk, and monitoring and control, by teaching the specific skill of cognitive reframing or altering negative self talk.

While the CTI assessment has been used in research since its release, the workbook has received little attention in the literature (Vernick, 1999; Sampson et al., 2004). Reviewers Gilbert (1996) and Fontaine (2001) noted the lack of evidence in the CTI professional manual of the workbook's ability to correct dysfunctional career thinking or improve career problem-solving and decision-making skills. A search of the literature also revealed no formal, empirical evidence

of its efficacy. This may be due in part to the fact that no model exists for evaluating the effectiveness of reframed career thoughts resulting from use of the workbook.

Method

The design, participants, measures, and procedures employed to develop an expert model for evaluating the effectiveness of cognitive reframes of dysfunctional career thoughts will now be described.

Design

The design of this study combined both qualitative and quantitative methods. To create the expert model of evaluating reframes of dysfunctional career thoughts, both structured interview and “think aloud” protocol techniques were employed to provide qualitative data of some depth. Such a depth interview is best used,

...when the focus of inquiry is narrow, the respondents represent a clearly defined and homogenous bounded unit with an already known context, the respondents are familiar and comfortable with the interview as a means of communication and the goal is to generate themes and narratives (Crabtree & Miller, 1999, p. 90).

The “think aloud” instructions employed by the investigator during the interview, were intended to encourage experts to verbalize their thoughts as they evaluated cognitive reframes. Originally employed by Newell and Simon (1972), such protocols have long been used to identify the sequence of steps and knowledge used by experts when solving discrete problems (e.g., playing a chess game). A second stage of the study, relying on quantitative methods was also designed to tentatively establish the inter-rater reliability of judgments among experts applying the model to determine the degree to which a person has successfully reframed a dysfunctional career thought. In short, the study was designed to use qualitative methods to make an explicit model of the tacit schemata and rules used by experts in judging the effectiveness of cognitive reframes, then

quantitatively demonstrating that this model can be applied in a reliable manner to judge a novel set of reframes of dysfunctional career thoughts.

Participants

A purposeful sampling strategy was applied because “experts” on the reframing of dysfunctional career thoughts were desired for their specific knowledge about the topic and relative homogeneity in clinical and theoretical approach (Kuzel, 1999). Although the ideal sample size for qualitative research is from five to 20 units of analysis (Patton, 1990), four doctoral level, counseling practitioners responsible for the development of the CTI were selected for their perceived expertise in the use of the instrument and the accompanying workbook. Keeping in mind that years of experience has not been clearly shown to relate to expertise (Skovholt, Ronnestad, & Jennings, 1997), these four professionals possessed greater than 100 years combined experience working with clients who have career and mental health problems. All four experts were Caucasian, three male and one female, with ages ranging from 49 to 62 years ($\bar{X} = 55.5$).

Individually, these professionals have written extensively on career development theory and practice, publishing numerous articles and books on various aspects of the subject. As a group, these practitioners have developed the *Cognitive Information Processing Approach to Career Problem Solving and Decision Making* (Peterson et al., 1991; Peterson et al., 1996; Peterson et al., 2002; Sampson et al., 2004). In short, the training, experience, and research credentials of the panel members qualified them as “expert” in the area of investigation. The participants consented to participate in this study after a brief description of the procedure and time requirements were provided by the investigator.

Measures

As this study was conducted in two stages, model creation and evaluation of model reliability, two instruments were also developed: 1) a *structured interview* to facilitate the development of a model based on experts' schemata and 2) a *rating form* to determine the reliability of the new model when evaluating cognitive reframes. These two instruments are described in the following text.

Structured Interview. As part of the structured interview protocol, each of the four participants was presented with eight stimulus items drawn from the CTI (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996b). Paired with each CTI item was a corresponding cognitive reframe selected from a preexisting dataset of 2,064 reframing statements generated as part of an experimental evaluation of the effectiveness of the CTI Workbook in an undergraduate career development course (Carr, 2003). Care was taken to ensure that the reframed statements were randomly selected while representing a balance of participants, treatment statuses, and data collection times so that reframes viewed by the expert panel would be representative of varying individuals and quality. Out of the sixteen statements selected, six of the statements came from participants in the control group, ten statements from treatment group participants, eight statements were collected immediately after treatment, and eight statements were sampled two weeks post treatment. Finally, each statement included in the interview protocol came from a different participant in the study.

To ensure both item overlap and variety among experts, two versions of the structured interview (Form A and Form B) were created. Both versions of the interview protocol form can be reviewed in [Appendix B](#). The reader should note that grammar and spelling errors in reframes generated by participants were retained. While CTI items and paired reframes were varied across

the forms, items corresponding across forms were matched by the eight information processing domains of CIP Theory (Sampson et al., 1996b). Thus, corresponding items and reframes on the structured interview forms were assumed to relate to theoretically similar knowledge domains (e.g., self-knowledge, executive processing, etc.).

Rating Form. The rating form to determine the reliability of the new model when evaluating cognitive reframes can be viewed in [Appendix C](#). This 12 item form was created by choosing three statements from the CTI and then for each statement, selecting four reframes from the preexisting undergraduate data set. Using the schema model as a guide, reframes were purposively selected by the investigator to represent one of four positions on a Likert scale ranging from -1 (less effective) to 2 (more effective). This unbalanced scale was chosen to represent reframes that actually might be counterproductive (i.e., -1), allow for the possibility of a neutral or no change response (0), and acknowledge that some reframes may be partial (+1) or complete (+2). In this case, an unbalanced scale was called for given that higher precision was desired on one side of the scale than the other (Friedman & Amoo, 1999).

Procedure

Model Creation. To create the model, data were collected by appointment, in the private offices of each of the four experts. Data collection times using the structured interview protocol ranged from approximately 30 minutes to 45 minutes in length. Members of the expert panel were given one of the two versions of the structured interview instrument ([Appendix B](#)) to follow throughout the procedure and were invited to write or draw on scratch paper at their discretion. Each expert was blind to the selected items and reframes until his or her interview was conducted and was asked not to discuss the structured interview with colleagues until data collection was complete.

Following the format of the structured interview, the expert was asked by the investigator to read each item and corresponding reframe aloud and then respond to prompts provided by the investigator. If after reading the reframe, the expert felt that the undergraduate participant who authored the reframe did not “understand the task,” then the remaining prompts were typically skipped and the investigator moved onto the next item-reframe combination. If after reading the reframe, the expert felt that the undergraduate participant did “understand the task,” additional prompts were delivered by the investigator. These prompts probed for the expert’s thoughts on the undergraduate’s understanding of the task, observations on how the undergraduate altered the statement, strategies used by the undergraduate, and the undergraduate’s degree of success and quality in reframing the statement. Experts were also asked to provide evidence supporting their decisions on reframe quality. Finally, experts were asked to share any additional thoughts they may have about the reframe. These self-reported thoughts were hand recorded with paper and pencil and then transcribed into a word processing program by the investigator.

After all structured interviews were conducted, statements collected from experts were combined, sorted into groups of related concepts, then summarized by the investigator using a method in keeping with the editing organizing style suggested by Addison (1999). Seven major categories or themes emerged from the data. Within each of these seven categories, “less effective” and “more effective reframes” of cognitive distortions were then described using statements made by the expert panel. The resulting draft model was presented to the panel for corroboration, comment, and revision; which resulted in minor changes in wording and formatting made to enhance clarity.

Model reliability. Next, experts were asked to rate a set of 12 reframes using the model and the rating form to assess its reliability ([Appendix C](#)). For scheduling reasons, this task was

not performed under controlled conditions; however, panel members were asked to not communicate with each other during the rating process. The ratings of the four experts were then compared to each other and with those of the principal investigator in an attempt to determine the ability of the new model to reliably classify reframes on a dimension of global effectiveness.

Validity of Schema Structure. The four member, expert panel was again employed to assess the validity of the categories derived from the criteria resulting from the think aloud protocols. Each member was given a randomized a set of 25 cards, each containing one schema criterion, and was asked to sort them into one of the seven category headings (e.g., locus of control, explicitness, etc.). Members were also provided with a “No Classification” category under which they could choose to place those criteria, which were judged not to fit under any of the seven categories.

After a review of the initial sort results and at the suggestion of the expert panel, a second round of categorization was conducted. The previous procedure was followed with two changes: 1) a fifth expert, who was also an author of the Career Thoughts Inventory and Workbook, was added to the panel to provide an odd number of members to “break ties”; and 2) panel members were able to place each criterion under both a primary and secondary category. Items on which agreement were not achieved by at least 4 of the 5 expert members were reviewed by the original four panel members using a structured format facilitated by the primary investigator ([Appendix D](#)). The goal of this process was to arrive at consensus on criterion categorization while ensuring that each member had an equal chance to express a rationale for his or her prior judgments.

Results

Schema Creation

Out of 32 potential judgments about reframe effectiveness, experts decided 12 times that undergraduate students did not appear to understand the reframing task. Thus, additional qualitative data was collected on at least 20 expert judgments by the panel of four professionals ([Table 1](#)). Additionally, part of the expert judgment process was to rate the general quality of each reframe on a scale from marginal (1) to high (3) ([Table 2](#)). Of 32 potential judgments, five were rated as marginal quality, 13 as moderate quality, and five as high quality. Quality ratings were skipped for nine of the 12 judgments for which the task appeared to not be understood. Thus, the majority of the reviewed reframes were judged by the experts to have been the result of an understood task and were determined to have been of mixed quality (i.e., the reframe data was valid and varied enough to be judged by the experts).

The resulting raw data from the depth interview and think aloud process can be seen in [Appendix E](#). The output of the qualitative sort procedure on this raw data was a *Schema of Cognitive Distortions Influencing Career Problem Solving and Decision Making* ([Table 3](#)). The seven themes or categories which emerged from the sort included: locus of control, explicitness, affect, time sensitivity, word choice, missing key points, and reframe structure.

Schema Reliability

Data resulting from the experts' judgments for each CTI statement and reframe after applying the model can be seen in [Table 4](#), while average ratings for each expert can be viewed in [Table 5](#). Given the range of the Likert scale and number of reframes rated for each item, the expected mean score for each CTI statement would be .5 (i.e., $-1 + 0 + 1 + 2 = 2/4 = .5$). It should be noted that the average ratings of two experts agreed with those of the investigator, though this

may be due to a cuing effect caused by the design of the instrument. However, Dr. B appeared to be more conservative and Dr. C appeared to be more liberal in their judgments respectively ($\bar{X} = .25$ and $\bar{X} = .75$).

There was also a moderate to high degree of correlation of reframe ratings with four of six comparisons among the four raters significant ($\alpha \leq .05$) ([Table 6](#)). Also, the judgments of three of the four experts correlated significantly with the a priori judgments of the investigator ($\alpha = .01$). However, it appears that the judgments of Dr. C, were significantly correlated only to those of Dr. D. Furthermore, inter-rater agreements varied with Kappa coefficients ranging from .11 to .52 among experts and from -.07 to .77 between experts and the investigator (Cohen, 1960) ([Table 7](#)).

Validity of Schema Structure

The degree of agreement among experts for the schema structure validation procedure can be viewed in [Table 8](#). Agreement, defined as four of the five experts concurring on category placement, was achieved for 19 of the 25 criteria. Agreement was not initially achieved on six of the 25 criteria. A group consensus about categorization was reached on five of these six criteria during the structured discussion led by the principal investigator. The remaining criterion on which agreement could not be achieved was removed from the schema based on the unanimous recommendation of the expert panel.

Overall, four of principal investigators original categorizations were changed by the expert panel ([Table 9](#)). Three criteria were moved from other categories into the category of affect and one criterion was moved to the category of missing key point. The final table, with validated category groupings can be viewed in [Table 10](#). The close reader will notice several

criteria were slightly edited based upon the recommendation of the expert panel. This action was taken to clarify meaning and intended rationale for category membership to the reader.

Discussion

This discussion will begin with an acknowledgement of the study's limitations, discuss the literature in support of the constructed model, and close with suggestions for applying the model in practice and research.

Limitations

A reader familiar with empirical studies might suggest that the structured interviews could have been conducted by a third party naïve to the career development and cognitive reframing literature. Furthermore, the evaluative statements made by clinicians in the first phase of the project could have been sorted by more than one similarly naïve individual. Instead data were collected and then sorted by the investigator. While steps could have been taken to reduce the risk of investigator bias in the creation of the model, such efforts may have hindered the collection of data (e.g., recorder's lack of familiarity with terminology and nuances in expert statements) and resulted in a model with less theoretical validity and clinical utility. Such practices are not uncommon in qualitative research, though the execution of the data collection and sorting process could have been more detailed and rigorous if individuals other than the investigator collected and sorted the data (Addison, 1999).

It should be noted that the volunteer experts were highly motivated to participate in this study. Furthermore, their common interests in theory and practice issues related to the role of dysfunctional thinking in career decision making via CIP Theory may limit the "generalizability" of the constructed model. Thus, the judgments of these expert practitioners may not be

representative of other professionals with similar clinical and research experiences, thus the model may not be easily transferable to other settings.

Finally, the poor reliability of ratings made by experts on novel reframes with the model must be addressed. First, the small number of ratings ($n = 48$) made by the experts, left little room for error. However, it should be noted that the formatting of the reframe rating instrument may have suggested to raters that each point on the four point rating scale corresponded to one of the four reframes in the CTI item grouping. Thus, a process of elimination may have also impacted rating independence. It would have been better to randomly present each CTI item and reframe pair to the experts.

Literature and Model

Evidence supporting the validity of the proposed model exists in the theoretical and empirical literature. Most likely the expert panel's collective knowledge of this literature is reflected in the model. Each of the seven themes contained in the model, (locus of control, missing key points, explicitness, affect, time sensitivity, word choice, and reframe structure) will now be discussed in the context of the problem-solving and metacognitive literature.

Locus of Control. Locus of control (LOC) is the degree to which individuals expect that reinforcement is contingent on their own behaviors versus environmental events resulting from chance or others' actions. This construct has been found to be a relatively stable, cross situational measure of individual difference in numerous studies (Rotter, 1990). Specifically, LOC has been found to be a significant variable in the performance of problem-solving tasks (Larson, Piersel, Imao, & Allen, 1990). That is, if individuals think (tacitly or explicitly) that feedback necessary for success is dependent on external factors beyond their control, they are less likely to successfully solve their problems.

In the specific case of career decision making, LOC has been found to be modestly associated with dysfunctional career thinking ($r = .26, p \leq .001$) as measured by the Career Thoughts Inventory (Saunders et al., 2000). However, while dysfunctional thinking has been found to capture a significant amount of the variance on a measure of career indecision, LOC has not. Thus, an external locus of control may be a “symptom” of the dysfunctional thinking which interferes with the problem-solving process (Peterson et al., 1991; Peterson et al., 1996).

For example, Sue, who has been unsuccessfully searching for a job, has an excellent resume and cover letter. However, she does not follow up with employers after submitting her application for vacant positions. Instead, she expects that employers “will get in touch with her” if they like her resume (i.e., she waits for feedback from her environment). This may be due to a dysfunctional thought that she would be viewed as being “pushy” if she made a phone call politely expressing her continued interest.

Missing Key Point. In several reframes, the expert panel observed that what was negative or unhelpful about the original dysfunctional thought was not properly identified, thus the reframe “missed the point.” From the experts’ point of view, the client incorrectly defined the problem. However, there is evidence that clients can be trained to better identify and define problems to be solved. For example, in a study by Cormier, Otani, and Cormier (1986), highly specific training in problem definition was provided in which subjects were taught to employ a relatively simple mnemonic, ABC (Affect, Behavior, and Cognition) to describe the problem and identify its probable causes. This and other studies on the effectiveness of various problem-solving training protocols have suggested that the learning of problem definition skills may contribute to subjects choosing “better options” from among a variety of alternatives (Nezu & D’Zurilla, 1981a; Nezu & D’Zurilla, 1981b; Cormier, Otani, & Cormier, 1986).

For example, after trying out and disliking his third college major, Bob stated to his counselor, “I’ve tried all the good majors (Accounting, Purchasing, and Marketing) and I’m bad at them.” Bob views the problem as his “badness” (i.e., lack of skill) at “good majors” (i.e., business majors). After listening to Bob and considering the *Pyramid of Information Processing Domains in Career Decision Making* ([Figure 1](#)) (Sampson et al., 2004), the counselor decides that dysfunctional thoughts about choosing a major are limiting Bob’s knowledge of both himself and his options. Using the pyramid, the counselor helps Bob redefine the problem gap from one that is unbridgeable (i.e., “I’m bad”) to one that is passable, by engaging in learning experiences to improve his schemata of self and options and reframe his dysfunctional cognitions.

Explicitness. This theme suggests a rational and concrete (i.e., observable) approach to career decision making, which is in agreement with the primary role of cognitive therapy, “...to identify, reality test, and correct distorted conceptualizations and the dysfunctional beliefs (schemata) underlying these cognitions (Beck et al., 1979). In the spirit of Kelly’s (1955) person as scientist metaphor, the cognitive-behavioral practitioner encourages clients to question and search for observable evidence to support their dysfunctional thoughts and distortions.

Thus, one goal of the practitioner may be to help clients learn to create explicit, “planful” reframes, that are based on observable data. Heppner and Krauskopf (1987) emphasized the importance of helping clients learn to state their problems and goals concretely in counseling. For example, specific criteria for evaluating consequences of problem-solving alternatives increased the chances of the “most effective” solution being selected when compared to control (Nezu & D’Zurilla, 1979). Such specific self-talk may help clients to exercise more effective control and monitoring, because they will have criteria by which they can judge if they have successfully achieved their goal.

For example, a guidance counselor working with Tonya, a high school senior interested in nursing may hear her say, “All nurses go to four year colleges, I can’t handle that much school.” The counselor first helps Tonya *identify* the cognitive distortions reflected in her thought. Next, he helps her *challenge* her dysfunctional thought by asking her to detail the evidence supporting her claim that “all nurses require 4-year degrees.” When she realizes that she lacks evidence supporting her assumption, the counselor asks Tonya to review several nursing occupations and their education requirements on a computer-assisted career guidance system. Once enough evidence is collected, the counselor helps Tonya *alter* her schema and thoughts about nursing occupations. Finally, Tonya is encouraged to *act* on her new found knowledge by interviewing admissions counselors at both 2- and 4-year nursing programs. In turn, the new evidence Tonya collects can be used to challenge and alter her statement that she, “can’t handle that much school.” Tonya soon learns that instead of the zero options afforded by her original thought, she actually has several options from which to choose.

Affect. A significant misunderstanding about cognitive approaches is that they ignore affect (Freeman et al., 1990; Sampson et al., 2004). This model, in keeping with the previous discussion of Cognitive Information Processing theory, helps to refute this myth by stressing the importance of addressing affect and strategies for emotional coping in cognitive reframes where appropriate. While cognitive practitioners usually choose to intervene with cognitions first, as they are seen as the mediator between environmental stimuli, feeling, and behavior, it may be important for cognitive reframes to acknowledge the affective factors influencing career decision making. For example, the induction of an affectively positive state has been found to improve performance on problem-solving tasks (Isen, Daubman, & Nowicki, 1987). Marzillier (1986, p. 100) concluded that debate about the causal relationship of cognitions to emotions by stating that,

“...a dynamic interdependence between thought, feeling, and action describes their relationship more usefully than any assertion of primacy.”

The impact of affect on career decision making is illustrated by the case of Louisa, a skilled worker downsized from a local electronics manufacturer. After job hunting for three months, she visited her local workforce center, just as her unemployment was about to expire. She told her counselor, “*I’m at the end of my rope, even if I could afford food I couldn’t eat, I’m so upset...all I do is cry. I’ve gone on 10 interviews and they all hated me, I’m unemployable.*” It’s obvious that Louisa is depressed. Her cognitive distortions (e.g., they all hated me) bias her view of herself and her depressive affect (e.g., tearfulness and brooding) bias employers’ views of Louisa. The counselor decided to refer Louisa to a medical professional for further evaluation and possible pharmacological treatment of her depression. Once the affective symptoms of depression lift; reframing work on dysfunctional thoughts such as “I’m unemployable” can progress by evaluating the evidence derived from her past ten interview experiences. The evidence may show that Louisa simply needs to improve her interviewing skills.

Time Sensitivity. How the client perceives time and its importance in problem solving may also play an important role in successfully reframing dysfunctional cognitions. For example, the setting of interim or proximal goals (e.g., breaking long periods of time into chunks) may be helpful to clients. “When individuals are somewhat unsure of their ability to handle a complex, challenging endeavor, the setting of short-term, proximal sub goals can beneficially affect self-referent thought, motivation and performance” (Stock & Cervone, 1990, p. 496). Furthermore, Stock and Cervone noted that when setting interim goals that flexibility be maintained so as to not diminish a client’s sense of control and motivation.

Practitioners may also encourage clients who are reframing cognitions to consider the length of time and amount of effort required to arrive at a career decision. For example, Sandelands, Brockner, and Glynn (1988) found that graduate students exhibited greater persistence in solving insoluble tasks when they were informed that persistence was a wise strategy. Similarly, helping clients to acknowledge the ongoing nature of decision making (i.e., solving one problem leads to new problems to be solved) may induce a similar problem-solving set that encourages success (Reardon et al., 2000). Thus, initially helping clients to clarify the time and persistence required for problem solving may improve problem-solving performance.

An *Individual Learning Plan* (ILP) (Peterson et al., 1996; Sampson et al., 2004) can be used in career counseling by practitioners to clarify a client's goals and her perception of the time and persistence required. This form, viewable in [Appendix F](#), prompts the client to state and record her distal goals. Also included on the ILP are learning activities, collaboratively generated by both client and counselor, to facilitate goal attainment. The intended purpose of (i.e., proximal goal) and time required to complete each activity is also written on the ILP. The clarity provided by the ILP may provide a sense of, "buy in for the client, increasing the likelihood that the client will follow through"(Sampson et al., 2004, p. 60). Finally, consistent with the literature, it is clear to the client at the bottom of the ILP that goals can be changed as learning occurs.

Word Choice. Perhaps one of the most obvious themes to emerge from the model is that of word choice. As discussed previously in this paper, Beck and others (Beck, 1976; Beck, 1967; Beck et al., 1979) have identified several cognitive distortions present in the self-talk of clients which have been categorized into misuse of information and extreme types of thinking (Arnkoff & Glass, 1982) ([Appendix A](#)). Among these distortions, overgeneralization, magnification and minimization, dichotomous thinking, and imperative statements are perhaps the easiest for the

novice practitioner and client to identify due to the specific words associated with them (e.g., always, all, none, never, must).

However, one of the most difficult aspects for clients to learn may be the difference between “not negative self talk” and “positive self-talk.” Judgments by the expert panel indicated that simple word reversal (e.g., *I can't make a career decision* to *I will make a career decision*) is not sufficient to achieve reframing. In fact, setting a problem-solving goal without properly defining the problem and creating an internally centered, explicit plan that is sensitive to issues of affect and time may be counterproductive. A more helpful reframe for the previous example might be, “*While I might get anxious, I can stay calm and make a career decision if I follow the Individual Learning Plan I created one step at a time.*” While this reframe may be somewhat complex, simpler statements may result from clients “moving through the motions” of the reframing process and in turn setting themselves up for additional failure and frustration.

Reframe Structure. The final theme to emerge in the model is the view that the structure of the reframe should parallel the structure of the original negative thought. In this case, the expert panel may not be attending solely to explicit verbal syntax, but also to the relationships it represents (e.g., If-then, action and consequence). For example, when asked to categorize physics problems, novices used *surface features* of the problems such as equipment employed while experts used the theories needed to solve the problem (Chi, Feltovich, & Glaser, 1981). Chi suggested that this *deep processing* by experts is a result of their more sophisticated schemata.

The novice practitioner may hear her client's statement “*I'm afraid if I try out my chosen occupation, I won't be successful*” as a simple statement of fact. The expert, however, may derive deeper meanings about her client's avoidance behavior resulting from anxious feelings and an external locus of control. By encouraging the client to maintain the implicit “If-Then”

structure and reframe the statement in more positive and explicit terms, the expert practitioner may promote the acquisition of new knowledge; that anxiety and avoidance behavior decrease when one takes positive action.

Implications for Practice and Research

While some may see irony in the dichotomous format of the model's presentation in Table 10 for describing dysfunctional career thoughts, its parsimony and utility are thought to outweigh its shortcomings. Hopefully, this model will enable practitioners of various skill and experience levels to make global judgments about the effectiveness of a given client reframe of a dysfunctional career thought. Once this global judgment is made, the clinician could then investigate the nuances of a possibly dysfunctional thought. In addition, this model is not intended for use as a checklist comparing the total number of less effective qualities to more effective qualities for a given reframe. It is intended as a guide to obtaining a sense of the overall quality of reframes of dysfunctional career thoughts.

The goal of cognitive-behavioral practitioners is to teach their clients to “autorestructure” their dysfunctional thoughts (i.e., become independent of the practitioner). However, how do clients know that their newly reframed thoughts are helpful? Sampson, Peterson, Lenz, and Reardon (1992) have provided clients with “plain language version” of the pyramid of information processing and CASVE cycle in an effort to ensure the utility of CIP Theory. Similarly, it may be equally helpful to provide clients with a job aid to evaluate the quality of their reframes. Such a client aid is available in [Table 11](#) and is shown tied to the original expert model in [Table 12](#). The reading level of this “plain language” document has been found to be at the 7th grade level due to selected words, such as “negative” (Harris & Jacobson, 1982).

It should be noted that the limited reliability results were accomplished without training raters on the model in order to achieve higher levels of agreement. While it might be counterintuitive to expect “experts” to require training on rating data using a model based on their own schemata, one must separate the task of “rating” items for purposes of comparison from the task of applying the model ipsatively. Regardless of its suitability for use in research, a short training program might be created so practitioners can learn to use the model to assess and improve the quality of client reframes. If designed properly, an additional benefit of such training may be more reliable rating data that can be used to evaluate the outcomes of interventions for dysfunctional career thinking such as the CTI Workbook.

Conclusion

Evidence exists both in the literature and anecdotally that adolescents and adults are sometimes unsatisfied with career counseling that misses their “core issues.” From the general perspective of cognitive-behavioral therapy, these core issues may arise from the client’s obsolete schemata, cognitive distortions, and dysfunctional thoughts. From the specific perspective of Cognitive Information Processing theory, dysfunctional thoughts can contribute to career indecisiveness by undermining current, and preventing the learning of new, metacognitive skills necessary for successful career problem solving and decision making. This paper has offered a preliminary expert model which both practitioners and clients might use to create and evaluate more effective reframes of dysfunctional career thoughts. In turn, this model will hopefully enhance practice and research, which will result in greater satisfaction and success for both practitioners and clients.

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Table 1
Expert Judgment of Task Understanding

item	CTI Items 33-40		CTI Items 41-48	
	Dr. A	Dr. B	Dr. C	Dr. D
1	Yes	Yes	Yes	Yes
2	Yes	Yes	Yes	Yes
3	Yes	Yes	somewhat	Yes
4	Yes	No	No	No
5	Yes	No	somewhat	Yes
6	No	No	No	No
7	Yes	Yes	No	No
8	No	No	somewhat	Yes

Table 2
Ratings of Reframe Quality by Experts

item	CTI Items 33-40		CTI Items 41-48	
	Dr. A	Dr. B	Dr. C	Dr. D
1	3	2	3	3
2	1	2	3	3
3	2	2	2	2
4	2	1	skipped	skipped
5	2	1	2	2
6	skipped	skipped	skipped	skipped
7	2	2	skipped	skipped
8	skipped	1	2	1

Legend: 1= marginal, 2=moderate, 3=high

Table 3

An Initial Schema for Effectiveness of Reframes of Cognitive Distortions Influencing Career Problem Solving and Decision Making

	Less Effective Reframe	More Effective Reframe
Locus of control	<ul style="list-style-type: none"> ▪ External focus ▪ Reactive or defensive posture ▪ Views self as powerless to change ▪ Attributes positive events to chance or behavior of others ▪ Defers responsibility to others ▪ Lacks self-confidence (trust in self) 	<ul style="list-style-type: none"> ▪ Internal focus ▪ Proactive or open posture ▪ Views self as capable of change ▪ Attributes positive events to own behavior ▪ Assumes responsibility for self ▪ Has self-confidence (trust in self)
Explicitness	<ul style="list-style-type: none"> ▪ Little or no evidence goal or direction (no gap identified) ▪ Uses general language about planning (lacks detail) ▪ No evidence of a decision-making model ▪ Does not provide measurable outputs/outcomes ▪ Views planning as unimportant ▪ Identifies 0 or 1 option for solving problem ▪ No evidence of evaluating decision making progress 	<ul style="list-style-type: none"> ▪ Evidence of a goal or direction (gap identified) ▪ Has specific details about a plan to reach a goal ▪ Evidence of a decision-making model ▪ Provides measurable outputs/outcomes ▪ Views planning as important ▪ Identifies multiple options for solving problem ▪ Evidence of evaluating decision making progress
Affect	<ul style="list-style-type: none"> ▪ Does not address emotional component ▪ Provides no strategy for emotional coping 	<ul style="list-style-type: none"> ▪ Addresses emotional component ▪ Provides a strategy for emotional coping
Time Sensitivity	<ul style="list-style-type: none"> ▪ A sense of pessimism about the future ▪ Unrealistic expectation of time required to make a decision ▪ No acknowledgement of need for persistence and commitment ▪ Views decision-making as a one-time event 	<ul style="list-style-type: none"> ▪ A sense of optimism about the future ▪ Realistic expectation of time required to make a decision ▪ Acknowledges need for persistence and commitment ▪ Acknowledges the ongoing process of decision-making
Word Choice	<ul style="list-style-type: none"> ▪ Uses absolute words (can't, never, right) ▪ Uses imperatives (should, must, have to) ▪ Uses simple reversal (worried → not worried) 	<ul style="list-style-type: none"> ▪ Uses positive words (can, able) ▪ Does not use imperatives (should, must, have to) ▪ Uses more detailed language
Missing Key Point(s)	<ul style="list-style-type: none"> ▪ Reframe excludes a problematic element of original item ▪ Reframe does not address career-decision making domain 	<ul style="list-style-type: none"> ▪ Reframe resolves problematic elements of the original item ▪ Reframe addresses career-decision making domain
Reframe Structure	<ul style="list-style-type: none"> ▪ Reframe does not follow the parallel structure of the original item 	<ul style="list-style-type: none"> ▪ Reframe parallels structure of item (if-then, action-consequence)

Table 4

Ratings of Experts Applying Schema to Reframes

Item	Dr. A	Dr. B	Dr. C	Dr. D	Investigator
6a	-1	-1	0	1	1
6b	0	-1	0	-1	-1
6c	2	2	2	2	2
6d	1	-1	1	0	0
11a	2	2	1	2	2
11b	-1	-1	2	0	0
11c	0	0	0	-1	-1
11d	1	1	1	1	1
13a	-1	0	-1	-1	0
13b	1	0	2	1	1
13c	2	2	1	2	2
13d	0	0	0	0	-1

Table 5
Descriptive Statistics

	Mean	SD	N
Dr. A	.5000	1.16775	12
Dr. B	.2500	1.21543	12
Dr. C	.7500	.96531	12
Dr. D	.5000	1.16775	12
Investigator	.5000	1.16775	12

Table 6
*Correlations Among Raters Applying Model and
 Investigator's A-priori Judgments*

	Dr. A	Dr. B	Dr. C	Dr. D	Investigator
Dr. A	1	.801**	.524	.733**	.667**
Dr. B		1	.291	.737**	.737**
Dr. C			1	.605*	.524
Dr. D				1	.933**
Investigator					1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 7
Interrater Agreement (Cohen's Kappa)

	Dr. B	Dr. C	Dr. D.	INV
Dr. A	0.5	0.51	0.52	0.27
Dr. B		0.13	0.38	0.38
Dr. C			0.11	-0.07
Dr. D				0.77

Table 8
Percent Agreement of Raters on Schema Category Validation Task

	Agreement		Non-Agreement		Total
Experts Agreeing	5/5	4/5	3/5	2/5	
Judgments	11	8	5	1	25
%	44	32	20	4	100

Table 9
Changes Resulting from Validation of Schema by the Expert Panel

Less Effective/Less Effective Reframe	Category Change
A sense of pessimism about the future/A sense of optimism about the future	Time Sensitivity → Affect
Reactive or defensive posture/Proactive or open posture	Locus of Control → Affect
Lacks self-confidence/Has self-confidence	Locus of Control → Affect
No evidence of a decision-making model/Evidence of a decision-making model	Explicitness → Missing Key Point
Views planning as important	Explicitness → Removed from Schema

Table 10
*A Schema for Effectiveness of Reframes of Cognitive Distortions
 Influencing Career Problem Solving and Decision Making*

	Less Effective Reframe	More Effective Reframe
Locus of control	<ul style="list-style-type: none"> ▪ External focus ▪ Views self as powerless to change ▪ Attributes positive events to chance or behavior of others ▪ Defers responsibility to others 	<ul style="list-style-type: none"> ▪ Internal focus ▪ Views self as capable of change ▪ Attributes positive events to own behavior ▪ Assumes responsibility for self
Explicitness	<ul style="list-style-type: none"> ▪ Little or no evidence of a goal ▪ Uses general language about planning (lacks detail) ▪ Does not provide measurable objectives ▪ Identifies vague options for solving problem ▪ Little evidence of evaluating decision making progress 	<ul style="list-style-type: none"> ▪ Evidence of a goal ▪ Has specific details about a plan to reach a goal ▪ Provides measurable objectives ▪ Identifies concrete options for solving problem ▪ Evidence of evaluating decision making progress
Affect	<ul style="list-style-type: none"> ▪ Does not address emotional component ▪ Provides no strategy for emotional coping ▪ A sense of pessimism about the future ▪ Reactive or defensive posture ▪ Lacks self-confidence 	<ul style="list-style-type: none"> ▪ Addresses emotional component ▪ Provides a strategy for emotional coping ▪ A sense of optimism about the future ▪ Proactive or open posture ▪ Has self-confidence
Time Sensitivity	<ul style="list-style-type: none"> ▪ Unrealistic expectation of time required to make a decision ▪ No acknowledgement of need for persistence over time ▪ Views decision-making as a one-time event 	<ul style="list-style-type: none"> ▪ Realistic expectation of time required to make a decision ▪ Acknowledges need for persistence over time ▪ Acknowledges the ongoing process of decision-making
Word Choice	<ul style="list-style-type: none"> ▪ Uses absolute words (can't, never, perfect) ▪ Uses imperatives (should, must, have to) ▪ Uses simple word reversal 	<ul style="list-style-type: none"> ▪ Uses positive words (can, able) ▪ Does not use imperatives (should, must, have to) ▪ Uses more detailed language
Missing Key Point(s)	<ul style="list-style-type: none"> ▪ Reframe excludes a problematic element of original item ▪ Reframe does not address career-decision making domain ▪ No evidence of a decision-making model 	<ul style="list-style-type: none"> ▪ Reframe resolves problematic elements of the original item ▪ Reframe addresses career-decision making domain ▪ Evidence of a decision-making model
Reframe Structure	<ul style="list-style-type: none"> ▪ Reframe does not follow the parallel structure of the original item 	<ul style="list-style-type: none"> ▪ Reframe parallels structure of item (if-then, action-consequence)

Thinking More Helpful Thoughts About Career Decision Making

As you use change your negative thoughts into positive ones, use the questions below to “check” your new, more positive thoughts.

They can help you see if you are moving from a negative way of thinking to a more positive way of thinking. Not all of the questions below will apply to each of your negative thoughts.

For more help, talk with your counselor about how your negative thoughts effect your career choices and how you can take action based on your new, more positive thoughts.

Does your “new” thought help you to:

- be open to new things?
- view yourself as capable of changing?
- assume responsibility for making a choice?
- identify the problem?
- identify specific options for solving your career problem?
- create an informed and specific plan for solving your career problem?
- have a realistic estimate of the time required to solve your career problem?
- know when you have solved your career problem?
- be optimistic about the future?
- acknowledge the need for persistence?
- recognize and cope with your feelings?
- acknowledge the ongoing process of decision-making?

Does your new thought avoid

- words such as “can’t,” “never,” “perfect”?
- words such as “should,” “must,” “have to”

Table 12

Client Handout of Schema Tied to Expert Model

**Thinking More Helpful Thoughts
About Career Decision Making**

As you change your negative thoughts into positive ones, use the questions below to “check” your new, more positive thoughts.

They can help you see if you are moving from a negative way of thinking to a more positive way of thinking. Not all of the questions below will apply to each of your negative thoughts.

For more help, talk with your counselor about how your negative thoughts effect your career choices and how you can take action based on your new, more positive thoughts.

Does your “new” thought help you to:

- be open to new things? (*proactive or open posture*)
- view yourself as capable of changing? (*views self as capable of change*)
- assume responsibility for making a choice? (*assumes responsibility for self*)
- recognize the problem? (*reframe resolves problematic elements of the original item*)
- name specific options for solving your career problem?
(*identifies concrete options for solving problem*)
- create an informed and specific plan for solving your career problem?
(*has specific details about a plan to reach a goal*)
- have a realistic estimate of the time required to solve your career problem?
(*realistic expectation of time required to make a decision*)
- know when you have solved your career problem? (*provides measurable objectives*)
- be hopeful about the future? (*a sense of optimism about the future*)
- acknowledge the need for persistence? (*acknowledges need for persistence over time*)
- recognize and handle your feelings?
(*addresses emotional component and provides a strategy for emotional coping*)
- acknowledge the ongoing process of decision-making?
(*acknowledges the ongoing process of decision-making*)

Does your new thought avoid

- words such as “can’t,” “never,” “perfect”? (*uses absolute words*)
- words such as “should,” “must,” “have to” (*uses imperatives*)

Figure 1. Pyramid of Information Processing Domains In Career Decision Making,. **Note.** From *Career Development and Services: A Cognitive Approach* (p. 28), by G. W. Peterson, J. P. Sampson, and R. C. Reardon, 1991, Pacific Grove, CA: Brooks/Cole Publishing Company.

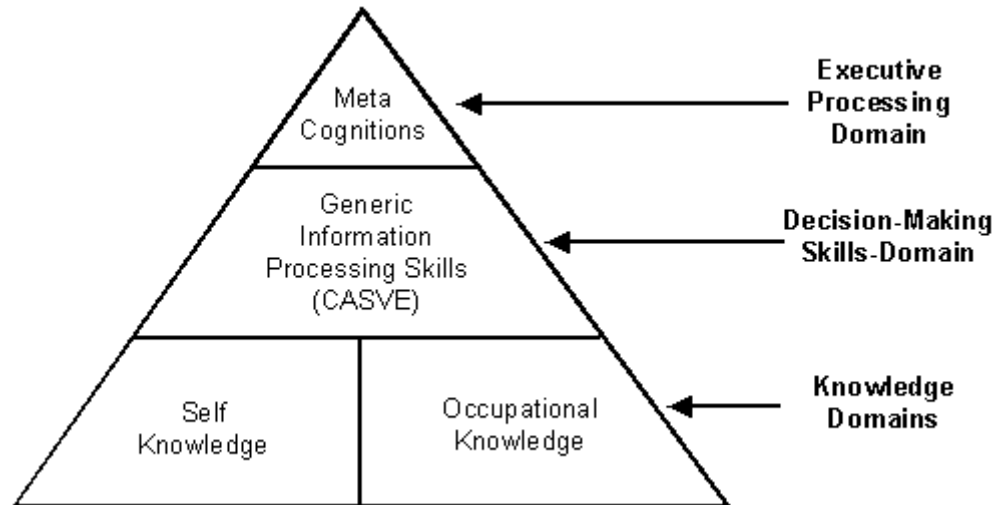
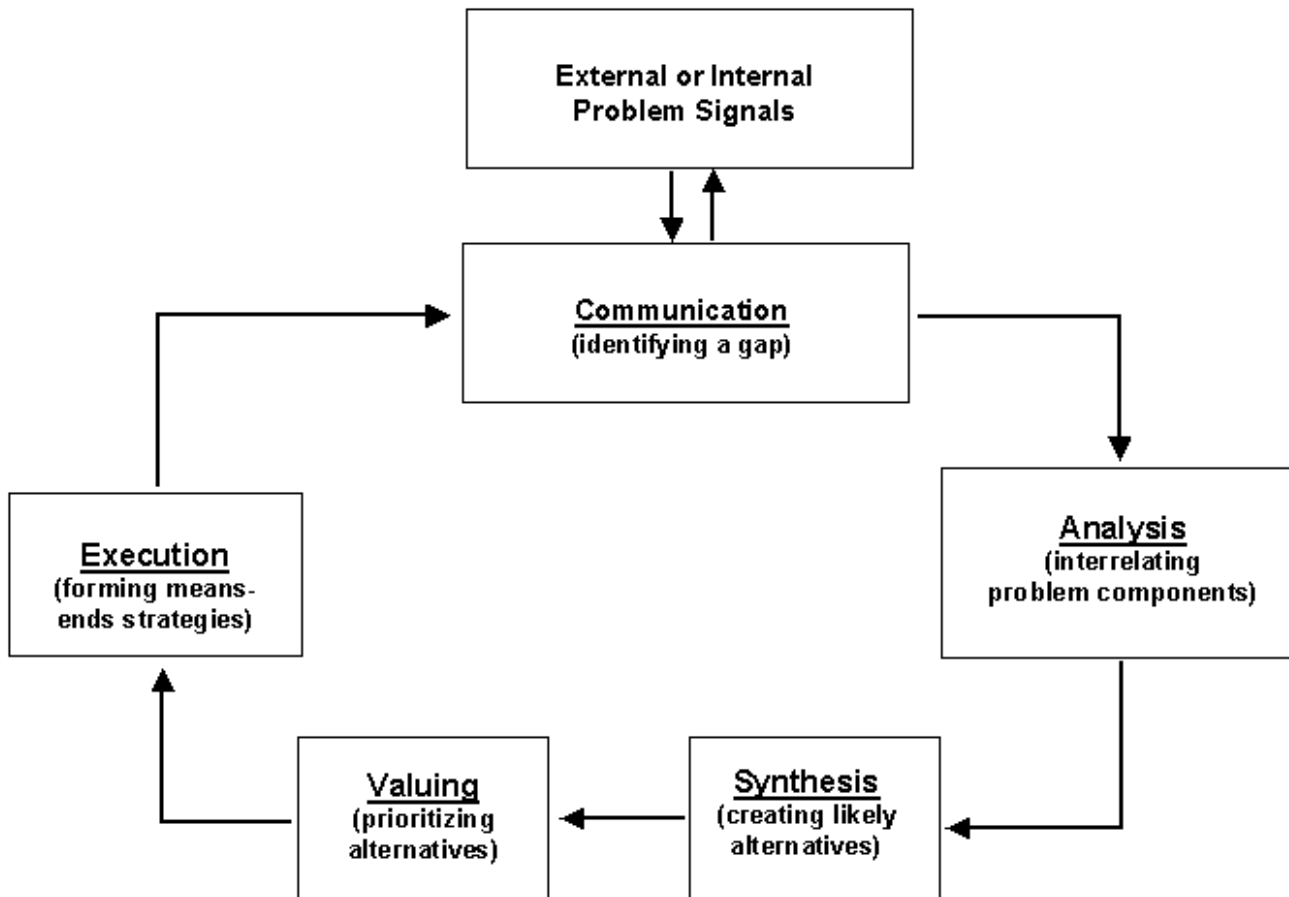


Figure 2. The Five Stages of the CASVE (Communication, Analysis, Synthesis, Valuing, Execution) Cycle of Information Processing Skills Use in Career Decision-Making. **Note.** From *Career Development and Services: A Cognitive Approach* (p. 33), by G. W. Peterson, J. P. Sampson, and R. C. Reardon, 1991, Pacific Grove, CA: Brooks/Cole Publishing Company.



Appendix A

**Systematic Cognitive Errors/Distortions Identified by Aaron Beck
(Beck, 1976; Beck, 1967; Beck et al., 1979)**

Arbitrary inference (mind reading):	making conclusions in absence of supporting or presence of conflicting information (e.g., I'm not a good teacher, even after receiving good ratings from students.)
Selective Abstraction:	focusing on one detail outside of context (e.g., jealousy from date talking to another person at a party)
Overgeneralization:	creating a rule from too little evidence (e.g., All men are pigs, because I got stood up once.);
Magnification (catastrophizing) & minimization:	viewing something as far more or less significant than it is (e.g., If I don't pass this class my parents will hate me, It's not important to pay your taxes)
Personalization	attributing events to self without causal evidence (e.g., laughing people are talking about me)
Dichotomous thinking:	categorizing in extremes (e.g., I will be either a total success or a total failure.)
Should statements:	absolute imperatives regarding behavior of self or others (e.g., I must be the #1 sales generator for my company.)

Appendix B

Instructions for Think Aloud Protocol

On the following page are 8 statements taken from the Career Thoughts Inventory and corresponding reframes made by evaluation study participants to these statements.

For each item please complete the following steps while voicing your thoughts aloud.

I will prompt you through the steps for each item.

1. Read aloud the original CTI item in bold.
2. Read aloud the participant response.
3. Answer aloud the following questions:
 - a. Did the participant appear to understand the task?
If no, what appears to be the problem?
 - b. How has the participant altered the statement?
 - c. What strategy does the participant appear to be using?
 - d. Has the participant successfully reframed the statement?
 - e. How would you rate the quality of the reframed statement (1= marginal, 2=moderate, 3=high)?
 - f. What evidence supports your decision in e?
 - g. Do you have any additional thoughts about this statement?
4. Feel free to write or draw on the worksheet given you.

Thank you for your assistance.

Form A***1. I get upset when people ask me what I want to do with my life.**

I don't get upset because I know I am capable of choosing what I want to do.

2.

It will take time, but through a systematic plan for researching library resources and personal contacts are effective.

3.

There is always a risk no matter what occupation or field of study I choose, but I just need to have a good choice and alternatives.

4.

I can talk to people in my field or in a particular occupation to help understand if it is in my best interest.

5.

My age gives me more experience on my occupational choices.

6.

It is not hard to settle on just one field of study or occupation.

7.

Finding a good job is a matter of hard work & lots of effort.

8.

I should talk to someone to help me and guide me to my right path.

*Items removed to maintain instrument security.

Form B*

1. **My achievements must surpass my mother's or father's or my brother's or sister's.**
My achievements should make me happy and don't necessarily have to surpass my family members.
2.
I can learn about the work world and make an educated decision about my future.
3.
I am indecisive about my field of study or occupation but I am working on my decision making.
4.
I must be dedicated and well studied.
5.
I am aware of occupations I'm interested in, I know one day I'll have to make a choice.
6.
I need to be happy with my career.
7.
I am excited to try new things.
8.
If they are my decisions then I should trust them.

*Items removed to maintain instrument security.

Appendix C

Instrument to Assess Model Reliability

Step 1: Read the original item and then the cognitive reframes of the original item.

Step 2: Rate each reframe from -1 (less effective) to 2 (more effective) using the criteria listed on the next page.

6. The views of important people in my life interfere with choosing a field of study or occupation.

- | | | | | |
|----|---|---|---|---|
| -1 | 0 | 1 | 2 | a) Other people are only trying to help me when they express their views, I should listen to their suggestions. |
| -1 | 0 | 1 | 2 | b) It's not important to me what other people think. |
| -1 | 0 | 1 | 2 | c) I can listen to both myself and to other people, then choose a major or career. |
| -1 | 0 | 1 | 2 | d) The views of important people in my life do not interfere with choosing a field of study or occupation. |

11. I'm so frustrated with the process of choosing a field of study or occupation I just want to forget about it for now.

- | | | | | |
|----|---|---|---|--|
| -1 | 0 | 1 | 2 | a) I know I feel frustrated right now, but if I educate myself and have a plan, then things will turn out all right. |
| -1 | 0 | 1 | 2 | b) I have already chosen my major. |
| -1 | 0 | 1 | 2 | c) I don't have the time to be frustrated about choosing a major or occupation |
| -1 | 0 | 1 | 2 | d) It doesn't help me to ignore that I need to choose a major, even though I may feel frustrated. |

13. I'll never find a field of study or occupation I really like.

- | | | | | |
|----|---|---|---|---|
| -1 | 0 | 1 | 2 | a) Eventually I'll run into a major that fits me. |
| -1 | 0 | 1 | 2 | b) I will find a major or career that I can enjoy |
| -1 | 0 | 1 | 2 | c) If I explore different majors and careers I'll eventually find one that fits me. |
| -1 | 0 | 1 | 2 | d) Finding a job that I like isn't important to me, I work to live instead of living to work. |

Appendix D

Procedure for Finalization of Schema

Each criterion on the “Agreement NOT Achieved Sheet” will be addressed in turn using the following procedure

- a) Experts read the criterion in question and jot down a brief definition of the categories in question and their rationale(s) why the criterion fits in the category w/o conversation
- b) Each expert will share their definitions and rationale
- c) Facilitator will read definition from external source (if available)
- d) Facilitator will ask for discussion lasting no longer than 5 minutes
- e) Facilitator will ask experts to circle their favored category

After the meeting, data will be tabulated by facilitator, the model revised. Those items not achieving consensus among at least 4 experts will be dropped from the model.

Appendix E

**Raw Data from Structured Interviews
Sorted by Emergent Categories**

Locus of Control

placed this in an active mode that depends on shifting to internal locus of control, constructed response in form of capability that he is able to learn and demonstrate has demonstrated an effective coping mechanism in form of learned ability/capability

has been reframed in terms of an ability or capability that puts locus of control as an internal state rather than external state

its framed so that it eliminates defensiveness or a move from reactive to proactive"

converted a passive response into an action in the form where he can take control, turned from learned helplessness into helpful action.

cognitive reframing in terms of an action oriented response

changed it in terms of Locus of Control, it's a classic reframe of Locus of Control,

shifting from an external locus of control, cognitive reframing from an external state to an internal state

Did not answer in terms of acquired ability or capability, perpetuates learned helplessness, remains an external locus of control

by asserting that the person is able/capable of making choices."

Reasserting capability of self-direction

They have personalized it so that it is not just a matter of chance but a result of effort

indicates individual responsibility that it is not external but internal that effects the outcome

Altered it by indicating the personal effort required to successfully do the task (i.e., find a job)

They have introduced the idea of getting an outside person to provide guidance.

Kind of an external strategy.

Doesn't acknowledge the nature of the problem (e.g., complex thing) or that the person is unable to follow a model or process and so it's a partial reframe because they recognize the gap, but they just want somebody to turn things over to.

They've owned that it is about their own happiness, given themselves some margin

Focusing back on themselves and acknowledging that they can be successful without surpassing family to think positively about their ability to achieve a task (a sense of optimism is seen)

and acknowledged effort to make a decision

"giving themselves some credit that they know about some occupations that fit,

If I do make decisions then I can have confidence, It is possible to trust myself. Can imagine trusting their decisions

Trying to be more confident about trusting their decision making.

"the identified the elements of the item that are most problematic like focusing on themselves (make me happy vs. surpass relatives expectations)"

he/she is also being more inner directed than other directed (statement is external, make reframe internal)
 the concept of being other directed vs. inner directed the item is clearly other dominated, the response is clearly inner directed

Increased acceptance of personal responsibility

. Good ?, they are both I statements --> responsibility."

They maintained the ""I"" statement which is evidence of accepting responsibility (maintained the inner directedness of the items in the reframe)."

their strategy reflects a realistic recognition that a choice will be needed in the future (Super's career maturity construct of acceptance of responsibility).

the response is more confident, the switch in locus of control,

"they have focused on their capability and their ability to be successful in the task (e.g., ""I can learn"" in the item there is an implied ""I can't",,"

Explicitness (Process)

altered it through developing a strategy for finding information, has formulated a systematic plan

"forming a plan for a ""library search and making personal contacts"" and these will be effective"

has specified direction but without supporting detail, this is goal language as opposed to measurable observable objectives

"But I just need to have a good choice and a timeline"" --> second part leaves more to be desired

its like the executive/conceptual part is done but no the operational

"its accepting risk but the second part falls short of a top level response its not ""just a"" it would require full responses to have a good ? Options and commitment"

did not engage multiple sources of understanding (no process, no multiple sources)

seems to not have much of a decision making model to draw upon.

avoid the ""how"" but that they know they need to make a choice at some point"

""working on my decision-making"" which is vague, but better than nothing."

"The problem is that it does not say anything about ""how"" they are going to make a choice.

problem: still vague, not concrete enough with regards to decision making,

whereas the reframe includes the intended behavior.

Explicitness (Options)

by changing a limiting into an expanding (it does not limit options it creates options)

"the sentence ""more experience"" with which to consider occupational choices poorly worded brings in experience factor but doesn't say how it contributes to creating options, does not say how age operates as a positive"

Just identifying an activity to deal with a problem

I don't think so, They only pick up on part about information interviews. Didn't really alter the statement, just responded with an option related to getting information.

identified methods of getting information about jobs in field and identified that it takes time to do that.

"problem: in the reframe they do not evaluate their present occupational knowledge ""I know so little"" requires a response statement about what they do know."

Affective Dimension

"has addressed the affective/worry component by saying there is always risk no matter what, opening himself up to inherent risk. "

reframing and accepting risk as part of my choices

He's partially gotten at the worry but not totally. Admitting risk is part, process of having confidence in a choice. This is a partial reframe (e.g., like ways to bail out of a marriage, requires commitment (symptom vs. core of problem).

Deeper level of processing rather than verbal skill (can teach a skill, but can they internalize it) High level response requires some level of internalization evident. This touches on integrating cognitive/behavioral and affective domains.

"I don't feel like they addressed the part of ""worrying a great deal",” it would have been better in the 2nd part to talk more about process of decision making than making a good choice."

Time Sensitivity

its shallow, even though is action oriented, a high level response would acknowledge ongoing process of learning about occupations,

would also have to add persistence to be high quality and a good choice

identified methods of getting information about jobs in field and identified that it takes time to do that.

(a sense of optimism is seen)

They are maintaining the future focus of the item.

Disabling/Enabling Words

reframing a negative into a positive

Yes, but didn't do it (no). Minimal effort to reframe. Just inserted a negative. This person was exhausted or....

"two ways, just reversed it ""I don't get upset",”

They just reversed it, it disagrees with the original thought but does not address it or reframe it.

"acknowledged the fact that it is impossible to choose ""the right field",” recognized that one needs to make best possible choices under circumstances and have options available"

backed off absolute part

just kind of edited the original statement

with a positive, active statement

they've chosen a descriptive word that better fits them (personalized)

shoot self in foot with ""I'll have to""

"still ""shoulding"" themselves could be more positive"

saying ""not necessarily is a more open, flexible, conditional term which reflects reality"

"they identified some key words (e.g., ""surpass"") and they are making the concept more conditional or realistic

reframed statement from negative to positive (know so little --> I can learn), linking the perception about themselves to the decision

"problems with statement - ""should"" implies a fixed set of absolute truths (e.g., Albert Ellis and some of the problem associated with the term should)."

"they have eliminated absolute thinking in terms of the word ""never""

they have also eliminated the absolute thinking in terms of the word ""can't"."

" The other thing is that there is absolute thinking in ""won't"" there is not relativism/condition thinking in the response.

Just disagreed with original statement.

the word ""so"" is evidence of absolute thinking [magnification],

in the item there is an implied ""I can't"

they have revised it from passive to active

Striking a Balance

they have taken a moderate view, focused on own needs have a balanced view

takes a balanced view while being positive, not pie in the sky but acknowledging work to be done (realistic view of task)

did not acknowledge key element of having a balance between pleasing self and pleasing others.

age does not limit choice of occupations but in some instances age is a factor in hiring or selection (a more full reframe) age should not limit choice, but may limit opportunity.

"I think that this one if it was a more complex thought, longer statement that encompassed more it would be a higher rated reframe. For example a ""good job in my field"" reframe could acknowledge that hard work and effort can be affected by chance. Could add time dimension (e.g., ""longer one stays at it the better the job.) Adding some things to provide more evidence of a reframed thought based on additional knowledge, insight, and understanding."

reflecting reality,

Item/Reframe Structure and Syntax

reframe is consistent with content and the phrasing of the item is similar

no consequence or causality (I'm excited to try new things that I would enjoy.) The original item has an If-Then structure, the response does not. (If I risk myself, then there is a chance I will be successful).

The other thing that makes it a good reframe is they understand how learning about the world of work relates to decision-making. An appropriate ""If-then"" relationship."

It's more positive and its better linked to career decision-making behavior

they have revised it from passive to active, the reframe provides something to help them resolve situation, they are focusing on where the problem is (the indecisiveness)

"The reframe does not address the content of the item (e.g., complexity of occupational knowledge, complexity of decision making, complexity of self-knowledge, did not address absolute thinking "I'll never be able to make a good choice",) response is vague and doesn't relate to career decision making"

"They are trying to be more specific in their response. "I'm aware of occupations that I'm interested in" but only in a minimal way because this is similar to the reframe. They are maintaining the future focus of the item. They are keeping the reframe parallel to the original item in the content and grammar."

Missing the key point or points of an item

I don't feel like they really reframed the original thought and they don't really deal with the notion of choosing, kind of incomplete, minimal reframe

"not much of one, more of a statement of own situation than content of statement, does not deal with "embarrassed to let others know""

made some effort but haven't totally dealt with content of statement, thinking not complex in terms of analyzing

didn't really deal with content of statement

"rather than focus on "liking" focused on awareness and need to make a choice"

identification of the most problematic elements of the original item.

it does not deal with significant others issue its excessively vague (happy and career)

It does not identify a key problematic element of the item."

" A problem is that the reframe does not include any mention of career. The item deals with trust and positive outcome, reframe only deals with trust

They have identified the essential elements of the item (e.g., trust) they found only one key points (trust) and reframed that appropriately, reframed the I statement

doesn't deal with both elements of the original item (trust and outcome) doesn't deal with career, very general.

Appendix F

Individual Learning Plan

Goal(s):

#1 _____

#2 _____

#3 _____

Activity	Purpose/Outcome	Estimated Time Commitment	Goal #	Priority

This plan can be modified by either party based upon new information learned in the activities of the action plan. The purpose of the plan is to work toward a mutually agreed upon career goal. Activities may be added or subtracted as needed.

Student/Client/Customer Date

Staff Member Date