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CAREER COUNSELING AS AN ENVIRONMENTAL SUPPORT:
EXPLORING INFLUENCES ON CAREER CHOICE,
CAREER DECISION-MAKING SELF-EFFICACY, AND CAREER BARRIERS

BY

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DISSERTATION

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Abstract

This study was motivated by concerns regarding the difficult academic and career choices facing today's college students as they navigate higher education and encounter career barriers along their paths. Using Social Cognitive Career Theory (SCCT; Lent, Brown, & Hackett, 1994) as a primary framework, the study sought to understand the role that individual career counseling could play as an environmental support to help students explore options, make choices, set goals, and take the necessary steps to implement their choices and persist to their goals. The research questions examined both the outcomes of participating in individual career counseling (e.g., changes in career decision-making self-efficacy and perceptions of career barriers), and the process of participation as viewed through students' perspectives (e.g., components of career counseling that students found most helpful).

This study employed a quasi-experimental design using mixed methods to examine first-year college students' interpretations of individual career counseling experiences, as well as the influence of those experiences on career choices, career decision-making self-efficacy (CDMSE), and perceptions of career barriers. Employing a mixed methods approach in data collection and data analysis provided opportunities to (a) build on the primarily quantitative past research through use of preestablished and tested survey instruments to examine career intervention outcomes, (b) develop a deep understanding of students' experiences via interviews to examine the career choice process, and (c) uncover unique insights by employing the multiple lenses offered by a mixed methods approach.

The study targeted first-year college students who had not selected a major or academic focus upon entrance to a large, 4-year public university. A total of 130 students persisted in the study, including 33 in the treatment group and 97 in the control group. The treatment was a

structured career development intervention consisting of (a) an initial individual career counseling appointment; (b) a performance accomplishment activity related to the particular student's unique career development needs; and (c) a second individual career counseling appointment that provided support for reflection on and interpretation of the performance accomplishment activity, as well as discussion of possible next steps. Survey and interview data were collected at three times over the course of a full academic year: (a) prior to the intervention, (b) 2 to 4 weeks following the intervention, and (c) 5 to 6 months following the intervention. Data analysis considered immediate outcomes of individual career counseling participation, the influence of lag time on those outcomes, and student perceptions of what contributed to the outcomes they experienced.

The main contribution of this study relates the process of individual career counseling, and the major findings are discussed from two perspectives. First, the components of career counseling that emerged as particularly influential for facilitating students' career choices are presented, including (a) resource and information delivery; (b) career counselor—client relationships that were marked by a sense of openness, flexibility, demonstrations of genuine interest and attentiveness to students' stories, and invitations to return for further assistance; and (c) student engagement in performance accomplishment activities related to making and implementing career choices. Second, the areas of the career choice process that were influenced by career counseling are discussed. Comparisons are made to the influences theorized in SCCT, with evidence uncovered that both supports the model proposed by Lent et al. (1994) and suggests potential theoretical expansions for future research.

Beyond the process-oriented contributions of this study, findings are presented regarding the observed outcomes of individual career counseling, addressing both the outcomes

specifically outlined within the research questions (changes in CDMSE and perceptions of career barriers) and additional insights that emerged within participant interviews, such as making progress on career choice tasks, experiencing affective changes, and motivating future help-seeking intentions and behaviors. Finally, the findings address compelling issues that were not initially central to the study, yet emerged during the data collection and analyses. These issues include (a) client readiness for seeking assistance, (b) potential spaces for career counseling to affect career barrier reduction and connections with environmental supports, and (c) limitations of individual career counseling.

Study findings related to the process and outcomes of participating in individual career counseling led to suggestions of potential new theoretical connections regarding the ways in which career counselors influence students. Insights were also gained regarding the role that individual career counseling can play as an environmental support to facilitate the career choice process. Implications are offered for theory, research, and practice.

*for Jonathan, Abigail, and Sophia,
my joy and inspiration*

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Chapter 1

Introduction

Studies of college impact suggest a powerful rate of return for students who pursue and complete postsecondary degrees (Astin, 1993; Pascarella & Terenzini, 2005). Intellectually, higher education participants experience substantial gains in knowledge areas such as math, reading, science, and technology (e.g., Flowers & Pascarella, 1999; Hagedorn, Siadat, Nora, & Pascarella, 1997; Knox, Lindsay, & Kolb, 1992; Myerson, Rank, Raines, & Schnitzler, 1998), as well as in transferable skill areas such as critical thinking (e.g., Bers, McGowan, & Rubin, 1996; Drouin, 1992; Facione, 1997) and leadership abilities (e.g., Astin, 1993; Cress, Astin, Zimmerman-Oster, & Burkhardt, 2001). Professionally, the attainment of a bachelor's degree increases both average net annual earnings and the likelihood of entering high-status occupations (e.g., Knox, Lindsay, & Kolb, 1993; Lavin & Hyllegard, 1991; Pascarella & Terenzini, 2005) and decreases the likelihood of being unemployed (e.g., Blau, Ferber, & Winkler, 1998; Pascarella & Terenzini, 2005; Paulsen, 1998), as compared with those holding only a high school diploma. Regarding quality of life, higher education participation has also been linked to better physical health (e.g., Bucher & Ragland, 1995; Gilleski & Harrison, 1998; Winkleby, Fortmann, & Barrett, 1990) and increased civic and community involvement (e.g., Knox et al., 1992; Pascarella & Terenzini, 2005). These findings suggest that participation and persistence in higher education is a desirable pursuit.

Although college degree completion offers many potential benefits, college students often struggle with challenges that threaten to derail their academic and career progress. Within the career development literature, these challenges are often referred to as career barriers which are defined as “events or conditions, either within the person or in his or her environment, that

make career progress difficult” (Swanson & Woitke, 1997, p. 446). College students experience career barriers in many formats, including financial pressures, conflicts between multiple life roles, lack of readiness for college-level work, and difficulty with decision making (e.g., McWhirter, Torres, & Rasheed, 1998; O’Leary, 1974; Swanson & Woitke, 1997). Fortunately, research has also demonstrated that college students perceive environmental supports related to exploring, making, and implementing career choices. Environmental supports are events, conditions, or resources that facilitate career progress (Lent, Brown, & Hackett, 2000); they may be derived from a variety of sources such as significant others (e.g., parents, siblings, peers, advisors, counselors, teachers), financial aid resources, and programs designed to facilitate transitions to college (e.g., Ferry, Fouad, & Smith, 2000; Lent et al., 2002; Quimby & O’Brien, 2004).

Despite the literature’s advances in identifying the types of environmental supports and career barriers that students may perceive, the process by which students interpret and act on these influences is not well understood (e.g., Lent et al., 2000; Swanson, Daniels, & Tokar, 1996). For instance, although some college students are motivated by career barriers they see as challenges to overcome, others become immobilized and disheartened, hindering their progress toward higher education degrees and other career-related goals (e.g., Luzzo, 1995; Luzzo & Hutcheson, 1996; Swanson & Tokar, 1991). Career barriers also affect students at differing points in their decision-making process. Some college students are overwhelmed by the sheer number of options available on entering higher education, whereas others quickly select an option, yet become lost in a maze of how to implement their choices successfully (Sampson, Reardon, Peterson, & Lenz, 2004). Furthermore, the experience of perceived environmental supports and career barriers is confounded with other attributes such as personal affect (e.g.,

Creed, Patton, & Bartrum, 2004), coping efficacy (e.g., Lent et al., 2001), and occupational choice (e.g., Lindley, 2005). The complex and confounded nature of the process by which environmental supports and career barriers affect career choices has led to divergent and sometimes confusing findings across research studies. For example, studies by Luzzo (1993), Luzzo and McWhirter (2001), McWhirter (1997), and McWhirter, Torres, Salgado, and Valdez (2007) produced contradictory findings when examining differences between ethnic groups regarding perceptions of future career barriers such as racial discrimination, sex discrimination, and financial concerns. Moreover, conceptual and methodological research issues have been identified as contributing to such difficulties. Conceptually, studies have been plagued by poor definitional understandings of environmental influences, such that terms are not defined consistently across studies, and researchers and participants within a single study may not be operating from common understandings of the phenomena under consideration (Lent et al., 2000). Methodologically, the validity and appropriateness of existing quantitative instruments, as well as inadequate attention to moderating variables (e.g., coping efficacy, personal affect, and occupational choice) has been called into question (e.g., Lent et al., 2000; McWhirter, Rasheed, & Crothers, 2000). Greater definitional clarity and diversification of research methods to include longitudinal, qualitative, and mixed methods approaches are needed in future research (Fouad & Arbona, 1994; Lent et al., 2000; Luzzo, 1999; Rivera, Chen, Flores, Blumberg, & Ponterotto, 2007).

One promising, yet often overlooked, strategy for supporting students in the attainment of their academic and career goals in college is student engagement in professional academic, vocational, and career advising relationships (Astin, 1993; Bedsworth, Colby, & Doctor, 2006; Light, 2001; Tinto, 1999). For example, as a result of an interview study with more than 1,600

undergraduate students, Light (2001) concluded that “good advising may be the single most underestimated characteristic of a successful college experience” (p. 84). Smaller scale studies conducted by Groccia and Harrity (1991) and Jurgens (2002) provided additional evidence supporting the relationship between career interventions, major selection, and student persistence in college. Yet as promising as these studies may sound, they provide little insight into how or why such advising relationships and interventions help students achieve their goals (e.g., Oliver & Spokane, 1988; Whiston, Sexton, & Lasoff, 1998).

Statement of the Problem

Today’s college students face difficult academic and career choices with many potential career barriers along their paths. They can become stymied by perceived career barriers and indecision, “floundering” from one major to the next and slowing their progress toward their degrees (Betz, 2004, p. 344). Experiencing such “prolonged uncertainty” in regard to college goals “often leads students to call into question the reasons for their continued presence on campus” (Tinto, 1993, p. 172), and can ultimately reduce the likelihood of students persisting to their higher education goals and accessing the personal and societal benefits of a college degree (Gordon, 1985).

Decades of career development research has shown that career interventions generally support college students in making transitions, as well as defining, setting, and creating plans to reach academic and career-related goals (e.g., Baker & Popowicz, 1983; Diegelman & Subich, 2001; Fretz, 1981; Myers, 1986; Oliver & Spokane, 1988; Ryan, 1999; Whiston et al., 1998; Whiston, Brecheisen, & Stephens, 2003). However, due to the scarcity of research that examines the process of making career choices and limitations in research designs of available studies (Brown & Ryan Krane, 2000; Hughes & Karp, 2004; Oliver & Spokane, 1988; Whiston et al.,

1998), few conclusions can be drawn regarding the types of interventions that are particularly helpful or meaningful to college student participants. For instance, career intervention outcomes studies often examine short-term interventions and use short-term data collection, which does not offer a great enough temporal lag for student development to occur and be observed (e.g., Hughes & Karp, 2004; Luzzo, Hasper, Albert, Bibby, & Martinelli, 1999). In addition, the primarily quantitative approaches taken may show changes before and after an intervention, yet they do not provide insights regarding why or how these changes occurred. It is as if the experience of participating in the career intervention is hidden within a black box. What really happens within these interactions? How do students experience career interventions? How could career interventions be improved to meet students' needs so that fewer become stymied or lost in the academic pipeline, leaving college without achieving their goals?

Purpose of the Study

This study examined first-year college students' perceptions of and experiences in individual career counseling, which was conceptualized as an environmental support designed to help students transition to college and to explore academic major and career options. Changes in students' perceptions were examined over time, specifically regarding career choices and career decision-making self-efficacy, as well as perceptions of career barriers and sources of environmental supports. The study aimed to demonstrate outcomes of participation in individual career counseling, drawing connections to past career intervention outcomes literature. Yet, it also aimed to move beyond past outcomes studies by identifying specific, process-oriented aspects of individual career counseling that were particularly influential in supporting college students in making and implementing career choices.

Study design components were carefully selected to contribute to achieving the study purpose. For example, past research shaped the selected career intervention, which consisted of (a) an initial individual career counseling appointment, (b) a performance accomplishment activity related to the particular student's unique career development needs, followed by (c) a second individual career counseling appointment that provided support for reflection on and interpretation of the performance accomplishment activity, as well as a discussion of possible next steps. Individual career counseling was selected as the intervention of choice due to its consistent emergence in the literature as an effective intervention strategy for achieving desired outcomes, particularly as compared to other career interventions such as workshops, computer assisted career guidance, and self-directed approaches (Hughes & Karp, 2004; Ryan, 1999; Whiston et al., 1998). The inclusion of a performance accomplishment activity was based on research demonstrating that this strategy is capable of enhancing the self-efficacy of career counseling clients (e.g., Bandura, 1986; Diegelman & Subich, 2001; Luzzo & Day, 1999; Luzzo et al., 1999), thereby supporting an individual in making career choices (Betz, 2004, 2007; Lent, Brown & Hackett, 1994). Basing the career intervention for this study on intervention components that were shown to be effective in the past was expected to increase the likelihood of observing desired outcomes following the treatment. This facilitated the connections to past research on career intervention outcomes, which is primarily quantitative with short-term data collection periods, while advancing the literature by examining students' evolving interpretations of the processes that contributed to those outcomes.

Lent et al.'s (1994) Social Cognitive Career Theory (SCCT) provided a theoretical foundation for the study, because it has been recognized as a promising approach for examining the processes through which people make and pursue career choices (e.g., Albert & Luzzo, 1999;

Ali & McWhirter, 2006; Chartrand & Rose, 1996). Through the lens of SCCT, career interventions may be viewed as one example of an environmental support that strives to facilitate the process of making and implementing career choices. The study sought to understand the role that individual career counseling with accompanying performance accomplishment activities played in the experience of students as they (a) developed academic and career interests, (b) made educational and occupational plans, (c) engaged in performance accomplishment activities and interpreted their level of success, (d) understood and addressed perceived career barriers, and (e) recognized and embraced environmental supports.

Additionally, in terms of research methods, a quasi-experimental design using mixed methods was embraced to examine changes in students' perceptions of individual career counseling, career barriers, and other environmental supports that influenced their academic and career choices. Three rounds of surveys and interviews occurred over the span of an academic year to provide temporal lag time to observe changes in students' perceptions of their opportunities and decisions (Hughes & Karp, 2004; Luzzo et al., 1999). Using established survey instruments served multiple purposes, including (a) making connections to previous literature, which is dominated by quantitative study designs, (b) responding to calls for research employing standardized measures that can be compared across research studies (e.g., Oliver & Spokane, 1988; Whiston et al., 1998), and (c) exploring changes over time across a single sample of participating students, a task to which survey methods are well-suited (Krathwohl, 1998). Iterative interviewing and member checking provided "in-depth accounts" (Luzzo et. al, 1999, p. 139) of students' experiences with the career choice process, allowing for a deep understanding of how students come to hold beliefs about their own capabilities and the environmental factors that influence their educational and career choices (Usher & Pajares, 2008).

Research Questions

This study sought to develop an understanding of first-year college students' perceptions of and experiences in individual career counseling, and was guided by the following four research questions:

1. How do students interpret their experiences of participating in individual career counseling early in their first college year?
2. What influences do students perceive individual career counseling to have on their:
 - development of academic and career interests?
 - development of educational and occupational plans?
 - engagement in performance accomplishment activities?
 - interpretation of performance accomplishment activities?
 - career decision-making self-efficacy (CDMSE)?
 - perceptions of environmental supports?
 - perceptions of career barriers?
3. Do students who participate in individual career counseling experience an increase in CDMSE beyond that expected due to maturation, as demonstrated by the control group?
4. Do students who participate in individual career counseling experience greater change in the magnitude of perceived career barriers than those expected due to maturation, as demonstrated by the control group?

Note the nondirectional nature of the fourth research question. This neutral phrasing recognized that some areas of perceived career barriers could potentially decrease as a result of the career intervention, while others could increase as a result of progressing to new developmental challenges. The question aimed to identify change, both positive and negative.

To address these research questions, data were collected from both a treatment group and a control group at three points in time: (a) prior to the intervention, (b) approximately 2 to 4 weeks after the intervention, and (c) approximately 5 to 6 months after the intervention. Two primary data collection methods were employed. The first two research questions were addressed by a series of three interviews at the aforementioned times. These questions responded to the gap

in related literature regarding the need to understand how people interpret their career choice experiences (Luzzo, 1999; Rivera et al., 2007) and were derived from current theoretical understandings of how environmental supports affect career choices in SCCT (Lent et al., 1994). Participants in both the treatment and control groups were interviewed regarding their current career choices, as well as the career barriers and environmental supports they perceived. Participants in the treatment group were also asked directly about their experiences in individual career counseling.

To address the third and fourth research questions, previously developed and tested measures were used to examine changes in students' perceptions over time. Data were collected from both the treatment and control groups to address changes over students' first academic year due to maturation unrelated to the individual career counseling treatment. The administration of the three rounds of surveys occurred concurrently with the interview times. The instruments selected for this purpose were the Career Decision Self-Efficacy Scale (CDSE Scale; Betz & Taylor, 2001) and the Career Barriers Inventory–Revised (CBI-R; Swanson, 1995a). The CBI-R measures students' expectations regarding a variety of career barriers that may interfere with their career progress. The CDSE Scale addresses participants' perceived self-efficacy for completing the necessary tasks for making academic and career decisions (Betz & Taylor, 2006). Such beliefs about one's own capabilities have been theorized to influence behavioral choices, performance, and persistence (Bandura, 1997; Betz & Taylor, 2006; Lent et al., 1994).

The juxtaposition and mix of the resulting survey and interview data offered greater richness of understanding of the questions posed in this study than could be achieved by using a single data collection method (Greene, 2007). The survey findings provided an enhanced avenue to connect the study findings with the existing literature, which is largely quantitative in nature.

The interview findings provided a greater depth of understanding regarding how students perceived the experience and influences of individual career counseling than has been available in past research.

Significance of the Study

This study extended previous work on environmental supports and career barriers by moving beyond the existing and extensive categorizations of influences (e.g., Crites, 1969; McWhirter et al., 1998; Swanson & Tokar, 1991), toward a conceptualization of students' experiences and development while they were engaged in a career intervention. The study was intended to develop a deep understanding of the process by which students come to see themselves as effective career decision-makers who can appropriately engage environmental supports and address career barriers.

This study also explored the outcomes of a specified support service—individual career counseling appointments with performance accomplishment activities—that is commonly available to college students at higher education institutions across the United States. For instance, at the institution participating in the study, this three-part intervention would be openly available to any student who wished to pursue it. Findings from this study can inform higher education administrators and practitioners about outcomes associated with career counseling and advising services, thereby addressing calls for evidence demonstrating the difference that higher education institutions can make in students' lives (e.g., Ewell, 2001; Schroeder, 1996; U.S. Department of Education, 2006; Wingspread Group on Higher Education, 1993).

The selected research design also contributed to the literature. The substantial focus on participant interviews addressed the call for qualitative research to clarify the complex nature of environmental influences on the career choice process (Luzzo, 1999; McWhirter, 1997; Rivera et

al., 2007). In addition, data were collected over the span of an academic year, recognizing the importance of providing time and space for development to occur (Hughes & Karp, 2004; Luzzo et al., 1999). Together, these research design aspects addressed a literature gap described most aptly by Fouad and Arbona (1994):

Because the person and the environment affect each other in complex and reciprocal ways, conducting research from the perspective of the developmental-contextual model requires longitudinal and qualitative methodologies that allow for the observation and description of people's interactions with their environment. (p. 102)

In addition, mixed research methods were employed, which is rarely found in the research literature regarding environmental influences on the career choice process. The aim of this strategy was to develop a “broader, deeper, and more comprehensive social understanding by using methods that tap into different facets or dimensions of the same complex phenomenon” (Greene, 2007, p. 101). The mixed method strategy may inform strategies for structuring related inquiries in future research.

Finally, this study contributed to current theoretical understandings of the effect of individual career counseling and environmental supports on college students' career choices. Building on the theoretical foundation of SCCT, this study examined hypothesized relationships between variables in the career choice process, including career barriers, environmental supports, self-efficacy, the development of academic and career interests, the development of educational and occupational plans, and engagement in and interpretation of performance activities. Exploration of these variables within the context of a career intervention expanded the theoretical understanding of how students' career choice processes may be influenced by higher education professionals who are trained to deliver career interventions.

Definition of Terms

A number of terms used in this study have varying definitions across the relevant literature. This section provides operational definitions for this study.

Career. A *career* is a “purposeful life pattern” (Reardon, Lenz, Sampson, & Peterson, 2000, p. 6) that emerges as a person thoughtfully and actively engages various activities and opportunities throughout his or her life span. In this definition, career is considered quite broadly, including educational, work, occupational, volunteer, service, and leisure activities. For the purposes of this study, the aspects of career that were explored focused on academic- and occupation-related aspirations and choices.

Career barriers. *Career barriers* are “events or conditions, either within the person or in his or her environment, that make career progress difficult” (Swanson & Woitke, 1997, p. 446). Note that, although barriers in this conceptualization make progress difficult, barriers are not defined as impenetrable. Rather, barriers may be overcome, although the degree of difficulty in persisting past a particular barrier depends on both the specific barrier and the capabilities of the individual experiencing that barrier (Swanson et al., 1996). Examples of career barriers include financial pressures, conflicts between multiple life roles, lack of readiness for college-level work, and difficulty with decision making (e.g., McWhirter et al., 1998; O’Leary, 1974; Swanson & Woitke, 1997). Throughout the literature, career barriers are also referred to as contextual barriers, environmental barriers, and perceived barriers.

Career choice. In this study, a *career choice* was defined as an expressed intention or goal for pursuing a particular academic or occupational option. (See also the definition of *career choice process* below.)

Career choice process. Based on Lent et al.'s (1994) SCCT, this study views making career choices as a constantly moving and evolving process, rather than a static act occurring at one point in time. Individuals conceptualize their intentions and goals related to academic and occupational options, take active steps to explore those options, and then modify their intentions based on their perceptions of the success or failure of their actions. Environmental supports and career barriers also influence individuals' perceptions as part of the *career choice process*.

Career decision-making self-efficacy. *Career decision-making self-efficacy* is one task-specific type of self-efficacy that refers to "an individual's degree of belief that he or she can successfully complete the tasks necessary to making career decisions" (Betz, Klein, & Taylor, 1996, p. 48). As measured by the Career Decision Self-Efficacy Scale (Betz & Taylor, 2001), these tasks include accurate self-appraisal, gathering occupational information, selecting goals, making plans for the future, and problem solving. (See also the definition of *self-efficacy* below.)

Career development. *Career development* encompasses the "total constellation of economic, sociological, psychological, educational, physical, and chance factors that combine to shape one's career" (Sears, 1982, p. 139). (See also the definition of *career* above.)

Career intervention. A *career intervention* is any program, service, resource, or effort designed to assist a particular audience with the process of exploring career options, making decisions, developing plans to implement those decisions, and managing growth and development within chosen paths.

Clients. The term *clients* refers to recipients of career programs, services, or interventions. In this study, clients are referred to as "college students" when the recipients of career programs, services, or interventions are currently enrolled in college and receiving career services through the college or university in which they are enrolled.

Environmental influences on the career choice process. *Environmental influences* are factors that an individual perceives as playing a noteworthy role in his or her process of making academic and career choices. These influences may provide (supports) or block (barriers) opportunities to consider options, make decisions, and implement plans. This definition was adapted from the discussion by Lent et al.'s (1994) of contextual influences on educational and career choice. Several additional terms further clarify environmental influences, such as

- ***Distal, background influences*** are those factors that have happened in the past that influence one's self-efficacy and outcome expectations for a particular career path. Examples include exposure to role models, gender and cultural role socialization, and health or disability status (Lent et al., 1994).
- ***Proximal influences*** come into play during critical phases of the active career choice process. For example, access to career networks or experiences of discriminatory hiring practices would be considered proximal contextual influences on career choice behavior (Lent et al., 1994).
- ***Perceived contextual influences*** are those environmental factors that individuals comprehend and can articulate as potentially influencing their progress toward personal educational and career goals. Perceived contextual influences may or may not actually exist in the objective environment. Lent et al. (2000) stressed the importance of "attending to the person's active phenomenological roles in processing both positive and negative environmental influences" (p. 37). Positive and negative influences that are actively perceived provide a "more influential force on career behavior" (Swanson & Woitke, 1997, p. 446) than those that are not perceived as existent or salient for an individual.
- ***Actual contextual influences*** are those factors that concretely exist within the contextual or personal environment. Actual contextual influences may or may not be perceived by an individual. For example, Lent et al. (2000) suggest that the quality and depth of past educational experiences would constitute an objective support or barrier to career progress. If a student does not understand that he or she will need to enroll in remedial coursework prior to taking courses that will count toward his or her college degree, an actual barrier exists that is not perceived by the student.

Environmental supports. *Environmental supports* are environmental events, conditions, or resources that facilitate education and career progress (Lent et al., 2000). Examples of environmental supports include significant others (e.g., parents, siblings, peers, advisors,

counselors, teachers), financial resources, and programs designed to facilitate transitions to college (e.g., Ferry, Fouad, & Smith, 2000; Lent et al., 2002; Quimby & O'Brien, 2004).

Throughout the literature, environmental supports are also referred to as *contextual supports* and *perceived supports*.

Exploring Majors College. *Exploring Majors College* (EMC) is the pseudonym used in this study for the academic unit that enrolls undergraduate college students who have not selected or been accepted into a college or major at Midwest University.

Midwest University. *Midwest University* (MU) is the pseudonym chosen for the large, Midwestern, public, selective, and predominantly white institution that served as the location for this study.

Self-efficacy. This study adopts Bandura's (1986) definition, stating that *self-efficacy* refers to "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). Ultimately, self-efficacy beliefs relate to a question of "Can I do this?" (Swanson & Woitke, 1997, p. 448). Bandura (1977, 1986, 1997) theorized that self-efficacy could be modified over time via the following four methods:

- ***Performance accomplishments*** refer to an individual's active enactment of a particular task, which is then perceived as a successful experience (increasing self-efficacy) or as an unsuccessful experience (decreasing self-efficacy).
- ***Vicarious learning experiences*** consist of observing another person modeling a particular activity, followed by that person's judgment of his or her own capabilities to perform the activity.
- ***Verbal persuasion*** refers to a verbal expression by a significant other affirming (increasing self-efficacy) or expressing doubt regarding (to decrease self-efficacy) one's capabilities of successfully performing a particular task.
- ***Physiological and affect states*** are the somatic and emotional reactions that an individual experiences before, during, or after completing a particular task that influence his or her assessment of his or her capabilities.

University 101. *University 101* is the pseudonym used in this study for a required, one-credit, 8-week exploration course that all incoming students in the Exploring Majors College were required to take during their first semester. The course was taught by academic advisors from the Exploring Majors College and was primarily focused on helping students transition to college. Topics covered included learning styles, time management, study skills, talents and strengths, transferable skills, course registration, the intercollegiate transfer process, and resources for exploring majors and careers. More detail regarding the University 101 class is available in Chapter 3.

Delimitations

This study examined the relationships between a subset of the variables of Lent et al.'s (1994) SCCT, primarily focusing on perceived environmental supports, perceived career barriers, and career decision-making self-efficacy (a single, task-specific type of self-efficacy). The advantage to limiting the scope of the investigation in this manner was that it enabled time and resources to be dedicated to an in-depth exploration of these relationships, which are understudied in the current literature. The drawback to this approach was that other important influences on the academic and career choice process may have gone unacknowledged or may have been overlooked because of limitations in the scope of the research.

The study was further delimited by the selection of an academic institution and by focusing on a specific group of students who were working on a specific career decision. To facilitate the variety of study components, the study took place at a single institution, MU. The study population consisted of first-year, traditional-aged (18 to 20 years old) college students who had not selected a major or academic focus at the time of their admission to MU. The individual career counseling appointments were designed to assist students with exploring

academic majors and related career choices, essentially helping students transition to college, find their place, and select a college major. Targeting students at a single institution who were working on similar academic and career choices facilitated both the provision of the career intervention, as well as examination of similarities and differences in experiences across student participants. This delimitation to a single group of students at a single university created a study population that did not represent the diverse student groups who attend a great variety of higher education institutions. Caution is encouraged when considering findings, particularly when discussing how the findings may or may not relate to different student groups who may be working on different academic and career choices in different settings.

Further, the study design limited data collection to examining students' experiences based primarily on self-reported measurements and interviews. Other data sources (e.g., academic transcripts, counselor notes, counselor interviews, university records) were not gathered as resources for broadening insights into the research questions. This decision was related to the study's primary research questions, which explored students' interpretations of their experiences of participating in career interventions early in their college experiences. Students' interpretations are of key concern because they relate directly to students' perceptions of the outcomes of engaging the environmental support offered by the career intervention. Indeed, some scholars stress that it is these student interpretations that ultimately drive self-efficacy and decision making (e.g., Bandura, 1997; Usher & Pajares, 2008).

Limitations

This study took place at a single large, Midwestern, public, selective, and predominantly white institution, which was purposefully selected for this research. Participants were selected based on enrollment in a required first-semester course for all students who had not selected a

college or major at the time they were admitted into the university. Students enrolled in this class during the first 8 weeks of the semester were invited to participate, and those who participated were randomly selected to be part of the control group or part of the treatment group that participated in the career intervention. Interview participants were purposefully selected based on the results of the first survey they completed. Some students self-selected to decline participation in the study. Further, participation in this study required a considerable amount of time and dedication on the part of students, particularly those assigned to the treatment group. Some students chose to discontinue participation during the course of the study. This led to questions regarding students' self-selection for study participation, as well as persistence in or early termination of the intervention: How did participants in the full study differ from nonparticipants and study noncompleters? How might participants and their experiences at MU differ from those in other higher education colleges and universities? Although Chapter 4 does offer some analyses comparing participants in the full study with noncompleters and the population as a whole, caution is recommended in regard to making generalizations based on this research or to applying findings to other institutions or college student groups.

Additionally, a single career intervention type consisting of individual career counseling appointments with accompanying performance accomplishment activities was selected for this study. This selection was made based on intervention components that have facilitated the achievement of relevant outcomes in past research (e.g., Brown & Ryan Krane, 2000; Luzzo et al., 1999; Oliver & Spokane, 1988; Whiston et al., 1998). This design decision was expected to increase the likelihood of observing desired outcomes following the treatment, thus allowing this study to connect with past career intervention outcomes research while advancing the literature by examining students' interpretations of the processes that may have contributed to those

outcomes. It is important to recognize that this was a time- and counselor-intensive intervention choice. Again, caution is recommended in generalizing to other types of career interventions (e.g., workshops, computer-assisted career guidance, self-directed approaches).

Chapter 2

Literature Review

Today's higher education students face numerous choices of educational institutions, academic majors, programs of study, and career opportunities. The sheer volume of options can be bewildering and challenging to wade through. Students' personal explorations and considerations of options occur within a dynamic interplay of core personal factors (e.g., self-efficacy, interests, goals) combined with a vibrant combination of environmental influences (e.g., family, peer, community, societal) that may support or hinder consideration of available options, effectiveness of decision making, and implementation of a career choice (Lent & Brown, 2006; Swanson & Woitke, 1997). Although much research attention has been dedicated to how core personal factors affect career choice, the role of environmental influences remains complex and ill defined (Lent, Brown, & Hackett, 2000). After a brief introduction to the literature reviewed, this chapter explores current understandings of environmental influences on the career choice process in three stages. First, environmental influences on career choices are considered by examining theoretical understandings of career barriers, environmental supports, and social cognitive process models of career choice. Second, empirical studies regarding environmental supports and career barriers are reviewed and critiqued. Third, career development interventions are explored with regard to their potential role as an environmental support in the career choice process. The chapter concludes with a discussion of strengths and limitations of current research, as well as recommended future research directions.

Resources for this review of literature were located by using library search databases such as *Education Full Text*, *PsychINFO*, and *Dissertation Abstracts*. Keywords for these searches included *career supports*, *contextual supports*, *education supports*, *environmental*

supports, perceived supports, career barriers, contextual barriers, education barriers, environmental barriers, perceived barriers, career intervention outcomes, career development outcomes, and career choice. These searches led to the identification of seminal works that were published in peer-refereed journals and well-referenced in the literature (e.g., Brown & Ryan Krane, 2000; Hackett & Betz, 1981; Lent, Brown, & Hackett, 1994; Lent et al., 2000; McWhirter 1997; Oliver & Spokane, 1988; Swanson & Tokar, 1991; Swanson & Woitke, 1997; Whiston, Sexton, & Lasoff, 1998). Core seminal works were built upon by using the *Social Science Citation Index* and by personally contacting prominent scholars for full bibliographies of their works. These search strategies resulted in a large number of resources and references addressing environmental influences on career choice. Relevant theories had been applied to the career choice process of a variety of populations, including elementary, middle, high school, and college students, as well as counselor educators, athletes, and battered women. To focus on college students' academic and career experiences, publications that addressed the following two audiences were examined: (a) career choices of undergraduate students in higher education, and (b) career choices of high school students as they pertain to their intent to pursue higher education. The result was a compilation of theory-building and theory-testing literature, primarily drawn from peer-reviewed, research-oriented journals, such as the *Journal of Career Assessment*, *Journal of Career Development*, *Journal of Counseling and Development*, *Journal of Counseling Psychology*, and *Journal of Vocational Behavior*. The vast majority of these resources were published in the past 25 years.

Theoretical Understandings of Environmental Influences on Career Choices

This section lays a foundation for later analyses by exploring historical developments regarding theory and research on environmental supports and career barriers. Career barriers are

discussed first, because much of the early discussion of environmental influences on career development began with the consideration of factors that impeded women's career development progress (e.g., Farmer, 1976; Nieva & Gutek, 1981; O'Leary, 1974), and was later expanded to examine hindrances experienced by minority populations (e.g., Flores & O'Brien, 2002; Slaney, 1980a; Slaney & Brown, 1983). This is followed by a discussion of environmental supports, which have often been recognized as underrepresented in the career development literature (e.g., Brown & Ryan Krane, 2000; Lent et al., 2000; Richie et al., 1997). Finally, social cognitive process models are examined as a strategy for conceptualizing the ways in which environmental supports and career barriers may influence individuals' career choices and follow-through.

Career barriers: Early roots in categorization models. Although many definitions of career barriers (also referred to as environmental barriers or contextual barriers) have emerged in the literature, the definition presented by Swanson and Woitke (1997) was adopted for this study. Swanson and Woitke stated that career barriers are “events or conditions, either within the person or in his or her environment, that make career progress difficult” (p. 446). Note that, although career barriers in this conceptualization make progress difficult, they are not defined as impenetrable. Rather, career barriers may be overcome, although the degree of difficulty in persisting past a particular barrier depends on the specific barrier, the capabilities of the individual experiencing that barrier, and the environmental supports that an individual perceives (Swanson, Daniels, & Tokar, 1996).

An early classification system of career barriers originated in 1969 with Crites' two categories of barriers to career development: internal conflicts and external frustrations. Crites called these barriers “thwarting conditions” (p. 397) because they impeded people from reaching career goals. Internal conflicts referred to characteristics such as a lack of personal self-esteem,

motivation, or drive, whereas external frustrations originated in the environment in the form of job competition, job discrimination, and a sense of economic insecurity. This internal–external dichotomy persisted throughout many later conceptualizations of career barriers (see Table 2.1). For example, O’Leary (1974) hypothesized that women’s aspirations for managerial careers were influenced by six internal and four external barriers. More recently, McWhirter, Torres, and Rasheed (1998) reviewed literature on women’s career barriers in which they used a two-category framework of external/environmental barriers and individual/socialized barriers.

Table 2.1

Theories Categorizing Internal and External Barriers

Theorist	Theorized Internal Barriers	Theorized External Barriers
O’Leary (1974)	Fear of failure Low self-esteem Role conflict Fear of success Perceived consequences of engaging in achievement-oriented behaviors Perceived incentives for engaging in achievement-oriented behaviors	Societal sex role stereotypes Attitudes towards women in management Attitudes towards female competence Prevalence of the “male managerial” model
McWhirter, Torres, and Rasheed (1998)	Self-efficacy expectations Low outcome expectations Preparation for job tasks or skill deficits Multiple role stress	Sexual harassment Sex discrimination Lower socioeconomic status Constraints or negative attitudes toward religious practices Physical work environment limitations Racism Homophobia Lack of mentors or role models Lack of support

The early 1980s proved to be an important time for the development of models and theories of women's career development. During this period, two evolving strands of theory added a new dimension to the consideration of career barriers. In 1981, Nieva and Gutek became interested in understanding the psychological underpinnings of women's increased participation in the workforce. Their conceptualization of career barriers was presented in an examination of married women's decisions to pursue work experiences outside the home. These choices were characterized as being affected by personal (e.g., education, age, race, personality traits), attitudinal (personal and significant others' attitudes toward women in the workplace), and situational (e.g., husband and children, mobility, previous experience) factors that would either support or deter women from making the decision to work outside the home. Gottfredson (1981) also considered gender-related career barriers, yet focused on the broad consideration of occupational aspirations with the incorporation of women's developmental stages of gender self-concept. Gottfredson recognized an interaction between women's self-concept and their perceptions of the accessibility of particular occupations. These individual perceptions could be interpreted as obstacles within the social or economic environment when they ultimately affected the selection and implementation of occupational aspirations. This work sparked interest in exploring the central role of self-concept coupled with the importance of individuals' recognition and response to the career barriers that they perceived in their environment (Luzzo, 1996).

These new strands of research led Swanson and Woitke (1997) to express concern that the original two-category systems of internal and external career barriers "often fails to adequately fit individuals' experiences" (p. 445). They described classifications of career barriers as either internal or external as a matter of perspective and interpretation. For instance, a manager may interpret an employee's behavior as a lack of internal personal motivation, whereas

the worker may see his or her actions as attributable to a work environment that provides harsh disincentives for taking on new initiatives. In this case, labeling the career barrier as internal or external depends on who is interpreting the behavior. Because of this attributional challenge, Swanson and her colleagues (Swanson & Tokar, 1991; Swanson & Woitke, 1997) devised a system of career barrier clusters that reflected the work of Gottfredson (1981) and Nieva and Gutek (1981). Their system included social/interpersonal barriers, attitudinal barriers, and interactional barriers (see Table 2.2). Social/interpersonal barriers are primarily derived from one's family and upbringing, including gender role socialization and stereotypes, ethnic socialization and stereotypes, and other forms of social learning about perceived expectations. Influences of social/interpersonal barriers are expressed in terms of both current family responsibilities and future expectations about marriage and children. Attitudinal barriers are

Table 2.2

Example Social/Interpersonal, Attitudinal, and Interactional Barriers According to Swanson and Woitke (1997)

Barrier Type	Barrier Examples	
Social / interpersonal	Dual career families	Relocation
	Family financial status	Support of family
	Multiple role obligations	Time for family
Attitudinal	Ability / performance	Personality characteristics
	Interests	Satisfaction with job / school
	Motivation / aspirations	Values
Interactional	Age	Education
	Race	Knowledge of work environments
	Sex	Previous experience

those that primarily relate to the internal characteristics of an individual's interests, skills, attitudes, and personality traits. Interactional barriers relate to outwardly visible demographic characteristics, as well as to preparation for work. Although subsequent research by Swanson and Woitke (1997) provided stronger evidence for this three-cluster approach than the previous internal/external two-category approach, they expressed some concern about finding only moderate support for their cluster model.

The greatest strength of these various categorization models of career barriers is found in their ability to call attention to the great variety of stumbling blocks that individuals face in their experiences of exploring careers, making career decisions, and implementing their choices. These models facilitate discussion and recognition of the great complexity of considering the dynamics by which career barriers influence the career development process. However, these cluster models also have considerable shortcomings. As suggested by Swanson and Woitke (1997), these models fall short of accurately reflecting college students' experiences. Additionally, categorizations of career barriers direct attention to symptoms of problems without providing insights into how to address the origins and propagation of those problems. Finally, because these categorizations often explore group differences, they can result in the unintended (but actual) side effect of reinforcing stereotypes (Chartrand & Rose, 1996). To address these shortcomings, additional theories are needed that focus on how individuals process their experiences of encountering environmental influences, such as career barriers. Career choice process frameworks are expected to lend themselves more directly to practical recommendations for supportive interventions, which may alleviate the hindering effect of career barriers.

Environmental supports: Often a missing link. The definition of environmental supports in this study mirrors that of career barriers. Environmental supports are events,

conditions, or resources that have the effect of facilitating career progress (rather than making career progress difficult, as is the case of career barriers). Tracing the early roots of theories on environmental supports is considerably more challenging than tracing the roots of theories on career barriers. Lent et al. (2000) recognized environmental supports as “a missing environmental ingredient” that has “long been recognized in the career development literature, but [has] not often captured sustained research attention” (p. 42). Borgen and Maglio (2007) suggested that environmental supports are an essential ingredient in the career choice process that can often be taken for granted by researchers and counselors alike. Greater focus in both research and practice is needed in this area.

Similar to the career barriers literature, early explorations of environmental supports often related to studies of women’s career development. Sobol (1963) presented an early theory of work commitment for married women that highlighted environmental supports as one of three influential factors in women’s career decisions. The three factors included (a) enabling conditions, which were primarily family status factors such as number of children, age of the children, and family supports; (b) facilitating conditions, which related to the ease of finding a job; and (c) precipitating conditions, which push a woman toward work such as financial needs, life satisfaction, and attitudes toward accomplishment. Nearly two decades later, Tinsley and Faunce (1980) used Sobol’s theory to examine enabling and facilitating conditions for women by comparing differences between homemakers and those with careers outside the home. These scholars found that career orientation was more strongly related to enabling factors in the women’s environments than to facilitating or precipitating conditions. Davey and Stoppard (1993), in their study of factors affecting the occupation expectations of female high school

students, also found that the most influential factors fit Sobol's classification of enabling factors (e.g., support from significant others).

Beyond Sobol's (1963) categorization model, typologies or resources for considering environmental supports are difficult to locate. Since the late 1990s, empirical research studies have considered a wide variety of support types (e.g., parents, family, siblings, friends, teachers, role models) while branching out to new study populations such as racial and ethnic minorities (e.g., Flores & O'Brien, 2002; Leal-Muniz & Constantine, 2005; Rivera, Chen, Flores, Blumberg, & Ponterotto, 2007) and families living in rural areas with low socioeconomic status (e.g., Ali & McWhirter, 2006; Ali, McWhirter, & Chronister, 2005; Lapan, Hinkelman, Adams, & Turner, 1999). Additionally, some researchers have found it necessary to design new instruments for their studies to measure perceptions of specific environmental supports (e.g., Ali et al.'s, 2005, Sibling Support Scale; Ali & Saunders', 2006, Parent Support Index). As a result, comparisons can be difficult to draw across this diverse, sometimes disjointed, body of literature. One common thread across the vast majority of these recent empirical studies relating to environmental supports has been a theoretical foundation in a social cognitive processing perspective. For that reason, this review of literature now turns to a discussion of process models.

Social cognitive process. Theoretical categorizations of career barriers and the limited literature on environmental supports provide some understanding of what college students may encounter. However, these inquiries do not provide a sense of direction for designing professional responses because they lack insights regarding how and when environmental supports and career barriers influence the career choice process. Lent et al.'s (1994) Social Cognitive Career Theory (SCCT) has been recognized as a primary example of a process model that describes the mechanisms through which students prepare for, implement, and evaluate

academic and career choices within an environment replete with perceived supports and barriers (e.g., Albert & Luzzo, 1999; Chartrand & Rose, 1996; Swanson & Woitke, 1997). SCCT is grounded in a cognitive psychological understanding of the relationship between self-efficacy beliefs, environmental cues, and human behavior. Modifying these ideas to address career-specific actions, Lent et al. (1994) proposes SCCT to describe how career interests, intentions, goals, and performance develop over time, as well as how environmental factors may influence an individual's choice process.

To examine SCCT, it is helpful to begin with a brief overview of the foundational contributions of Social Cognitive Theory. This section then examines descriptions of the thought and experience processes in SCCT that are internal to an individual. These processes are made up of self-efficacy, outcome expectations, interests, goals, choices, and personal evaluations of experiences. Finally, this section addresses the way in which internal processes are embedded within a context of both personal and environmental influences on career choices. Environmental inputs may exert positive, negative, or neutral influences on an individual's choice process (Lent et al., 2000). It is through these influences that both environmental supports and career barriers affect education and career choices.

SCCT's roots in Social Cognitive Theory. SCCT is rooted in Bandura's (1986) general Social Cognitive Theory, with a heavy focus on individuals' self-efficacy beliefs. Bandura defined self-efficacy as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). Self-efficacy beliefs relate to specific tasks or behaviors, such as solving calculus problems, creating a painting, or making a career choice. Bandura (1977, 1986, 1997) suggested four sources through which self-efficacy could be acquired and modified over time:

- Performance accomplishments–direct, hands-on experience performing the behaviors in question, resulting in perceived successes or failures;
- Vicarious learning experiences–observations of models’ performance of the behaviors in question, influencing one’s personal assessment of his or her capabilities in relation to others;
- Verbal or social persuasion–expressions of encouragement or support from significant others, which influence one’s view of one’s capabilities of successfully completing the behavior in question; and
- Physiological or affective states–emotional arousal experienced in regard to the behavior in question, influencing one’s perceptions regarding the task.

Recognition of performance accomplishments is thought to be the most powerful self-efficacy source because it is based in authentic, hands-on experiences. In addition, Bandura (1977, 1986, 1997) suggested three behavioral consequences that are influenced by perceptions of self-efficacy: (a) performance on specific tasks, (b) persistence in spite of encountered challenges, and (c) approach versus avoidance behaviors. Higher levels of self-efficacy encourage successful performances, increased persistence in the face of challenges, and approach behaviors. Betz (2000) suggested that, in the context of career development, approach behaviors relate to what an individual would be willing to try, whereas avoidance behaviors relate to what an individual would not be willing to try.

In the 1980s, a number of theorists became attracted to the application of self-efficacy constructs to specialized questions in the field of career development. This theory-building extension effort was led by Hackett and Betz (1981), who explored the interactions of gender and self-efficacy in career choice and adjustment behaviors (Lent & Brown, 2006). However, understandings of self-efficacy were not defined as a new wave of career theories. Quite to the contrary, the transformation of this theoretical construct to applications in career development was intended to be “an explanatory construct that might be integrated with broader theoretical

perspectives” (Hackett, Lent, & Greenhause, 1991, p. 11). In this way, self-efficacy became a fresh perspective that was anticipated to rally cooperation across a diverse field of theory and application.

Lent et al. (1994) set out to build on both Bandura’s (1986) Social Cognitive Theory and Hackett and Betz’s (1981) approach of seeking ways to integrate theory across the field of career development. SCCT emerged as an “attempt to complement, and to build conceptual linkages with, existing career development theories” (Lent & Brown, 1996, p. 311) and to contribute to a comprehensive understanding of career choice with the intent of informing developmental and preventive career interventions.

Internal process functions of SCCT. The internal components begin with four key constructs that make up the sociocognitive foundations of SCCT, including self-efficacy, outcome expectations, interests, and goals. This is then added to an understanding of how performance accomplishment activities are selected based on the core components (activity selection/practice), how those trials are experienced (performance attainment), and how those experiences are tied into a sociocognitive feedback loop (sources of self-efficacy and outcome expectations). Figure 2.1 provides a visual representation of the relationship between these seven constructs.

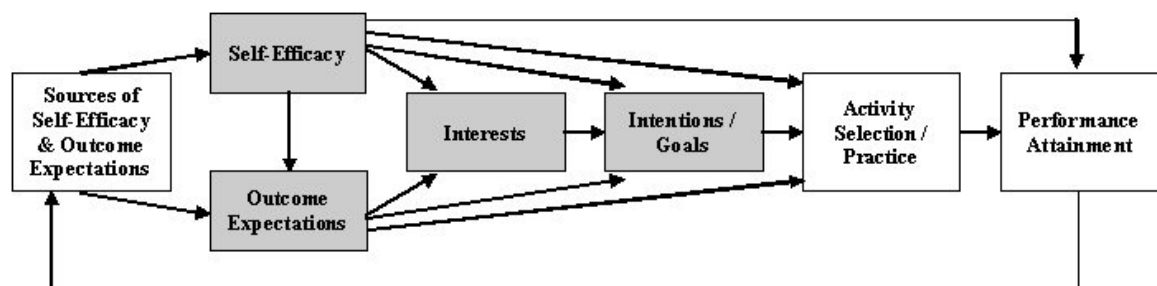


Figure 2.1. Core internal concepts and relationships in a model of Social Cognitive Career Theory (adapted from Lent, Brown, & Hackett, 1994; shading added for emphasis).

Self-efficacy. In SCCT, self-efficacy beliefs are defined using the same language as Bandura (1986), who stated that these beliefs refer to “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances” (p. 391). SCCT brings self-efficacy beliefs into the realm of career development as dynamically related to work tasks, academic tasks, performance contexts, and social and psychological adjustment at a particular time in a person’s life (Lent et al., 1994). Ultimately, self-efficacy beliefs relate to a question of “Can I do this?” (Swanson & Woitke, 1997, p. 448). Lent and Brown (2006) stated that the construct of self-efficacy has received the “lion’s share of attention in the research” (p. 15) because of its recognized central role in the career choice process.

Outcome expectations. Outcome expectations in SCCT are defined as “beliefs about the consequences or the outcomes of performing particular behaviors” (Lent & Brown, 1996, p. 312). Outcome expectations are influenced by an individual’s self-efficacy beliefs, yet they are also a distinctly different construct, asking the question of “If I try doing this, what will happen?” (Lent & Brown, 2006). Outcome expectations vary in focus (e.g., anticipated social influences, anticipated material gains or losses) as well as in strength and direction (e.g., positive, negative, neutral). Outcome expectations are also hypothesized to have a smaller effect on behavior than self-efficacy beliefs, which may partially explain their lesser focus in the research literature.

Interests. Interests refer to “people’s patterns of likes, dislikes, and indifferences regarding different activities” (Lent & Brown, 2006, p. 17). According to SCCT, the formation of career interests is best understood through positive self-efficacy and outcome expectations. Individuals uncover enduring interests in activities in which they see themselves as competent and from which they anticipate valued, positive outcomes.

Personal goals and intentions. Personal goals and intentions develop out of self-efficacy, outcome expectations, and enduring interests. Personal goals signify “the intention to engage in a particular activity or to produce a particular outcome” (Lent & Brown, 2006, p. 17), and they serve the key function of organizing and regulating behavior over time (Niles & Hartung, 2000).

Activity selection and practice. The construct of activity selection and practice represents actions that are intended to explore or implement a particular career choice (Lent et al., 1994). Examples of actions one might pursue to practice a career include internship opportunities, job shadowing, an academic major, or skill training courses. The greater the extent of an individual’s definition of and commitment to their personal goals, the more likely they will be to engage in these career-related actions. Yet, personal goals are not the only factors that influence activity selection. These actions are also directly influenced by an individual’s self-efficacy and outcome expectations.

Performance attainment. Practicing a particular activity leads to performance attainment, meaning that the individual perceives the experience as a success, a failure, or somewhere in between (Lent & Brown, 1996). This assessment is influenced by both the tangible act of engaging in the experience and the individual’s judgments of his or her own capabilities.

Sources of self-efficacy and outcome expectations. Finally, an individual’s perception of success or failure feeds back into their self-efficacy and outcome expectation beliefs for future activities. This feedback loop is represented in Figure 2.1 with directional arrows from the “performance attainment” box to the “sources of self-efficacy and outcome expectations” box. The cyclical flow of cognition and action creates a dynamic representation of an ever-evolving, and therefore complex, choice process. With each exploration and processing step, an individual redefines what he or she perceives as available and desirable academic and career choices.

The elegance and apparent flow of the complete internal model of SCCT can be rather enticing for researchers and practitioners alike. However, it is important to recognize the complexity of relationships between these internal variables (as depicted by the arrows in Figure 2.1). For instance, SCCT hypothesizes that self-efficacy affects interests both directly and indirectly through outcome expectations. Similarly, outcome expectations are hypothesized to affect personal goals both directly and indirectly through interests. Even more complex, self-efficacy is hypothesized to affect personal goals directly, but also to affect them indirectly through interests and outcome expectations, as well as a combination of interests and outcome expectations. These overlapping relationships can be challenging for students, practitioners, and researchers to tease out. Additionally, career choices do not occur in a vacuum, which requires consideration of SCCT's conceptualizations of external influences from both personal and environmental sources.

Influences from personal and environmental inputs. Personal and environmental factors may influence the career choice process either as a precursor to current career choices or as a direct facilitator or deterrent (Lent et al., 1994). Those that are precursors are considered distal, background contextual factors that affect the choice process through developed self-efficacy and outcome expectations (Lent et al., 2000). Distal factors include personal inputs and background contextual influences. Factors that directly affect active career decision making are referred to as influences that are proximal to choice behavior (Figure 2.2).

Personal inputs. Lent et al. (1994) define personal inputs as biological attributes of individual differences, such as gender and race. Although these attributes have a genetic origin, they also have “profound psychological and social significance” (p. 104) when interpreted through the sociocultural environment in which the individual interacts. Swanson and Woitke

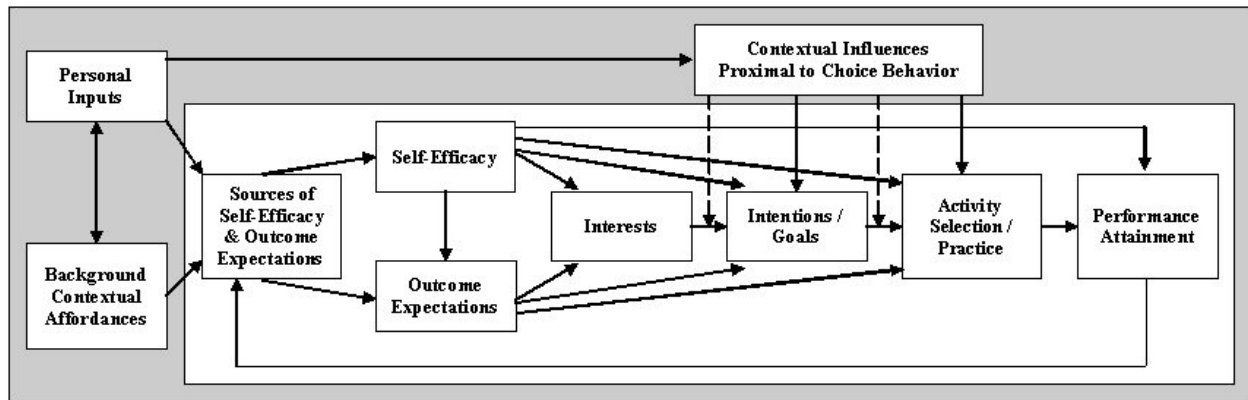


Figure 2.2. Full unifying model of career choice, including personal and environmental influences (adapted from Lent, Brown, & Hackett, 1994; shading added for emphasis; dashed lines indicate hypothesized moderating effects, and solid lines indicate hypothesized direct effects.).

(1997) expand on the original definition of these personal input categories by adding genetic predispositions and health or disability status.

Contextual determinants. Beyond personal inputs, Lent et al. (2000) divide contextual determinants into two categories. The first is labeled “background contextual affordances” in Figure 2.2 and describes the more distant influences that help shape cognitions and interests over time. Examples of background influences include: (a) exposure to career options via family work patterns, and (b) gender role socialization, which defines “appropriate” careers for men and women. The second types of contextual determinants are those that come into play at the time of decision making. Examples include personal networking contacts and discriminatory hiring practices. This context can either hinder (barriers) or facilitate (supports) consideration of options, decision-making progress, and implementation of selections. In Figure 2.2, this second type of contextual determinant is entitled “contextual influences proximal to career choice Behaviors,” and the directional arrows denote the moderating (dashed lines) and direct (solid lines) influences at times of clarifying personal intentions and goals, as well as selecting activities to practice career choices.

Lent et al. (1994) acknowledged that their original hypothesized relationships regarding the influence of personal and environmental factors on career choice had not been adequately researched at the time of their seminal 1994 publication, yet they posed these paths to encourage more systematic research regarding their validity. Lent et al. (2000) stated that the volume of research on personal and environmental factors still lagged considerably behind research on the core sociocognitive constructs of SCCT.

Empirical Findings Regarding Environmental Supports and Career Barriers.

Categorization and process models have provided a foundation for numerous empirical studies regarding the influence of environmental supports and career barriers on the career choice process (e.g., Ali et al., 2005; Ferry, Fouad, & Smith, 2000; Flores & O'Brien, 2002; Lent et al., 2002; Lindley, 2005; Lopez & Ann-Yi, 2006; Luzzo, 1995; Luzzo & Hutcheson, 1996; Luzzo & McWhirter, 2001; McWhirter, 1997; Swanson & Tokar, 1991). This section provides a comprehensive overview of empirical research findings, demonstrating college students' perceptions of environmental supports and career barriers, the interrelated nature of environmental supports and career barriers, variations in perceptions across student groups, and the complex nature of environmental influences revealed within confounded relationships with other interpersonal variables.

College students perceive environmental supports. A handful of empirical studies have examined connections between perceived environmental supports and measures of career development. The bulk of the research has been quantitative in nature, often using instruments that were developed specifically for the studies in question (e.g., Ali et al., 2005; Ferry et al., 2000) or that were redesigned from past studies to fit current research needs (e.g., Flores & O'Brien, 2002; Hackett, Betz, Casas, & Rocha-Singh, 1992). For example, Ali et al. (2005)

found that, for a sample of 114 ninth-grade high school students coming from a lower socioeconomic background, perceived sibling and peer support accounted for 36% of the variance in vocational and educational self-efficacy. Studies examining the career choices of minority high school students have found parents to be influential supportive figures in students' lives. For example, Flores and O'Brien's (2002) test of SCCT with 377 female, Mexican American high school students demonstrated that perceptions of parental support predicted both career choice prestige and career aspirations. In their sample of 791 undergraduate college students, Ferry et al. (2000) found that perceived parental encouragement for college math and science participation had significant, positive, and direct effects on undergraduate students' academic grades. Perceived support and encouragement from faculty members has also been associated with the academic performance of undergraduate students in science and engineering programs (Hackett et al., 1992). Further examining the influence of social relationships on college campuses, Quimby and O'Brien (2004) reported that nontraditional college women's perceptions of having social networks characterized by mutual reliance, nurturance, and valuing were uniquely predictive of career decision-making self-efficacy.

A notable qualitative study examining environmental supports was conducted by Lent et al. (2002). Using a semi-structured interview format with technical college and university students, Lent et al. found that, in response to open-ended prompts, students identified both contextual (e.g., social encouragement, access to role models or mentors, financial resources) and personal (e.g., self-confidence, sense of perseverance) supports for pursuing their ideal career choices. This particular study is presented in detail later in this review of literature, within a discussion of differences in perceptions of environmental supports and career barriers in relation to institutional type.

The variety of survey instruments employed in this collection of studies (e.g., Career Support Scale, Friend Support Scale, Sibling Support Scale, Social Provisions Scale), as well as the wide variety of career development comparison measures considered (e.g., academic performance, career certainty, career choice prestige, self-efficacy, vocational aspirations), demonstrates the complexity and diversity of ideas surrounding environmental supports. Lent and Brown (2006) call for further conceptualizations and research to shed light on the nuances in environmental supports, with particular attention paid to domain-specific measures that could offer more in-depth, precise understandings, as compared with global environmental support measures. Additional qualitative and longitudinal research is also greatly needed to further clarify the influences of environmental supports and to examine ways in which these supports may be embraced to help students make career choices.

College students perceive career barriers. Ample evidence exists to assert that college students do, in fact, perceive career barriers to their current and future career endeavors. They can articulate these career barriers in response both to open-ended prompts (e.g., Lent et al., 2002; Luzzo, 1993, 1995, 1996; Luzzo & Hutcheson, 1996; Swanson & Tokar, 1991) and within barrier inventories or assessments (e.g., Flores & O'Brien, 2002; Lindley, 2005; Lopez & Ann-Yi, 2006; Luzzo & McWhirter, 2001; McWhirter, 1997).

The strategy of presenting students with open-ended prompts regarding environmental influences encourages participants to broadly interpret the questions posed, with the hopes of garnering insight into the personal experiences of students. The early study by Swanson and Tokar (1991) in this area sought to assess the range of perceived barriers experienced by college students across common career-related experiences, including: (a) choosing a major or career, (b) obtaining the necessary degree or training, (c) acquiring a first job after college, (d) advancing in

a career, and (e) balancing career and family. The 48 participating undergraduate students received stimulus statements, each on a separate page with space for written responses. Participants produced between 1 and 10 potential barriers for each prompt, resulting in 1,098 reflected barriers. These barriers related to a wide variety of topics, such as family, friends, grades, qualifications, satisfaction, motivation, finances, disability, and social background.

Luzzo (1993, 1996) and Luzzo and Hutcheson (1996) continued this strategy of examining barriers through an open-ended format in survey studies that asked college students to respond in writing to the following questions: (a) what barriers do you believe you have overcome to get to where you are today in terms of your career development?, and (b) what barriers do you believe you will have to overcome in the future to fully achieve your career aspiration? In each of these studies, student responses were coded into pre-determined career barrier categories such as family-related, study skills, ethnic discrimination, gender discrimination, financial, and age discrimination. College students in these studies listed career barriers in all categories. However, a notable limitation to this method was the small number of barriers reported. For instance, Luzzo and Hutcheson (1996) reported that of the 115 participants in their study, 74% cited zero or one past barriers, whereas only 35% cited two or more anticipated future barriers. These authors expressed concern that, despite its strengths, this free-response approach “may limit someone from considering the full range of possible barriers” (p. 128) common to the career choice process.

A brief interview strategy has also been employed to gather free-response ideas regarding college students’ perceived career barriers (Lent et al., 2002; Luzzo, 1995). These interviews allowed for some similar advantages to the written open-ended response method, namely, encouraging broad interpretation of barriers with minimal external prompting. Yet, the

interviews also provided the flexibility to ask probing follow-up questions for greater depth and understanding. Whereas Luzzo (1996) employed a free-response interview method bounded by career-related experiences that were similar to the methods used by Swanson and Tokar (1991), Lent et al. (2002) integrated barrier questions into a broader discussion of expected and ideal career choices. In the Lent et al. (2002) study, when an interview participant expressed a disconnect between expected and ideal careers, the interviewers used probing questions to explore barriers that “the participant saw as hindering pursuit of his or her ideal career” (p. 64). When an interview participant’s expected and ideal careers were the same, the interviewer used probing questions to explore past barriers that the participant had experienced, as well as any coping strategies that helped him or her overcome those barriers. Of the 31 four-year university and community college study participants, more than 67% mentioned financial concerns as a potential barrier to reaching career goals. With moderate frequency (33 to 67%), participants acknowledged personal difficulties (e.g., problems adjusting to college, depression, time management), ability considerations (e.g., problems with academic progress), and negative social and family considerations. Barrier concerns mentioned with low frequency (less than 33%) included role conflicts, excessive educational requirements, negative school or work experiences, and work conditions.

On the quantitative side, a number of instruments have been developed and employed to examine college students’ perceptions of career barriers. Two of the most commonly used measures include the Career Barriers Inventory–Revised (CBI-R; Swanson, 1995a) and the Perceptions of Barriers Scale (POB Scale; Luzzo & McWhirter, 2001; McWhirter, 1997). The CBI-R contains 13 scales with internal consistency coefficients ranging from .64 to .86 and a median of .77 (See Table 2.3; for more information, refer to Swanson et al., 1996). A variety of

Table 2.3

Scales of the Career Barriers Inventory – Revised

Scale	Number of Items	α^*
Sex Discrimination	7	.86
Lack of Confidence	4	.77
Multiple-Role Conflict	8	.78
Conflict between Children and Career Demands	7	.75
Racial Discrimination	6	.84
Inadequate Preparation	5	.85
Disapproval by Significant Others	3	.64
Decision-Making Difficulties	8	.83
Dissatisfaction with Career	5	.79
Discouraged from Choosing Nontraditional Careers	5	.75
Disability/Health Concerns	3	.76
Job Market Constraints	4	.68
Difficulties with Networking/Socialization	5	.64

* As reported by Swanson et al. (1996).

scholars have contrasted this instrument with measures of self-efficacy (e.g., Quimby & O'Brien, 2004; Rivera et al., 2007) and coping efficacy (e.g., Lent et al., 2001; Luzzo & McWhirter, 2001), and have employed it to explore differences in perceptions of barriers across genders and ethnic groups (e.g., Luzzo & McWhirter, 2001; Rivera et al., 2007).

McWhirter (1997) developed a 24-item Perceptions of Barriers (POB) scale aimed at understanding barriers to education and career as perceived by juniors and seniors in high school. This scale contained subscales for anticipated future job discrimination (8 items, Cronbach's $\alpha = .89$), barriers which may prevent college (9 items, $\alpha = .79$), barriers anticipated during college (5 items, $\alpha = .74$), and general perceptions of barriers (2 items). Luzzo and McWhirter (2001) later modified this instrument to adapt the scale to the target audience of college students and to

accommodate revisions suggested by McWhirter (1997), such as the addition of items regarding child care, partner relationships, environmental supports, role models, and ethnicity. The revised POB scale contained two subscales: career-related barriers (11 items, Cronbach's $\alpha = .86$) and educational barriers (21 items, Cronbach's $\alpha = .88$). The POB scale, and additional modified versions of this instrument, have been employed by a number of scholars working to understand student experiences (e.g., Constantine, Wallace, & Kindaichi, 2005; Flores & O'Brien, 2002; Leal-Muniz & Constantine, 2005; Lindley, 2005; Lopez & Ann-Yi, 2006).

This set of studies, using both qualitative and quantitative research approaches, demonstrates that college students clearly do perceive education and career barriers. In addition, these studies highlight the necessity of careful consideration in formulating research designs to examine perceptions of career barriers. Despite the potential strengths of encouraging broad consideration and interpretation, as seen in the work of Luzzo and Hutcheson (1996), open-ended questioning approaches with little guidance or follow-up probing may have the opposite effect, encouraging short, surface responses that reflect a limited range of possibilities. On the other hand, currently available survey instruments, such as the POB Scale and the CBI-R, encourage reflection on a broad range of potential barriers. However, these instruments also have their weaknesses. As discussed later, several potential confounding variables may skew the data in these quantitative approaches (Lent et al., 2000), and the lack of contextual depth in the data leaves much to be desired in understanding the role career barriers actively play in the career choice process.

Environmental supports and career barriers are interrelated. As they are both derived from the surrounding environment, environmental supports and career barriers are thought to interrelate in potentially interesting and complex ways (Lent et al., 2000). The

scholarly literature examining these relationships has emerged only recently, with a few intriguing findings that deserve mention.

In examining the role of environmental supports and career barriers in the pursuit of a math or science college major, Lent et al. (2001) found supports and barriers to be inversely related, such that a greater perception of supports was associated with lesser perceived barriers. However, this was not a one-to-one relationship, and findings suggested that supports and barriers may represent distinct contextual constructs that have the potential to influence one another (i.e., certain supports compensate for certain barriers, whereas certain barriers overpower certain supports). A later path analysis study with a similar college student population found that both supports ($\beta = .69$) and barriers ($\beta = -.16$) produce significant and unique paths to self-efficacy (Lent et al., 2003). Together, environmental supports and career barriers accounted for 56% of the variance in self-efficacy beliefs.

Further examining the overlap between environmental supports and career barriers, Ali et al. (2005) reported connections between these two constructs. In their sample of high school students, the perceived likelihood of encountering career barriers was moderately, yet significantly, correlated with the current perceived support from mothers ($r = -.26$), fathers ($r = -.35$) and peers ($r = -.22$), whereas the perceived difficulty of overcoming career barriers was moderately and significantly correlated with only perceived support from mothers ($r = -.22$). Luzzo (1996), on the other hand, found that community college students who had perceived past family-related barriers (e.g., balancing work and family responsibilities, finding child care) exhibited higher current levels of career decision-making self-efficacy than those who had not perceived these past barriers. Luzzo stated that these findings might suggest that overcoming past family-related barriers may strengthen students' confidence and "serve as a catalyst for engaging

in effective career exploration and decision making processes” (p. 246). The findings of this small group of studies suggest that an examination of environmental supports has the potential to be a promising and intriguing area of research. Several scholars have suggested the need for further work in this area (e.g., Lent et al., 2000; McWhirter, Torres, Salgado, & Valdez, 2007).

Differences in environmental supports and career barriers between groups often lack clarity. A number of empirical studies have examined between-group differences in perceptions of environmental influences on career choice. Whereas some hypotheses of differences have been supported by the research data, others have resulted in unexpected and mixed findings. This section examines a sample of these findings by differences in ethnicity, gender, and institutional type.

Ethnic differences. Although current research has reported a lack of significant differences in the number of past career barriers experienced by ethnic majority students relative to ethnic minority students (e.g., Lopez & Ann-Yi, 2006; Luzzo 1993), the findings are not as clear regarding anticipated future career barriers. Although differences did not emerge in the number of perceived future career barriers for Luzzo’s (1993) sample of ethnic minority and ethnic majority college students, several other studies reported otherwise (e.g., Lopez & Ann-Yi, 2006; Luzzo & McWhirter, 2001; McWhirter et al., 2007). For example, Lopez and Ann-Yi (2006) found that African American undergraduate women anticipate significantly more career barriers than do either their White or Hispanic counterparts. Luzzo and McWhirter (2001) found that ethnic minority students (as a group) reported a significantly greater number of career barriers than did European American students.

In addition to the number of career barriers perceived, a few studies have examined students’ perceptions of difficulty in overcoming career barriers. Consistently, ethnic minority

students were found to express greater difficulty in overcoming career barriers (McWhirter et al., 2007) and lower levels of coping efficacy or confidence for overcoming career barriers (Luzzo & McWhirter, 2001; McWhirter et al., 2007).

When the specific types of anticipated career barriers reported by students are examined, current research demonstrates considerable variability. Table 2.4 provides an overview of some commonly discussed anticipated career barriers, along with whether differences were found between ethnic minority and ethnic majority groups. Ethnic minorities were consistently found to report some future career barriers more often than did ethnic majority students in areas such as study skills, academic limitations, teacher and peer support, and family pressures (Luzzo, 1993; McWhirter, 1997; McWhirter et al., 2007). However, study results conflicted regarding whether ethnic differences existed between other anticipated career barriers such as racial discrimination, sex discrimination, financial concerns, and child care issues (e.g., Luzzo, 1993; Luzzo & McWhirter, 2001; McWhirter, 1997; McWhirter et al., 2007).

Gender differences. An examination of gender differences regarding environmental influences on career choice led to additional conflicting findings. In the development and testing of the CBI-R, Swanson et al. (1996) consistently found that females indicated greater perceptions of career barriers than males across numerous instrument scales such as sex discrimination, lack of confidence, and multiple-role conflict. Luzzo and Hutcheson (1996), using an open-ended interview format, arrived at a different conclusion. For their sample, male and female students expressed no differences in the number of past career barriers. Rather, female students perceived a greater number of future career barriers than did male students. Lindley (2005) reported that female undergraduate students in her study expressed a greater number of future career barriers than did male students, yet no gender differences were found for future educational barriers.

Table 2.4

Sample of Differences in Career Barriers, as Perceived by Ethnic Minority and Ethnic Majority Students

Career Barrier	Differences Reported between Ethnic Minority and Ethnic Majority Study Participants?	
	No	Yes
Ethnic or racial discrimination	McWhirter, Torres, Salgado, and Valdez, 2007	Luzzo, 1993; Luzzo and McWhirter, 2001; McWhirter, 1997
Gender or sex discrimination	McWhirter et al., 2007	McWhirter, 1997
Financial	Luzzo, 1993; McWhirter, 1997	Luzzo and McWhirter, 2001
Study skills		Luzzo, 1993; McWhirter et al., 2007
Academic limitations—lack of confidence, ability, motivation		McWhirter, 1997; McWhirter et al., 2007
Teacher support or peer support		McWhirter et al., 2007
Family pressures or attitudes		McWhirter, 1997; McWhirter et al., 2007
Role conflict, child care, or pregnancy	McWhirter et al., 2007	Luzzo and McWhirter, 2001

Consistently, female and male students have been found to report equal confidence in their abilities to overcome future career barriers (e.g., Luzzo & McWhirter, 2001; McWhirter, 1997; McWhirter et al., 2007).

Similar to the case with ethnic differences, considering the specific types of career barriers reported by students provides a varied and complicated picture. Table 2.5 provides an overview of some of the commonly discussed career barriers, along with whether differences were found between female and male students. Some categories of career barriers presented mixed findings. For example, in the majority of studies, samples of female students expressed a greater likelihood of experiencing career barriers related to sex discrimination than did male students (e.g., Luzzo & McWhirter, 2001; McWhirter, 1997; Swanson & Tokar, 1991). However, in McWhirter et al.'s (2007) sample of high school students, females and males similarly reported low anticipation of career barriers to postsecondary education associated with sex discrimination. These scholars hypothesized that anticipation of sex discrimination may be career related, rather than education related. For this reason, their sample of high school students might not yet find sex discrimination barriers to be salient in their immediately anticipated experiences. Discrepant findings for anticipated financial barriers were also apparent in the literature. For the sample of high school students for her 1997 study, McWhirter found no gender differences with respect to financial difficulties. However other studies of high school (e.g., McWhirter et al., 2007) and college students (e.g., Swanson & Tokar, 1991) found that females reported a greater likelihood of encountering financial barriers to education than did males. Finally, gender differences in anticipated barriers related to child care and work-home role conflicts were found in some studies (e.g., Luzzo, 1995; Swanson & Tokar, 1991), but not in others (e.g., Luzzo & McWhirter, 2001; McWhirter et al., 2007).

Table 2.5

Sample of Differences in Career Barriers, as Perceived by Female and Male Students

Career Barrier	Differences Reported between Genders?	
	No	Yes
Gender or sex discrimination	McWhirter, Torres, Salgado, and Valdez, 2007	Luzzo and McWhirter, 2001; McWhirter, 1997; Swanson and Tokar, 1991
Ethnic or racial discrimination		McWhirter, 1997
Financial	McWhirter, 1997	McWhirter et al., 2007; Swanson and Tokar, 1991
Academic limitations–lack of confidence, ability	McWhirter, 1997	
Social influences		Lent et al., 2005
Family pressures or attitudes	McWhirter, 1997	
Role conflict, child care, or pregnancy	Luzzo and McWhirter, 2001; McWhirter et al., 2007	Luzzo 1995; Swanson and Tokar, 1991

Two studies regarding gender differences in perceptions of environmental supports and career barriers had such unexpected findings that they merit specific mention. Lent et al. (2005) conducted a study to assess the application of interest and choice models in SCCT across gender and university type. A total of 487 engineering students were included in the study from two Historically Black Colleges and Universities (HBCUs) and from one predominantly white state

institution (PWI). An interesting and unexpected finding emerged when data were considered by gender. For this sample of undergraduate students, women perceived more social supports and fewer social barriers than did men, which is in direct opposition to expectations based on earlier literature (e.g., Gottfredson, 1981; McWhirter et al., 1998; Nieva & Gutek, 1981). Lent et al. (2005) suggested that the growing availability of women's support services and role models in engineering could be affecting this finding, yet they caution readers against acting on such speculations in practice, stating that "women and most racial-ethnic minority groups continue to be substantially underrepresented in science and engineering fields, and the educational environment is often viewed as part of the problem" (p. 90).

Lindley (2005) predicted, for her study of 255 undergraduate students, that outcome expectations (beliefs about the consequences of pursuing a career path) would be negatively related to perceived career barriers, a hypothesis that followed the SCCT process presented by Lent et al. (1994). However, Lindley's results were quite contrary to these predictions. For male students, no significant correlations were found between perceived career barriers and outcome expectations. For female students, perceptions of career barriers were positively correlated with several types of outcome expectations. Potential reasons behind these unexpected findings included the presence of a confounding variable of occupational choice (choice of a male-dominated or female-dominated career field) or a "tendency to idealize options that are viewed as unattainable" (p. 282). Yet future research is needed to develop a more complete understanding of these findings.

Differences between institutional types. Two studies by Lent et al. (2002; 2005) examined differences in college students' perceived environmental supports and career barriers across institutional types. Lent et al. (2002) conducted structured interviews with 19 students at a

large state university and with 12 students at a small technical college to explore what prompted their career decisions, how alternatives were ruled out, what career barriers were expected, and what environmental supports or strategies the students expected to use to cope with career barriers. Many similarities between institution types emerged from the data. As can be seen in Table 2.6, interviewees at both sites reported experiences with a variety of similar environmental supports and career barriers in implementing their occupational goals, including contextual factors (e.g., access to role models; financial concerns; role conflicts) and personal factors (e.g., ability limitations, personal adjustment difficulties, self-confidence). Differences were also apparent. Only students from the large state university discussed environmental supports of career exploration in relation to leisure and work experiences. Only students from the small technical college discussed the supportive nature of the school environments and assistance with cognitive reframing, as well as barriers derived from negative life events and a lack of exposure to options.

A second study that examined differences across institutional types is the Lent et al. (2005) study mentioned previously, which examined differences between the environmental supports and career barriers perceived by engineering students at a single PWI and two HBCUs. Students at the PWI did not differ significantly in their experience of social barriers related to their educational pursuits as compared with students at the HBCUs. However, significant differences were found in relation to contextual social supports, with students at HBCUs expressing stronger supports than did students at the PWI. The authors suggested that the intentional focus of HBCUs on mentoring and role-modeling might be reflected in these results as “advantages of the HBCU environment” (p. 90). However, this suggestion was offered with caution and the need for further research to explore and substantiate this claim was recognized.

Table 2.6

Perceived Supports and Barriers across Institutional Type (Lent et al., 2002)

Factor Discussed	Large State University	Small Technical College
Contextual Supports		
Cognitive restructuring or reframing assistance		✓
Encouragement from family, friends, and teachers	✓	✓
Financial support	✓	✓
Leisure and exploratory activities	✓	
Role models	✓	✓
Supportive school environment		✓
Work experiences	✓	
Personal Supports		
Goal setting	✓	✓
Perseverance	✓	✓
Self-confidence	✓	✓
Contextual Barriers		
Financial concerns	✓	✓
Lack of exposure to options		✓
Negative life events (e.g., crime, loss of a parent)		✓
Negative social or family influences	✓	✓
Role conflict	✓	✓
Personal Barriers		
Personal adjustment difficulties	✓	✓
Ability limitations	✓	✓

Synthesis. As can be gleaned from this discussion, although understanding the many categories of environmental supports and career barriers that students experience may be a useful starting point, this is only one piece of the puzzle. Research to date has created a complicated and conflicted picture of how students interpret their environments. These conflicting study results may be due to a number of factors, including, but not limited to, differences in research populations across studies, different measurement instruments and strategies, varying interpretations of environmental supports and career barriers by either the researchers or the participants, and the confounding of these environmental supports and career barriers with other related constructs. These concerns are addressed in detail in the next section of this literature review.

When these limitations are taken into consideration, future research may benefit from pursuing explorations of within-group differences rather than between-group differences (Swanson et al., 1996; Swanson & Woitke, 1997). Chartrand and Rose (1996) offer further caution on this point, stating that when environmental supports and career barriers are delineated across group lines (e.g., gender, ethnicity, institutional type), these categorizations can result in the side effect of reinforcing stereotypes. Approaches that focus on how students process potential environmental supports and career barriers decreases the likelihood of stereotyping by connecting characterizations of personal and external influences with core cognitive processes. Connecting research with career choice process frameworks, rather than categorizations, also lends more directly to practical recommendations to alleviate the negative influence of career barriers while building positively influential environmental supports.

Environmental supports and career barriers are complex and confounded. Current literature regarding the influence of environmental supports and career barriers on the career

development process presents a “mixed picture” (Lent et al., 2000, p. 43). As demonstrated previously, high school and college students clearly do perceive both environmental supports and career barriers that influence their educational and career goals. Those environmental supports and career barriers have been shown to be interrelated, although in complicated ways. Comparisons of supports and barriers across groups based on gender, ethnicity, and institutional type have revealed unexpected, and at times, conflicting results. Scholars point to a host of additional confounding variables and complex environmental influences that have yielded an unwieldy array of research findings to date (e.g., Lent et al., 2000, 2001; Luzzo & Hutcheson, 1996; Swanson et al., 1996). This section examines some of the complex influences and potentially confounding variables, including: (a) the likelihood of encountering a career barrier versus the ability to overcome that career barrier; (b) global versus domain-specific influences, (c) coping efficacy, (d) personal affect, (e) occupational choice, (f) temporal dimensions, and (g) career barriers as hindrances versus motivators.

Likelihood of encountering career barriers versus ability to overcome career barriers.

One of the challenges in understanding the influence of career barriers on the career choice process has been the inconsistency in how career barriers are defined and measured (Lent et al., 2000). Two survey instruments are particularly prominent in the literature: the POB Scale (McWhirter, 1997) and the CBI-R (Swanson, 1995a). The POB Scale asks respondents to indicate, on a 5-point Likert scale, the likelihood that they anticipate encountering each of the 22 suggested barriers. The CBI-R presents 70 potential barrier-related items, and has been used with several response formats, including the following: (a) to indicate, on a 7-point Likert scale, the likelihood of encountering each barrier (e.g., Lent et al., 2001; Luzzo & McWhirter, 2001; Rivera et al., 2007); (b) to indicate, on a 7-point Likert scale, how much one would be hindered

by each barrier if the respondent were to encounter it (e.g., Austin, 2006; Karl-Lam, 2006; Quimby & O'Brien, 2004); and (c) to indicate responses on both the likelihood and hindrance scales (e.g., Ali et al., 2005; Rivera, 2002; Weiss, 2000). Researchers have criticized measures of career barriers that do not make a distinction between perceived likelihood and hindrance in data collection. For instance, McWhirter et al. (2007) pointed out the weaknesses of their own POB Scale instrument and those of past studies that have used this measure, highlighting its sole consideration of the likelihood of encountering barriers. They stated that “research providing more specific information about the nature of barriers perceived by young people may provide insight into the inconsistent findings in this body of research” (p. 121). Further, Swanson et al. (1996) suggested that without making a distinction between the likelihood of and perceived ability to overcome barriers, researchers risk allowing participants to interpret stimuli in different ways, thus adding uncertainty to the data collected. Swanson and Woitke (1997) recommended that taking steps to “disentangle the *likelihood* and *hindrance* components” (p. 454, italics in original) of barriers could provide crucial information for the development of interventions to assist students. However, the attempts by McWhirter, Rasheed, and Crothers (2000) to delineate among these dynamics led to inconclusive results. They used McWhirter’s (1997) Perceptions of Education Barriers (PEB) instrument with high school sophomores, asking them to rate each barrier on three scales: (a) the likelihood that the barrier would occur, (b) the magnitude of the barrier if it should occur, and (c) the estimated difficulty of overcoming this barrier. The high school students in their sample did not make clear distinctions among these three dimensions, leaving questions regarding whether the lack of distinction was due to participants’ actual viewpoints or to difficulties with the PEB instrument. Clearly, this issue requires further theory-building and measurement-oriented research.

Global versus domain-specific influences. As demonstrated in an early study by Swanson and Tokar (1991), students perceive differentiated career barriers across a variety of career-related tasks. For instance, students in their sample often mentioned a lack of information, a lack of ability, financial concerns, and pressure from significant others as substantial hindrances to pursuing a particular academic major. Yet in the case of finding a first job, students cited the job market and personal qualities (qualifications, skills, experiences) as the most substantial hindrances. In the study by Lent et al. (2001), perceptions of task-specific barriers overlapped considerably with perceptions of global influences. Moderate to high correlations were found between domain-specific barriers of pursuing math or science majors and perceptions of global barrier such as job market constraints ($r = .46$), racial discrimination ($r = .49$), sex discrimination ($r = .51$), and the disapproval of significant others ($r = .36$). Lent et al. stated that these notable correlations suggested considerable conceptual overlap between domain-specific math or science barriers and global career development barriers, yet the two types of barriers maintain a reasonable amount of distinctiveness in practice. Lent and Brown (2006) expressed concern that overreliance on global measures in the literature has led to a lack of precision in study findings. They suggested that assessments tailored to domain-specific environmental supports and career barriers have the potential to lead to stronger predictive models of the career choice process, yet they recognized that not many instruments have been developed for these purposes. Whether employing a pre-determined instrument or developing a new instrument for measuring environmental supports and career barriers, item formats and content require careful scrutiny to accurately interpret findings for a particular population (Swanson et al., 1996).

Coping efficacy. Lent et al. (2000) highlighted coping efficacy as an inherent challenge to many career barrier instruments that assess the likelihood of experiencing barriers and the

expected hindrance of those barriers. Theoretically, coping efficacy, defined as “beliefs about [one’s] ability to manage or negotiate obstacles” (p. 41), would directly influence the perception of career barriers. Viewing oneself as capable of coping with a particular environmental condition would naturally lead one to avoid perceiving it as a career barrier. To disentangle coping efficacy from career barrier perceptions, Lent et al. recommend the development and use of separate measures for these constructs.

Several instances of studies that examine both career barriers and coping efficacy can be found in the literature (e.g., Lent et al., 2001; Lopez & Ann-Yi, 2006; Luzzo & McWhirter, 2001). As a group, these findings demonstrate an overlapping, but distinctive, contribution made by each construct. Lent et al. (2001) found that, for their group of 111 undergraduate students, higher coping efficacy was associated with perceptions of lesser barriers ($r = -.42$), greater supports ($r = .63$), and high math course self-efficacy ($r = .53$). The particularly large correlation between coping efficacy and perceptions of environmental supports notably exceeded the authors’ predictions. The authors suggested that these moderate to large correlations demonstrate considerable interrelation among the constructs, yet perceptions of career barriers, environmental supports, and coping efficacy still “[appear] to reflect somewhat distinct capabilities” (p. 480) that require further examination to understand their unique and joint contributions to the career choice process. More recently, Lopez and Ann-Yi (2006) examined career indecision among a diverse group of undergraduate women using the POB Scale and Coping with Barriers Scale developed by Luzzo and McWhirter (2001). Lopez and Ann-Yi found that both beliefs about coping with barriers and perceived barriers offered unique contributions to prediction models of career indecision, thereby highlighting these two constructs as “nonredundant sources of information” (p. 42) that distinctively add to the understanding of students’ career indecision.

Considering the findings of Lent et al. (2001) and Lopez and Ann-Yi (2006) together provides an understanding of coping efficacy as a related and overlapping, yet unique, contributor (unique from perceptions of career barriers) to the career choice process.

Personal affect. Because the interpretations of environmental supports and career barriers are filtered through the lens of the perceiver, it is natural to speculate that an individual's personal affect (e.g., pessimistic, optimistic) influences his or her experiences of environmental influences. Lent et al. (2000) hypothesized that, in comparison with those with a high positive affect, people inclined to a high negative affect are likely to: (a) perceive more barriers, (b) perceive fewer supports, (c) discount their experiences of success, and (d) experience diminished coping efficacy beliefs. Although much room remains for research in these areas, a few studies have tested these ideas. Lent et al. (2001) found that, consistent with their expectations, undergraduate students' perceptions of domain-specific math- and science-related barriers correlated moderately with negative affect ($r = .30$), whereas their perceptions of domain-specific math- and science-related supports correlated moderately with positive affect ($r = .34$), suggesting a relationship between perceptions of environmental supports and a "tendency to focus on the positive aspects of one's environment" (p. 480). Creed, Patton, and Bartrum (2004) examined a similar construct in looking at the relationship between external career barriers and the cognitive style of optimism or pessimism for high school seniors. Optimism and pessimism were unable to predict variance in perceived career barriers for their full sample or for males in the sample. For females only, however, optimism and pessimism predicted a significant 9% of the variance in perceived career barriers, with a pessimistic cognitive style particularly related to perceptions of career barriers ($r = .28$). Although these findings are less definitive than the findings of Lent et al. (2001), they do suggest potential avenues for further exploration.

Occupational choice. As discussed earlier, Lindley's (2005) study correlating career barriers and outcome expectations for female undergraduate students led to unexpected results. Contrary to predictions, perceptions of career and educational barriers were positively correlated with several types of outcome expectations, primarily those relating to traditionally male-dominated fields. One reason suggested for these unexpected findings was the presence of a confounding variable of occupational choice (choice of a male-dominated or female-dominated career field). Lindley suggested that "women who have chosen male-dominated occupations may have positive outcome expectations for these occupations but also perceive more barriers to their own career development" (p. 281). Therefore, choice of occupation may be intertwined with perceptions of both career barriers and coping beliefs. Rivera et al. (2007) came to a related, yet different, conclusion for their sample of Hispanic women at an urban community college. Findings of this study suggested that Hispanic women who perceived a greater number of career barriers were more likely to select female-dominated occupations than women who perceived fewer career barriers. In a hypothesized explanation of these findings, Rivera et al. (2007) suggested that the tendency to select careers considered "appropriate for women" (p. 57) might be a coping strategy aimed at limiting career considerations to overcome career barriers. The studies showed that the interaction of career barriers and occupational choice is not well understood and could benefit from further research.

Temporal dimensions. Although empirical studies of the temporal dimension of environmental supports and career barriers are lacking in the current literature, a few scholars have discussed the influence of time on the perception of supports and barriers in career development (e.g., Lent et al., 1994, 2000; Luzzo, Hasper, Albert, Bibby, & Martinelli, 1999). Within SCCT, contextual influences fall into two time-oriented categories: distal and proximal to

career choice (Lent et al., 1994). Distal factors have their basis in past learning experiences that have shaped a person's cognitions. Proximal factors come into play at the time a career choice is made, creating the "opportunity structure" (Lent et al., 2000, p. 40) in which a person engages career choices. Both of these sets of influences constantly evolve based on the dynamic interplay of learning experiences, environmental cues, and career choices in which one engages. For instance, as suggested in the thought-listing study by Swanson and Tokar (1991) previously discussed, different career development tasks (choosing a major or career, obtaining the necessary degree or training, acquiring a first job after college, advancing in a career, balancing career and family) triggered different salient and anticipated career barriers. Yet because these data were collected from a group of college students at one point in time, it is difficult to ascertain whether the career barriers that students brainstormed remained salient for them over time. There remains a need for additional research to develop a deeper understanding of the temporal dimensions of environmental influences on the career choice process. Qualitative and longitudinal research approaches have been suggested as potential strategies for tackling these issues (Lent et al., 2000; Luzzo et al., 1999)

Career barriers as hindrances versus motivators. In 1991, Swanson and Tokar recognized that little was known regarding the ways that individuals face and cope with perceived career barriers; they suggested that "barriers may be perceived as a defeat to some individuals and as simply more of a challenge to others" (p. 104). Much of the research discussion since then has remained at the level of educated guesses regarding why people respond differently to career barriers.

Luzzo (1995) conducted a multiple methods study with a group of undergraduate students by collecting quantitative measures of career maturity, decision-making skills, and vocational

congruence, as well as by conducting a series of qualitative interviews regarding personal career development processes and their experience of career barriers. Despite the fact that women in this sample mentioned more role conflicts and barriers than men did, the data seemed to indicate that “undergraduate women seemed to be much more planned in the career decision-making process than undergraduate men” (p. 321). As a potential explanation for this finding, Luzzo suggested that the perception of career barriers might serve as “a motivating force” (p. 321) to encourage these women to plan carefully to overcome anticipated obstacles. Luzzo and Hutcheson (1996) offered additional compelling insights regarding potential reasons that some people may view career barriers as hindrances whereas others interpret them as motivators. With a sample of undergraduate college students, Luzzo and Hutcheson examined the contribution of the attributional style (internal vs. external locus of control) to the perception of both career barriers and career decision-making capabilities. They found that students who perceived numerous career barriers, as well as those who viewed career decision-making tasks as external and uncontrollable, reflected “a general concern for and apprehension toward making career decisions” (p. 128). On the contrary, students who perceived career barriers, yet viewed career decision-making tasks as internal and controllable, expressed greater confidence in their ability to overcome those barriers and effectively engage in career choices. These findings suggest that, although perceived career barriers might “substantially interfere” with some students’ career choice process, other students may find barriers to serve an “adaptive purpose” (Luzzo & Hutcheson, 1996; p. 125), encouraging action to explore and plan. Future barriers research would benefit from considering this issue.

Synthesis. This discussion demonstrated the complexity of examining environmental supports and career barriers, particularly in relation to the many interactive variables that

confound research results. The need remains to carefully disentangle constructs such as (a) the anticipated likelihood of encountering career barriers versus the anticipated ability to overcome them; (b) the consideration of global versus domain-specific environmental supports and career barriers; (c) the influence of characteristics such as coping efficacy, personal affect, and occupational choice on career development behaviors; (d) the interpretation of career barriers as either hindrances or motivators; and (e) the engagement of career choice behaviors over time.

Researchers are advised to consider research design decisions carefully to ensure an appropriate selection of methods and instruments for the research questions and populations of interest. Approaches should clearly define terms and constructs, delineating between potentially confounded variables. Instructions provided to participants should appropriately guide participants to consider constructs of interest to the study. Finally, caution is recommended in the interpretation and application of study results, on the part of both researchers and consumers of research.

Role of Career Development Interventions as an Environmental Support

The discussion of literature thus far has demonstrated that college students perceive and experience both environmental supports and career barriers to attaining their academic and career goals (e.g., Ali et al., 2005; Hackett et al., 1992; McWhirter, 1997; Swanson & Tokar, 1991). Understanding the impact of environmental influences on individuals is challenging due to the complex and confounded nature of these influences, measurement challenges, and the scarcity of longitudinal and qualitative research that explores how environmental influences develop and change over time (e.g., Lent et al., 2000, 2001; Luzzo et al., 1999). Evidence exists to demonstrate that, for many, experiencing career barriers may hinder the ability to achieve educational and career goals (e.g., Lopez & Ann-Yi, 2006; McWhirter et al., 2007), whereas

experiencing environmental supports may increase the likelihood of persistence and goal attainment (e.g., Ferry et al., 2000; Hackett et al., 1992). Yet what can be done to support college students as they make academic and career choices, as well as to support them in understanding and addressing career barriers?

Career interventions may be viewed as one example of an environmental support that strives to assist, reinforce, and encourage students during the process of making academic and career choices (Buescher, Johnston, Lucas, & Hughey, 1989). Considering career interventions in light of Lent et al.'s (1994) SCCT, programs and services offered by college career centers would be anticipated to influence an individual's internal career choice processes by helping to (a) connect interests with potential personal goals, (b) select personal goals, (c) connect personal goals with potential performance accomplishment activities, and (d) select performance accomplishment activities. These expectations are evidenced in two hypotheses set forth by Lent et al. (1994), in which career interventions can be viewed as an instrumental support system that assists students to uncover and use beneficial opportunities in ways that diminish the influence of career barriers. These hypotheses include the following:

Hypothesis 5B: The *relation of interests to choice goals* will be moderated by opportunity structures (e.g., job availability, economic conditions, costs associated with occupational entry, perceived and actual barriers to entry) and *support systems* (e.g., financial, emotional, and instrumental support). Interest-choice goal relations will be stronger when opportunity and support are perceived to be high versus low. Conversely, these relations will be attenuated when perceived barriers (e.g., discrimination, disapproval of significant others) are high versus low (p. 108, italics added for emphasis).

Hypothesis 6C: The *relation of choice goals to entry behaviors* will be moderated by opportunity structures and *support systems*. Goal-behavior relations will be stronger when opportunity and support are perceived to be high versus low. Conversely, these relations will be attenuated when perceived barriers (e.g., discrimination, disapproval of significant others) are high versus low (p. 109, italics added for emphasis).

If career interventions provide such support, one might expect to find evidence of positive developmental outcomes resulting from engagement in such programs and services. This section of the literature review explores studies regarding the influence of career interventions, examining strengths and weaknesses in the claims that can be made. First, meta-analyses of career intervention outcomes studies over the past 60 years are reviewed to provide an overview of what is understood and missing from the literature. Second, career intervention outcomes studies related to Bandura's (1977, 1986, 1997) Social Cognitive Theory and Lent et al.'s (1994) SCCT are considered to examine evidence and insights regarding how career interventions influence the career choice process.

Meta-analyses of career intervention outcomes. On the basis of reviews of career intervention outcomes studies (e.g., Hughes & Karp, 2004; Oliver & Spokane, 1988; Whiston et al., 1998, 2003) ample research evidence indicates that many different types of career interventions (e.g., individual counseling, career courses, computer-assisted career guidance programs), designed for a wide variety of people across the lifespan (e.g., college students, K-12 students, adults in career transition), assist clients in making and implementing career choices based on the indicators chosen for their studies (e.g., academic achievement, career decision-making self-efficacy, career exploration behaviors, career indecision, career maturity, vocational identity). Oliver and Spokane (1988) conducted a meta-analysis of 58 experimental design studies published between 1950 and 1979 in which they explored the relationships between career interventions and their outcomes. The authors reported an overall average effect size across studies of 0.82, an average effect size of 0.65 after removing outliers, and an average effect size of 0.48 when weighting the effect size by sample size. These effect sizes translate into moderate to large effects (Cohen, 1988) resulting from career interventions. Whiston et al.

(1998) replicated and extended the work of Oliver and Spokane (1988), using new meta-analytic techniques that had evolved over time. They examined 47 experimental design studies published between 1983 and 1995. Findings of their meta-analysis yielded an average effect size of 0.45 across all studies. The authors contended that these new results continue to support the claim that career interventions may be considered “moderately effective” (p. 160) overall. Building on these two meta-analytic studies, Hughes and Karp (2004) employ a narrative approach to synthesize more than 50 outcomes studies of school-based career interventions published between 1983 and 2003. Their review also concluded that primarily positive findings have been uncovered in published studies addressing a wide variety of career interventions. Considering these research syntheses, among others (e.g., Baker & Popowicz, 1983; Fretz, 1981; Myers, 1986), it appears reasonable to accept the statement by Oliver and Spokane (1988) that “career counseling has generally been shown to have positive effects, and the question of whether career counseling works is no longer needed” (p. 447).

However, beyond this broad conclusion, these scholars offer little regarding what aspects of career counseling and career interventions are particularly effective or for whom they are effective. What can be determined regarding specific treatment characteristics and populations has been minimal and sometimes conflicting. For example, when examining treatment type, Oliver and Spokane (1988) concluded that class-based interventions had the largest effect size ($d = 2.05$), followed by workshops ($d = 0.75$), and individual counseling ($d = 0.74$). Whiston et al. (1998), however, found individual counseling to have the highest overall effect size ($d = 0.75$), with workshops ($d = 0.22$) and class-based interventions ($d = 0.15$) lagging considerably behind. Within their narrative approach, Hughes and Karp (2004) arrived at a conclusion regarding career courses that fell somewhere between these two meta-analyses. They stated that, although

students seem to benefit from career courses, “there is little evidence that gains—either academic or career-related—are maintained over time” (p. 29). One area of agreement regarding treatment type across these studies was that self-directed interventions that lacked direct counselor involvement produced weak effect sizes ($d = 0.10$, Oliver & Spokane, 1988; $d = 0.11$, Whiston et al., 1998). Additional disagreement was found regarding the variable of treatment intensity, defined by Oliver and Spokane (1988) as the number of hours plus the number of sessions of a treatment. Oliver and Spokane found treatment intensity to be the only treatment characteristic to contribute significantly to the magnitude of an effect size, such that greater effects were produced by more time-intensive interventions. Whiston et al.’s (1998) results, however, did not substantiate this finding. They suggested that “a linear combination of hours and sessions may not adequately depict the relationship between treatment intensity and outcome” (p. 161). Conflicting and limited findings such as these have led many scholars to “lament that although we know that career interventions are effective, we know little about how, why, and for whom they work” (Brown & Ryan Krane, 2000, p.740).

Ryan (1999) and Brown and Ryan Krane (2000) shed some light on effective components of career interventions in a meta-analytic study that re-examined research included in the meta-analyses by Oliver and Spokane (1988) and Whiston et al. (1998), as well as other relevant studies that had emerged in the literature between 1995 and 1998. Unlike in previous meta-analyses, Ryan (1999) coded for 18 intervention components and used these in her regression analyses to examine their contributions to effect size variability beyond that of the study, method, participant, and treatment characteristics that were examined in previous meta-analyses. The 18 intervention components examined included (a) anxiety reduction, (b) attention to building support, (c) attention to decreasing barriers, (d) card sort procedures, (e) cognitive

restructuring, (f) computer-guided assistance, (g) counselor support, (h) decision-making models and strategies, (i) individual interpretations and feedback, (j) modeling, (k) outside reading, (l) personal performance accomplishments, (m) self-report inventories, (n) values clarification, (o) vicarious achievements, (p) vocational exploration, (q) workbooks and written exercises, (r) world of work information, and (s) other. A number of Ryan's findings were consistent with previous meta-analyses. For example, participant characteristics (e.g., age, education level, motivation) failed to contribute to effect-size variability over that accounted for by the study and method characteristics. Additionally, self-directed interventions appeared to be less effective ($d = 0.23$) than other forms of treatment, such as individual counseling ($d = 0.41$) or class-based interventions ($d = 0.43$). With regard to treatment intensity, Ryan examined average effect sizes against the number of treatment sessions and found an interesting relationship. Whereas single-session treatments produced an average effect size of 0.24, a sharp increase was seen for 2- or 3-session treatments, which yielded an average effect size of 0.47. Again, a sharp increase in average effect size was seen for 4- or 5-session treatments ($d = 1.26$). Yet, after this, the relationship between number of sessions and average effect sizes declined considerably, falling to 0.35 for interventions with 12 or more sessions.

Perhaps Ryan's (1999) most unique and compelling results related to the exploration of intervention components. Five components were identified as contributing significantly to effect sizes beyond those accounted for by characteristics of the study and methods. These "critical components" included: (a) workbooks and written exercises, (b) individualized interpretations and feedback, (c) world of work information, (d) modeling opportunities, and (e) attention to building support. Moreover, the greater the number of these critical components included in an intervention, the greater the resulting effect size. Interventions that did not include any of these

components produced an average effect size of 0.22. Inclusion of only one component produced an average effect size of 0.45, whereas the average effect size was 0.61 for interventions with 2 components and 0.99 for interventions with 3 components. No studies examined in the meta-analysis included more than 3 of the identified critical components. Brown and Ryan Krane (2000) were quick to clarify that these findings do not suggest the other 13 components are “ineffective or unnecessary. Rather, they simply suggest that the effectiveness of career interventions for choice-making difficulties can be improved (often dramatically) by ensuring that [the] five components are included as a part of the intervention” (p. 745).

Finally, Whiston et al. (2003) conducted a meta-analysis specifically examining differences among treatment types, including: (a) individual career counseling, (b) individual test interpretation, (c) group career counseling, (d) group test interpretation, (e) career workshop or structure groups, (f) career classes, (g) career computer systems without counseling, (h) career computer systems with counseling, and (i) counselor-free interventions. They examined research published between 1975 and 2000, covering and extending the period addressed by Whiston et al. (1998) and Ryan (1999). Whiston et al. (2003) began their discussion by suggesting that “a disturbing trend appears to be a decreased interest in career outcome research as 60% of the studies were published between 1975 and 1985, whereas the remaining 40% of the studies were conducted [between 1986 and 2000]” (p. 402). They also noted the paucity of studies including individual career counseling, which made it difficult to make claims regarding of this treatment type. The clearest finding asserted by Whiston et al. (2003) was that “counselor-free interventions are not as effective as other career treatment modalities and that effective career interventions need to include a counseling component” (p. 406).

Despite a few intriguing findings from these meta-analyses, it seems that limited conclusions can be drawn regarding what treatment format and structure might lead to an effective career intervention. A variety of limitations have been highlighted as contributing to the challenges in examining career intervention outcomes, particularly as they pertain to specific client groups, including (a) a lack of overlap in available studies; (b) insufficient reporting of validity, reliability, and subject attribute data; (c) few standardized measures across studies; (d) a lack of detailed information presented in the research regarding counseling intervention components; and (e) short-term interventions and data collection that limit the ability to examine lasting changes over time (Heppner & Heppner, 2003; Hughes & Karp, 2004; Oliver & Spokane, 1988; Whiston et al., 1998, 2003). Additional research on career intervention outcomes has been called for to distinguish the unique and meaningful contributions offered by career specialists (e.g., as opposed to psychotherapists; Brown & Ryan Krane, 2000), as well as to discover ways to enhance services to meet the needs of career counseling clients.

Outcomes studies related to Social Cognitive Theory and Social Cognitive Career Theory. Despite numerous calls made over the past two decades for process-oriented research on career counseling (e.g., Heppner & Heppner, 2003; Savickas, 2003; Swanson, 1995b; Whiston, 2003), very few studies have examined the application of process models, such as SCCT, to tests of the effectiveness of career interventions. This section provides an overview of available past studies, looking first at the internal process functions of SCCT including self-efficacy, outcome expectations, interests, and goal setting. This is followed by studies examining personal and environmental influences as outlined by SCCT. Finally, career intervention outcomes studies that examine changes in career decision-making self-efficacy (CDMSE) are explored, as an important case of the self-efficacy construct included in the SCCT model.

Self-efficacy, outcome expectations, interests, and goal setting. The extensive literature review for this study located only three research studies that used Social Cognitive Theory (Bandura, 1977, 1986, 1997) or SCCT (Lent et al., 1994) as a foundation for examining career intervention outcomes. All three studies examined changes in variables related to the internal process functions of SCCT (self-efficacy, outcome expectations, interests, and goal setting) as a result of a planned intervention. Two studies designed interventions based on Social Cognitive Theory, specifically regarding sources of self-efficacy, whereas the third study examined the outcomes of a career development course that included a wide variety of self-exploration, information gathering, and career development skill building tasks.

Diegelman and Subich (2001) examined whether a career intervention based on verbal persuasion could influence students' intent to pursue a particular career path. In that study, nonpsychology majors were recruited from an introductory psychology class to participate in a 25-minute discussion of career opportunities for people with a B.A. degree in psychology. Pretest and posttest surveys examined participants' reflections on self-efficacy, outcome expectations, interests, and goals. The study results revealed that, whereas pretest and posttests did not show a significant increase in self-efficacy, significant increases in outcome expectations, interest in psychology, and intent to pursue a psychology degree all occurred after the intervention.

Luzzo et al. (1999) discovered similar findings in a study examining a career intervention designed to enhance math and science self-efficacy that incorporated performance accomplishment and vicarious learning components. That study contained four experimental groups, including the (a) control, (b) performance accomplishment treatment, (c) vicarious learning treatment, and (d) performance accomplishment and vicarious learning treatment. The

performance accomplishment condition consisted of college students completing and receiving immediate (mostly positive) feedback on a set of incomplete number series problems. For the vicarious learning condition, students watched a 15-minute video of student testimonials about students deciding on and pursuing math and science majors. Posttest data were collected at two times, immediately after the treatment and 4 weeks later, to explore whether the influences persisted over time. For the 94 first-year college students who participated in the study, only the performance accomplishment group demonstrated statistically significant gains in self-efficacy for math- and science-related courses immediately after the intervention (effect size = 0.51). Four weeks after the intervention, participants' interest in math and science careers was significantly higher for students in the treatment that provided both the vicarious learning and performance accomplishment conditions (effect size = 1.40) than in any other group. Significant effects on math and science course self-efficacy, occupational self-efficacy, and career interests were also found for the performance accomplishment only group. The vicarious learning and control groups demonstrated no significant gains at either posttest time.

McWhirter et al. (2000) applied the SCCT model to an exploration of a 9-week career education class for high school sophomores to examine the influence of the class on CDMSE, vocational skills self-efficacy, outcome expectations, and perceived educational barriers. Students were divided into two groups. One group participated in the career education class in the first academic quarter, whereas the other group participated in a health education class. In the second academic quarter, the groups then switched class topics, with career class participants taking the health education class and vice versa. Survey data were collected at three times: (a) at the beginning of the first quarter, (b) at the end of the first quarter, and (c) at the end of the second quarter. Pretests and posttests demonstrated small, yet significant, increases in CDMSE

and vocational skills self-efficacy immediately after the career education class treatment. For the students who took the career education class during the first quarter, both types of self-efficacy scores decreased during the second quarter, but these remained higher than the pretest scores. Outcome expectations were also significantly higher immediately after the career class, yet these increases were not maintained over the 9-week lag time. Influences on perceived educational barriers were not found for the treatment group.

Together, these three studies demonstrate positive influences of career interventions on gains in self-efficacy, outcome expectations, and expressions of career interests. Diegelman and Subich (2001) also found a significant increase in academic goal intentions. Explorations of intervention components based on Bandura's (1977, 1986, 1997) sources of self-efficacy also reported significant results. In particular, performance accomplishment activities and verbal persuasion techniques emerged as effective for enhancing self-efficacy, outcome expectations, interests, and goal intentions (Diegelman & Subich, 2001; Luzzo et al., 1999). However, vicarious learning used alone did not seem to result in significant gains in self-efficacy or expressed interest (Luzzo et al., 1999). Findings regarding delayed posttests and lag times present a puzzle. Luzzo et al. (1999) observed continued increases in self-efficacy and expressions of interests after a 4-week lag time period, whereas in the study by McWhirter et al. (2000), initial increases in self-efficacy and outcome expectations diminished over a 9-week lag time. It is difficult to draw conclusions regarding these changes over time because there are only two studies to consider and the two studies focused on different populations and treatment types.

Environmental supports and career barriers. Studies exploring the effects of career interventions on perceptions of environmental supports and career barriers represent a considerable gap in the literature. Only one study, that by McWhirter et al. (2000) previously

mentioned, used SCCT as a theoretical foundation to examine changes in perceived educational barriers based on a career intervention (a 9-week career education class for high school sophomores) via a pretest and posttest design. No changes in perceived barriers were found for the treatment group. However, differences were found between the pretest and posttest for the combined treatment and control groups. The authors suggested that the perception of barrier scores may have been influenced by the beginning of a new school year, and that perceived barriers decreased over time due to students' becoming "more familiar with their schedules and the demands of their current educational experience" (p. 338). They also noted difficulties with the barriers measure, which asked participants to reply to each item on three scales: (a) the likelihood that the barrier would occur, (b) the magnitude of the barrier if it should occur, and (c) the estimated difficulty in overcoming this barrier. Participants did not make distinctions between these three scales, leaving some room for question in the interpretation of student responses.

Evidence of the influence of career interventions on perceived environmental supports is recognized only sparingly in the literature. Mann (1972) examined the use of a "balance sheet" career intervention with high school seniors to support their college choice. One part of this intervention was to brainstorm pros and cons of their available choices in relation to environmental supports (or barriers) such as parents, friends, and their community. Immediate and 4-month follow-up posttests indicated that the treatment group, in comparison with the control group, tended to (a) consider a wider range of alternatives, (b) express less regret and concern about their choice after the decision, and (c) were less interested in receiving dissonance-reducing information. Palmer and Cochran (1988) and Kush and Cochran (1993) also studied career choices of high school students. Both studies examined the effectiveness of a self-

guided career intervention called “The Partner Program,” in which parents worked through a structured program with their child following a self-help manual. Participants were given 4- to 5-weeks to complete the program, and pretest and posttests were administered to examine changes over time. Palmer and Cochran (1988) found that treatment participants demonstrated a “marked improvement” (p. 74) in their attitudes toward and capacities for completing career development tasks, as well as a significantly stronger child–parent bond. Kush and Cochran (1993) reported that, after their participation in the program, high school seniors showed greater career certainty, less indecision, more career salience, and a stronger ego identity.

What little evidence is available regarding the influence of career interventions on perceptions of environmental supports and career barriers provides more suggestions for future research directions than insights or solutions. Note that in this small selection of studies, no change was found in perceptions of career barriers related to career interventions (McWhirter et al., 2000), whereas some positive influences were found resulting from incorporating discussion of environmental supports (Mann, 1972) or including supportive individuals themselves in the career intervention (Kush & Cochran, 1993; Palmer & Cochran, 1988). Findings such as these have led some scholars (e.g., Brown & Ryan Krane, 2000; Lent et al., 2000; Richie et al., 1997) to suggest that there may be value in shifting future research away from a tendency to focus on career barriers toward an examination of environmental supports: What supports are available to clients? How can career interventions help clients (a) identify sources of support and (b) develop support plans to help them overcome barriers and persist toward their career goals?

Career decision-making self-efficacy. CDMSE is defined as “an individual’s degree of belief that he or she can successfully complete the tasks necessary to making career decisions” (Betz, Klein, & Taylor, 1996, p. 48). Instruments designed to measure CDMSE, such as the

Career Decision Self-Efficacy Scale (CDSE Scale; Betz & Taylor, 2001), provide insights into how clients think about their personal capabilities in relation to the process of making education and career choices. CDMSE, as a specific type of self-efficacy, also has clear connections to Bandura's (1977, 1986, 1997) Social Cognitive Theory and Lent et al.'s (1994) SCCT.

CDMSE has “received substantial attention in the career development literature” (Luzzo & Taylor, 1994) and has been connected to numerous career development variables. For example, significant positive relationships have been found between CDMSE and engagement in career exploration activities (Blustein, 1989; Gushue, Clarke, Pantzer, & Scanlan, 2006; Gushue, Scanlan, Pantzer, & Clarke, 2006), vocational identity (Gushue, Clarke, et al., 2006; Gushue, Scanlan, et al., 2006; Robbins, 1985), academic and social integration (Peterson, 1993), and career decidedness (Robbins, 1985; Taylor & Popma, 1990). On the other hand, significant negative relationships have been found between CDMSE and variables related to career decision-making difficulties, such as career indecision (e.g., Betz & Luzzo, 1996; Robbins, 1985; Taylor & Betz, 1983; Taylor & Popma, 1990) and difficulty committing to a college major (Betz, 2004). As indicated by Betz (2004), more than 20 years of research has clearly demonstrated that “self-efficacy expectations do in fact significantly influence career choices, performance, and persistence” (p. 343), which positions CDMSE as a central part of the career choice process. Many scholars have recommended that increasing CDMSE should be a primary goal of career interventions (e.g., Betz, 1992; Gainor, 2006; Ganske & Ashby, 2007; Peterson, 1993). However, few studies are available in the current literature to examine the effectiveness of career interventions for helping clients increase their CDMSE (Maples & Luzzo, 2005). The results of available studies are summarized here.

Foss and Slaney (1986) provided an early example of a systematic effort to increase CDMSE via a career intervention. In their study, female undergraduate students from an introductory psychology course watched a 30-minute videotape in which women spoke about career development. Elements of verbal persuasion and vicarious learning within the video were aimed at reducing sex role stereotyping in career planning and broadening the range of women's perceived career options. The pretest data were collected immediately prior to observing the video, and the posttest data were collected 2 weeks later. Results showed significant increases in CDMSE 2 weeks after exposure to the video.

Two studies examined the effects of verbal persuasion in individual career counseling on CDMSE. First-year college students in the study by Luzzo & Taylor's (1994) completed a 2-hour World of Work Inventory that examined career interests, job satisfaction indicators, and vocational training potentials. The treatment group participants then engaged in an individual counseling session that was designed to "persuade participants verbally that they possessed the ability to acquire the requisite skills for effective career decision making" (p. 33). The pretest and posttest demonstrated a significant increase in CDMSE for the treatment group, whereas the control group demonstrated no change. Krieschok, Ulven, Hecox, and Wettersten's (2000) combined intervention of career counseling and resume preparation was designed to engage military veterans who may otherwise be reluctant to seek career counseling. The intervention incorporated verbal persuasion to help veterans focus on their individual strengths, accomplishments, and potential. Although only 13 participants completed the pretest to posttest study, significant increases in CDMSE were observed with a large effect size ($d = 1.41$).

The combination of individual career counseling with standard interest inventories has also been examined in relation to effects on CDMSE. Luzzo and Day (1999) engaged a group of

first-year college students to evaluate how CDMSE could be affected by (a) completing the Strong Interest Inventory (Strong, Hansen, & Campbell, 1994) and (b) participating in an individual feedback session regarding the inventory results. Feedback sessions were designed to incorporate elements of verbal persuasion and performance accomplishments. The 99 participants were randomly assigned to a control group or one of two treatment groups: (a) the Strong Interest Inventory only, or (b) the Strong Interest Inventory and a feedback session. Students who completed the interest inventory and feedback session exhibited significant increases in CDMSE relative to students in the other two experimental groups. Moderate effect sizes were reported. Uffelman, Subich, Diegelman, Wagner, and Bardash (2004) compared the effects of three modes of interest assessment on CDMSE. Introductory psychology courses were used to recruit 81 undecided college students, who were randomly assigned to one of four experimental groups: (a) interests assessed via the Self-Directed Search (Holland, Fritzsche, & Powell, 1994) followed by an interpretative session with a counselor ($n = 22$), (b) interests assessed via the Self-Directed Search within two process-oriented interactive sessions with a counselor ($n = 19$), (c) interests assessed via the Strong Interest Inventory followed by an interpretive session with a counselor ($n = 21$), and (d) a no-treatment control group ($n = 19$). The varying levels in the Self-Directed Search treatment were designed to examine critical treatment components as suggested by Brown and Ryan Krane (2000). Comparisons of pretest and posttest data revealed significant increases in CDMSE for all three treatment groups, as well as no change in CDMSE for the no-treatment group. However, contrary to the authors' hypotheses, no differences were found between the three treatment groups.

Two additional studies examined how CDMSE might be affected by the combination of individual career counseling with use of DISCOVER (ACT, 1998), a computer-assisted career

guidance system. Fukuyama, Probert, Neimeyer, Nevill, and Metzler (1988) invited 77 undergraduate students who were enrolled in an introductory psychology course to participate in a pretest survey and orientation session to learn about the DISCOVER program. Approximately 3 days later, students then spent 45 minutes completing assessment materials and 1 hour working with the DISCOVER program. The control group completed the posttest surveys prior to using the DISCOVER program; whereas the treatment group completed the posttest surveys after using the program. Results showed a significant increase in CDMSE for the treatment group. A study by Maples and Luzzo (2005) engaged university students who sought career counseling services at a university career center. The 34 participants were randomly assigned to one of four treatment groups: (a) 1-hour DISCOVER session only, (b) 45- to 50-minute career counseling session only, (c) both DISCOVER and career counseling sessions, or (d) control. Pretest and posttest assessments were delivered over a 10- to 14-day period. Although significant main effects were not found for the counseling treatment, a significant increase in CDMSE, with a moderate effect size (0.541), was observed for students in the two treatment groups who had used DISCOVER. Note that these study results contradict those found in the meta-analyses discussed previously (e.g., Oliver & Spokane, 1988; Whiston et al., 1998, 2003) such that no significant change was found for the career counseling treatment, and significant results were found for the counselor-free intervention using DISCOVER.

Finally, four studies examined the effects of group career counseling interventions on CDMSE. Note that this set of studies covers a much more diverse client population than the studies presented previously. In the first three studies, the activities that formed the foundation of the group career counseling interventions were based on Bandura's (1977, 1986, 1997) theorized sources of self-efficacy: performance accomplishment, vicarious learning, verbal or social

persuasion, and affective state. Foltz and Luzzo (1998) evaluated the effectiveness of a career counseling workshop on the CDMSE of 66 nontraditional college students who ranged in age from 26 to 54. The workshop met on two occasions, with each session lasting approximately 2 hours. Study results showed significantly higher gains in CDMSE for the treatment group immediately after the workshop, as compared with a delayed-treatment group. Sullivan and Mahalik (2000) investigated the effectiveness of a career group intervention on the CDMSE of college women. The treatment group consisted of 31 women who reported moderate to high levels of career indecision at the outset of the treatment. These women participated in a 6-week career group that met for a 90-minute period each week. Findings indicated that the women in the treatment group experienced increases in CDMSE beyond those experienced by women in the control group. O'Brien et al. (2000) examined the effectiveness of a career exploration program on the CDMSE of economically disadvantaged high school students attending an Upward Bound Summer Institute. Participants attended five 50-minute sessions over 5-weeks. In addition to focusing on sources of self-efficacy, anxiety reduction was a fundamental focus of the sessions. The treatment group was composed of 26 participants, and the control group was composed of 39 participants. Study findings indicated that, after the treatment, students involved in the career exploration program reported higher levels of CDMSE than those in the control group. The final group career intervention study was conducted by Bikos and Furry (1999). They evaluated job search clubs for international students. These clubs met on seven occasions for 90 minutes and covered a wide variety of informational topics, such as (a) using campus career services, (b) resume writing, (c) visa status and work permits, (d) networking, (e) researching employers, (f) working with references, (g) job search etiquette, and (h) interviewing. Results of the pretest and posttest demonstrated an increase in CDMSE, with a moderate effect size.

These studies demonstrate that, across a variety of treatment types, career interventions aimed at increasing CDMSE have resulted in significant changes for the treatment group and no change for the no-treatment or control group. This held true despite small sample sizes (ranging from 13 to 99 participants) and the short duration and intensity of several of the interventions (e.g., observing a 30-minute video). However, there is much more to be learned regarding CDMSE and career interventions. Calls have been made for longitudinal research with several administrations of CDMSE instruments to examine changes over time (e.g., Betz & Luzzo, 1996; Gainor, 2006). Additionally, Gainor (2006) highlighted the importance of attending to the environmental context in which self-efficacy beliefs develop, which connects this line of research with the literature on SCCT, environmental supports, and career barriers. Finally, additional research is needed to examine CDMSE and the effectiveness of career interventions for diverse populations and settings (Bernes, Bardick, & Orr, 2007).

Synthesis. Much research evidence exists regarding the positive effects of career development interventions on many indicators, such as career decidedness, career maturity, self-efficacy, and vocational identity (e.g., Hughes & Karp, 2004; Luzzo et al., 1999; Oliver & Spokane, 1988; Whiston et al., 1998). It is tempting, based on this evidence, to conclude that career interventions are part of a support system that facilitates the career choice process—essentially to say that career interventions work. However, much remains to be understood about the mechanisms through which career interventions support students. What aspects of these interventions create the opportunity for development to occur? What types of career interventions are most effective for particular groups of students? It is as if the experience of participating in a career intervention is hidden within a black box, with little systematic understanding of the interaction between the student and the services provided.

Further research is required specifically to examine the relationships among instrumental support systems, opportunity structures, interests, career choice goals, and career entry behaviors, as hypothesized by SCCT. This research would benefit if some of the current weaknesses in the available literature were addressed, such as using standardized measures from previous studies and collecting data over longer periods of time (e.g., a traditional academic school year) to provide a sufficient temporal lag for student development to occur. By having a deeper understanding of students' experiences, career specialists could more clearly distinguish the meaningful contribution they make in students' lives and career interventions could be tailored and improved to increase their ability to meet clients' needs.

Synthesis and Future Directions

Early research regarding environmental influences on career choice primarily focused on the development of categorization models to describe various types of environmental supports and career barriers that individuals might encounter. Categorization models served an important function by bringing attention to the great variety of factors that could help or hinder the exploration of academic and career options, career decision making, and implementation of choices (e.g., Crites, 1969; O'Leary, 1974; Swanson & Tokar, 1991). However, these models also led to many shortcomings, such as (a) directing attention to the symptoms of the problem, rather than the source; (b) failing to adequately represent the experiences of individual students; and (c) although unintended, reinforcing stereotypes of minority populations (Chartrand & Rose, 1996; Swanson & Woitke, 1997).

SCCT, as a career choice process model, addresses some of these shortcomings by moving beyond the naming of environmental supports and career barriers to examine the process by which these influences affect career choices (Lent et al., 1994). This shift in focus was

expected to provide improved insights into how support systems, such as career interventions, could be designed to facilitate the career choice process (Chartrand & Rose, 1996; Swanson & Woitke, 1997). Despite the available theoretical foundation for investigations, Lent et al. (2000) indicated that SCCT's hypotheses regarding environmental influences "have generally received limited inquiry" (p. 38) in research studies due to the complexity of the phenomenon and difficulties in measurement of variables. In particular, environmental supports have been underexplored in a body of literature that appears to have a history of taking supports for granted (Borgen & Maglio, 2007; Lent et al., 2000). Scholars have recommended future process-oriented studies that examine topics such as: (a) how environmental supports and career barriers might influence individuals' career choice behaviors, (b) the ways that individuals come to see environmental influences as supports or barriers, (c) the relationships between coping efficacy and perceptions of career barriers, and (d) ways to help students build support networks to help facilitate their career plans (e.g., Brown & Ryan Krane, 2000; Lent & Brown, 2006; Lent et al., 2000).

Current research demonstrates that college students clearly perceive a wide variety of environmental supports and career barriers as influencing their academic and career goals (e.g., Ali et al., 2005; Hackett et al., 1992; McWhirter, 1997; Swanson & Tokar, 1991). However, the complex and confounded nature of environmental influences has led to many contradictions in the literature regarding students' interpretations of their environmental supports and career barriers (e.g., Lent et al., 2000, 2001; Luzzo et al., 1999). When approaching this research, readers are cautioned to disentangle variables carefully, such as (a) the anticipated likelihood of encountering career barriers versus the anticipated ability to overcome them; (b) the consideration of global versus domain-specific environmental supports and career barriers; (c)

the influence of characteristics such as coping efficacy, personal affect, and occupational choice on career development behaviors; and (d) the interpretation of career barriers as either hindrances or motivators. Each of these variables has been found to confound research findings, leading to complicated representations of how environmental supports and career barriers influence the career choice process (e.g., Lent et al., 2000; Luzzo, 1995; Swanson & Woitke, 1997). Difficulty in isolating confounding variables is further affected by factors such as (a) limitations of quantitative instruments currently available, (b) varied definitions of environmental supports and career barriers across studies, (c) research designs that do not provide a great enough temporal lag to observe development, and (d) limited qualitative research to help clarify the complex ways in which environmental supports and career barriers influence the career choice process (Lent et al., 2000; Luzzo et al., 1999).

Research regarding career intervention outcomes has resulted in strengths and weaknesses similar to those in the environmental influences literature, such that the surface-level results appear clear, whereas details and nuances are obscured. A primary strength of the outcomes literature is a clear and consistent demonstration that career interventions positively affect a variety of participants on numerous career-related measures (Oliver & Spokane, 1988; Whiston et al., 1998). Results of career interventions tend to emerge as particularly positive when a career counselor is involved in the delivery (as opposed to counselor-free interventions). However, much remains to be understood about the dynamics behind these findings: What aspects of these interventions create the opportunity for development to occur? What types of career interventions are most effective for particular groups of students? It is as if the experience of participating in a career intervention is hidden within a black box, with little systematic understanding of the interaction between the student and the services provided. Comparisons of

intervention types and strategies are needed, particularly as they pertain to specific populations. In addition, a greater in-depth understanding of the process by which development occurs is needed. Longitudinal studies with multiple data collection points are needed to provide a temporal lag time over which change can be examined (Hughes & Karp, 2004; Lent et al., 2000; Luzzo et al., 1999).

Finally, researchers (Fouad & Arbona, 1994; Luzzo, 1999; McWhirter, 1997; Rivera et al., 2007) have called for a greater diversity of research methods, including qualitative methods, mixed methods, and longitudinal approaches, to address shortcomings in the current, primarily short-term, quantitative literature. Great attention to detail in study design has been recommended, particularly in relation to (a) selecting appropriate methods and instruments; (b) clearly defining terms and constructs to delineate confounding variables; (c) reporting of sufficient validity, reliability, and subject-attributed data; (d) using standardized measures; and (e) reporting detailed information about the components of the career intervention. New methodological approaches combined with well-designed studies are expected to broaden the current understanding of student experiences, leading to insights regarding (a) unique and meaningful contributions offered by career specialists (Brown & Ryan Krane, 2000), (b) how career development interventions might be improved to meet college students' needs (Lent et al., 2000), and (c) possible modifications or extensions of theory to better represent the experiences of diverse populations (e.g., Flores & O'Brien, 2002; Flores, Navarro, Smith, & Ploszaj, 2006).

Chapter 3

Methods

This study employed a quasi-experimental design using mixed methods to examine first-year college students' interpretations of their career counseling experiences, as well as the influence of those experiences on career choices, career decision-making self-efficacy (CDMSE), and perceptions of career barriers. Employing a mixed methods approach in data collection and analysis provided opportunities to: (a) build on past research by using pre-established and tested survey instruments, (b) develop a deep understanding of student experiences via interviews, and (c) uncover unique insights by employing the multiple lenses offered by a mixed methods approach. This chapter discusses the theoretical underpinnings for this research, as well as the research design, study implementation, and data analysis procedures. The chapter concludes with insights into the investigator's personal history and the recognition of how her experiences and viewpoints may have shaped the study.

Theoretical Underpinnings

This research was guided primarily by a pragmatic paradigm stance, with attention focused on the research problem and selecting data collection and analysis methods that would best inform the problem (Creswell, Clark, Gutmann & Hanson, 2003). As demonstrated by the contradictory and confounded results in previous quantitative studies of perceived environmental supports and career barriers (e.g., Lent, Brown, & Hackett, 2000; Lent et al., 2001; Luzzo et al., 1999), as well as the limited understandings of process in career intervention outcomes research (e.g., Brown & Ryan Krane, 2000; Whiston, Sexton, & Lasoff, 1998), the complexity of the experiences addressed by this study was expected to lead to natural limitations in what could be understood from a single research method. The use of multiple research methods provided

greater responsiveness to the dynamics present in the study context and to the research questions than would have been possible with a single method (Greene, Benjamin, & Goodyear, 2001; Johnson & Onwuegbuzie, 2004). This section begins by identifying the purpose for mixing methods, followed by the assumptions made regarding judgments of research quality.

Purpose for mixing methods. The primary purpose for mixing methods in this study was complementarity, meaning that the intention was to garner “broader, deeper, and more comprehensive social understandings by using methods that tap into different facets or dimensions of the same complex phenomenon” (Greene, 2007, p. 101). The phenomenon under study was first-year college students’ perceptions of participation in individual career counseling experiences early in their first college year, with a particular focus on how this environmental support might influence career choice, career decision-making self-efficacy (CDMSE), and perceived career barriers. Interviews with study participants were intended to deepen and enhance the current understanding of students’ experiences before and after individual career counseling. The survey instruments measured facets of potential influences of career counseling on student perceptions, specifically examining changes in CDMSE and career barriers. This balanced qualitative and quantitative design facilitated comparisons of findings with past research, which is primarily quantitative, while also expanding opportunities to develop an in-depth understanding of students’ experiences through elaborations and illustrations they offered during interviews.

Assumptions about quality. For this study, high-quality research was viewed as being credible, dependable, and defensible. Understandings of credibility and dependability are derived from Lincoln and Guba’s (1985) discussions of establishing trustworthiness. Credibility ensures that research participants find that the results accurately represent their constructions of reality,

whereas dependability refers to the fairness of data representation such that findings are accurately represented and not overstated. The concept of defensible research is drawn from the work of Onwuegbuzie and Johnson (2006); it signals an ability to justify the research design, process, and findings “to the research and practice communities for whom the research is produced and used” (p. 48). Greene (2007) suggested that persuasive arguments regarding quality should address both the research methods and the inferences made. The remainder of this section lays a foundation for judgments of quality in these two areas.

Quality of methods. This section shares steps taken to determine the quality of the specific methods chosen for this study. Two primary considerations are explored: (a) the rationale and appropriateness of the methods selected for the research questions at hand, and (b) the steps taken to “[adhere] to the quality criteria and procedures of the tradition in which the method is being implemented” (Greene, 2007, p. 166). To focus appropriately on the quality criteria for each method, the rationale and quality procedures are discussed separately for surveys and interviews.

Survey rationale and quality procedures. The vast majority of studies examining career intervention outcomes, environmental supports, and career barriers have been primarily quantitative in nature (e.g., Lent et al., 2005; McWhirter, 1997; Swanson, Daniels, & Tokar, 1996), examining participant responses to surveys (e.g., Career Barriers Inventory-Revised, Career Decision Self-Efficacy Scale, Perceptions of Barriers Scale) or using written short-answer response formats. With regard to outcomes studies, these approaches have demonstrated that “career counseling has generally been shown to have positive effects” (Oliver & Spokane, 1988, p. 447), although an understanding of what contributes to those effects is lacking. With regard to environmental supports and career barriers, these approaches have demonstrated considerable

usefulness in naming the variety of factors that may help or hinder the exploration of academic and career options, career decision-making, and implementation of choices (e.g., Crites, 1969; O’Leary, 1974; Swanson & Tokar, 1991). As such, they raise awareness of the complexity of the issue under study, despite shortcomings of past research, as discussed previously.

For this study, the inclusion of previously-developed surveys, including the Career Decision Self-Efficacy Scale (Betz & Taylor, 2001) and the Career Barriers Inventory–Revised (Swanson, 1995a), served multiple purposes. First, the use of such surveys was a response to a call for research that employs standardized measures that can be compared across research studies (Oliver & Spokane, 1988; Whiston et al., 1998). This provided a clear anchor with which to connect the findings of this study with past literature for comparison and reflection. In addition, this study was conducted over the span of a traditional academic year with the intention of exploring changes over time across a single sample of participating students—a task for which survey methods are well suited (Krathwohl, 1998).

Several quality criteria and procedures were used to address threats to internal validity associated with quasi-experimental designs and survey research (see Bickman, Rog, & Hendrick, 1998). For example, over sampling was used to address concerns about attrition, whereas random assignment to treatment and control groups was used to address concerns about maturation. All survey instruments were pilot tested with a group of students whose characteristics were similar to the population of interest. Pilot testing consisted of administering surveys to 109 students, conducting research interviews with 8 students, and conducting cognitive laboratory interviews with 12 students in which participants vocalized their thoughts as they completed the survey instruments. More detailed descriptions of the pilot study, as well as elements implemented for addressing threats to inference quality and internal validity, are discussed in the study

implementation section of this chapter. Finally, in regard to data analysis and reporting, survey scale reliability was examined, the proper steps for checking assumptions for statistical tests were followed, and both statistical significance and effect sizes were reported, as called for by numerous scholars (e.g., Pascarella & Terenzini, 2005; Sun, Pan, & Wang, 2010; Thompson, 2002; Whiston et al., 1998).

Interview rationale and quality procedures. Many studies of career intervention outcomes, environmental supports, and career barriers that have relied on quantitative methods have called for the inclusion of qualitative methods in future research. These studies have suggested that a broader range of research methods might “help clarify the nature and meaning of perceived barriers” (McWhirter, 1997, p. 138), allow for “in-depth accounts” of participants’ career decision-making processes (Luzzo, 1999, p. 139), and “address faulty assumptions” (Rivera, Chen, Flores, Blumberg, & Ponterotto, 2007, p. 59) that might underlie the sometimes contradictory research findings.

The current study relied on a responsive interview strategy that sought to elucidate how participants interpret the career choices, environmental supports, and career barriers they encounter. Responsive interviewing, as described by Rubin and Rubin (2005), takes an interpretive constructivist stance, meaning that “how people view an object or event and the meaning that they attribute to it” (p. 27) are of central importance. It recognizes that different people view their world through different personal lenses; therefore two people may interpret the same event in multiple or even conflicting ways. The goal of such research is to search for shared, socially constructed meanings among members of a particular group.

This approach was particularly germane to a study that considered participants’ perceptions of environmental supports and career barriers, as well as participants’ personal

beliefs about their capabilities for successfully completing tasks (self-efficacy). As discussed previously, environmental supports and career barriers that are actively perceived as salient to an individual provide a “more influential force on career behaviors” than those that are not perceived as existent or salient (Swanson & Woitke, 1997, p. 446). Understanding the meaning an individual attaches to such influences is key to understanding the effect of those influences on his or her career choice behaviors. Similarly, how an individual makes sense of his or her actions and experiences, rather than the objective results of those actions, is the key factor in increasing or decreasing his or her self-efficacy for successfully accomplishing a task in the future (Bandura, 1997). The qualitative approach of iterative interviewing and member checking over time was anticipated to provide a deep understanding of how students come to hold beliefs about their own capabilities and the environmental factors that influence their academic and career choices (Usher & Pajares, 2008).

Procedures for adhering to quality criteria for the interview portion of this study followed recommendations from Lincoln and Guba (1985), Patton (2002), Rubin and Rubin (2005), and Wolcott (2005). As described in the Interview Procedures section of this chapter, a disciplined sequence of techniques was employed to ensure credible, dependable, and defensible research. This sequence included following a semi-structured interview guide, engaging in reflective journaling immediately after each interview, writing contact summary narratives for each interview to share with participants for the purpose of member checking, discussing contact summary narratives with each participant and integrating their feedback, and engaging in memoing to make connections and comparisons across participants. Interview data collection and data analysis occurred concurrently, each one informing the other.

Quality of inferences. This section presents the criteria considered for judging the quality of inferences and data interpretations that emerged from the research study. It addresses the question of how the “accuracy” of study outcomes or conclusions was judged (Teddlie & Tashakkori, 2003, p. 36). Four criteria guided this thinking. First, adherence to the outlined research design and implementation steps was considered. This required a critical review of study progress throughout data collection and analysis, as well as the creation of an “audit trail” through which the development of themes, ideas, and inferences could be documented and reviewed (Lincoln & Guba, 1985, p. 319). Second, primary importance was given to the idea that participants (both students and the career counselors who provided the treatment) should be able to recognize the research interpretations as “adequate representations of their own (and multiple) realities” (Lincoln & Guba, 1985, p. 314). This was achieved through contact summary narratives and member checking with student participants, as well as a peer review session with the career counselors who provided the treatment. Participants were provided opportunities to correct errors, offer additional information, and summarize their understanding of the findings and what these meant for them. Member checks demonstrated that the vast majority of the interview participants found their contact summary narratives to be accurate representations of their experiences, with participants making statements such as Adam’s comments on the summary from his first interview: “I feel like it was like exactly what I’m feeling and what I’m going through. So it’s pretty dead on.” Only 7 of the 71 (9.9%) contact summary narratives that were shared with interview participants required minor clarifications and revisions, whereas the remaining 64 were deemed accurate as originally prepared. During the peer review session, career counselors observed that the findings seemed reasonable based on the data and their experiences. Sharing findings with this group primarily spurred in-depth conversations regarding

implications for practice. A third criterion for judging the quality of inferences was that arguments presented for the study outcomes and conclusions should be persuasive and clearly informed by the data, although not stated in an absolute fashion. Throughout the presentation of findings, negative cases and questions arising from the study were highlighted as areas for future exploration. For the final inference quality criterion, the research endeavored to demonstrate clearly that a better understanding was reached with the use of mixed methods than could have been possible with a single method alone. Clear arguments for the benefits of mixing methods in this study are made in the discussion of findings in Chapter 9.

Research Design

This section describes the primary components of the research design for this study. It begins with an overview of the study design and the planned procedures for mixing methods. This is followed descriptions of the study setting, population, participants, human subjects review, and consent process. Finally, the data collection methods are discussed, with information provided about the artifacts collected, survey instruments, interview procedures, and peer review session.

Study design overview. This study used a time-extended before-and-after, quasi-experimental design (Reichardt & Mark, 1998) to examine students' perceptions of individual career counseling, particularly in relation to career choices, CDMSE, and perceptions of career barriers. Students who chose to participate were randomly assigned to the treatment group (participating in the individual career counseling offered as part of this study) or control group (not participating in the individual career counseling offered as part of this study). Survey and interview data were collected at three points over the course of the study: (a) prior to the intervention, (b) 2 to 4 weeks following the intervention, and (c) approximately 5 to 6 months

after the intervention. All participants were invited to complete the surveys, whereas only a purposefully-selected subset of the treatment and control groups participated in the interviews. Procedures for random and purposeful selection, as well as survey and interview data collection are discussed in detail in the Study Implementation section of this chapter.

Mixing methods procedure. This study employed a quasi-experimental design with concurrent and semi-integrated mixed methods, modeled after design conceptualizations discussed by Greene (2007), Greene et al. (2001), Greene, Caracelli, and Graham (1989), and Teddlie and Tashakkori (2006). The two strands of data collection (surveys and interviews) occurred concurrently throughout the study, with planned times to focus on each method (discussed in the Chronological Description of Data Collection Procedures section later in this chapter). The integration of the design related to specifically “planned, scheduled points of interaction” (Greene et al., 2001, p. 31) between the survey and interview strands. In a fully integrated design, both strands (survey and interview) would interact and influence each other throughout the course of the study (Teddlie & Tashakkori, 2006). In this study, however, a semi-integrated approach was embraced, such that the quantitative survey methods influenced the qualitative interviews, providing information for purposeful sample selection and insights into potential lines of inquiry throughout the study interviews. Yet the interviews did not influence or change the survey data collection or analyses. The survey methods strictly followed a pre-determined schedule of data collection and analysis procedures to maintain the internal validity of these procedures and confidence in the resultant findings.

Setting. A large, public, four-year university, referred to as Midwest University (MU), was selected as the site for this study. University records from the 2009–2010 academic year indicated that MU enrolled more than 30,000 undergraduate students. The institution is

considered selective, admitting 60 to 70% of undergraduate applicants and reporting that 55% of incoming freshmen ranked in the top 10% of their high school class. MU is a predominantly white institution (more than 75% of undergraduate students self-identify as white), with primarily traditional-aged students (the mean age of undergraduate students is just above 20 years). In 2009–2010, 53% of the undergraduate student population was male and 47% was female. The vast majority of undergraduate students (more than 97%) were enrolled full time.

At MU, prospective students apply directly to individual college units (e.g., business, engineering, education, liberal arts and sciences, fine arts) for admission to undergraduate studies. In the past, students who were undecided on a college or major applied to the liberal arts and sciences college as undecided students. However, MU recently created a new, separate academic unit for students who have not decided on a college or major that provides special programs to support and encourage exploration of majors. For the purposes of this study, this academic unit is referred to as the Exploring Majors College (EMC). According to university records, almost one quarter of MU's 2009–2010 incoming first-year students began their college experience in this academic unit, with approximately 3,000 students enrolled in this unit at any given time. This academic unit provides a unique opportunity to connect with a large group of students who are in the process of considering a similar type of career choice—the choice of a college major.

Although single-institution studies have been criticized for their limited scope because the environment is held constant (e.g., Astin, 1970), many benefits exist for the use of a single institution for this exploratory study which combines multiple data collection methods. First, the complexity of a quasi-experimental design that concurrently employs multiple research methods requires some boundaries to make the data collection and analysis manageable. The potential

insights gained from focusing the lenses of multiple methods on the phenomena of interest were anticipated to outweigh the benefits of a single-method study carried out at multiple institutions. Second, the selection of MU provided a unique opportunity to connect efficiently with students who were exploring college majors because of the existence of an academic unit dedicated to these students. Narrowing the scope of career choices in which students were engaging to a focus on major exploration (rather than other career choice tasks, such as job search preparation, professional networking, or exploring graduate and professional school) facilitated explorations and comparisons across participants. Findings from this study were not expected to be directly generalizable to other higher education institutions or to students who are engaging in different career choice tasks. Yet the insights gained were expected to inspire new lines of inquiry and to demonstrate the benefits of employing multiple research methods.

Population and participants. The population for this study was first-year, traditional-aged college students who had not selected a major or academic focus upon entrance into a large 4-year public institution. At MU, these students enrolled in a designated academic unit, the Exploring Majors College (EMC). During their first semester, all EMC students were required to enroll in a University 101 course, which is a one-credit, 8-week exploration course taught by EMC academic advisors. A total of 12 course sections were visited, with section enrollments ranging from 35 to 220 students. Inviting all students in this course to participate in the study, as well as randomly assigning participants to the treatment or control groups for the study, was anticipated to provide a representative sample of this population. Detailed information regarding population demographics is available in Chapter 4, “Participant Descriptions.”

Human subjects review and voluntary consent. Human subjects research approval was obtained from MU. Additionally, permission and approval were obtained from the course

director of the EMC University 101 course and the director of the career center, which provided the individual career counseling. Efforts were made to engage in continual conversation with these groups to ensure a common understanding of the study purposes, data collection procedures, and confidentiality requirements associated with data analyses and the reporting of findings.

The consent process was viewed as an “ongoing, two-way communication process between the research participants and the investigator” (Sieber, 1998, p. 130). The voluntary consent form for the project was signed by participants during their first interaction with the researcher, when they chose whether to participate in the study (see Appendix A). Copies of the voluntary consent form were made available throughout each step of data collection so that participants could reference the document to address any questions that may have arisen. The researcher also provided an opportunity for participants to ask questions at each step of data collection.

Confidentiality and anonymity were honored throughout this study. On agreeing to participate in the study, each participant created a unique identifier. This unique identifier was the only way that survey and interview data were connected over time. No name or other identifying information was connected with participant responses. Pseudonyms were used in interview transcripts and the presentation of results. Any additional information that could be used to identify an individual (e.g., home town, name of high school) was removed from transcripts and other related writings.

Data collection methods. A variety of data collection methods were employed to carry out this research study. This section discusses the artifacts collected, the survey instruments used,

the procedures for participant interviews, and peer review session designed to gather insights from career counselors who offered the treatment for the study.

Artifacts: Career center usage data. Because it would not have been ethical to deter students in the control group from using career services or to deter students in the treatment group from using career services beyond those provided by the study intervention, a strategy for tracking usage outside the study was needed to address threats to inference quality and internal validity. The career center provided information regarding career services used by participants based on career center records. The data shared were limited to (a) the time period in which the service was used (prior to the survey pretest for this study, between the survey pretest and posttests, and between the survey posttest and delayed posttest); (b) the types of services used (individual appointments, drop-in resume or cover letter reviews, workshop, other); and (c) the number of times each service type was used. Only information about attendance was collected and connected with the study data by the unique identifier that students created. Nothing about the content of sessions or other confidential counseling information was obtained at any time.

Survey instrumentation. This study used a demographic questionnaire and three survey instruments, namely, the Occupational Alternatives Questions (OAQ; Zener & Schnuelle, 1972), Career Decision Self-Efficacy Scale (CDSE Scale; Betz & Taylor, 2001), and the Career Barriers Inventory–Revised (CBI-R; Swanson, 1995a). This set of instruments was pilot tested in December 2008 with a sample of first-year college students from the EMC. Within the full study, the same set of survey instruments, modified only by removing 6 of the 13 CBI-R subscales that were found to be beyond the scope of the full study, was administered to participants three times within the traditional academic school year.

Demographic questionnaire. The demographic questionnaire created for this study collected information on the background characteristics of age, gender, citizenship, and ethnicity. These data were primarily used to describe the sample, as well as to frame the sample within the population.

The demographic questionnaire also inquired about whether participants had used career services at MU in the 2 to 3 months prior to completion of each survey. If participants had used career services, they were asked how many times, for what reasons (e.g., to choose a major, develop a resume, find an internship), and in what formats they had used these services (e.g., to meet with a career advisor, attend a workshop, use a career services website). The potential responses available for each question were based on service category and type descriptions as delineated in the annual reports of the career center at MU. These response options were intended to provide a close match with experiences to which participants may be exposed. This section of the demographic questionnaire offered a secondary strategy for characterizing participants' interactions with career services beyond those provided by the study's intervention. Unfortunately, the accuracy of career services usage data collected via the surveys was found to be questionable. Comparisons of participants' survey responses with interview discussions revealed erroneous survey data in four cases. Ron, a control group participant, provided a typical example of these discussions during his postinterview at the end of the first college semester:

Interviewer: I noticed on your most recent survey that you mentioned that you went to some workshops at the career center. Can you tell me about those experiences?

Ron: I wrote that?

Interviewer: Yeah, you checked a box that said you went to workshops and looked at their website.

Ron: Oh, I looked at the website. I don't think I've been to workshops. I might have been, but I may have not known that it was through the career center.

Additionally, comparisons of participants' survey responses with career services usage data gathered from the career center's reporting system revealed discrepancies in more than 15% of cases. As a result, the self-report data were not used in analyses. Rather, analyses relied on usage data collected from the career center's reporting system.

Occupational Alternatives Questions. This study used a modification of the OAQ, initially created by Zener and Schnuelle (1972) and used in several subsequent studies (e.g., Hartung, 1995; Monahan, 1987; Peterson, Ryan-Jones, Sampson, Reardon, & Shahnasarian, 1994; Robinson & Cooper, 1988; Slaney, 1980b). The OAQ, as presented in this study, consisted of two questions: (a) "list all of the majors that you are considering right now," and (b) "which major is your first choice? If undecided, write undecided." (The original wording of this question used the term "occupation" in place of "major." The change in wording helped participants focus on the career choice of primary interest to this study, namely, choosing an academic major in college.) The responses to the two OAQ questions were coded into four categories: (a) a first choice listed with no alternatives; (b) a first choice listed with alternatives; (c) no first choice listed, just alternatives; and (d) neither a first choice nor alternatives listed (Slaney, 1980b). The OAQ has been demonstrated to show concurrent validity with measures of career indecision, such as a significant, moderate correlation ($r = .37$) with the Vocational Identity Scale of the My Vocational Situation (Monahan, 1987). Slaney (1980b) also found significant differences between the four OAQ categories and several measures of career indecision. Slaney (1978) found the measure to be very stable over a 7-week period. No information was available regarding internal reliability because of the two-item structure of the questions.

Career Decision Self-Efficacy Scale – Short Form. The CDSE Scale “measures an individual’s degree of belief that he/she can successfully complete tasks necessary to making career decisions” (Betz & Taylor, 2006, p. 6). The CDSE Scale has been used in several studies designed to evaluate career development interventions (e.g., Fukuyama, Probert, Neimeyer, Nevill, & Metzler, 1988; Luzzo & Taylor, 1994; Sullivan & Mahalik, 2000; Uffelman, Subich, Diegelman, Wagner, & Bardash, 2004). The scale contains 25 items, which are evenly divided into 5 subscales: self-appraisal, gathering occupational information, goal selection, making plans, and problem solving. Respondents were asked how much confidence they had to complete each of the career decision-making tasks presented. A 5-point scale was provided for each item, with possible responses ranging from 1 (*no confidence at all*) to 5 (*complete confidence*). Betz, Hammond, and Multon (2005) reported internal reliability scores ranging from .78 to .87 for each sub scale, as well as alphas for the full 25-item instrument ranging from .93 to .95. In this current study, across the three survey administrations, internal reliability scores ranged from .70 to .87 for each subscale, and from .92 to .94 for the full 25-item instrument. More details on internal reliability for this study are available in Chapter 7.

Factor analysis studies of the original 50-item instrument indicated several “problematic items” that were removed to create the short form (Betz & Luzzo, 1996, p. 417). However, content validity studies relying on factor analysis still have only marginally supported the existence of the five subscales (e.g., Taylor & Betz, 1983; Taylor & Popma, 1990). Betz and Taylor (2006) contend that, despite these findings, the connection of the five-factor structure with theory (e.g., career maturity as discussed by Crites, 1969, 1978) has important implications for the design of career development interventions and should therefore remain part of the instrument. With regard to construct validity, the CDSE Scale has been found to correlate with

related constructs such as career indecision (Betz, Klein, & Taylor, 1996; Taylor & Betz, 1983; Taylor & Popma, 1990) and vocational identity (Betz et al., 1996).

Career Barriers Inventory-Revised. The CBI-R (Swanson, 1995a) measures the barriers that individuals perceive to their educational and career goals. These barriers are conceptualized as the “external conditions or internal states that make career progress difficult” (Swanson et al., 1996, p. 236). The CBI-R contains 70 possible career barriers that individuals may face, which are divided into 13 subscales. Internal reliability for the subscale items, as reported by Swanson et al., ranges from .64 (disapproval by significant others scale, difficulties with networking / socialization scale) to .86 (sex discrimination scale). Similar scale reliability results have been found in other studies that use this instrument (e.g., Lent et al., 2001; Rivera, 2002; Rivera et al., 2007).

This study used 7 of the 13 CBI-R scales, including Decision-Making Difficulties (8 items), Difficulties with Networking or Socialization (5 items), Disapproval by Significant Others (3 items), Dissatisfaction with Career (5 items), Inadequate Preparation (5 items), Job Market Constraints (4 items), and Lack of Confidence (4 items). These scales were selected based on a review of published studies in which some of the subscales were removed from this instrument (e.g., Lent et al., 2001; Quimby & O’Brien, 2004), as well as on findings from the pilot study for this work, which included all 13 subscales. The 7 subscales selected represent those that were determined to be the most relevant and salient to the population for this study, as well as to the intervention being evaluated. A single-response, likelihood scale, format of the CBI-R was used in this study, making the same rating scale choice as Lent et al. (2001), Luzzo and McWhirter (2001), and Rivera et al. (2007). Participants were asked to indicate their expected likelihood of encountering each barrier listed, with possible responses falling on a 7-

point scale, ranging from 1 (*not likely at all*) to 7 (*extremely likely*). Likelihood scale scores were calculated by summing the response on all scale items and then dividing by the number of items on a scale. In this study, across the three survey administrations, internal reliability scores ranged from .51 to .89 for each subscale, and from .94 to .96 for the total score based on the 7 selected subscales. More details on internal reliability for this study are available in Chapter 8.

Interview procedures. The interviews for this study were designed to “describe and understand the meanings of central themes” (Kvale, 1996, p. 31) in participants’ lives as they related to academic major and career choices. At the beginning of each interview, the researcher reviewed the purpose of the study and the steps taken to protect the confidentiality and anonymity of the participant. Permission was sought to audio tape the conversation.

A general interviewing guide (Appendix B) laid the foundation for the relevant topics to be covered so that the same general inquiry areas were addressed with each participant (Patton, 2002). However, considerable flexibility was allowed during each interview to follow the flow of the conversation and the topics that sparked the interest of the participant. Providing space to follow such emergent topics recognized and valued the expertise that participants brought to the conversation from their unique experiences and ways of constructing meaning (Rubin & Rubin, 2005).

Questions appearing on the interview guides were a starting point for conversations. The order in which topics were addressed changed from one interview to the next, allowing issues to be explored via prompts from the researcher as well as through directions spurred by participants. A variety of probing questions was used to gain a deep understanding of the many dimensions of the issues of interest (Wolcott, 2005). Sample probing questions, as suggested by Bogdan and Biklen (2007) and Patton (2002), included “Can you give me an example?” “Take

me through that experience.” “How do you feel about that?” “What do you mean by that?”

Probing questions such as these were expected to result in “rich data filled with words that reveal the respondents’ perspectives” (Bogdan & Biklen, 2007, p. 104).

Immediately following each interview, the researcher engaged in a process of reflective journaling by keeping a diary of first impressions about the topics covered, the interview process, and other personal reactions. These reflections served as a strategy for exploring early concepts and themes, as well as a way to record impressions of and potential needed modifications to the interview process (Lincoln & Guba, 1985).

Audio recordings of interviews were then transcribed and uploaded into the NVIVO 8.0 qualitative data analysis software package for coding and analysis. The first round of coding transcriptions, conducted concurrently with data collection, was carried out in an emergent fashion, with primary themes noted as they evolved within discussions. These emergent codes were used to write contact summary narratives that addressed the primary themes of each interview as generated by each participant (Miles & Huberman, 1994), such as current major and career options, perceived career barriers, experiences with support services, and expectations for the next steps to explore majors and careers.

The contact summary narratives were used as supportive documents to enhance follow-up interviews. At the beginning of each follow-up interview, participants reviewed the contact summary from their previous interview and were encouraged to offer feedback, corrections, and expansions on the themes presented there. Participant feedback was then integrated into a revised contact summary, as necessary. The contact summaries served not only as a resource for member checking initial analyses (Lincoln & Guba, 1985), but also as a prompt for deepening

understandings of issues when themes were revisited to consider changes in participants' interpretations of events and influences over time (Wolcott, 2005).

Finally, the researcher engaged in a process of memoing between each round of interviews as a strategy for exploring themes emerging across participants (Miles & Huberman, 1994). These memos were shared in conversation with colleagues and career counselors to further explore initial ideas, identify areas for clarification, and seek alternate interpretations.

Peer review session. At the completion of the data analysis in January 2011, the proposed findings were shared in a 3-hour peer review session with the career counselors who provided the treatment for this study. In this session, background information on the study was provided, and then each research question was discussed, addressing data collected and interpretations made. The career counselors were encouraged to discuss which findings were surprising and which were expected. They were also asked what the findings meant for them as career counselors and for their work with future students. This session provided an opportunity for career counselors to ask questions, offer their own interpretations of the data, and elaborate on their experiences as partners in the research study. The discussion greatly informed interpretations and conclusions of the study.

Study Implementation

This section provides a chronological overview of the data collection and analysis procedures. This is followed by a description of the implementation procedures for the pilot and full studies. The section concludes with a discussion of how implementation elements have been created to address potential threats to inference quality and internal validity, including investigator bias, history, maturation, and attrition. Please note that this chapter focuses on procedures for carrying out the study. Information regarding actual participant numbers,

response rates throughout the study, attrition analyses, and participant demographics can be found in Chapter 4, which is solely dedicated to describing the participants.

Chronological description of data collection procedures. This study was carried out in several phases. The first phase was a pilot study designed to examine the appropriateness and feasibility of using the planned mixed methods approach of survey and interview techniques. The pilot study consisted of a single round of survey data collection, as well as a single set of interviews. Findings and reflections from this experience were applied to the full study design. Within the full study, participants were contacted three times over a full academic year for completion of surveys and, for a subset of the participants, interviews. This section describes the data collection procedures in detail.

Pilot study. The pilot study data were collected between December 2008 and March 2009. The researcher visited 4 (out of a total of 22) randomly selected sections of the EMC University 101 course and invited 122 students to participate. The survey data collection occurred in December 2008, near the end of the students' first college semester. This time was chosen so that data could be collected regarding participants' decision to use (or not use) career services during their first semester. For the pilot study, paper-and-pencil surveys were completed during class time, with 109 students (89.3%) choosing to participate.

Included with the surveys was an invitation to participate in one-on-one pilot interviews with the researcher. From the 33 students (30.3%) who were willing to participate in interviews, 8 were purposely selected for pilot interviews based on their survey results. Efforts were made to interview students with differing responses to the surveys, with students selected based on CDSE Scale total scores, CBI-R total scores, and whether the student self-reported using career services in his or her first semester at MU. This strategy provided an opportunity to pretest the interview

questions with individuals who could bring a wide variety of perceptions and experiences to the conversation. Interviews were tape recorded and transcribed for analysis.

Finally, 12 cognitive laboratory interviews were conducted in which participants completed the CBI-R in the presence of the researcher. In past studies, the CBI-R has been used with three different response scales, including (a) the likelihood of encountering barriers (e.g., Lent et al., 2001; Luzzo & McWhirter, 2001; Rivera et al., 2007), (b) how much a particular barrier would hinder the respondent if encountered it (e.g., Austin, 2006; Karl-Lam, 2006; Quimby & O'Brien, 2004), and (c) both the likelihood and hindrance scales (e.g., Ali, McWhirter, & Chronister, 2005; Rivera, 2002; Weiss, 2000). During the cognitive laboratory interviews, participants each completed a CBI-R with one of these three scale options.

Participants were asked to vocalize their thoughts as they completed the survey, sharing their understandings of the survey prompts and explaining the reasons behind their responses (Fowler, 2002). These interviews were used to explore the merits of using each scale option with this particular population, as well as to examine the logistics of this survey, including issues of the clarity of instructions, formatting, and the time required for survey completion. Interviews were tape recorded and transcribed for analysis, which ultimately led to the choice of the likelihood scale for the full study.

Full study. The full study was conducted between August 2009 and April 2010. Figure 3.1 provides an overview of the survey and interview data collection schedule by experimental groups. This section describes how students were invited to participate, as well as the steps in which participants were involved throughout the study.

Participant invitation. Participants were invited to take part in the study via the EMC University 101 course. All course sections were visited during the second or third week of the

Control Group, Survey Only	Aug 2009	Sept 2009	Oct 2009	Nov 2009	Dec 2009	Jan 2010	Feb 2010	Mar 2010	Apr 2010
1 Survey, Pre									
2 Survey, Post									
3 Survey, Delayed Post									
Control Group, Survey and Interview	Aug 2009	Sept 2009	Oct 2009	Nov 2009	Dec 2009	Jan 2010	Feb 2010	Mar 2010	Apr 2010
1 Survey, Pre									
2 Interview, Pre									
3 Survey, Post									
4 Interview, Post									
5 Survey, Delayed Post									
6 Interview, Delayed Post									
Treatment Group, Survey Only	Aug 2009	Sept 2009	Oct 2009	Nov 2009	Dec 2009	Jan 2010	Feb 2010	Mar 2010	Apr 2010
1 Survey, Pre									
2 Career Counseling Appointments									
3 Survey, Post									
4 Survey, Delayed Post									
Treatment Group, Survey and Interview	Aug 2009	Sept 2009	Oct 2009	Nov 2009	Dec 2009	Jan 2010	Feb 2010	Mar 2010	Apr 2010
1 Survey, Pre									
2 Interview, Pre									
3 Career Counseling Appointments									
4 Survey, Post									
5 Interview, Post									
6 Survey, Delayed Post									
7 Interview, Delayed Post									

Figure 3.1. Overview of survey and interview data collection times by experimental groups.

semester in and effort to reach students at the beginning of their college experience. Between 800 and 900 students were expected to be invited to participate in the study. Students were encouraged to participate if they met two eligibility requirements: (a) they were 18 years of age or older, and (b) they were currently deciding between two or more major or career options, or were unsure of what major or career options they might want to consider. This meant that if

students had already chosen a single major they intended to pursue, they were asked not to participate. Students who indicated a willingness to participate signed a voluntary consent form, and provided their first name and e-mail address so that they could receive the electronic surveys. They also created a unique identifier that would be used to connect their survey responses over time. Completion of the first online survey (used as a pretest) was considered confirmation of study participation.

Survey completion. All participants were asked to complete the surveys at three times throughout the course of their first academic school year. There were five components to the survey: (a) a demographic section, completed only on the pretest survey; (b) the modified OAQ (Zener & Schnuelle, 1972); (c) the CDSE Scale (Betz & Taylor, 2001); (d) 7 of 13 scales from the CBI-R (Swanson, 1995a); and (e) an open response section for additional comments. Students were randomly assigned to receive one of two versions of each survey. In one version, the CBI-R came before the CDSE Scale. In the other version, the CDSE Scale came before the CBI-R. These different orders were examined statistically to consider what, if any, influence the order of completing these surveys might have on the responses.

Participants received an e-mail with a link to the online survey that was sent to the address they provided when choosing to participate in the study. Follow-up e-mails were sent to nonresponders twice over the course of 10 days. The first round of surveys was sent within 48 hours of students' indicating their willingness to participate. The second round of surveys was sent in early December 2009, after the treatment group had participated in the treatment and near the end of the students' first semester at MU. The final round of surveys was sent in early April 2010, approximately 5 to 6 months after the treatment group participated in the treatment and near the end of the students' first academic year at MU. This delayed posttest survey was

intended to examine the temporal lag time of changes that may be associated with participation in the treatment (Hughes & Karp, 2004; Lent et al., 2000; Luzzo et al., 1999).

Selection of treatment and control groups. Treatment and control groups for the study were selected after the first round of survey completion. Of those who indicated a willingness to participate in the study and then completed the pretest survey, 60 (the maximum possible within resource constraints) were randomly selected to participate in the individual career counseling treatment. This group was referred to as the “treatment group,” whereas all others were referred to as the “control group.”

Selection for interview participation. After the first round of surveys, 30 students were purposefully selected to participate in interviews with the researcher. To accomplish this, students’ total scores on the CDSE Scale and CBI-R were graphed on a scatter plot. The researcher then focused on participants with scores on the fringes of the plot, representing four categories: (a) high CDMSE, low perceived barriers; (b) high CDMSE, high perceived barriers; (c) low CDMSE, low perceived barriers; and (d) low CDMSE, high perceived barriers. Individual student responses were then examined to seek a balance in gender and ethnicity, as well as the variety of academic majors being considered, across interview participants. This strategy was used in an effort to find a group of students who could bring a wide variety of perceptions and experiences to the interview conversations. A total of 20 students were selected from the treatment group and 10 students were selected from the control group.

Each selected participant was asked to engage in three interviews throughout his or her first academic year. The first interview occurred in September 2009, shortly after the pretest survey had been completed and prior to the treatment group’s participation in individual career counseling. The second interview occurred in late November and early December 2009, after the

treatment group had participated in the intervention and near the end of the students' first semester at MU. The final interviews occurred in April 2010, approximately 5 to 6 months after the treatment group participated in the intervention and near the end of the students' first academic year at MU. Note that, throughout the study, the interviews occurred at approximately the same time as the collection of survey data. Interviews were recorded and transcribed for analysis.

Participation in the treatment. The treatment in this study was a structured career development intervention consisting of (a) an initial individual career counseling appointment; (b) a performance accomplishment activity related to the particular student's unique career development needs; followed by (c) a second individual career counseling appointment that provided support for reflection on and interpretation of the performance accomplishment activity, as well as a discussion of possible next steps. Individual career counseling was selected as the intervention of choice due to its consistent emergence in the literature as an effective intervention strategy for achieving desired outcomes, particularly as compared with other career interventions such as workshops, computer assisted career guidance, and self-directed approaches (Hughes & Karp, 2004; Ryan, 1999; Whiston et al., 1998). The inclusion of a performance accomplishment activity was based on research demonstrating that this strategy is capable of enhancing the self-efficacy of career counseling clients (e.g., Bandura, 1986; Diegelman & Subich, 2001; Luzzo & Day, 1999; Luzzo et al., 1999), thereby supporting an individual in making career choices (Betz, 2004, 2007; Lent, Brown, & Hackett, 1994). Basing the career intervention for this study on intervention components that were shown to be effective in the past was expected to increase the likelihood of observing the desired outcomes after the treatment. This facilitated connections with past career intervention outcomes research, which is

primarily quantitative with short-term data collection periods, while advancing the literature by examining students' evolving interpretations of the processes that contribute to those outcomes.

Although each individual career counseling appointment was tailored to the individual participant, two of Brown and Ryan Krane's (2000) critical components of career interventions were present in all these interactions: individualized interpretations and feedback, and world of work information. The one-on-one interactions between the student and career counselor created an environment that allowed discussions and feedback to be tailored to each student. Carrying out performance accomplishment activities encouraged active engagement with resources that provided information on aspects of the world of work, such as academic majors, classes, career opportunities, and occupational information. Based on student needs, the specific topics covered within individual career counseling appointments varied, and can be considered in the broad categories of (a) self-knowledge, (b) options, (c) decision making, (d) implementing choices, (e) external pressures and supports, and (f) additional resources and services. Self-knowledge includes discussions of interests, skills, strengths, and values, as well as past experiences in clubs, sports, volunteer, and work experiences. These are the personal aspects, sometimes known and sometimes unknown, that a student brings to the table. Options relate to the academic majors and careers that students are considering, as well as to future career-related opportunities that a student may choose from, such as internships, student organizations, and volunteer positions. Decision making refers to making connections between self-knowledge and options to make a selection. During career counseling appointments, discussions may address decision-making styles and strategies, or may guide students through a decision-making process. Implementing choices refers to the steps required to pursue a choice actively. This may include tasks such as completing applications, preparing a resume or cover letter, and learning to build networks.

Discussions regarding external pressures and supports address factors that may influence academic major and career choices, such as academic history, financial strains, and family input. Finally, career counseling appointments often connect participants to resources and services that can assist them in any of the previously mentioned areas. No one session could cover all these topics. However, career counseling appointments were designed to address a selection of these topics, based on the individual participants' needs.

Performance accomplishment activities related to academic major and career choices are designed to encourage participants to become actively involved in career exploration, decision making, or implementation. Sample performance accomplishment activities discussed among the career counselors who offered the treatment for this study included the following:

- Attending a major- or career-related student organization meeting;
- Contacting an alumnus or alumna for an informational interview about his or her career;
- Talking to a professor or a graduate school representative about educational plans;
- Talking with a junior or senior student in a major of interest;
- Using an online database to research potential careers;
- Reading the job advertisements in a major newspaper, clipping out everything that sparks his or her interests, and noting the trends in the collection;
- Finding a list of employers in a particular field, going to their websites and seeing what types of entry-level jobs exist and what skills or educational background the employer requires; and
- Looking at an internship opportunity and preparing a resume tailored to that position.

Some next step activities commonly recommended by career counselors were not considered strong performance accomplishment activities for this study. For instance, career counselors were discouraged from relying on interest inventories that required the counselors to score the results because there would be no opportunity for participants to view the results before their second career counseling appointment and would therefore have little opportunity to apply or reflect on the experience. Of course, if a counselor-scored interest inventory was the most appropriate next step for a participant, this resource was not withheld. Rather, career counselors

were encouraged to suggest both the interest inventory and another activity that actively involved participants in the process of making academic major and career choices.

Participants who were randomly selected for the treatment group were contacted by e-mail in late September or early October 2009 to schedule their first individual career counseling appointment. The researcher worked closely with the career counselors who provided the intervention to schedule this first appointment. After this, the career counselors facilitated the remainder of the intervention so that the researcher did not have access to nor contact with confidential counseling information. The only data that the career counselors shared with the researcher were the number of appointments and career service events that each participating student attended.

Implementation elements for addressing threats to inference quality and internal validity. This study's time-extended, before-and-after, quasi-experimental design using mixed methods opened the possibility for several threats to the inference quality and internal validity of the findings, such as investigator bias, history, maturation, and attrition (Krathwohl, 1998; Lincoln & Guba, 1985; Patton, 2002; Reichardt & Mark, 1998). These issues were considered in the study design. Their potential influences, as well as the study implementation elements intended to help address those influences, are discussed here.

Investigator bias. Concerns regarding investigator bias stem from the reality that "it [is] impossible to separate the inter-relationships of what is being investigated and the investigator" (Smith & Heshusius, 1986, p. 5). I recognize that my own perspectives, understandings, and social constructions of the world necessarily influence this study, from the conceptualization of the research problems, to the selection of methods, to the data collected, to the inferences drawn from analyses. However, I worked to address threats to inference quality by acknowledging

personal biases and by using a number of techniques to protect against allowing biases to undermine the credibility of the study.

I began by reflecting on personal and professional experiences that led me to select and design this particular study. Journaling about and discussing these experiences with colleagues helped me process and honestly recognize when and where they might interact with the study participants and data. For example, I experienced an inner tension at several points in the study because of the need to maintain the role of researcher, who receives and processes others' stories, as opposed to slipping into my past role of career counselor, who offers advice and assistance. Acknowledging this tension eased the discomfort and helped me recommit to the researcher-participant relationship on which the students and I had agreed. The Personal History section at the end of this chapter provides additional insights into my reflections and how I was situated in this study.

Additionally, several techniques for credibility and dependability suggested by Lincoln and Guba (1985) contributed to addressing the threat of investigator bias. Member checking and the peer review session offered fruitful opportunities to integrate others' constructions of reality, thereby ensuring that my own interpretations adequately represented their understandings. The creation of an audit trail provided opportunities to revisit the process that contributed to interpretations, as well as to have my decisions and interpretations reviewed by an independent party when necessary.

History. History refers to events beyond the scope of the study that “could cause change in the outcome of interest” (Reichardt & Mark, 1998, p. 200). One clear history-related event that could have influenced study results was the required EMC University 101 course. This course was primarily focused on helping students transition to college, and it covered topics such

as learning styles, time management, study skills, talents and strengths, transferable skills, course registration, and the inter-college transfer process. Activities focused on how to explore majors and careers were also included as part of two of the eight EMC University 101 class sessions, in which students were offered an opportunity to take an interest inventory and to hear about resources for learning about majors and careers. Although it is important to acknowledge this issue, the EMC University 101 course was not expected to be detrimental to the study results for several reasons. First, the depth and personalization of major and career choice experiences was much greater in individual career counseling than in the EMC University 101 courses. The large enrollment sizes (ranging from 35 to 220 students) and number of topics covered in the EMC University 101 courses simply did not allow in-depth, personalized discussion of the major and career choice process. Second, interviews with both treatment and control group participants allowed for the opportunity to discuss the EMC University 101 class to assess its influence on major and career choices. Third, this research study was intended to examine changes over time related to individual career counseling that went beyond what would be expected for students in the typical first-year college environment. At MU, all EMC students are required to take the University 101 class, making it a typical environmental experience.

Additional events related to history in this study included participants (in either the treatment or control group) using career services that were not a part of the study, participants finding career decision-making assistance from sources outside the formal career services at MU, and serendipitous events that were not directly related to active career exploration tasks (e.g., developing a mentoring relationship with a senior student on campus). Clearly, it would not have been possible or ethical to limit students in this study from engaging in experiences such as these. However, some structures were built into the research design to account for such history.

For example, information regarding career services used by participants was gathered through the career center's record-keeping system, including (a) the time period in which the service was used (prior to the survey pretest for this study, between the survey pretest and posttests, and between the survey posttest and delayed posttest); (b) the types of services used (individual appointments, drop-in resume or cover letter reviews, workshop, other); and (c) the number of times each service type was used. Additionally, the interviews provided an opportunity to examine history-related events that occurred before, during, and after the treatment. The interview guides prompted exploration of environmental supports in the general environment, in addition to those discussed within the treatment. Participants who were members of the control group were also interviewed as a way of exploring experiences outside the treatment provided within this study.

Maturation. Maturation refers to the continuous processes of development that occur over time in the lives of the study participants (Krathwohl, 1998). For first-year, traditional-aged college students, maturation could be manifested in processes such as developing new reasoning skills and exploring identity. The primary strategy for addressing maturation was to include a control group for the surveys and a subset of the control group in interviews.

Attrition. Attrition refers to the loss of participants from a study, with the concern that a systematic difference may exist between those who drop out of a study and those who persist (Krathwohl, 1998; Reichardt & Mark, 1998). Ethically, it is important that each participant have the choice to voluntarily continue with or discontinue participation in the study at any time. Recognizing the 8-month period covered from the beginning to the completion of this study, the choice of participants to discontinue was of definite concern. Several strategies were designed to discourage attrition. First, the investigator shared the importance of the study with the students,

stressing that the information learned from this study would be used to inform the development of effective support systems to help students make smooth transitions into college, persist to completion of their degrees, and find meaningful, rewarding careers. Second, monetary gifts were provided to participants at each stage of the data collection. After each of the three rounds of online surveys, one participant was chosen at random to receive a \$50 monetary gift. Students who were randomly selected to participate in individual career counseling received a monetary gift of \$5 for each appointment attended. Students who participated in interviews received a monetary gift of \$5 for the first two interviews, and \$10 for the third interview. Finally, it was acknowledged that, particularly for those who were randomly selected to participate in individual career counseling, continued participation in the study had the clear potential to help facilitate the successful choice of an academic major and career.

Within the data analysis, attrition was considered through an examination of the demographic characteristics of the (a) population, (b) pretest survey respondents, (c) full study participants, and (d) study noncompleters. This analysis was intended to point out potential problem areas for the interpretation of results due to attrition. Results of these analyses are presented in Chapter 4.

Data Analysis

Data analysis in this study occurred iteratively and concurrently with data collection. Interview and survey data were first analyzed independently. Where appropriate, mixed analyses were then completed at predetermined points to deepen the understanding of participants' perceptions of environmental supports, as well as changes in CDMSE and perceptions of barriers over time. This section addresses each stage of data analyses, describing procedures for the independent interview analyses, the independent survey analyses, and the mixed data analyses.

Independent interview analyses. Iterative interview data preparation and analysis activities were used to ensure credibility. These included reflective journaling, contact summary narratives to explore themes emerging for each individual participant, and memos to explore themes emerging across participants (Lincoln & Guba, 1985; Miles & Huberman, 1994). These tasks occurred concurrently with data collection, beginning with the pilot study interviews and continuing throughout the project. This provided opportunities to develop and refine themes throughout the study and to member check early connections by revisiting themes and ideas with interview participants (Wolcott, 2005).

The first round of coding interview transcriptions was carried out in an emergent fashion, with primary themes noted from the participants' points of view as they evolved within discussions. These emergent codes were used to write the contact summary narratives of each interview that were shared with participants. Participant feedback was integrated into the contact summary narratives. A coding guide was then developed based on a theory-based "start list" of codes drawn from the study's conceptual framework (Miles & Huberman, 1994), as well as emergent themes and participant feedback.

At the completion of data collection, the full interview transcripts were re-coded from a holistic perspective, using the coding guide developed based on previous analyses, reflection, and memoing. The coding guide was continuously revised during the process of analysis to find an adequate fit with the data from this particular sample of students. Some codes were dropped when they did not fit the material, whereas other codes were found to "emerge progressively" during data analysis (Miles & Huberman, 1994, p. 60).

The first two interview questions for this study were examined primarily with data from the independent interview analyses:

- How do students interpret experiences of participating in career counseling early in their first college year?

- What influences do students perceive career counseling to have on their:
 - development of academic and career interests,
 - development of educational and occupational plans,
 - engagement in and interpretation of performance activities,
 - career decision-making self-efficacy, and
 - perceptions of career barriers?

Chapters 5 and 6 of this manuscript present the findings related to these research questions.

Independent survey analyses. The surveys selected for this study were used for two primary purposes. First, the demographic and OAQ data were used to describe the sample as compared with the population of interest for this study. Chapter 4 offers a detailed presentation of these data. Second, the CDSE Scale and the CBI-R were used to examine changes in student perceptions over time directly addressing two of the primary research questions for this study:

- Do students who participate in individual career counseling early in their first college year experience an increase in CDMSE beyond that expected due to maturation, as demonstrated by the control group?

- Do students who participate in individual career counseling early in their first college year experience greater change in the magnitude of perceived career barriers than expected due to maturation, as demonstrated by the control group?

Analyses of the CDSE Scale data are provided in Chapter 7, and analyses of the CBI-R data are available in Chapter 8.

All survey data were imported into SPSS 18.0 for analyses. For analyses of both the CDSE Scale and the CBI-R, one-way ANOVA with repeated measures was conducted to determine whether statistically significant differences existed between (a) experimental groups (treatment and control), and (b) survey times (pretest, posttest, and delayed posttest), as well as (c) to identify interactions between experimental groups and survey times. The Greenhouse-Geisser correction was applied when violations of sphericity were detected. Significant

differences were further explored via simple effects analyses calculated with *t*-tests using a Bonferroni adjusted significance level ($.05/3 = .017$) to account for spurious findings resulting from multiple comparisons (Girden, 1992). For the CDSE Scale, the post hoc analyses were conducted one-tailed, with .05 set as the level of significance to explore the potential increase in CDMSE. For the CBI-R, post hoc analyses were conducted two-tailed, with .05 set as the level of significance to explore potential changes in the perceived likelihood of encountering career barriers. Finally, for all statistical tests, Cohen's *d* effect sizes were calculated to evaluate the size of observed differences. Determinations of small ($d = .2$), medium ($d = .5$), and large ($d = .8$) effects were made based on Cohen's (1988) conventional definitions.

Mixed analyses. Mixed analyses related to changes in CDMSE and perceived career barriers over time, as both the interviews and surveys examined these issues. Findings related to the mixed data analyses are presented in Chapters 7 ("Changes in Career Decision-Making Self-Efficacy") and 8 ("Changes in Perceptions of Career Barriers"). The mixed data analyses relied primarily on two techniques: (a) quantitizing interview data, and (b) analyzing interview data based on categories derived from the survey responses.

Quantitizing interview data. To examine the variables of interest, such as the environments that influenced changes in CDMSE or perceived career barriers, coded interview statements were counted in an attempt to identify patterns across participants and between experimental groups (Miles & Huberman, 1994; Onwuegbuzie & Teddlie, 2003). This quantitizing of interview data helped demonstrate similarities and differences in participants' perceptions of their academic major and career choice experiences and signaled areas for deeper analysis.

For example, one particularly fruitful area of analysis emerged in relation to the environments that students perceived to influence their CDMSE. In this case, all coded student statements relating to the belief in one's ability to engage confidently in career decision making, as well as to pursue academic or career choices, were subdivided into categories by the environment in which each participant example or vignette was situated. Environmental categories emerged from the data and included (a) classes and academics, (b) career counseling and career services, (c) MU support services other than career services, (d) jobs and internships, (e) student organizations and sports, (f) volunteer experiences, and (g) general life experiences. The general life experiences category captured day-to-day interactions that did not fit other categories, such as watching a TV program, helping a friend, or experiencing a family member's illness. For each participant, environments discussed as places that influenced their CDMSE were then tallied. For example, over Adam's three interviews, he discussed situations that influenced his CDMSE in four environments: (a) classes and academics, (b) career counseling and career services, (c) student organizations and sports, and (d) general life experiences. This does not necessarily mean that Adam did not have experiences in the environments of jobs and internships, volunteer experiences, or MU support services other than career services. It simply indicates that the experiences that Adam described as most salient to his CDMSE were situated in the four environments that he discussed. Comparisons were made between treatment and control group members. Where discrepancies existed, interview data were examined closely to develop a deeper understanding of factors contributing to the observed differences.

Analyzing interview data based on categories derived from survey responses. Interview participants were also grouped based on their movement on the CDSE Scale and the CBI-R over time so that themes could be examined both within and between groups. Grouping participants

based on movement on the survey instruments over time, rather than on the specific numerical values that participants selected on the given scale, served two purposes. First, structuring comparison groups based on individuals' change patterns appropriately aligned with the primary focus of the study, namely, changes in student perceptions and self-efficacy over time. Second, this approach recognized that different participants might interpret numbers on the rating scales in different ways. However, it is reasonable to assume that a single person would use similar interpretations of the rating scales from one time to another. Some uncertainty regarding scale interpretation was removed by focusing primarily on differences in ratings for individual study participants from one time to another.

For example, consider the procedure for grouping participants based on their CDSE Scale total scores. First, difference values were calculated across the three permutations of surveys (posttest minus pretest, delayed posttest minus posttest, delayed posttest minus pretest) for all participants. Because statistical analyses demonstrated significant differences between the treatment and control groups, the means and standard deviations of the difference values were calculated separately for each of the experimental groups. For the treatment group interview participants who persisted in all aspects of the study (completing all three rounds of surveys and interviews), the differences in individual participant's CDSE Scale total scores were then compared with the mean and standard deviation for the treatment group as a whole. If the change in a participant's CDSE Scale total score was one or more standard deviations greater than the mean difference for his or her appropriate group, the participant was flagged as having experienced an increase in CDMSE beyond expectations. A change in the CDSE Scale total score one or more standard deviations below the mean difference for the group was flagged as a decrease in CDMSE beyond expectations. All others were flagged in a category indicating no

change beyond expectations. The same process was followed for the control group interview participants who persisted in all aspects of the study, except that the differences in individual participants' CDSE Scale total scores were compared with the mean and standard deviation for the control group (rather than the treatment group) as a whole. Divisions into increases beyond expectations, decreases beyond expectations, and no change beyond expectations were made in the same fashion based on standard deviations from the group mean. The same process was followed for all five CDSE Scale subscales, the CBI-R total score, and all seven CBI-R subscales. Salient themes emerging across participant interviews were then considered to look for similarities and differences both within and between categories of participants.

Personal History

At this point, it seems important to share some of my personal history, as it may provide insights into how I am situated as a researcher in this project. Under the guidance of my dissertation committee, I offer reflections in two areas: (a) my personal career journey, and (b) sources of my methodological leanings and selection of mixed methods for this research study.

Career journey. My first professional passion was, and in many ways still is, career development. I have great curiosity about the way college students explore majors and careers, make career-related decisions, and implement those decisions, particularly as these activities relate to persistence to achieve higher education goals.

My own story of academic choices in high school and college is marked by uncertainty and premature decisions. I would not say that high school came easily for me. However, I was taught at an early age to work hard at every task I encountered (academic or hobby), and I had great support from family members, teachers, and mentors to do so. As a result, I found that I could excel in many areas. As I thought about possible next steps and college majors, I

considered the directions that I saw around me. Coming from a family of medical scientists, my exposure to possibilities was fairly narrow—whatever I pursued, I thought that it had to be related to science or engineering. It was all I knew. Having done well in a computer programming class in high school and having enjoyed math and physics, I decided that perhaps a computer science major would be a good choice. I was accepted into the College of Engineering at Cornell University and immediately dedicated myself to this one major even before stepping foot on campus.

What I discovered at Cornell University was that even though I had the skills to complete programming projects, I did not enjoy it. I did not feel a connection with my classes and I struggled with the material, studying twice as long as my peers to grasp the same concepts. In my free time, I trained to become a peer counselor and volunteered on a campus-based crisis hotline. My computer science peers, on the other hand, spent their free time taking apart their computers and writing code. With each passing semester, I fell further and further behind, and a dreaded sense of impostor syndrome grew inside me. However, all the while, I never considered changing majors or career paths. I was hesitant to change because the discomfort of staying in the same place seemed better than the alternative, the fear of having no direction. It was not until the end of my junior year that I stumbled into a career center and found a connection with a career counselor who helped me acknowledge that I was lost. In my third career counseling session, I looked at her and said, “Amy, I want your job.”

Having only one year and two computer science classes left to complete my computer science degree, I stuck it out in that major and graduated with a GPA that was just high enough to apply to competitive graduate programs. However, under Amy’s guidance, I also immediately began taking steps to explore career counseling as a career option. I volunteered as a peer advisor

in the career center that made such a difference in my life. After graduating from Cornell University, I remained on that campus for an extra year to enroll in some psychology classes and to continue working in career services to be certain it was a good fit before pursuing graduate studies. That short time left me with no doubt that I had found a professional home—career development was where I belonged.

I have now worked in career services at a variety of higher education campuses for more than 10 years. In May 2002, I completed a Master's degree in Counseling, with a specialization in career development, from The Florida State University. Since then I have worked in numerous roles helping individuals from all walks of life—from high school students, to college students, to mid-career changers, to federal government professionals looking to move into the Senior Executive Service—to explore options, make decisions, and implement career choices. Nevertheless, I find my greatest passion is working with college students who feel lost and uncertain, those who have not found their place on campus and are searching for their own academic or career homes. I am inspired by the opportunity to make a difference in their lives, perhaps mirroring the way that Amy made a difference in mine.

In my time as a career development professional, I have developed a clear personal style in working with clients, which is strongly theory based. I have professional leanings toward the use of Cognitive Information Processing (Sampson, Reardon, Peterson, & Lenz, 2004) and Social Cognitive Career Theory (Lent et al., 1994) in my interactions. I find myself matching students' expressed experiences with my own past experiences and ideas of how successful career choices are made. This matching process helps me develop a rich understanding of how the student is making meaning of his or her experiences (McCracken, 1988), as well as the potential next directions that may be useful to him or her. I also continuously strive to look for

exceptions and discrepancies in my understandings. Upon building rapport with a student, a common probing question that I use is “On the one hand you said __ (A) __, but on the other hand, now you are telling me __ (B) __. Can you tell me more? Help me understand how you see them differently.” I find that this active desire to embrace ambiguity and complexity not only helps students enhance their knowledge of self, but also expands my own world view and cognitive understandings of personal and career development. Perhaps this respect for embracing ambiguity and complexity could be seen as a quality that drives my choice to adopt an interpretive constructivist approach to interviewing, and even a pragmatic approach to research design.

My decision to pursue a Ph.D. in higher education, with an evaluation research specialization, was spurred by a work experience at George Mason University. In August 2003, I was hired to establish and lead a career center in the School of Management. In that role, I was continually challenged by the college dean to demonstrate the positive impact of our office’s efforts, the value that our small group added to the college as a whole. I found that I did not have the knowledge or skill to do it well at the time. In response, I developed a new, strong desire to learn to do so (a new twist on my original passion for working with college students). This was also the time when a re-energized push for learning outcomes assessment emerged in student affairs with publication of *Learning Reconsidered* by the American College Personnel Association and the National Association of Student Personnel Administrators (2004). It was an exciting time to be thinking about the value of career services on college and university campuses.

This is what brought me to the Department of Educational Organization and Leadership at the University of Illinois at Urbana-Champaign. I desired to develop a deep understanding of

the higher education institutions that I valued so highly, of student development both inside and outside the classroom, and of program evaluation with experience in employing both qualitative and quantitative methods. This dissertation reflects a blend of these past experiences and desires.

Reflections on mixing research methods. Greene (2007) suggests that all social inquirers bring a unique “mental model” to their work, which is made up of “a set of assumptions, understandings, predispositions, and values and beliefs” (p. 12). This mental model creates a lens through which individuals “perceive and make sense of the social world” (p. 13). My own mental model is influenced by past experiences in environments which embrace and encourage very different inquiry styles. I completed my undergraduate degree in computer science at Cornell University’s College of Engineering. Within this environment, I excelled in statistics classes and discovered a deep curiosity about programming logic and optimization. I then went on to pursue a master’s degree in counseling, followed by a number of work experiences as a career counselor and educator. I learned to embrace environments characterized by ambiguity, emotion, dialog, complexity, and contextualized meaning making – a very different place from the rigid logic of computer science. Within my experiences, I developed a deep appreciation and respect for both ways of seeing the world. I enjoyed exploring how these viewpoints could speak to one another.

With this background, I was introduced to mixed methods theory and research as a doctoral student. Particularly in the writings of Jennifer C. Greene (e.g., Greene, 2007; Greene, Benjamin, & Goodyear, 2001), I began to see connections to my personal values and style. I felt energized by Greene’s (2007) description of a mixed methods way of thinking which “accepts the legitimacy of multiple and diverse ways of knowing, the partiality of any one way of knowing, and thus the desirability of multiple stances on knowledge in service of more

comprehensive insights and understandings” (p. 23). This way of thinking about knowledge felt comfortable, familiar, and natural. Early in my doctoral program, when exploring dissertation ideas, the most common and prominent advice that I received was: “If you want to finish, do not do a mixed methods study.” (In and of itself, this is an interesting message for new scholars to receive.) However, I could not ignore the internal draw to conduct research that prominently featured different ways of knowing and making meaning, as well as to explore ways that different lenses could inform each other.

Admittedly, I struggled with a number of tensions in the implementation of this study, which are perhaps most prominently evidenced in the presentation of results. Organizing the results presentation, as well as deciding upon what voice and style to use in the writing, was particularly challenging.

Organizationally, I presented the findings by research question, drawing contributions from each method as it uniquely contributed to the knowledge sought. This facilitated my interests in recognizing different ways of knowing and examining how they inform one another. As I look back on the manuscript, however, I do see a disadvantage; this approach hindered the flow of the story. The manuscript organization became more rigid and compartmentalized than I would have liked, disallowing spaces for discussion across research questions.

In regards to voice within the analyses of findings, I started by thinking of how this study responds to past research. As previously discussed, the majority of past research that examines career intervention outcomes and environmental influences comes from a counseling psychology tradition and relies heavily on quantitative methods. So that is where I began, often first presenting quantitative results to demonstrate outcomes and then moving to the expansions offered by the qualitative and mixed analyses. This frame of mind lent itself to a traditional,

empirical approach, using third person voice and presenting trends and integration of qualitative data. I believe that this decision had value to help situate the study within past literature, but I also recognize that individual participant's stories and journeys do not emerge in the text as strongly as I would have liked them to. In future writing, I look forward to telling these stories in greater detail, with greater attention to allowing participant voices to emerge through the analysis.

Chapter 4

Participant Descriptions

This chapter provides an overview of participants, placing them within the context of the student population of interest for this study. It begins with an overview of who was invited to participate, as well as who accepted those invitations and persisted throughout the full study. Because surveys were completed by all study participants, this information is presented next, including both participant demographics and their academic major considerations. This is followed by descriptions of interview participants and the purposeful selection process. The chapter concludes with a data-driven recognition of study limitations regarding the use of career services beyond the research study and the challenge of study participation acting as an intervention.

Study Invitations and Participation Rates

When this study began in August 2009, a total of 1729 first-time, first-year college students were enrolled in the Exploring Majors College (EMC) at Midwest University (MU). Of this group of students, 847 (49.0%) were enrolled in a mandatory University 101 class during the first half of the academic semester. Personally visiting each of the class sections provided a means for the researcher to extend invitations to students to participate in the study. The remaining first-time, first-year students in the EMC were enrolled in this class during the second half of the academic semester, and therefore were not contacted for participation.

During the second and third weeks of the academic semester, the researcher spoke to 812 students from 12 class sections regarding study participation. Students were encouraged to participate if they met two eligibility requirements: (a) they were 18 years of age or older, and (b) they were currently deciding between two or more majors or career options, or were unsure

of what major or career options they might want to consider. This meant that if students had already chosen a single major they intend to pursue, they were asked not to participate. Of those who reported not meeting the eligibility requirements, 23 reported being 17 years of age or younger, and 231 reported having already decided on a single college major or career. This left 564 eligible students (32.6% of the total students enrolled in the EMC) who were invited to participate in the study. Ultimately, 305 students chose to participate and completed the pretest survey (54.1% of eligible and invited students). Students' completion of the pretest survey was the indicator used to determine participation before being randomly assigned to the treatment and control groups. Additional attrition occurred after this pretest survey. For example, 58 students began the treatment, yet 5 of those students dropped out of the study after completing only one career counseling appointment (half of the treatment). An additional 170 students chose not to complete the immediate posttest survey, the delayed posttest survey, or both. This left 130 students (43.3% of the original 305 students) in the final study sample. See Table 4.1 for additional details regarding students' decisions to participate and follow through with the study.

Population and Survey Participant Demographics

The following tables provide descriptive data regarding the demographic variables of age (Table 4.2), citizenship (Table 4.3), gender (Table 4.4), and race or ethnicity (Table 4.5) for respondents to the pretest survey, participants in the full study, and students who did not complete the full study. Demographics are also provided for the population as a whole. As these tables demonstrate, in regard to age, when the study limitation of not being able to include minors (those 17 years of age or younger) was taken into account, the breakdown of those who participated in the full study closely resembled that of the population. Likewise, concerning citizenship, the breakdown of participants in the full study resembled that of the population.

Table 4.1

Number of Students Accepting and Declining the Study Invitation, with Pretest Survey Participation Results

Invitation Response and Participation Result	Number of Students	Percentage of All Students (812)	Percentage Meeting the Study Criteria (564)
Declined the invitation			
17 years of age or younger	23	2.8	n/a
Already selected a single major	231	28.4	n/a
Other reason or prefer not to say	87	10.7	15.4
Did not report a reason	45	5.5	8.0
Accepted the invitation			
Did not complete the pretest survey	121	14.9	21.5
Dropped out of the treatment group	5	0.6	0.9
Dropped out of the study after some survey completion	170	20.9	30.1
Completed the full study	130	16.0	23.0

Concerning gender, female students were overrepresented in the full study sample (63.8%) as compared with the population (50.0%). Finally, in relation to race and ethnicity, White/Caucasian (79.2% of full study participants vs. 61.7% of the population) and Asian/Pacific Islander (16.9% of full study participants vs. 8.3% of the population) students were overrepresented in the study sample as compared with the population, while Black/African American (1.5% of full study participants vs. 8.8% of the population) and Hispanic/Latino(a) (2.3% of full study participants vs. 17.8% of the population) students were underrepresented.

Some concern is warranted regarding participant attrition across the study. Overall, 57.4% of students who completed the pretest survey chose not to respond to the immediate

Table 4.2

Age of Survey Participants

Age	Population		Pretest Survey Respondents		Full Study Participants		Study Noncompleters	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
17 years or younger	66	3.8	*		*		*	
18 years	1,488	86.1	258	84.6	105	80.8	153	87.4
19 years	147	8.5	42	13.8	22	16.9	20	11.4
20 years	20	1.2	5	1.6	3	2.3	2	1.1
21 years	6	0.3	0	0.0	0	0.0	0	0.0
22 years or older	2	0.1	0	0.0	0	0.0	0	0.0
Total	1,729		305		130		175	
Average	18.1		18.2		18.2		18.1	

* Students had to be 18 years of age or older to participate in this study, in accordance with Institutional Review Board requirements.

Table 4.3

Citizenship Status of Survey Participants

Citizenship Status	Population		Pretest Survey Respondents		Full Study Participants		Study Noncompleters	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
U.S. Citizen	1,564	90.5	275	90.2	117	90.0	158	90.3
Permanent Resident	52	3.0	12	3.9	5	3.8	7	4.0
International	105	6.1	17	5.6	7	5.4	10	5.7
Other	8	0.5	1	0.3	1	0.8	0	0.0
Total	1,729		305		130		175	

Table 4.4

Gender of Survey Participants

Gender	Population		Pretest Survey Respondents		Full Study Participants		Study Noncompleters	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Female	865	50.0	180	61.5	83	63.8	97	55.4
Male	864	50.0	123	38.5	47	36.2	76	43.4
Transgendered	0	0.0	1	0.3	0	0.0	1	0.6
Not Reported	0	0.0	1	0.3	0	0.0	1	0.6
Total	1,729		305		130		175	

Table 4.5

Race or Ethnicity of Survey Participants

Race or Ethnicity	Population		Pretest Survey Respondents		Full Study Participants		Study Noncompleters	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Black/African American	152	8.8	16	5.2	2	1.5	14	8.0
Hispanic/Latino(a)	307	17.8	17	5.6	3	2.3	14	8.0
Asian/Pacific Islander	143	8.3	51	16.7	22	16.9	29	16.6
White/Caucasian	1,066	61.7	217	71.1	103	79.2	114	65.1
Other	3	0.2	4	1.3	0	0.0	4	2.3
Not Reported	58	3.4	0	0.0	0	0.0	0	0.0
Total	1,729		305		130		175	

posttest survey, the delayed posttest survey, or both. Attrition rates were larger in the control group (60.7%) than in the treatment group (43.1%). For the demographic variables of age and citizenship, the differences in attrition across response categories were minimal. A greater percentage of Black/African American and Hispanic/Latino(a) students chose to discontinue participation (87.5% and 82.4%, respectively), as compared with Asian/Pacific Islander and White/Caucasian students (56.8% and 52.5%, respectively). Yet study noncompleters were not overrepresented in these groups with higher attrition as compared with the population: 8.8% of the population and 8.0% of study noncompleters identified as Black/African American, while 17.8% of the population and 8.0% of the study noncompleters identified as Hispanic/Latino(a). Likewise, male students had greater attrition rates (61.8%) than female students (53.9%), yet the percentage of male study noncompleters (43.4%) was not disproportionately high in comparison with the population (50.0%). This breakdown of attrition rates seemed to suggest that, although undesirable, the attrition rate was not detrimental to the study. Caution is required, however, when interpreting and generalizing results of the statistical analyses.

Participants' Academic Major Considerations

A modification of Zener and Schnuelle's (1972) Occupational Alternatives Questions was included as part of the demographic questionnaire on the survey to characterize participants' thoughts regarding their academic major options. Participants listed all the academic majors they were considering at the time they completed each survey and indicated if they had a first choice option. Table 4.6 summarizes the frequencies of student responses for the pretest, posttest, and delayed posttest surveys.

For the pretest survey, the vast majority of participants (93.7%) articulated that they were considering multiple majors, whereas 4.6% of participants were not able to articulate any

Table 4.6

Summary of Participant Major Considerations Articulated on Each Survey Time

Major Options Articulated	Pretest		Posttest		Delayed Posttest	
	#	%	#	%	#	%
First choice, no alternatives	2	1.5	14	10.8	27	20.8
First choice, with alternatives	47	36.2	73	56.2	81	62.3
No first choice, with alternatives	75	57.7	43	33.1	22	16.9
No first choice, nor alternatives	6	4.6	0	0.0	0	0.0

potential majors. Slightly more than one third (37.7%) of the participants expressed that they had a first choice major in mind. Great variation existed in the types of majors articulated by each participant. Some students expressed a limited number of closely related options, for instance debating between (a) finance or accounting; (b) chemistry or biology; and (c) psychology, sociology, or social work. Others expressed numerous majors with considerable variation in subject areas and locations in colleges across MU, such as (a) psychology, pre-dentistry, art history, art therapy, and interior design; (b) secondary education, library science, history, English, and computer science; (c) international studies, humanities, business, environmental studies, and human nutrition; and (d) business, astronomy, engineering, and architecture. Of the respondents who were not able to articulate a first choice major or alternatives on the pretest survey, two left only question marks in the response box for listing the majors they were currently considering. The remaining responses included

- All majors.
- I am undecided, everything sounds good. I just don't want to be stuck at a 9-5 for my life. I want to go out and see the world and people.
- I am very unsure of what I really want to pursue but possibly something along the lines of sociology, but that is still very up in the air.

- Everything! (absolutely no idea), Spanish as a minor.

At the end of the first academic semester, as indicated on the posttest survey, all participants were able to articulate possible options for their academic majors. Two-thirds of the participants (67.0%) articulated a first choice major (up from 37.7% in the pretest survey), whereas 89.3% mentioned alternatives they were considering. By the end of the first academic year, as indicated on the delayed posttest survey, an increasing number of participants demonstrated the ability to articulate academic options, with 83.1% of participants articulating a first choice major and 79.2% identifying alternatives.

Selection of Interview Participants

As described in Chapter 3, participants were first randomly assigned to the treatment and control groups, and then students from each group were purposefully selected to participate in interviews. Purposeful selection was based on results from the pretest survey, with variety sought across students' expressions of career decision-making self-efficacy (CDMSE) and perceived barriers, as well as reported gender, ethnicity, and academic majors under consideration. To accomplish this, students' total scores on the Career Decision Self-Efficacy Scale (Betz & Taylor, 2001) and Career Barriers Inventory-Revised (Swanson, 1995a) were graphed on a scatter plot. The researcher then focused on participants with scores on the fringes of the plot, representing four categories: (a) high CDMSE, low perceived barriers; (b) high CDMSE, high perceived barriers; (c) low CDMSE, low perceived barriers; and (d) low CDMSE, high perceived barriers. From there, individual student responses were examined to provide a balance in gender and ethnicity across participants, as well as to include a wide variety of academic majors being considered across participants.

Figure 4.1 shows the scatter plot of treatment group participants and Figure 4.2 shows the scatter plot of control group participants. In each plot, the initial inventory scores of students who participated in interviews are clearly marked. The 23 students who chose to participate in all three interviews are indicated by shaded circles, whereas the 6 students who chose to participate in one or two interviews are indicated by shaded triangles.

Table 4.7 provides an overview of interview participants' gender and their race or ethnicity as reported on the pretest survey, demonstrating the variety achieved. Note that approximately 60% of the interview participants were female, and that slightly more than half of the participants identified as members of an ethnic minority group. As demonstrated in Table 4.8, interview participants expressed interest in a wide variety of majors on their pretest surveys, including architecture, business, communications and media, engineering, fine arts, health and

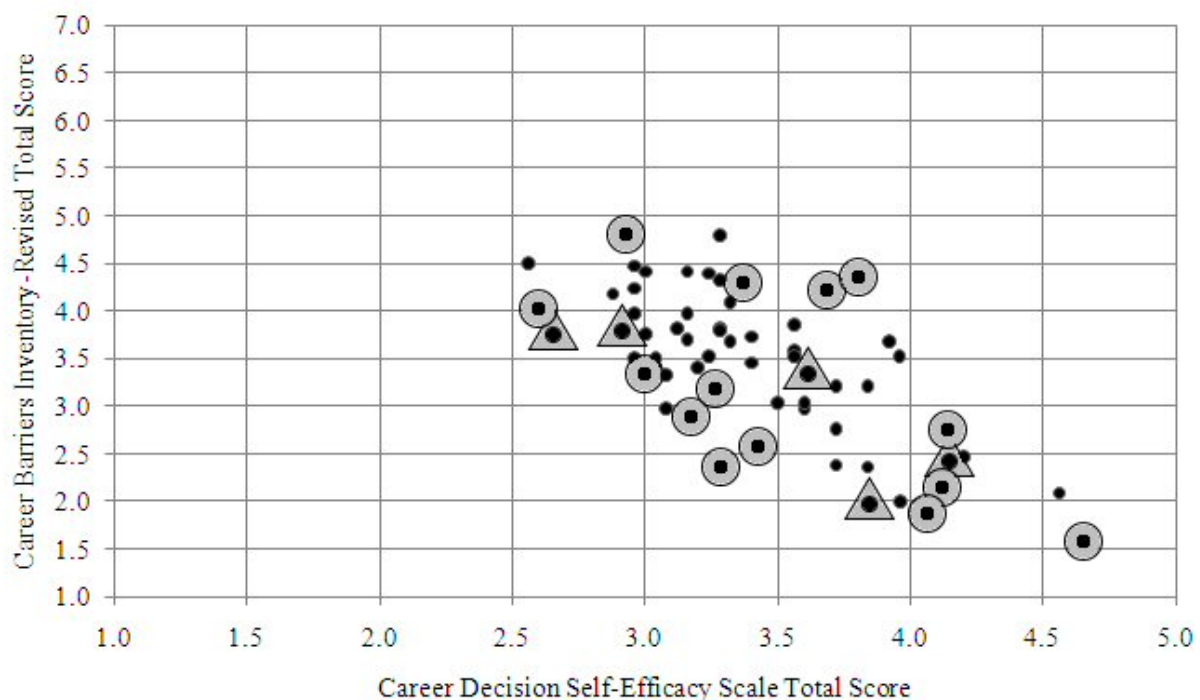


Figure 4.1. Scatter plot of the treatment group members' inventory scores from the pretest survey. Shaded circles indicate purposefully selected students who participated in all three study interviews. Shaded triangles indicate purposefully selected students who chose to participate in one or two study interviews.

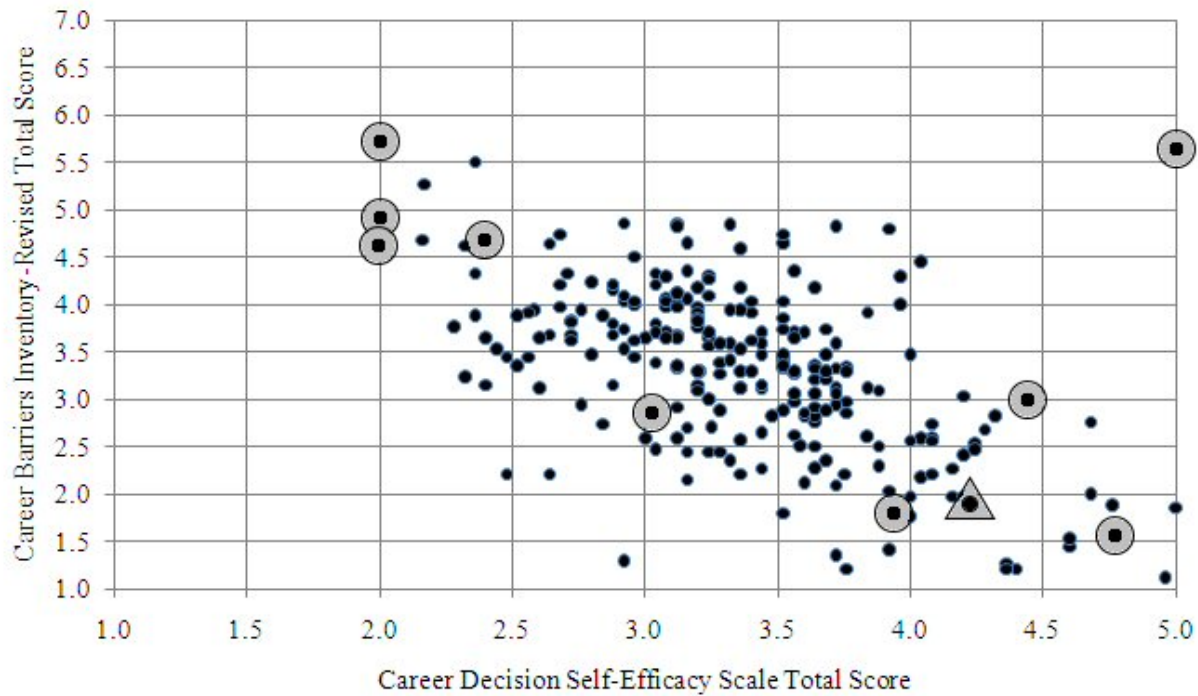


Figure 4.2. Scatter plot of the control group members' inventory scores from the pretest survey. Shaded circles indicate purposefully selected students who participated in all three study interviews. The shaded triangle indicates the purposefully selected student who chose to participate in a single study interview.

the medical professions, liberal arts and sciences, and social sciences. In the open-response fields, several students also indicated general indecision regarding potential majors to pursue. For example, one student expressed interest in "some type of liberal arts," whereas another stated "I am very unsure of what I really want to pursue, but possibly something along the lines of sociology, but that is very up in the air."

Appendix C contains sample narrative summaries from interviews with two treatment group participants (Gina, Grant) and one control group participant (Wendy). These summaries provide a look into the personal journeys both (a) expressed by students during interviews, and (b) affirmed by students via member checking.

Table 4.7

Gender and Ethnicity of Interview Participants

Demographic		Control Group ($n = 10$)	Treatment Group ($n = 19$)
Gender	Female	6	11
	Male	4	8
Ethnicity	Black/African American	1	2
	Hispanic/Latino(a)	1	3
	Asian/Pacific Islander	1	5
	White/Caucasian	6	9
	Multiracial	1	0

Participation-Related Limitations

At this point, it is helpful to acknowledge some of limitations that could not be controlled for within the study design. Two issues of interest are discussed here: (a) the use of career services beyond the study, and (b) study participation as an intervention. Data collected throughout the study are presented to inform readers of the extent that these limitations might have influenced the study findings.

Use of career services beyond the research study. One recognized study design limitation was that participants (in either the treatment or the control group) could use career services that were not part of the study. Treatment group participants engaged in a series of interactions with career services at MU, which followed a structure of (a) a first career counseling appointment, (b) a performance accomplishment activity to actively explore majors or careers, and (c) a second career counseling appointment to reflect on progress and next steps. Treatment group members were welcome to participate in additional career services activities of

Table 4.8

Variety of Majors Considered by Interview Participants at the Beginning of their First College Year

Architecture	Fine Arts	Liberal Arts / Sciences
Architecture	Art	Biology
Urban Planning	Cinema Studies	Chemistry
	Media Studies	Environmental Sciences
Business / Economics	Music Education	History
Accounting	Music Therapy	International Relations
Business		Mathematics
Business Management	Health / Medical	Molecular and Cellular Biology
Economics	Cardiology	Physics
Finance	Dentistry	Political Science
Marketing	Kinesiology	
	Nursing	Social Sciences
Communications / Media	Optometry	Anthropology
Advertising	Pediatrics	Education
Broadcast Journalism	Pharmacy	Elementary Education
Communications	Physical Therapy	Human Development
Graphic design	Pre-Health	Psychology
	Pre-Med	Secondary Education
Engineering	Pre-Vet	Sociology
Aerospace Engineering		
Bioengineering		
Chemical Engineering		
Computer Science		
General Engineering		
Materials Engineering		

their choosing, because it would be unethical and inappropriate to prohibit access to such services for the purposes of a research study. For the same reasons, control group members were welcome to use career services at MU outside the study.

Participants' access to experiences that were similar to the treatment created a necessity to gather data regarding study participants' use of career services during their first college year. Records of career center use were gathered from the career center's data collection system, which tracks all use of in-person, individual, or group services. Two data points were collected. First, the types of services used were recorded, including individual career counseling appointments, drop-in career advising for resume or cover letter reviews, workshops, and other (i.e., graduate school fair, mock interview). Second, the number of times each service was used was recorded. These data were initially recorded for three time periods: (a) prior to the pretest survey, (b) between the pretest and immediate posttest surveys, and (c) between the immediate posttest and delayed posttest. Because only two control group participants used career services prior to the pretest, the first two categories were combined into a category referred to as "using career services during the first college semester." For clarity, the last category was referred to as "using career services during the second college semester."

When the use of career services during the first college semester was examined, there was little evidence to suggest that students in the treatment group used career services beyond the use that was required by the study (Figure 4.3). No treatment group participants attended more than two individual career counseling appointments, and only four (12.1%) of the treatment group participants attended more than one drop-in advising or workshop session in addition to their appointments.

On the other hand, during their first college semester, 30 control group participants (30.9% of all control group participants) used some form of career services, according to the career center's records. Very few of these students' usage patterns resembled those of the students in the treatment groups, namely, two individual career counseling appointments with a

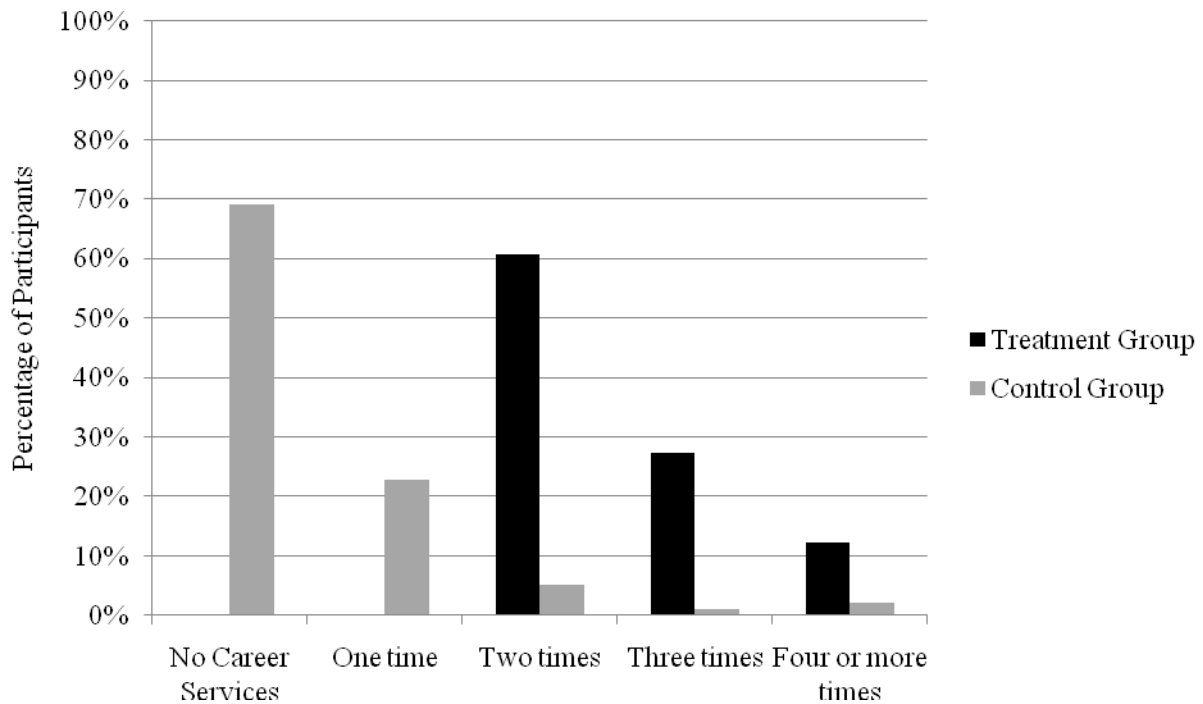


Figure 4.3. Use of career services by treatment and control group participants during the first college semester, according to career services records.

performance accomplishment task. As Figure 4.3 shows, 26.1% of the control group participants used career services only one time. Of the nine (9.3% of the control group) participants who used career services two or more times, only three (3.1%) attended two individual career counseling appointments in a manner resembling the treatment group.

When control group participants did use career services during their first college semester, they tended to choose brief drop-in advising for resume or cover letter critiques or group workshops more often than they used one-on-one individual career counseling appointments (see Figure 4.4). It is reasonable to assume that these experiences were quite different from those of the treatment group participants.

When career center records from the participants' second college semester were examined, there appeared to be little difference between the control and treatment group participants' choice to use career services. Small numbers of participants from each group

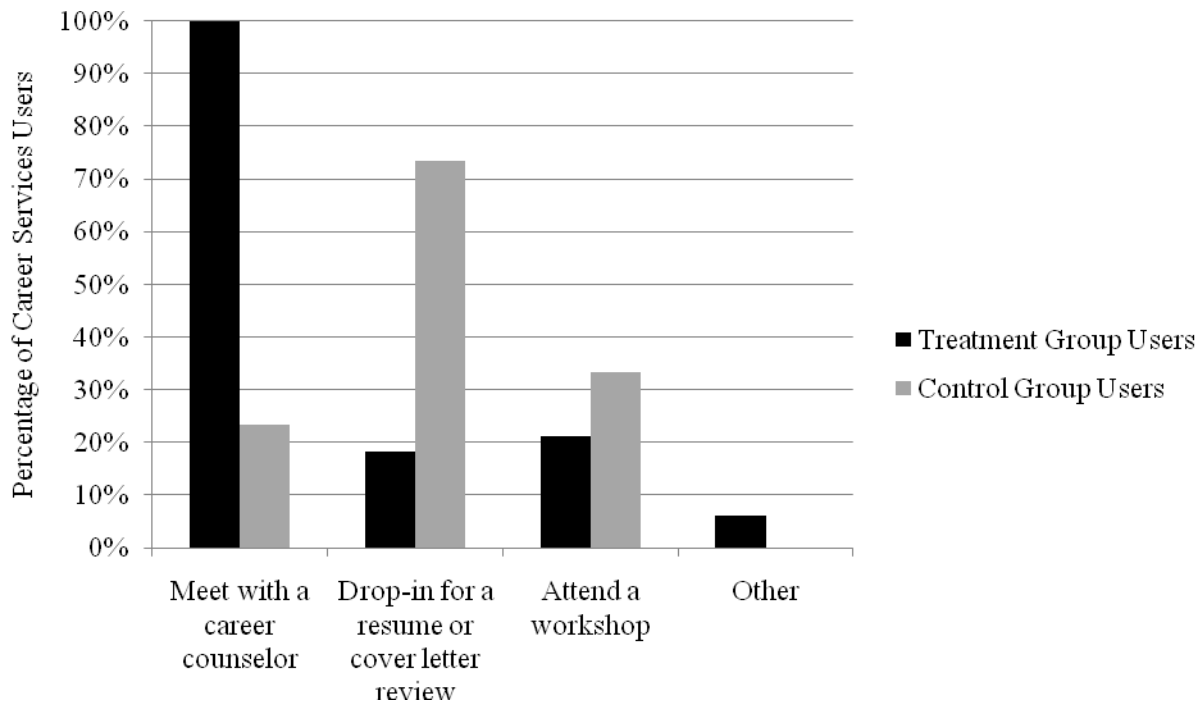


Figure 4.4. Format of career services use for treatment and control group participants during the first college semester, according to career services records.

(12.1% of the treatment group and 9.3% of the control group) used career services in this time period (see Figure 4.5). However, a similar pattern in the types of services selected remained from the first college semester. Treatment group participants more often selected individual career counseling appointments than the other options. Control group participants more often selected drop-in resume and cover letter reviews or workshops than individual career counseling appointments (see Figure 4.6).

Examination of these data regarding career center use during the first college year provides a sense of the influence that this limitation may have had on the findings. Although some control group participants did seek career counseling on their own, this did not occur to a great extent, and their selection of services (both before and after the designated treatment period in the first college semester) rarely resembled that of the treatment group. This suggests that, for the statistical analyses, the observed effect sizes may have been reduced in response to some

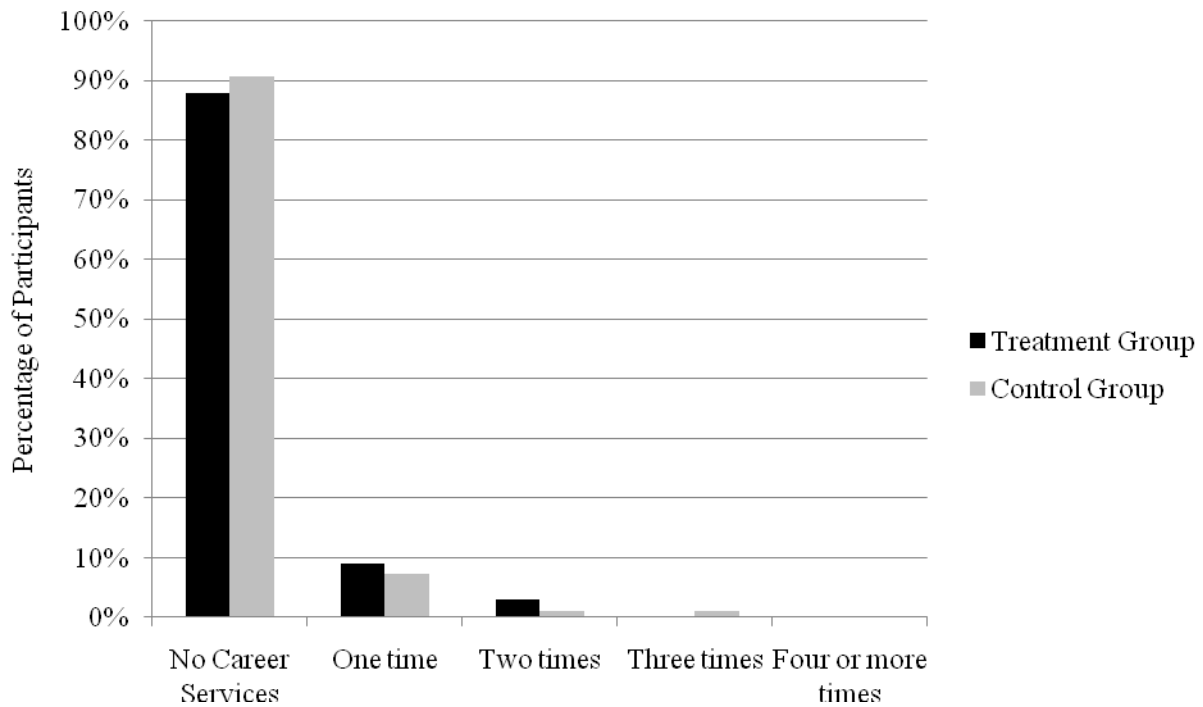


Figure 4.5. Use of career services for treatment and control group participants during the second college semester, according to career services records.

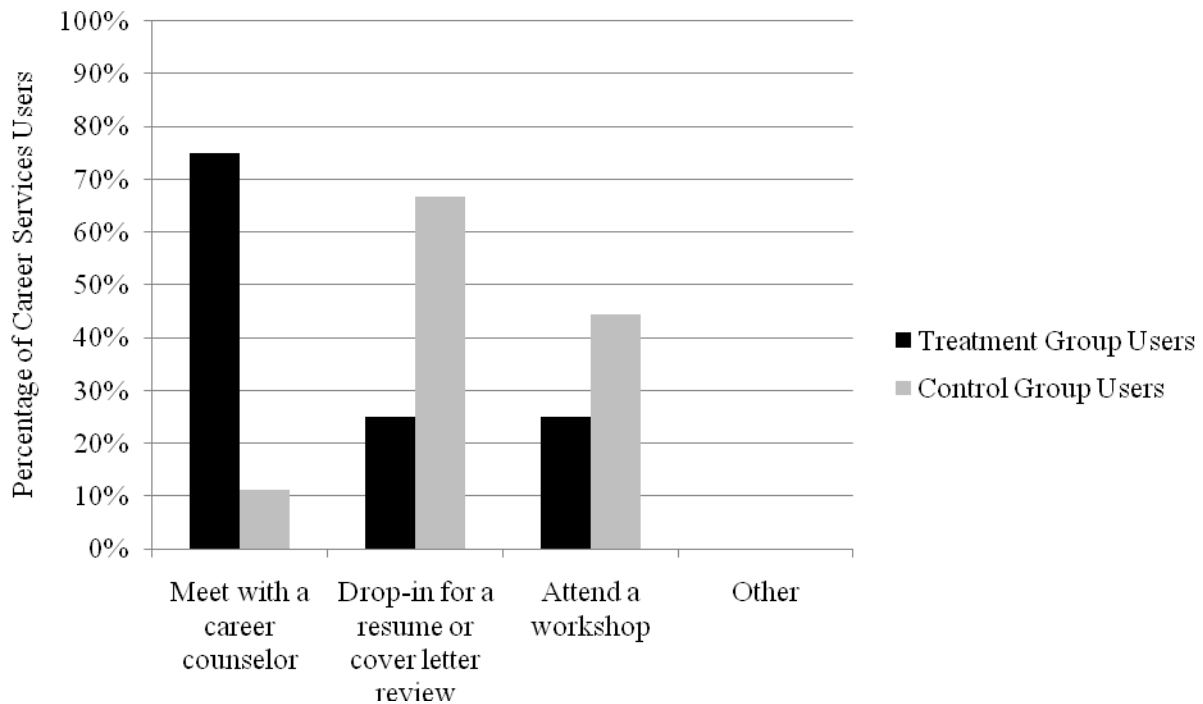


Figure 4.6. Format of career services use for treatment and control group participants during the second college semester, according to career services records.

control group members choosing to seek out career services on their own. It is quite possible that the treatment had a slightly larger effect than found in the current study.

Study participation as intervention. The research interviews encouraged participants to reflect on their academic major and career choices, including discussions of topics such as current options under consideration, perceived barriers, and sources of support and assistance (see interview guides in Appendix B.) As such, the research interviews themselves encouraged self-reflection and exploration regarding academic major and career choices, and may have influenced participants' perceptions.

In fact, a number of interview participants remarked on the helpful nature of their involvement in this study. Two treatment group participants, Adam and Derek, expressed appreciation for connecting them with the career center through the study. Adam stated,

Thanks, I guess for helping.... Well, you gave me an extra push, you know, going to the career center and stuff. It was good because I know I probably would've done it anyway, but doing this, it just set it up for me and everything. And so it was good.

Derek echoed Adam's sentiments about appreciating the "extra push" to try the career center and experiencing beneficial results:

I think if I wouldn't have taken part in this survey, I probably still wouldn't have visited the career center. It is kind of - it kind of exposed me to it. I mean, I knew it was there. I passed by it, "Oh, there's the career center." But I never really took the time to actually see what they offer. At my high school, they had a career center, but it wasn't really a career center. It was just more like a section of the library that had pamphlets of different majors and stuff. So I kind of thought it was similar. But then I came in and learned that there's actually advisors and stuff. And they offer different programs, not just an office with papers and stuff. So I thought it was very beneficial to me.

For Grant, the opportunity to talk about his experiences and decision-making processes in the research interviews were particularly meaningful. He commented on this after his delayed post

interview at the end of his first college year. The recorder was turned off when he made this statement; however, I recorded the following in my journal to capture his ideas:

After recorder turned off and invited to continue, Grant says that these interviews have been very helpful, help him reflect. Day by day, you are just going to class and getting through tasks. But here he gets to think back over how he got here, where his decisions came from. And, he appreciates the opportunity.

For Mara, it was reviewing the summary of her pre-interview that helped her process her own academic major and career choice process, making it more meaningful and tangible to her:

I think it was interesting because now that I think about it, it was like I agree with it. It was - at that moment I was just speaking, but when I read it, it's like the words actually is true. It makes sense. It's reality to me.

Finally, as discussed in detail in the later findings chapters, during Gina's research interviews, she came to a deeper understanding of the role that significant others play in her choice of an academic major and career. She came to appreciate the unintended, but actual, pressures that she felt and how they contributed to her angst regarding her upcoming choices.

Likewise, even though the duration of influence was considerably shorter, the act of simply completing the surveys associated with this study encouraged participants to reflect on their major choices, CDMSE, and perceived career barriers. This reflection may have stimulated new perceptions, encouraged help-seeking behavior, or otherwise influenced students.

Although these influences may be undesirable from a research standpoint, they are certainly unavoidable. Recognition of the possible influence of research study participation is encouraged in the consideration of findings.

Chapter 5

Student Interpretations of Career Counseling Experiences

This chapter explores how treatment group participants interpreted the individual career counseling experiences they encountered early in their first college semester. Evidence was primarily drawn from interviews conducted with 15 (of the original 19) treatment group participants who persisted in the study. The chapter begins by exploring participants' expressed expectations and desires prior to their first career counseling appointment and depicts preconceptions held. This is followed by descriptions of participants' experiences in individual career counseling, derived from the two follow-up research interviews. Participants' experiences are considered in terms of the content discussed in appointments, process engaged in, and resultant feelings experienced. The chapter concludes with a synthesis of ideas derived from comparisons of students' expectations with their experiences.

Expectations and Desired Experiences

During the first interview, all treatment group participants were asked to share their thoughts and feelings about participating in career counseling. The interview questions explored topics such as (a) expectations for what may happen in a career counseling appointment, (b) desired results or "take-aways" from the experience, and (c) concerns about attending career counseling (see interview guide in Appendix B). An examination of these preconceptions provides a helpful framework for comparison with participants' actual experiences and reflections.

Uncertainties and concerns. The interview participants reported few past experiences with career services and perceived their experiences as having had a minimal influence on their academic and career choices to date. For example, Denise explained,

I don't know—at my high school, there weren't really career programs or different programs that really help the students decide what they wanted to do. It was just one of those “do as best as you can in school.” Get your good grades, and then you'll just move on. And then I guess from there, hope for the best. I just—I never really had anything to kind of guide me anywhere.

As a result, Denise felt herself floating among many possible futures, continually changing interests and focuses: “My whole life, I've been changing what I want to do.”

Adam recalled some presence of career services in his high school, but he “didn't feel like anyone really utilized it.” His sole interaction with the career center was a single-day career exploration exercise, which left him with a negative impression of group career assessments:

If I did [use my high school's career center], I really don't think it really would have helped that much, because I don't know. We did one day a year where we went to this website and filled out stuff you liked and didn't like, and they would tell you what you wanted to be. It was ridiculous too. I don't even know—My number one was model or something like that. And my girlfriend, who's in the business college, she's studying to be an accountant, and she wants to get her 5-year masters in 4 years. She's really smart. Her number two was bus driver or something like that ridiculous. So it was just, like, “This is dumb.”

Feeling skeptical of generalized career services, Adam reflected that “I need real advice and counseling,” as opposed to isolated experiences that are not tailored to his situation and needs.

Derek, on the other hand, recalled a consistent presence of career resources in his school environment, which influenced his thinking regarding what career services at Midwest University (MU) may be like:

At my high school, they had a career center, but it wasn't really a career center. It was just more like a section of the library that had pamphlets of different majors and stuff. So I kind of thought it was similar [at MU].

Related to minimal previous exposure to career services, most interview participants (9 of the 15 treatment group interviewees who completed the study) expressed varying degrees of uncertainty regarding what they might encounter in a career counseling experience. Although some participants simply acknowledged their uncertainties about what to expect (e.g., Adam: “I

have no idea.”), others took the opportunity to imagine what might occur (e.g., Denise: “It’s called career counseling? I don’t know. I guess they’re just going to ask exactly what I’m considering and why. And then just maybe consider some majors and then hear my ideas, and maybe help me sort them out.”). Additionally, some participants sought to use the research interview as an opportunity to gather more information about what to expect.

- Jacob: Do I have to be prepared? Like bring stuff?
- Kari: It’s just helping you, right? Just talking about it? . . . What will we be doing?
- Grant: Can you tell me what a career counseling meeting would be like?
- Emily: So the appointment is you’re talking to someone?
Interviewer: Um-hum. It’s 45 minutes, one-on-one.
Emily: Yeah, so he or she can give me a really, really complete idea about my major, right?

In many cases, uncertainty about what to expect did not arouse anxieties for participants. They remained hopeful that they could engage successfully in the experience (e.g., Emily: “I’m pretty sure I can express myself.”) and that their individual career counseling experiences would ultimately be helpful (e.g., Hailey: “It could only do good.”). However, one common anxiety did emerge across three interviews. Students questioned whether they were prepared to participate in career counseling. Grant was particularly articulate in describing this concern:

I feel like I would wanna get more prepared, so I can have more to talk about, and wanna feel like I would—if they asked me a question on what my abilities are, what I like to, I’d wanna have firm answers, “I don’t like doing this. I like doing this.” Because sometimes I feel I come for counseling, or I’ll take one of the inventories, and they ask me a question on would you rather balance a financial sheet, or write a musical? I’d be like I don’t really know which one I would wanna do. I feel I would want to explore myself, and then go, and then explore more, than rather than just go, and then explore because then I just feel I’d be more prepared to make a decision after that . . . [I want to] help them help me.

If he were not participating in this study, concerns about not being prepared to engage in one-on-one, tailored support services would hold Grant back from using them early in his first college

semester. Kari expressed her concerns regarding a lack of preparation in affective terms, stating, “I wouldn’t wanna go unprepared, I would feel bad. Just maybe feeling intimidated. I don’t really know what goes into it.” As with Grant, Kari’s sense of self-doubt and intimidation regarding reaching out to support services would hinder her from using this resource outside this study.

A second anxiety that emerged in the interviews came from Lacy, a treatment group participant who dropped out of the study after the first research interview (and before any career counseling appointments). Lacy stated that her reason for dropping out of the study was that she had been “so busy lately. I don’t think I have time to continue with this.” Of note, according to career center records, Lacy did not use career services at any point in her first college year. Despite her brief engagement with this study, it seems important to acknowledge her concerns because it is possible that they contributed to her decision to avoid pursuing career counseling. Lacy’s discussion of potential majors during her first interview meandered from mathematics, to art, to education, and concluded with the statement, “it could all change; I have no idea.” She felt overwhelmed, not knowing how or where to begin.

There are so many options [at MU] so I don’t want to make the wrong decision and then be disappointed later . . . I like it, but at the same time, I wish there were less options so I could just make a decision.

Thinking about the career counseling that she was scheduled to participate in, Lacy stated, “Hopefully, it will put me in a better direction of what I want to do maybe. But yeah, I really don’t know what to expect.” She feared that the appointments could have the opposite effect, “maybe not being able to find out what I really want to do and just maybe getting more overwhelmed with all of the options or whatever . . . find out that I want to do other things too.” Although Lacy’s choice to discontinue the study made it impossible to determine with certainty,

her anxieties about the unknown and the potential of adding to her confusion about options may have created a barrier to seeking support via career counseling.

Expected interactions. When describing what they anticipated experiencing in career counseling, participants expected interactions to include (a) targeted, personalized questions; (b) explanations of options; (c) advice regarding choices and next steps; and (d) a personal connection and relationship.

Targeted, personalized questions. Participants saw individual career counseling as an opportunity for targeted, personalized assistance, beginning with a give-and-take conversation of asking and responding to questions. For instance, Chris expected the appointments to begin with the career counselor asking “general knowledge questions on what I might want to do and what are my career options and how I’m going to pursue it.” Other participants suggested that career counselors might ask about interests, skills, and past work and school experiences. Mara hoped the career counselor would spur new ideas by asking “a lot of questions I wouldn’t think of asking myself,” whereas Gina imagined a conversation that would be “open like this [research interview]; I can talk about anything.” Jennifer looked forward to the one-on-one interaction as an “opportunity to ask my own questions, even though I probably will forget half of them before I go in and ask them. But I can ask more in-depth stuff” than would be possible in a group setting.

Explanations of options. Career counselors were also viewed as a source of expertise and information regarding academic majors. Jacob suggested that career counselors could help explain what options would be available to him: “They might have ideas or something that you didn’t know about.” Hailey, on the other hand, expected explanations to provide detailed information about “different majors or different career paths” she was already considering.

Combining Jacob's and Hailey's perceptions, Beth stated that she imagined receiving assistance with "learning the options I have and learning the different routes that I could take and how to take them." Finally, Derek suggested a broad understanding of the information that career counselors might be able to offer:

You get different input on different majors, different routes you can take for your career and such. Even if you might already have a career set, it might help you get more information on it . . . I would imagine that if you're an architecture major or a psychology major and you go to the career counseling, it might help you find internships and such. So even if you're not set on a career, they can always help you. Even if you are set on a career, they can help you also. Yeah, in any situation, you don't have to be looking for a major to get help. You don't have to be in a major to get help either.

As described by Derek, explanations of options would be tailored to the needs expressed by the student seeking services.

Advice regarding choices and next steps. Career counselors were viewed as experts who could offer advice regarding major and career choices, as well as specific steps to take to implement those choices. In the process of making choices, participants wanted assistance in connecting interests and abilities with majors and careers. Some participants thought about this assistance in terms of general academic and professional norms. For example, Beth suggested that career counselors could provide insights to help her understand "what kind of a person can do well in certain areas." Other participants expressed a desire for assistance that was specifically tailored to their lives and experiences. Emily stated,

I think the other's idea and experience might help me because I'm still really young, and I still don't know a lot of things, but someone who helps me is going to know a lot of things. And they're professional in this area, and I believe they're going to give me a really good suggestion anyway.

Though it might not be my final decision, but I still have a lot of things to consider. I'm not so comfortable about everything, so it's impossible for me to know everything now, and it's impossible for me to consider every aspect in my life, but I

think they can.

Emily felt that she could benefit from the experience of working with a professional career counselor who could examine her situation from an outside perspective, consider multiple influences, and recommend a clear, personalized direction. Although Emily maintained the responsibility for making her “final decision,” she valued a career counselor’s professional insights.

Gina typified what participants anticipated regarding the specific steps required to implement a choice. She desired step-by-step “guidelines” for how to explore and pursue career options: “Okay, tell me exactly what to do and how to do it, and I’ll do it.” She struggled with decision making (“I’m not good at making decisions, at all . . . I’m very indecisive.”), and she desired help breaking down the intimidating process of choosing a major into manageable and concrete steps.

Personal connections and relationships. Participants often framed their expectations for interactions with career counselors within an interpersonal relationship. Adam was motivated to find “somebody to help direct me where I’m going . . . someone to talk it through with” in a confidential and casual environment. He liked the idea of talking through his thoughts and options in a low-pressure interaction: “they’re there to help me. It’s not like I need to impress them or anything.” This mitigated his concerns that “I don’t even know what I should go in to it thinking” and provided a sense of freedom and flexibility to explore his developing, unfinished ideas. Similarly, Kari sought a relationship with “someone who knows what they’re talking about”; she desired personalized information regarding “where I would be good at, what I would be good at” that a one-on-one interaction could facilitate. Grant viewed his relationship with a career counselor as an interaction with “a third party that could just shoot me straight . . .

unbiased sources,” as opposed to departmental advisors and representatives who may be “trying to sell you on why you should try this major out.”

Desired results. Reflecting on what they would like to gain from career counseling experiences, a handful of participants mentioned specific, concrete resources that they desired. For instance, Hailey wanted to know “what kind of classes I need to take” for the majors she was considering. Additionally, Gina expressed a desire for information regarding what types of careers graduates can attain with the academic majors she was considering:

I have a one-track mind for doctor because I know you can go into research and you can go into this. But I have absolutely no idea anything about it. I don't- say like I do major in chemistry, but I, in the end, don't want to be a doctor, what else can I do? What are my research options? What is this option, because I have no idea what those are.

Yet much more prominently than specific informational resources, participants expressed a desire to (a) clarify their future directions, and (b) experience affective and motivational benefits.

Clarify future directions. The desire to clarify future directions was a persistent theme across conversations with participants. The nature of the clarifications ranged from narrowing the number of options considered, to pinpointing a clear goal, to lining up the next steps required to achieve certain goals.

Kari's and Ethan's responses typified a desire to use individual career counseling to narrow the range of options they were considering. Within her first interview, Kari expressed a number of tensions between the things that she enjoys and the things that she feels she is good at doing (e.g., the difficulty of kinesiology classes vs. her interest in the helping professions, such as physical therapy; enjoying high school biology vs. feeling like she is “bad at science”; having successful experiences working with children with special needs vs. not liking the work-life balance of a teaching career). She looked to a career counselor as someone who could “help me

narrow it down; that's a huge part. It helps from someone who knows what they're talking about." A better understanding of her skills and abilities, as well as how those fit potential future directions, would help narrow her focus. Ethan's focus was a bit different; for him, narrowing his areas of interest was of primary importance. Ethan saw pursuing a college degree as an intensely personal experience: "I'm really here to learn, not to necessarily make myself a better candidate for a job . . . I'm not here to build my resume. I'm really here to learn about what I like." On the one hand, he stated that "it doesn't matter what I major in" because his immediate career goal of financial trading does not require a degree. On the other hand, he still needed to narrow his focus to find an efficient path to a college degree that could mark a completion of his experience at MU. From career counseling, he desired assistance targeting his areas of interest:

I guess [individual career counseling] would give me a direction of what I'm more interested in. So if I- whatever comes up with what I'm most interested in, I guess I can focus on learning more about that topic or- and taking more classes relating to it so I have a basis for it. So when I want to go into it, I'm not going in blind. I know at least some direction of where or what to do.

Mara and Hailey exemplified participants who were looking to pinpoint an end goal for their future directions. For Mara, setting a goal for her major and career would be "the best thing to have" because it would allow her to "map out a lot of things and place a lot of things in order." It would give her the focus needed to "get a head start" and motivate her to stay on track toward graduation. During Hailey's first interview, she expressed the feeling of floating between many possible majors, and she longed to feel an inner tug that could "pull [her] in one direction, be like, this is what you really want to do." She wanted a career counselor to help her know "the end product, what I really want to be doing at the end" in terms of a career that she could pursue with her major. She thought that "having a clear vision" of her future career would make it "easier for me to gravitate towards one thing."

Finally, Adam and Denise mentioned that having a clearer sense of their future directions would also lead to planning specific next steps to help them reach their goals. Denise stated, “I just really want to know for sure what I should major and minor in just so I can start making those steps and start preparing for it because I know I need to apply in the spring.” Adam echoed this sentiment, stating that a good experience in career counseling would lead to “knowing what the next step would be if what I wanted to do or what direction I was headed in.”

Affective and motivational benefits. Interview participants also expressed the desire to experience a variety of affective benefits resulting from their career counseling experiences. Derek, who was leaning toward applying to the architecture program, stated that he was “kind of scared” of the program’s competitive nature and the required math and science courses. From his individual career counseling experiences, he desired to develop a sense of increased hope and excitement about his future opportunities:

I look at [architecture] and it seems like a real long shot. If I can go somewhere and come out of that place with hope for that major, that would make my day. Even if architecture might be a lost cause, if I could come out of that place, out of the session, with a view on something else and be excited about it, that would also be something that I would be grateful for.

Jacob, who also aspired to be accepted into the architecture program, looked for a feeling of confirmation and validation regarding his opportunities:

I guess knowing that architecture is- after I figure out that it’s really what I would fit in with and that I am on the right track. And that I have a good chance of getting in; I don’t know if they could really tell that.

Adam, who was debating between majors in business, marketing, advertising, and entrepreneurship, hoped that individual career counseling would leave him “feeling confident about what I wanted to do next.” He saw career counseling as an instigator in helping him feel motivated to move forward with exploration of his major: “I wanted somebody to help me, direct

me where I'm going, because I have some ideas of what I want to do, but I need the extra push and motivation, and I guess someone to talk it through with."

Chris provided an interesting perspective on how attending individual career counseling could help him feel more committed to his goals and motivated to make measureable progress:

Chris: So with career options, if you can tell a person that this is what I would do, it also refreshes your mind that okay, I'm going to stay on path. It's telling you what I want to do. I actually have to do that. So that's something that I'm looking forward to.

Interviewer: So it's a way to kind of give yourself some time to reflect.

Chris: And then you plan accordingly. If you ask me a question and I don't know, then what's the point? It's tough to know these things. If I know them, then I have a better path. I have a better shape in mind of what I want to do.

For Chris, the act of articulating his ideas and plans to another person helps him clarify his goals, and creates a sense of accountability to that individual. This interaction would encourage increased commitment and would motivate him to achieve his goals.

Synthesis of expectations and desired experiences. The first-year college students in this study had little previous experience with career services, which left them uncertain about what to expect. They wondered: What would individual career counseling appointments be like? What would be expected of me? Will it be worth my time? What will I get out of it? A few students recognized anxieties that stemmed from this uncertainty, wondering if they would be adequately prepared for, or perhaps even overwhelmed by, the experience. The prospect of facing the unknown and resulting anxieties may have contributed to hindrances that kept these students from seeking career services on their own. Without the external impetus of this research study, many students stated that they would not have been likely to use career services in their first college semester. It is, therefore, important to recognize that the students in this study do not

represent a natural client population. In general, students' primary motivations for participating in career counseling were externally driven by the research study.

Despite the unfamiliarity with career services, anxieties about using career services, and external sources of initial motivation, the students in this study brought clear expectations to their individual career counseling experiences. The students desired a chance to build a personal relationship with a career counselor who would take time to get to know them. They expected career counselors to be a source of expert advice and detailed information about major and career options. Students wanted help strategizing how to go about making and implementing their choices while retaining the freedom to make their own choices.

The students in this study generally did not have a specific resource or answer in mind that they desired from their individual career counseling experiences. This lack of specificity may have related to their uncertainties regarding what could be expected from career counseling. What students did clearly want, regardless of the path to achieving it, was to feel energized by the experience (e.g., confident, hopeful, excited, motivated) and to discover an improved sense of focus regarding their options and goals.

Experiences as Described by Participants

During the immediate post interview and delayed-post interview, treatment group participants were invited to reflect on their experiences with career counseling. The prompts for this part of the conversation were quite broad (e.g., "Tell me about your experiences in individual career counseling. What was most helpful about the career counseling appointments? What could be improved?"). Participants were encouraged to talk about their experiences from their points of view, and probing questions were used to encourage detailed explanations. This section examines themes derived from participants' reflections, including the content of

discussions in career counseling appointments, the process as understood by participants, and the feelings derived from those experiences.

Content. When participants were asked to describe their experiences in career counseling, the content of the appointments often served as a foundation for the conversation. A primary theme in all the interviews was the resources participants discovered and used within career counseling. Additionally, participants reflected on discussions of self-knowledge (e.g., interests, skills, values, strengths, weaknesses), major and career options, and planning for their next steps in career exploration.

Resources. All the treatment group participants discussed specific resources that they had learned about and used within their career counseling experiences. These resources came in a variety of formats, from print materials, to websites, to events at MU, to program offices on the MU campus.

Gina talked about a stack of handouts that she received during her career counseling appointments, as well as other programs on campus that her career counselor recommended:

[From the career counselor], I got a sheet of the breakdown of- that this is where you wanna go and this is the classes you should take. And then I- there was the major fair- like the majors and minors fair which I attended. And I picked up a bunch of sheets from bio and chem. And I looked at- I think I even looked at maybe psychology I have a lot of sheets that I could go through and see what I like.

She kept these handouts, placing them in a “huge folder that’s just papers of- like, this is the [molecular and cellular biology] major, this is the chemistry major, this is this, this, and this.”

The majority of interviewees spoke about specific web-based informational resources they learned about and used as a result of their career counseling appointments. Angela and Emily, the two international students who participated in interviews, reflected that they were directed to “a lot of different websites about career searching.” Angela learned about these

resources during her individual career counseling appointment, and reported that she perceived the resources as helpful. Emily, on the other hand, encountered the websites during a workshop offered by the career center. She described being overwhelmed by the volume of resources and information:

They kind of give us so many websites, yeah, and I was shocked by those websites because I never expected so many websites; they come with so many jobs and so many open positions, and their requirements are really, really high . . . Yeah, too much information. And I still think time is not enough, so yeah, I have general study as my class now, but it's still not enough because you have to know a lot of thing.

Several students described using specific web-based database sites that were external to MU for researching career fields and opportunities. Denise described a website that provided a “list of different internships and companies and stuff like that where I can possibly see after graduating,” Jennifer appreciated a website that outlined “what can I do with this major and they explain everything for you,” and Grant was pleased to find a website “where you can look up people that need interns and stuff” specifically connected to his interests in small business management. Finally, other interviewees discussed specifically using websites hosted by offices at MU, including the career center. The students used these websites to look up classes relate to majors (e.g., Kari) and to gather information on potential career fields (e.g., Mara). Derek, who was originally thinking of pursuing an architecture degree, described how he uncovered information about a different major that caught his attention:

I was browsing through the career center website, looking at other majors and stuff, and I really became interested in a new- a different major that I wasn't really aware of. I'd heard of it, but I wasn't really- I didn't know what it was. It was urban planning, landscape, and stuff like that. So that was really interesting because, in architecture, you look at the- you design the building, basically. And in urban planning, you might not design an actual building, but you kind of shape the whole city, or the whole given area that you're given. Some urban planners might be hired by, for example, the City of Chicago. And they're the ones that decide what are the benefits of building this street, the benefits of creating this bridge, or something, how it can affect the community, and how it- you kind of network the buildings with each

other. You relate them to other things, among the people and stuff, to see how they could be benefitted and stuff.

The information that Derek found online led him to engage other campus resources throughout his first year. He continued to explore the urban planning major by talking to departmental advisors and students enrolled in that major. (Notably, he ultimately applied to the urban planning major before the end of his first year.)

Finally, many interviewees described programs, events, and other offices or services on campus that they chose to pursue based on the recommendations of their career counselors. Gina attended a fair offered by the Exploring Majors College to introduce students to different majors and minors, whereas Hailey attended an information session offered by the global studies department. Chris, Ethan, and Hailey visited other student services offices on campus, such as study abroad and leadership programs. Additionally, Derek expressed enthusiasm about seeking resume critique services that were offered by trained peers:

I heard about them, the resume critiques, but I never had actually been to one. I thought you just gave it to somebody, and then you came to pick it up two days later, or something. But I thought it was really helpful how, not only is it somebody that is around your age, one of your peers, instead of just an adult that's already been through it. It's somebody that is actually going through the same thing as you are. So they actually- they sit down with you, and they tell you what you could do better, what you did really good at, and stuff like that, instead of just returning it to you a couple weeks later- or a couple days later, I'm sorry- and just basically giving it to you to figure it out on your own

I've actually gone three times So my resume is pretty solid right now. But, of course, you're always adding stuff in and out. So, as of right now, it's pretty strong.

The concrete and tangible nature of resources such as print materials, websites, and programs and events made this aspect of career counseling experiences stand out in participants' descriptions. In many cases, participants' understanding of their experiences centered around the

resources they engaged, signaling the essential role that resources played in participants' ability to make sense of their experiences.

Self. Several students (e.g., Hailey, Jacob, Kari, Mara) described how their individual career counseling appointments began with a discussion of their interests, skills, and other personal characteristics. When potential major or career options were mentioned in these conversations, they were closely linked to self-evaluations. For instance, Kari described her conversation with the career counselor that led to a strong preference for pursuing kinesiology as a major:

We just pinpointed my interest in [kinesiology]. I love sports; it kind of goes together well. Physical therapy, there's radiology, there's training, there's so much more ways I can go with it if something doesn't go as I planned, doesn't fit as well We went through how I am as a person and really applied it to what's out there career-wise. Just like the characteristics and stuff I need, skills I have that I'd be able to succeed in what I do.

Notice the discussion of interests (e.g., "I love sports"), values (e.g., variety in future options), and characteristics and capabilities (e.g., "skills I have") that Kari considered in relation to her potential major. Mara describes a similar style in her conversation with a career counselor. She illustrates how her perceived strengths and weaknesses were integrated into the discussion:

[The career counselor] asked me questions- I'm trying to explain. Okay. The first one she asked just basically about myself. And then the next one, it was like she evaluated and it was- basically it was what she thinks I'm really strong about or strongly- what I should do. And she asked me of my hobbies and where I plan to pursue some of my hobbies and stuff.

. . . And she saw that I wanted to do things in the medical field, and since I told her things that I was not strong at, she named other alternatives for me to do because once I was looking at neonatal nurse and I'm still thinking about doing that. But, yeah, it's just like she was telling me about alternatives and things I should do.

In a particularly interesting case, Emily talked about how the creation of her first resume, as part of her career counseling experiences, led to insights about herself. In reviewing her resume with

the career counselor, they recognized that “most of the things are focused on communication and for the business stuff.” She found “support for” the assertion that “I think a business [major] for sure” is a “pretty fitting” option for her interests and past experiences, and she made plans to apply to the business college at the end of her first college year.

Options. The interview participants also described situations in which they discussed options for majors, internships, and careers with the career counselors. Within these discussions, participants gained general information about options, as well as new ideas, advice, and strategies for addressing future challenges. For Beth, discussions of her options tended toward information gathering:

We talked about some different majors and some different careers that could go with it. And she helped me explore international studies and some classes we could take. And pre-law especially, she explained how they don't really have a pre-law major and how it's kind of just an add on.

Beth primarily learned about existing classes and careers that related to majors of interest. Ethan and Emily, on the other hand, situated their discussions of options within a sense of strategizing how to best position themselves for future opportunities. Ethan desired to balance his interest in pursuing internship opportunities with his plans to take several years off after college to pursue financial trading. He was concerned that these plans may burn bridges with employers who might prefer their interns to continue into full-time employment after graduation. With the career counselor, Ethan considered many options and devised the following strategy:

We talked about career opportunities with the different departments in government and what I want to do. I want to work potentially with the CIA or Defense Department We discussed how it would be better if I maybe did internships with State instead of Defense or the CIA because it's sort of the same field of work. But if by chance I did an internship with the CIA, and they offered me a position for after college and me denying them, and then applying 5 years later, it probably won't look as good as applying 5 years later without doing an internship.

Emily reflected on options within the context of challenges and uncertainty that international students experience when looking for internships and jobs in America:

Hopefully, we can find a job, so everything is a hope, a wish, so what we can do is to pursue that and I'm hardworking to get internship, whether in [my hometown] or here, I'm trying, but it's really hard.

For Emily, individual career counseling presented an opportunity to strategize about how to gain experience. She saw MU's career center as a place that could offer support to locate internship options, even if they were unpaid, get her foot in the door, and have hands-on learning experiences:

[The career counselor] was thinking that because I'm an international student, if I'm gonna find an internship here, it's really hard, and though I have a resume now, I still cannot get jobs. So maybe when I come back from Christmas break, I'm gonna go to career center for one more time to find something sort of like internship, but they're not. So I'm not paid for that.

But I'm gonna find a position that I can get in for the summer like for 1 month or something, and when I'm in that position, I'm gonna follow a professional – like a bank clerk or something. I'm gonna follow him or her for the whole month or the 2 weeks – something like that. And I'm gonna learn something from him or her and learn experiences and learn what that job is major in.

Additionally, Emily looked to the career counselor to provide a sense of confirmation and understanding regarding her opportunities to seek international employment in her hometown.

She wondered how American companies might view this option, and how she could strategize to use this option to her benefit:

I asked [the career counselor] if I find a job in China- if I find a job in my hometown, and I do have some working experiences there, can I still write them [on my resume]? And he said yes, but for me I have questions. Like, "Do the companies here really believe that if I dominate the skills in China, can I still use them here or not?" Because they are two different society structure and I was consider- because they have differences in companies, but I think the skills should be the same So I think if I cannot find a really good job – I mean a good following job here for the summer – I'm gonna come back to my hometown. And I'm gonna find myself internship in my hometown.

Understanding her options and how they might be perceived by future employers helped Emily avoid getting overwhelmed and “lost in [her] way,” helping her to move forward with more confidence and reassurance.

Plans and next steps. Several interview participants mentioned creating plans for engaging in further career-related activities, including developing resumes, joining campus clubs, networking to secure job shadowing experiences, and looking for internships.

Resume writing and critiques were a common component of discussions in participants’ career counseling appointments. As previously described with Emily, some students developed a resume for the first time (e.g., Chris, Derek). Others updated their past resumes (e.g., Denise, Jacob) and learned how a college resume differs from a high school resume. As stated by Denise, working on resumes helped her “not only [see] everything that I’ve done, but [realize] that there’s still a lot more that I can do.” Several students were surprised to learn how quickly they would need to remove high school activities from their resumes in favor of college involvement. For example, Jacob shared the following:

Once you get to sophomore year I think it is, none of the high school stuff is even looked at, which kind of stinks because I was involved in a lot and I was hoping that would help towards college, but I guess that’s just another reason to get more involved in everything.

Despite his initial disappointment, this knowledge motivated Jacob to plan ways to get involved and to develop material for his college resume.

Adam, who was debating between majors in the communications college and the business college, expressed enthusiasm about the career counselor’s suggestion to get involved in a student organization on the MU campus:

When I talked to [the career counselor], she told me to combine my interests. Because I have to go in clubs and stuff to get into both colleges, she gave me an idea, which was really helpful- to try and get into a club, and then offer to do the advertising for

that club. Like say if I got into a business club or something, and then I can do advertising for the business club, combining both things.

In the beginning of his second college semester, Adam applied, and was accepted to, a competitive business fraternity at MU.

Other students talked about finding ways to network to learn more about potential career paths and uncover job shadowing opportunities. Kari reported that her career counselor “wants me to shadow and maybe find an internship over [winter] break.” She brainstormed some potential ways to find opportunities through networking: “I have a couple friends who have gone into physical therapy before, and there’s some clinics near me, so I’m gonna contact them this week.” Chris, who also planned to make some networking contacts over winter break, reflected on strategies for building networks that would begin with contacting MU alumni:

[The career counselor] told me to actually do interviews, just personal interviews, over lunch, or whatever, first. And then actually ask some at the end, if you want to do like a shadowing. And then he told me about the alumni, and how you can call and personalize and have a chat with them here.

Finally, locating potential internships was a common topic discussed in regard to planning for the next steps that was driven by a variety of motivations. For instance, Jennifer desired to seek internships to get a sense of what career fields might be a good fit for her – “I could get an internship or a work thing for like a group home or a mission and then get some hands-on experience in social work so I can see which one I would rather focus on.” Kari’s motivation for seeking internships was to stand out from the crowd when applying to the competitive kinesiology major: “I feel if I do get this internship and I do get this experience, I think that will stick out a lot, so I’m just trying to do everything I can to get involved.”

Process. Several process-oriented elements emerged as salient to students in their discussions of career counseling experiences, including attending appointments early in their first

college semester, building relationships with a helping professional, actively engaging in career exploration tasks, and continuing to seek career assistance in the future.

Starting early. Participants generally felt that attending individual career counseling early in their first college year was beneficial. Many echoed Kari's sentiment that "you can never get started too early. It's better." Jacob appreciated the extra push that individual career counseling gave him to move forward on exploration of his major and application to the architecture program: "they helped lead me really quickly so I didn't go the whole first semester not knowing what to do. It helped bring me in the right direction and now I think I'm definitely there." Denise focused on the confirming nature of individual career counseling, which helped her develop a sense of comfort and confidence to find her place at MU: "I think it was like perfect timing because it was just like right around the time where I was like, 'I really don't know what I'm doing and I'm just making sure that I'm on track.'" She added that perhaps "all freshmen should do it because it makes a difference."

Jennifer recognized and appreciated her early start with career counseling, but was also reluctant to seek out this support without an extra "requirement" to encourage her to participate:

Well, I know if I wasn't thrown into [career counseling], I probably wouldn't have done it I think it's good to get started early because then, I probably should have gone back this semester to talk to them about the internships and stuff. But, then you could actually get started on like the internships and the volunteer stuff because they would know what would look good and what would help you pick an actual career so then you're not sitting there junior or senior year, still not knowing what to do and what you like to do with what you have. So I think getting started early is kind of nice. It's just, I don't know. I think it should be like a continuum thing to go to, sort of. That would be really helpful.

Jennifer's comments suggested that, despite an external source of motivation to seek assistance, positive benefits can emerge from pursuing career counseling early in one's college career.

Additionally, she illustrated a dilemma regarding how to create an ongoing continuum of services for students, despite competing with other demands on students' time and focus.

Two students suggested that, although individual career counseling may have seemed helpful at the time, it occurred too early to have a lasting, meaningful impact on their chosen directions. Both students came to MU struggling between choices of potential majors, and they were not yet ready to let go of the majors they felt they “should” pursue (as opposed to majors they felt they would “like to” pursue). Angela was torn between embracing (a) her artistic skills in an art-related major, despite the uncertainty of future job opportunities; and (b) embracing the relative “security” of a biology major, despite her difficulties with science-oriented classes. Hailey was struggling to balance her interest in pursuing liberal arts majors, such as global studies and psychology, with a class schedule that would include all pre-med curriculum requirements. Both Angela and Hailey focused their individual career counseling on exploring the science-related paths they felt would be prudent to pursue. However, by the end of their first college year, they had both changed their minds, deciding to follow the paths they enjoyed and that they felt fit their natural skills and inclinations. As Hailey explained, “this year has definitely taught me what I really like . . . the topics that I really did like, not the ones I thought maybe I should like or should go into.” As a result, Angela’s and Hailey’s experiences with career counseling provided information that was no longer relevant to their future directions. Hailey described her changing understandings of herself and career exploration needs as follows:

I think during that time [the career counseling] was really helpful, but now that I- maybe it was a little too soon because I was still in the mindset of what I should want to do, so those were the- that’s what I was saying were my interests, when really, I realized through this year and semester that those weren’t really my interests, those were what I thought I should be doing. So I kind of knew the questions they were gonna ask, so I made my answers for what I thought they were gonna tell me.

Both Angela and Hailey suggested that having an individual career counseling appointment at the end of their first year would be a very different experience for them. Angela felt that the difference would stem from her ability to be “more clear” with her expressions of interests and the questions she had for the career counselor. Hailey felt that individual career counseling could make a positive difference now that she was able to articulate her preferences clearly: “Now I definitely need to make an appointment because I know what I like. Now, I just need them to help me find a perfect job that gives me all of that.”

Building relationships. Participants generally described their relationships with the career counselors as being marked by openness, attentiveness to students’ needs, a nondirective style, and invitations to return for additional assistance.

Openness. Beth described an open, flexible, easygoing conversation with her career counselor: “she had a really good personality and was easy to talk to, really friendly . . . I think it was a really good experience just talking with her and exploring all the avenues that I have.” Denise was impressed by the environment created by her career counselor, where she felt comfortable and invited to address any needs that were on her mind:

[The career counselor] was pretty open. He was like, “Is there anything else you want to talk about? Is there anything,” you know, because it wasn’t like okay, well, we’re just gonna discuss this and that’s it. He was definitely asking me, “Is there anything else you want?”

For Denise, this invitation communicated that the career center was a safe space to seek support and assistance.

Attentiveness to students’ needs. Invitations such as this were supported by a sense that the counselors were genuinely interested in (e.g., Mara) and attentive to (e.g., Beth) participants’ stories. Jennifer, who had had a number of lackluster experiences with academic and career

advisors in the past, expressed relief at finding a career counselor who took time to get to know her:

[The career counselor] made sure that everything was kind of settled and then talked about what we were going to do next time He actually listened to what I was talking about and made sure, he had everything together when I came in and actually took time to hear what I was saying.

Jennifer felt validated and heard by the career counselor, which laid a foundation for her to derive other benefits from the experience.

Nondirective style. Many participants commented on the nondirective nature of their career counseling interactions, with varying reactions to it. Some students appreciated the nondirective style. Grant reported that he found the impartial third-party he was looking for: “I feel like that would be my unbiased source, to tell you the truth.” Hailey appreciated the encouragement to explore and the space to come to her own conclusions: “I really liked that she didn’t just tell me things. She kind of led me to do some soul searching, I guess, and I liked that.”

Other students found themselves frustrated by the lack of specific directions and advice they received. Chris typified this frustration:

I got a lot of general advice. But I was looking for something concrete that- what exactly would look really good on your resume. You know what I’m saying? Like if you do this, then a lot of people appreciate that. Or just telling me, “Oh, yeah. You want to get involved.” Okay. I’ll try to get involved. But I was thinking, “Okay, if you do this, this, and this, then those are the main things you want to focus on.” I hoped I would get that.

Although he did feel that he “got a lot out of” individual career counseling, Chris would have liked someone to provide specific advice to help prioritize his next steps. He desired direct answers to his questions regarding what to do next.

Gina also wanted the career counselor to take a more directive approach than she experienced. However, rather than looking for answers, Gina needed assistance in figuring out

the right questions to ask and directions to explore. She came to MU debating between a major in chemistry or one in biology, with the goal of going to medical school and becoming a surgeon. Many possible academic paths could lead her to achieve those goals, leaving her uncertain of what might fit her best. When asked what might help her find a good direction, Gina replied, “I don’t really know, actually. I hadn’t really thought about that, how I was gonna pick.”

Gina found the individual career counseling appointments to be highly resource-intensive, with many guidelines and handouts to offer regarding a wide range of topics from what classes to take, to potential career options, to preparing for the medical school entrance exams. Gina appreciated the knowledge and expertise: “[the career counselor] knew exactly what she was talking about. And every question I had was answered. And there’s no gray area. I got the concrete answer.” She left the experience initially feeling “informed” regarding many options and potential pathways. Yet she also sensed something was missing from her experience. Gina mentioned that her appointments were “kinda short We got to the point, then in and out” in about 15 minutes, even though she was scheduled for two 45-minute appointments. Gina was left wanting more: “there’s only so many questions I can ask.” Yet she was not certain what else she could have received from the experience.

At the end of her first college year, Gina continued to waver between biology and chemistry, joking that she was waiting for “an epiphany” to know which way to go. Gina mentioned that she occasionally reviewed the folder of handouts she collected, but she struggled with how to make sense of how all the information fit her – “I don’t know, I have a lot of information, but it doesn’t seem to soak in. I’m aware of it, but I don’t know what to do with it. I don’t know what I’m supposed to do with it.” She considered going back to the career center “to talk about my alternatives.” Yet by that time, she did not see the career center as a place where

she could show her uncertainties or vulnerabilities: “I don’t see a lot of kids be like, yeah, I’m gonna go talk to this person, like a random person about my problems.”

Invitations to return. Several students mentioned appreciating the opportunity to have a career counselor who knew their personal story and actively invited them to return in the future. For instance, Kari stated, with a hint of surprise in her voice, that her career counselor “actually gave me her card and said she’s available if I needed another appointment, so yeah, very helpful. I’m gonna take her up on it definitely.”

Actively engaging in career exploration. Approximately half of the participants mentioned that the most helpful aspect of their career counseling experience was engaging in activities designed to help them explore major and career options. Several students (e.g., Hailey, Jennifer, Kari) mentioned the “homework” assignments they were asked to complete in between their two career counseling appointments for this study. Kari described the benefits of this approach, saying that “instead of just thinking about it, [the career counselor] had me do, like, homework, I guess you could say.” Kari looked up information on student organizations, internships, and job shadowing opportunities related to her target major of kinesiology, which helped her develop a concrete sense of what her next steps might be and energized her to seek out ways to get involved.

Another group of participants (e.g., Denise, Emily, Jacob) found that the process of developing or enhancing their resumes had the added benefit of helping them explore their options and next steps. As discussed previously, creating a resume helped Emily recognize how connected her skills and past experiences were with communications and business majors. She explained that this insight was the most helpful aspect of attending individual career counseling because it helped her focus her energies and future plans in a clear direction. Denise also found

working on her resume to be the most helpful part of her career counseling experience, stating that:

The best part probably, the resume, doing that and just kind of going over and not only seeing everything that I've done, but just kind of like realizing that there's still a lot more that I can do and how to build a resume . . .

It wasn't just the product of it; it was more of like "okay, these are my experiences," and just kinda like reminded me of what I've done and also let me know what I should do or if I want to join more programs or just do more within the program I'm in, that kind of thing.

Although Denise appreciated the completed resume as a product that she could feel confident about, the process of actively working with the career counselor on her resume "made the difference" for her.

Continuing to seek career assistance. Although only one interview participant returned to career services during her second college semester (Beth, who attended one individual appointment and one drop-in appointment), almost all mentioned seeing value in returning to use the career center later in their time at MU. Gina suggested that she would like to return to continue exploring her options within academic majors, whereas Beth, Derek, and Emily wanted to learn about internships and other ways to get hands-on career experience. Beth and Hailey suggested that the career center would be a helpful place to get information on job options and job market trends, where as Kari desired help in writing a resume for her application to transfer to a kinesiology major. Other students offered quite broad, generalized statements about their intentions to return to the career center. For example, Grant stated,

It just kind of seemed like they had help for every step of the way. There was just help for deciding the major, there was help for working at the majors, there was help for after you get out of school. I felt like it's gonna be a place that I'm gonna definitely be at later in my college career.

Adam was the only participant who did not indicate a strong interest in returning to the career center. He appreciated his early experiences with career services which steered him to apply to a highly selective business fraternity on campus:

At the time, the career center, that was helpful, and then [the career counselor] talked to me about joining clubs, and that's why I went out and checked out the business frats. And once I got into the business frat I wanted to, then from there the people, the active members and stuff, they really know what they're doing and what's up in the business world and everything on campus and stuff.

This fraternity offers programs for resume preparation, interviewing, and networking with employers in an environment that caters to Adam's professional interests:

They're helping me like- they help us become really professional really fast. I was in there- the first week I was in it, I like- I even had a resume going into it, and after the first week I had a whole decked out resume, like really good. They help us with everything.

As a result of having access to this exclusive group with built-in career opportunities, Adam felt that it was no longer necessary for him to seek support from MU's campus career center:

"Honestly, if I didn't want to do anything else, the business frat, that would be more than enough. I mean it does- they cover everything."

Feelings derived. Emotions expressed by interview participants following their individual career counseling experiences ranged from hopeful, to confident, to a growing sense of discomfort resulting from being presented with new information and challenges.

Reconsidering anxieties regarding individual career counseling. Three participants mentioned feeling anxious or intimidated by the thought of attending individual career counseling because they were uncertain that they would be prepared enough to discuss their options with a career counselor or be able to make good use of this support resource. After their appointments, all three participants had considerably different perceptions of the appointments. Kari focused on the relationship that she built with the career counselor, which put her at ease: "I

don't know why I was scared. It was very open; [the career counselor was] very nice, very friendly. It was very helpful." Adam expressed surprise that he had more to offer during the appointment than he expected to, stating,

I brought all my knowledge, what I wanted to do and everything. I bet you kids go in there that are just so confused and the counselors are like "I don't know where to start with you." But for me it was quite the opposite. It was real easy because I had such good ideas.

Finally, Grant focused on the web-based preparation work that he did prior to his first appointment:

I actually felt like I did a good amount of research to know what each college meant and just be able to ask more educated questions and ask them more specific questions about the majors and the minors . . . I felt prepared.

The act of scheduling an individual career counseling appointment served as a motivator for Grant, encouraging him to take action and resulting in increased self-confidence regarding his knowledge of options and his ability to engage career counseling successfully as a resource.

Hopeful. Several participants expressed that they felt more hopeful and comfortable regarding their future options after the individual career counseling than they did before. Derek, who desired to find an increased sense of hope and excitement about his future opportunities as a result of participating in career counseling, left the experience with a slightly different type of hope. He reflected a sense of hopefulness regarding the resources and supports available to him at MU, stating, "I might not have my major set, or anything like that. But [individual career counseling] gave me hope in the sense that there's help. So if I ever need more help, I know where to look." He felt informed and empowered to seek assistance to help him overcome any future challenges that he might encounter.

Jacob expressed a sense of hopefulness about his future options. He had been nervous about being accepted into the competitive architecture program at MU. With his career

counselor, Jacob discussed several possible alternatives and pathways to achieve his career goals.

Jacob reflected,

There's always opportunities and it makes the chances even better, I guess, so if I don't get in [to the architecture program], if I don't get the degree, I guess there's still a chance I could still work in [an architecture] firm or something like that . . . I feel a lot better about having a better Plan B.

Having alternative plans created a sense of calm for Jacob and helped to minimize some of the stress that he perceived regarding his academic options.

Confident and confirmed. Another common emotion expressed by participants was a feeling of enhanced confidence regarding their ability to make effective academic and career choices, as well as a sense of having their current choices confirmed. Grant provided a good example of increased confidence regarding his ability to make decisions about his major and career. During the first interview, Grant expressed hesitation about attending individual career counseling because he was not sure he would be adequately prepared; he wanted to “have firm answers” to the counselor’s questions, and worried that he might not be ready for that. Having the appointment scheduled motivated Grant to do some preparatory work even before his first meeting with the career counselor, leading to a productive experience. Grant reflected,

I feel more directed now that I've gone through the career counseling appointments and kind of done research on my own . . . Yeah, I don't feel too worried anymore. I still really wanna find my major and really wanna just get into it, but I don't feel anxious about anything. So I feel good.

Grant recognized that there were still steps that he needed to take to ultimately choose a major and career: “I’m still kind of juggling what I should do.” Yet he felt increasingly confident about his ability to seek out information and assistance, as well as to interpret how that information applied in his own life.

Adam and Denise typified participants' expressions of the confirming potential of individual career counseling. Adam reflected that the most helpful aspect of his career counseling experience was that the career counselor "basically reassured me that I'm on the right path, so probably just confidence. I'm not as nervous or feeling pressured anymore." Denise echoed this reflection, stating,

[The career counselor] thinks I'm pretty much on track, so I think that was pretty good to hear because I was worrying. But he said, as a freshman, I'm kind of doing pretty well with that. It felt good to hear that. Sometimes you just kind of doubt yourself, especially in a large university like this.

Both participants found confidence from the feedback of a campus expert who reassured them they were making good progress, particularly in comparison with college peers.

Unsettled. In addition to the encouraging emotions of confidence and hope, some students found themselves increasingly unsettled by the new discoveries that emerged from their career counseling experiences. As discussed previously, Emily was overwhelmed by the multitude of career information websites she learned about during a workshop. She was left feeling uncertain about how she could ever find the time to review all that information. Gina also expressed a sense of being overwhelmed by information. In her case, she reflected on having collected a folder of handouts about biology, chemistry, and pre-med requirements in her career counseling appointments and through campus events such as an academic majors information fair. Gina had sifted through the handouts to help her make decisions, such as when she was trying to select classes for her sophomore year. However, just having the information was not enough. Gina found herself feeling frustrated and uncertain about what the information about majors and careers meant for her own life.

Synthesis of experiences as described by participants. Despite an open-ended prompt asking about the students' experiences in career counseling, all the students in the study

described their experiences in terms of the resources they had encountered and used (e.g., career exploration websites, resume writing tools). They understood their experiences in terms of these concrete entities. However, isolated resources (such as the list of websites Emily had received and the stack of handouts Gina had gathered) were not sufficient to bring about positive experiences with career exploration. Resources became personally meaningful when they were balanced with tailored guidance that helped the students explore knowledge of self (e.g., interests, skills, values) and options, as well as to create a plan for their next steps.

Students generally appreciated getting a jump-start on career exploration early in their first college semester, and they mentioned that the timing helped them make progress on narrowing their choice of majors quickly and efficiently. Although a few students commented that the increased self-awareness developed during their first year of college would make later individual career counseling more beneficial, they still saw value in having an early, personal introduction to the resources and services offered by the career center. New-found familiarity with career counseling helped students overcome concerns about engaging in the process. Active, hands-on involvement in applying career exploration activities to their own lives was often acknowledged as the most helpful aspect of participating in career counseling.

All students saw value in continuing career exploration, either through the career center or through other career-oriented resources on campus (e.g., Adam's experiences with the business fraternity). Additionally, after their career counseling experiences, all the students could name specific career tasks or resources they wanted to pursue. However, few students felt that they would have used career services without the impetus from this research study, and only minimal follow-through on intended career exploration tasks was observed by the completion of

the study. This signified a dilemma: how can career counselors encourage students to engage in services?

Many students experienced the energizing emotions they sought from appointments: hopefulness, confidence, feeling confirmed, feeling motivated. Some students experienced unsettling emotions of being shocked, overwhelmed, or confused. Note that unsettling emotions are not, in themselves, an undesirable outcome. Such dissonance can come from recognition of the new developmental tasks to engage in and can spur action. For instance, Emily sought personalized one-on-one assistance to break down the overwhelming list of career websites into manageable chunks. However, as in Gina's case, these unsettling feelings can become troublesome when they lead to a sense of being lost ("I don't know what I'm supposed to do."), disconnected from the process of making active career decisions (joking about waiting for "an epiphany"), or confused about where to turn for help ("I don't see a lot of kids be like, yeah, I'm gonna go talk to this person, like a random person about my problems."). This raises the question of what could have been done differently to create a safety net in Gina's case.

Relationships between career counselors and participants that were characterized by openness, attentiveness to students' needs, and clear invitations to continue working together generally facilitated students' willingness to seek future assistance. Students in this study responded differently to the nondirective style of career counseling, with some students appreciating the space to explore and reflect, and others finding themselves frustrated or struggling with the loose structure. In some cases, relationships also seemed to serve as hindrances to making progress with career exploration and decision making. Gina provided an example of this with her reflections on career counseling that stopped short of her expectations, in terms of both the time spent and the depth of discussion. The appointments did not guide Gina

to engage actively in exploring career options as they applied to her specifically, leaving her unable to adequately synthesize the resources that she received and apply them to her own career decision-making process.

Chapter Summary: Reflecting on Expectations and Experiences

The following research question guided the issues explored in this chapter: How do students interpret their experiences of participating in career counseling early in their first college year? An examination of primary themes that emerged in participants' interviews regarding their expectations of career counseling and descriptions of their experiences suggested several insights into their perceptions and interpretations.

Students move quickly from uncertainty to specificity. Due to limited past experience with career counseling, participants initially expressed uncertainty, anxieties, and broad generalities regarding their expectations for career counseling. Participants rarely articulated specific resources or experiences they were looking for from career counselors. Rather, they focused on broad concepts such as the feelings that they might derive from their experiences (e.g., feeling hopeful, excited, motivated, confirmed, validated), as well as a desire for an increased sense of clarity regarding their future directions. During their post-interviews, participants' discussions changed considerably; initial uncertainties and generalities gave way to familiarity with and understanding of specific resources. Despite the brevity of their career counseling interactions, participants were able to describe the resources and services offered by the career center, as well as other support services on the MU campus. Many participants had specific ideas for the next steps they would like to take to continue exploring their major and career options.

Resources are important, but not enough. Although all participants understood and described their career counseling experiences in terms of concrete resources and actions taken (behavioral component, what participants were “doing”), interpretations of experiences could not be separated from how participants felt about the process (affective component) or the meaning and connections they derived from the experience (cognitive component). A knowledge of resources may have created a foundation to help participants describe their experiences, but resources alone were not enough. In fact, when resources dominated the experience (e.g., Emily’s workshop, Gina’s career counseling), participants found themselves overwhelmed, frustrated, and uncertain where to turn for further assistance. Resources became meaningful within a context in which participants received assistance in applying new information and new experiences to their own lives, and in interpreting how each option and choice might influence them.

Relationships and active involvement facilitate meaning making. Two qualities emerged as particularly important to students to assist them in applying new information and new experiences to their own lives: (a) the relationship with the career counselor; and (b) active, hands-on involvement. Career counselor–participant relationships that were marked by perceived qualities of openness, attentiveness, willingness to listen, and ongoing invitations offering assistance facilitated students’ explorations of majors and careers. Within these relationships, participants looked to career counselors as experts who could help them break down the challenging process of choosing a major and career into manageable tasks, apply new knowledge and resources to their own lives, and explain options and strategies for achieving goals. Strong relationships with career counselors often facilitated participants’ expression of feelings they desired, such as validation, hope, excitement, and motivation. However, some

students expressed frustration with the nondirective style of career counseling when they desired more specific step-by-step instructions for reaching their goals than the career counselors provided. Even when participants' career counseling experiences left them feeling unsettled by the new challenges ahead or left them uncertain about how to achieve their personal goals, a supportive relationship with a career counselor could help students overcome difficulties and make progress.

Participants often acknowledged that active, hands-on involvement in applying career exploration activities to their own lives was a particularly helpful aspect of their career counseling experience. They appreciated the “extra push” to try a career-related task (e.g., exploring careers that related to majors, writing a resume, attending a meeting of an academic student organization), as well as being able to discuss their experiences with a career counselor afterward. This provided two types of feedback on their experiences: (a) their personal reflections of performance and experience, and (b) insights from a career counselor who could help deepen their understanding of their experiences and determine their next steps.

Early impressions influence motivations and help-seeking behavior. Finally, the potential influence of career counseling experiences appears to begin before a student walks into the career center office, whether that influence steers students away (e.g., Lacy) or spurs self-driven action on the exploration of a major and career (e.g., Grant). This appears to be an important idea to remember in light of challenges with gaining and maintaining students' motivation to pursue career exploration tasks. The impressions of career centers and services that students develop, even before trying them out, influence their willingness to seek assistance.

Chapter 6

Influences of Career Counseling as Perceived by Students

This study framed individual career counseling as an environmental support. Based on Lent, Brown, and Hackett's (1994, 2000) Social Cognitive Career Theory (SCCT), individual career counseling was expected to influence students in four ways: (a) connecting interests with potential personal goals, (b) selecting personal goals, (c) connecting personal goals with potential performance accomplishment activities intended to implement or explore a career choice, and (d) selecting performance accomplishment activities to explore or implement a career choice. Although evidence of each of these areas of influence was found in the interview discussions, evidence of an additional path of influence not emphasized by SCCT was also found. Notably, participants described individual career counseling as helpful in shaping the way they interpreted past and present experiences related to academic and career choices.

This chapter begins by presenting participants' expressions of how individual career counseling early in their first college semester influenced their choices of majors and careers. This is followed by a discussion of the influence that career counseling experiences had on participants' perceptions of environmental supports, both those offered by the career center and those offered by other resources on campus. In many, but not all, instances, successful experiences engaging one environmental support led to increased confidence and enthusiasm for engaging others. This chapter concludes by recognizing the limitations in influences that emerged in participants' interviews, including premature goal setting, gaps in motivating action, and redirection of goals by other environmental influences.

Influences Perceived by Students

During the immediate post-interview and delayed post-interview, participants were invited to reflect on their individual career counseling experiences. The prompts for this part of the conversation were quite broad (e.g., “Tell me about your experiences with individual career counseling.”; “What was most helpful about the career counseling appointments?”; “What could have been better?”; “Did you gain something from your experience? If so, what did you gain?”). Participants were encouraged to talk about their experiences from their points of view, and probing questions were used to encourage detailed explanations. This section examines how participants described the influences of career counseling on their (a) academic and career choices, and (b) perceptions of environmental supports.

Influences on major and career choice. Interview participants clearly indicated that they understood that their individual career counseling experiences had influenced them in ways that are outlined by SCCT. This is demonstrated in the first three subsections below, including in discussions of influences on (a) connecting interests and skills with options, (b) decision making and goal setting, and (c) selecting and implementing performance accomplishment activities. However, interview participants’ descriptions of the influences from their individual career counseling experiences went beyond those emphasized by SCCT. The final subsection explores situations in which individual career counseling helped students interpret their past and present experiences with performance accomplishment activities in ways that led to new insights that influenced their processes of choosing a major and career.

Connecting interests and skills with options. Gaining a deeper understanding of personal interests and skills, as well as an expanded understanding of major and career options, were commonly mentioned as results of participating in career counseling. This section provides

participants' reflections on how their career counseling experiences influenced their thinking about self and options.

Kari provided a thought-provoking example of a genuine partnership with her career counselor that began with an exploration of self that was later connected to options. Note the use of “we” as Kari describes her experiences, indicating the integral role of the career counselor in the way that Kari processed information. Kari stated, “we went through how I am as a person and really applied it to what’s out there career-wise . . . the characteristics and stuff that I need, the skills I have.” As Kari narrowed down her options to a major in kinesiology, she reflected that “we just pinpointed my interest in it.” She was further motivated by the variety of potential careers that a kinesiology major could lead to: “we found that there’s more that I could look at through kinesiology” than she had originally expected. Kari viewed her experience as one of joint discovery between the career counselor and herself. As Kari looked up potential classes, student organizations, job shadowing opportunities, and internships, the career counselor helped Kari to put the information into perspective for her own life. As a result, Kari expanded her view of viable career options. Whereas previously, she had only thought of pursuing a career in physical therapy, she came to see alternative opportunities in areas such as radiology and training. This led to a “bigger connection” with the thought of pursuing a kinesiology major because it could lead to several “ways I can go with it if something doesn’t go as I planned.”

The experiences Jennifer and Beth described were slightly different from Kari’s. For them, exploring options came first, followed by considering how those potential options might fit their interests and skills. Jennifer described completing a “homework assignment” in which she gathered information on potential careers associated with the majors she was considering. She was surprised to find out “how many different areas you can go with your majors. I didn’t know

there were that many options.” Jennifer found it easier to cross potential careers off her list than to narrow down a list of potential majors without that context. The results were quite informative:

All the stuff for history, all I would want to do would be teach, and then in art, it would be art education and working in a museum or something, like archiving. And then religious studies wasn’t on the website, so nothing was really there. And communications- everyone was talking about how they loved communications and I didn’t like any of the areas so that whole major was gone. And then there was another one- like psych, I crossed off a bunch of the areas over there except for like counseling and group work Even sociology, not all the stuff on there I wanted to do.

However, Jennifer found a connection when she came across careers related to social work: “all of them I wanted to do.” With this information about options, Jennifer and her career counselor then discussed “what I liked to do and what I was good at and what I didn’t like to do and basically what I never wanted to do,” comparing Jennifer’s understanding of her interests and skills with opportunities in fields related to social work.

Similar to Jennifer, Beth shared that

[My career counseling appointments] actually opened up a lot of avenues I really wouldn’t have thought of. Just talking with [the career counselor]- I thought about the international studies stuff that I had actually forgot for the longest time and some different other things I had been interested in before that.

Beth described broadening the scope of the major and career areas that she was considering (expanding from business, supply chain management, and fashion design, to include international studies, political science, and pre-law), and then drawing connections between her options and her personal strengths. With her career counselor, Beth reflected on her strong communication and empathy skills–“understanding where everyone is coming from and compromising on top of that”–and recognized how those skills fit potential career fields, such as law and international relations.

Finally, when describing their individual career counseling experiences, other participants (e.g., Jacob, Derek) focused on expanding their consideration of major options that were closely related to their original interests. For example, prior to his individual career counseling, Jacob was considering architecture as a first choice major, with civil engineering as a backup. Yet he struggled with his backup choice: “I just feel a little iffy about it . . . roads and bridges really aren't that interesting to me.” As a result of his appointments, Jacob uncovered a new option—a major in technical systems management. His career counselor suggested this as a “good backup if you don’t get into architecture. That's a lot less rigorous to get in; they accept more people, so if something doesn’t work out in architecture, you could still stay in the same field.” This new option left Jacob feeling “more comfortable” with his alternatives in case he was not accepted into the highly competitive architecture program.

Derek was introduced to the possibility of a major in urban planning while “browsing through the career center website,” an exploration activity suggested by his career counselor. He reflected that “I really became interested in a new- a different major that I wasn’t really aware of. I’d heard of it, but I didn’t know what it was.” As a result of his interactions with career services, Derek demonstrated the ability to compare urban planning with his original preference for architecture, as well as to connect it with his own interests and values:

In architecture, you design the building, basically. And in urban planning, you might not design an actual building, but you shape the whole city, or the whole area that you’re given. Some urban planners might be hired by, for example, the City of Chicago, or something. And they’re the ones that decide what are the benefits of building this street, the benefits of creating this bridge, or something, how it can affect the community, and how it- you kind of network the buildings with each other. You relate them to other things, among the people and stuff, to see how they could be benefitted and stuff So in a way, it kind of brings my desire to help individuals. And it also brings my design aspect into it.

This integration of self and options motivated Derek to explore urban planning in detail by contacting current students and departmental advisors for information on the major.

Decision making and goal setting. Several participants expressed that their career counseling experiences directly contributed to their choice of an academic major, whereas others focused on how career counseling helped them set goals to reach desired milestones.

When picking up the remuneration gifts for study participation, two members of the treatment group who were not selected for interviews volunteered information regarding their successful experiences with career counseling when picking up the remuneration gifts for study participation. Cindy expressed gratitude for the “extra push” this study provided to encourage her to go to the career center. She commented that it was “really helpful” and that it led her to decide on pursuing an animal science major. Likewise, Nikki shared that she had previously been wavering between majoring in architecture or mathematics. Through individual career counseling, Nikki came to see that she “likes building things” more than working with abstract numbers. As a result, she decided to apply to the architecture program during her second semester. Nikki reflected that without attending individual career counseling in her first semester, she would not have been ready for the application deadline for the architecture program.

Students who did participate in interviews provided insights into what aspects of their career counseling experiences helped them make progress on decision making and helped them set goals to work toward their choices. Kari found that the opportunity to reflect on a wide variety of options within her career counseling appointments was an important aspect of her decision-making process:

[The career counselor] helped me look at all the different things to see why I'm not or why I would be good for those. And so it doesn't just help you zone in on one, but it helps you think about everything else they have to offer too.

With such guided reflection, Kari found herself ready to commit to a kinesiology major by the end of her first semester. She experienced “great relief” as a result, giving her a sense of satisfaction and confidence that she could successfully navigate the college environment.

Finally, as described in the previous section, Jennifer discovered her interest in social work while exploring career options as part of her individual career counseling experience. In discussions with her career counselor, she outlined a number of goals to lead her to a career in social work, including (a) pursuing an undergraduate major in psychology, (b) seeking internship experiences in “a group home or a mission and then [getting] some hands-on experience in social work,” and (c) pursuing a master’s degree in social work.

Selecting and implementing performance accomplishment activities. Participants reflected on the role that career counseling played in helping them select next step activities to explore majors and careers further. The selected activities varied widely, from writing or updating a resume (e.g., Chris, Denise, Derek, Emily, Ethan, Grant, Jacob), to attending information sessions on academic majors (e.g., Hailey), to selecting classes to try possible majors (e.g., Beth), to getting involved in academically related student organizations (e.g., Adam, Chris), to seeking job shadowing and internship opportunities (e.g., Denise, Emily, Ethan, Jennifer, Kari).

Denise and Jacob provided two examples of how discussions with career counselors led to new understandings of areas to expand their experience and involvement. They were motivated to pursue additional performance accomplishment activities as a result of their career counseling experiences. Denise expressed that the resume assistance she received was

particularly memorable, not solely for the final product, but for the process of reflection and discussion that occurred around the document:

I definitely feel like I have more stuff to build on my resume and I kinda know what I need to do, that sort of a thing, and I think they just kind of help you stay on track a little bit more and just kind of let you know, “Okay, you’re doing the right thing,” or “Maybe you need to do this,” or giving suggestions . . .

It was more of like okay, these are my experiences, and reminded me of what I’ve done and also let me know what I should do or if I want to join more programs or just do more within the program I’m in, that kind of thing. So I think it made a difference.

After her career counseling appointments, Denise stated that she was “excited” to seek out new opportunities and experiences to address gaps in her experience. By the end of her first college year, Denise had been accepted to the advertising program, participated in a 2-week study abroad experience, served on the social committee of an advertising club at Midwest University (MU), joined an academic honors society and attended several meetings, and lined up a summer internship, which would serve as an extension of her past summer work experiences.

Likewise, Jacob stated that conversations about his resume with his career counselor gave him an extra push to get involved in college:

Once you get to sophomore year I think it is, none of the high school stuff is even looked at, which kind of stinks because I was involved in a lot and I was hoping that would help towards college, but I guess that’s just another reason to get more involved in everything Once I get up to the next level I’m gonna have to have a resume if I want to have an internship or an actual job in something that’s involved with my major.

Recognizing this need early in his first college semester gave Jacob “another good step toward the future” because he understood the importance of continuous action and involvement. During his second semester, Jacob sought internship opportunities for the summer by directly e-mailing and calling a few architecture firms. Although he was not enthusiastic about his chances of finding a position (“I haven’t heard anything back yet. I don’t know. I probably won’t get it now

because I am the first year and I hadn't really had any classes underneath my belt.”), he developed a backup plan to work with a contractor, such as his uncle, to get more hands-on experience in an area related to his field of interest.

For the majority of participants, activity selection came as a result of attending individual career counseling. Grant's experience differed, however. He originally expressed hesitation about attending individual career counseling because he was not sure he would be adequately prepared. His concerns about being unprepared and lacking “firm answers” to potential questions regarding his interests and abilities spurred Grant to take action after scheduling, but before attending, his first individual career counseling appointment. He used university and career center websites to complete “a good amount of research to know what each college meant and just be able to ask more educated questions and ask them more specific questions about the majors and the minors.” This led to a productive and enjoyable career counseling experience for Grant, who was able to confidently build on current knowledge within the appointments, rather than feeling as though he was starting on an uncertain foundation. Grant's reflections offer an apt reminder that career counseling has the potential to influence students before they walk into the physical space of the career center. The simple act of scheduling an appointment provided Grant with the necessary stimulus to make progress on his major and career choices.

Interpretations of performance accomplishment activities. Three interview participants expressed that their individual career counseling experiences played an important role in helping interpret past activities that they engaged in for major and career exploration. Emily described how her career counselor helped her find patterns in her past experiences, whereas Denise and Adam benefited from the broad perspective that their career counselors provided regarding their current progress on career-related tasks.

Interpreting past experiences. Emily began her time at MU debating between majors in business and engineering. For her, the common denominator between the two paths was her natural understanding and enjoyment of mathematics and working with numbers. As part of her individual career counseling experiences, Emily created her first professional resume, which included experiences from both high school (e.g., president of the debate club) and college (e.g., newsletter editor for a Chinese students' association). Through this activity, her career counselor helped her to draw connections between her past experiences and potential majors:

Emily: [The career counselor] kind of give me a support for- I'm pursuing [a business] major because from my former experiences in high school and my leadership in high school something, he think I should major in business.

Interviewer: I see. So what kinds of things were on your resume?

Emily: Something like peer leaders and the club president for before I was in high school and something like the debate club and something. Yeah. It's pretty good because most of the things are focused on communication and for the business stuff. So it's like prerequisite. So it's pretty good.

Emily's selection of a business major stemmed from her experiences with a career counselor who helped her interpret how her past experiences and successes connected to potential future directions.

Normalizing experiences via comparisons with peers. Denise and Adam expressed the increased sense of security and confidence they derived from their experiences with career counselors, in which they career counselors provided a context for their progress by drawing comparisons with other first-year students. Adam was one of the students who expressed initial concern about being "underprepared" to participate in career counseling: "I don't even know what I should go in to it thinking." However, he was pleasantly surprised to discover how well he could articulate his thoughts on interests and skills, as well as on the majors he was

considering. Adam boasted that he made the appointment “pretty easy on [the career counselor] . . . It was really easy because I had such good ideas.” Additionally, he was pleased with the feedback that he received from his career counselor. He reflected that

She basically told me that I was in a real good position compared to a lot of people who still aren’t sure. And she basically gave me confidence, and I know what I’m doing now. I have my options. I know what I want to get into. I know what classes I need to take. So since I have that under my belt, she was like I’m going in a good direction. So that’s why I feel more comfortable now.

Adam left his individual career counseling experiences feeling “reassured” that he was “on the right path.” Similarly, Denise expressed relief to hear that, after talking about her work experiences and resume, her career counselor felt she was “on track” for her freshman year:

[The career counselor] said he thinks I’m pretty much on track, so I think that was pretty good to hear because I was worrying. But he said as a freshman I’m doing pretty well . . . It felt good to hear that. Sometimes you just kind of doubt yourself, especially in a large university like this.

Giving Denise some basis for comparison with her peers allowed her to normalize her worries and experiences, as well as to develop a sense of confidence to push forward.

Influences on perceptions of environmental supports. Participation in career counseling also influenced the way that many students viewed support services at the career center, as well as other sources on the MU campus. Many students experienced an expanded understanding of the help that environmental supports could offer, whereas a few students maintained limited expectations of these supports.

Expanded view. Expanded views of environmental supports resulted in a broader understanding of the resources and services that the career center could offer, as well as increased knowledge of and enthusiasm for pursuing other supports across the MU campus.

Career services. As a result of their individual career counseling experiences, many participants overcame their initial uncertainties regarding pursuing career counseling and

developed an understanding of the career center as being a supportive place for students at all stages of their college experience. Grant expressed a broad understanding of the supports that the career center offered, stating,

It just kind of seemed like they had help for every step of the way. There was just help for deciding the major, there was help for working at the majors, there was help for after you get out of school. I felt like it's gonna be a place that I'm gonna definitely be at later in my college career.

Beth returned to use career services on two occasions during her second college semester in order to explore internship opportunities, to investigate careers that her major may lead to, and to have her resume reviewed. Looking forward, she expressed, "I'll probably be asking the career center a lot" to uncover networking opportunities and to stay informed about job market trends. Other students suggested returning to the career center in the future to learn about internships and other opportunities for hands-on experience (e.g., Derek, Emily), to find information on job opportunities and job market trends (e.g., Hailey), and to seek help in preparing resumes and applications (e.g., Ethan, Kari).

Other college-based environmental supports. Having a positive experience with career counseling as an environmental support also led participants to express their knowledge of and interest in pursuing other support services on the MU campus.

Derek explained that his career counseling experiences "gave me hope in the sense that there's help. So if I ever need more help, I know where to look." He gained confidence in his ability to seek assistance, recognizing both a wealth of resources available in the MU environment and his need to take the initiative to engage them:

This university offers a lot of resources. But they try and give them to you. But they also don't go in your face and tell you, "You have an appointment. You have to come in because we just made you one for no reason." It's up to you to take that extra step, that extra- to put something from your part.

Kari, who was concerned about the challenges of a heavy science curriculum associated with her choice of kinesiology as a major, walked away from her individual career counseling experiences with greater confidence in her ability to seek out supports to help her succeed. Prior to individual career counseling, Kari worried that “I’m bad at science” and that “science and math are not my strongest areas.” Yet after her individual career counseling experiences, she expressed a revised focus on strategies and resources to help her successfully tackle the challenge that science courses presented:

It’s still concerning, but I feel like there’s a lot of resources to help me . . . [My career counselor] told me about [a program house for Latino/a students], how they help a lot with tutors and stuff like that, so I feel like there’s enough resources out there to help me out.

Adam, on the other hand, discovered a new source of support for his career-related needs. His individual career counseling experiences steered him to apply to a highly selective business fraternity on campus. The fraternity offers programs for resume preparation, interviewing, and networking with employers in an environment that caters to Adam’s professional interests:

They’re helping me like- they help us become really professional really fast. I was in there- the first week I was in it, I like- I even had a resume going into it, and after the first week I had a whole decked out resume, like really good. They help us with everything.

This exclusive group with built-in career opportunities became a central environmental support for Adam, in some ways replacing the role that the career center may have played for him:

“Honestly, if I didn’t want to do anything else, the business frat, that would be more than enough. I mean it does- they cover everything.”

Maintained limited view. Although many students’ perceptions of environmental supports were expanded by their participation in individual career counseling, this was not the case for everyone. Ethan and Gina maintained a limited view of the services available from

support offices on the MU campus, as well as the role that those resources could play in their academic and career decision making.

Ethan maintained a clear distinction between tasks and actions that could be supported by outside resources versus those that had to be internally driven and carried out. For him, selecting a major was a deeply individual decision:

I feel like it's sort of up to me to [choose a major]. And I don't know what I would ask of somebody to help me besides like reading an essay or something like that. Because there's not much somebody could do besides telling me what to do. And I don't really want to have somebody tell me what to do. I wouldn't mind advice, but I don't know what advice I would take.

Ethan felt that he could gather “somebody else’s opinion” on what majors, internships, or other directions to seek. The ultimate decision, however, had to be made alone. Ethan envisioned seeking support for the procedural parts of implementing his choices (e.g., reviewing admissions essays and applications) only after he had arrived at his personal decisions and goals.

Gina also expressed limitations regarding the type of help that she would consider seeking from support services on the MU campus. On the surface, Gina came across as an optimistic and energetic young woman with a clear career direction, namely, pursuing a major in either chemistry or biology, with the goal of becoming a doctor, “particularly, a surgeon.” Her individual career counseling appointments were resource-intensive (primarily focused on delivering informational handouts) and short in duration and depth. Gina explained that “we got to the point, then in and out” in about 15 minutes, even though she was scheduled for two 45-minute appointments. Gina left wanting more, yet was not certain what else she could have gotten out of the appointment: “there’s only so many questions I can ask.”

However, during her research interviews, cracks in Gina’s façade of confidence became apparent when her words were closely considered. For instance, she remarked that

- Both my parents are extremely, extremely intelligent You want to pick something that they're gonna be proud of you for doing, like, oh, I'm a doctor.
- I have my best friends there are actually seniors in high school. They always, though- I'll come home and they're like, "Oh, our big [MU] kid's back- our big doctor." I'm like, "I'm not a doctor yet, but-" so it's there.
- And my parents are too, subconsciously, joking, or they'll be like, "Oh, do you wanna go out for dinner?"- "No, I wanna save money."- And they're like, "Oh, that's okay. You can pay us back when you're a doctor."- (laughing) And I was like . . . "If I don't become one, what am I gonna do?"
- Every time I think, oh, doctor, I think that's like I have to go to med school for another four years, and I think, what if I don't make it to med school? Now what am I gonna do?
- I'm still nervous of how it's gonna go- college, the whole process. One test here killed me. I don't want it to happen again. So I'm just really, really worried. And again, I keep- with every bad grade I get, I'm like, "Oh, that's one thing I'm not gonna get in med school." I keep thinking I'm just not gonna make it. Like I'm gonna get to it and then it's not gonna work.

When asked in the research interviews about her feelings of worry and vulnerability, Gina responded, "I don't talk about this with anyone- or this in-depth. I don't tell my parents, like, 'Oh, Mom, I'm not confident.' It's just something we can't talk about Friends and parents don't necessarily give you what you need." Yet something about the relationship that developed in the research interviews for this study gave Gina a safe place to identify her feelings, to put words to her reflections, and to process some of the unexpected pressures that she was experiencing:

I didn't realize until we started talking, the pressure from the family or the pressure from other people. I never realized all these different things that played with it... I feel better now knowing that it's there because I don't like knowing things that are there. I don't want it to creep up behind me, you know?

The question remains whether there are other environmental supports (outside of participating in research interviews) that could offer a safe, confidential place for Gina to explore her needs.

Could individual career counseling have offered this if the career counselor had probed deeper regarding how Gina was thinking and feeling about the process?

At the end of her first college year, Gina's perceptions of the supports that the career center could offer appeared quite set. She continued to waver between chemistry and biology as her major options, and she considered going back to the career center "to talk about my alternatives." By that time, however, she did not see the career center as a place where she could show her uncertainties and vulnerabilities: "I don't see a lot of kids be like, yeah, I'm gonna go talk to this person, like a random person about my problems." Gina did not feel that support services on campus were a reasonable place to seek assistance with sorting out her feelings and concerns.

Synthesis. As described in Chapter 5, the career counselor–student relationship, as well as active, hands-on involvement in career exploration tasks, appeared to be common qualities of positive, influential career counseling experiences. Yet in this data exploration, insights were also gained regarding at what point in the career choice process students were influenced by relationships and performance accomplishment activities influence students. Many of the findings followed expectations based on SCCT such that environmental influences provided by career counseling engage students at the points of connecting interests and skills with options, goal setting, and selecting and implementing performance accomplishment activities. However, there also appears to be a path of influence in regard to interpreting performance accomplishment activities. Career counselors can help students reflect on past experiences, interpret those experiences in a broad context, and reinterpret actions as successes or failures. These interpretations then feed into an individual's career choice processes as sources of self-efficacy and outcome expectations for future engagement.

The data presented here also recognize the influence that introductory career counseling experiences can have on future engagement of environmental supports. One good experience often led to interest in and openness toward seeking another environmental support, whether that next experience was related to additional resources or services at the career center or whether it was using other support services on the MU campus. On the other hand, a lackluster experience with career counseling could limit students' perceptions of the assistance they would be motivated to seek.

Limitations of the Influences of Career Counseling

This section strives to offer a balanced and realistic view of the potential influences of career counseling by examining gaps that emerged in interview conversations. The themes explored here indicate areas where career counseling experiences had a limited influence on students' major and career choice process in relation to the duration of commitments to selected goals, as well as a lack of persistence in following through on selected performance accomplishment activities. Additionally, examples are provided of situations in which other environmental influences overshadowed the influence of students' career counseling experiences.

Premature goal setting. Two participants indicated a lack of readiness to explore their interests and skills in relation to academic majors during their first semester in college. The early timing of the individual career counseling appointments led them down paths that they later found to be a poor personal fit.

At the time of Hailey's individual career counseling appointments, she was not ready to close doors on either of her goals of having both a liberal arts major and a pre-med curriculum. She felt "overwhelmed with how different the two fields are" and was searching for a way to

“figure out how” to pursue both goals simultaneously. It was not until the end of her first college year that Hailey made the distinction between “the topics that I really did like, not the ones I thought maybe I should like or should go into.” Reflecting back on her individual career counseling, Hailey recognized how she directed the conversation with thoughts of what she should do:

I think during that time [the career counseling] was really helpful, but now that I- maybe it was a little too soon because I was still in the mindset of what I should want to do, so those were the- that’s what I was saying were my interests, when really, I realized through this year and semester that those weren’t really my interests, those were what I thought I should be doing. So I kind of knew the questions they were gonna ask, so I made my answers for what I thought they were gonna tell me.

As a result, Hailey pursued goals and academic classes that, in the end, were not a good fit for her.

When beginning her first semester at MU, Angela was torn between embracing (a) her artistic skills in an art-related major, despite the uncertainty of future job opportunities; and (b) the relative “security” of a biology major, despite her difficulties with science-oriented classes. As part of her individual career counseling experiences, Angela researched potential careers that she could pursue with each major and came up with a decision:

I was very determined to do biology because I went to the career center. I talked to the advisor, and we did all of the research I think biology, when I was researching it, has more possible future careers. And art is kind of narrow, kind of limited.

Feeling anxious about what she saw as limited opportunities in art, Angela became increasingly determined to force herself to embrace biology. She expressed deep frustration with other environmental sources of information (e.g., her University 101 class; friends who were art majors) that “muddied the waters,” leaving her feeling confused and unsettled. She wished that she could block out conflicting messages and push forward on her science path. It was not until

the end of her second college semester that Angela let go of this tension between art and science, and chose to follow her interests. She reflected, “I feel like when you’re struggling for academic works, it’s better to do something you like than something you don’t, and I feel like I like art better still than biology.” Angela uncovered a sense of calm and centeredness with this decision, saying,

What I found myself doing on the weekend or when I was free, I was like, “I don’t have anything to do, then draw a picture or paint.” I was like, “Why am I now studying biology instead?” So I was like, “Okay, I think that’s why I should do art.”

. . . I think everyone is like meant- I don’t know, I think everyone is like created to- they were meant to be in some position or where they should go. I mean there are people who- should just go for other stuff. Not just science; they should go do other stuff.

Like Hailey, Angela needed time to recognize and accept her true likes and dislikes, strengths and weaknesses. Their experiences provide reminders of the ways that personal readiness colors both perceptions of and conclusions drawn from individual career counseling experiences.

Although both Hailey and Angela saw their experiences with career counseling as helpful immediately after the appointments, their personal growth over time changed these perceptions. Both participants felt that the lasting influence of their past career counseling experiences would be minimal because of their new academic directions. Additionally, they imagined that future career counseling experiences would be very different from those in which they had engaged in their first college semester.

Gaps in motivating action. Although most participants described feeling motivated and energized by their individual career counseling experiences, for several, these positive feelings did not translate into concrete action by the end of their first college year. Jennifer and Kari offered two distinct stories of disconnections between knowledge of next steps and taking action.

Jennifer's inaction relates to seeking support services. On the one hand, her hesitation was understandable, because she described several lackluster past experiences with professionals in advising and counseling relationships. In high school, she was bounced from advisor to advisor due to circumstances that were beyond her control (e.g., counselors leaving the school). Often when she came to a new advisor, she found that person to be inexperienced (e.g., substitutes for a day), overloaded (e.g., counselors with heavy caseloads leaving little time to assist individual students), or dismissive of her questions (e.g., a counselor stating, "that's a really in-depth question, and it goes a lot deeper than you think, so we might have to talk about it next time" and then not returning to the question). As a result, Jennifer explained "I didn't get personal attention from any of my counselors ever." After years of challenges finding connections with helping professionals, Jennifer greatly desired to work with someone who would discuss her options in detail and appreciate her own, unique situation. She, therefore, expressed surprise at the positive and helpful relationship that she discovered with her career counselor in this study: "he actually listened to what I was talking about and made sure he had everything together when I came in, and actually took time to hear what I was saying." Yet Jennifer still reflected that individual career counseling was not an experience she would have sought out on her own volition: "I know if I wasn't thrown into it, I probably wouldn't have done it." Even though Jennifer recognized that she had found the tailored, personalized experience with a helping professional that she desired and that this support service had helpful resources to offer, she had not returned to the career center. At the end of her first year, she reflected,

I probably should have gone back this semester to talk to them about the internships and stuff. But, then you could actually get started on the internships and the volunteer stuff because they would know what would look good and what would help you pick an actual career so then you're not sitting there junior or senior year, still not knowing what to do and what you'd like to do with what you have. So I think getting started

early is kind of nice. It's just, I don't know. I think it should be like a continuum thing to go to, sort of. That would be really helpful.

Jennifer remained uncertain about when she might return for assistance or what it would take for her to engage this support service again.

Kari, on the other hand, expressed uncertainty regarding how to motivate herself beyond organizing performance accomplishment activities to taking advantage of them. During her immediate post-interview, she discussed engaging in job shadowing or information interviewing over winter break to explore a career in physical therapy. She had plans to use personal networks to line up opportunities: "I have a couple friends who have gone into physical therapy before, and there's some clinics near me, so I'm gonna contact them this week and ask about winter break, maybe doing something then." However, during the delayed post-interview at the end of her first college year, Kari shared that she had not pursued these connections and she now hoped to do so during her summer break. Kari described similar inaction regarding getting involved in student organizations at MU. In some cases, she identified schedule conflicts as a barrier to her involvement (e.g., "I have a class during the physical therapy one every time they meet. So I haven't been able to meet with them."). However, in other cases, Kari was not able to identify what was holding her back from getting involved:

Kari: Biggest challenges? Probably, I'm very organized with finding all these things, but I haven't joined a group yet. I have them all set out; I just need to take action, probably.

Interviewer: So good at identifying options.

Kari: Yeah.

Interviewer: What keeps you from going out and trying it?

Kari: I don't know. I have no idea. I think I feel so accomplished by having them set already, it's like I put them on the back burner because I know they're there. So it's more of me having to go forward with it.

Although Kari saw her individual career counseling experiences as influential in leading her to opportunities and ideas, a gap remained for her regarding following-through to implement her next steps.

Redirection by other environmental influences. Although many students emerged from their individual career counseling experiences with decisions made on academic majors and personal goals, in a few cases these directions were changed or unsettled by environmental influences beyond career counseling.

Jacob provided an example of a minor redirection of personal goals. He left his career counseling appointments excited about discovering a new backup major (technical systems management; TSM), which left him feeling “more comfortable” with his alternatives in case he was not accepted into the highly competitive architecture program. However, in a conversation with an advisor from the architecture department, Jacob received different information. The architecture advisor reflected that he “actually had not heard of TSM being that close” to architecture. Jacob came to see TSM as being “a lot more business than what I really thought” and as taking him away from the design work that he enjoyed. Jacob decided to change his planned back-up major to urban planning based on the architecture advisor’s recommendation.

Jennifer experienced a more comprehensive and challenging redirection of her decisions and goals than did Jacob. Despite beginning her first college semester feeling uncertain and debating among many major and career options, Jennifer left her individual career counseling experiences feeling excited about one specific direction- pursuing psychology as an undergraduate major, followed by a graduate degree in social work. She was enthusiastic and ready to apply to the psychology program. She then went home for Thanksgiving and received feedback from significant others that shook her confidence and resolve. Jennifer’s father

dismissed her new ideas: “he was like ‘that’s really cool, but you should still be a teacher.’” He pushed teaching as an ideal career “for the whole summers off” to spend with family and the sense that it “would be kind of an easy job”- a sentiment that Jennifer did not agree with but found hard to argue against. He discouraged social work, saying the field “has no future with it, I guess, and no money either.” Jennifer’s visits with some respected high school teachers echoed her father’s concerns. The teachers mentioned that “there is really no work available for social work right now” and that “social workers make less than teachers do. They said now that you’re in college we can tell you that teachers don’t make jack.” This feedback from significant others led Jennifer to question her decisions and goals. Adding a new dynamic to her concerns, she developed a fear of unanticipated financial strains related to choosing a path that her parents did not approve of: “they may not pay for as much stuff if they don’t like what I’m going into.” Jennifer was once again left without a direction to grasp onto, and she closed down her major and career exploration activities in favor of “focusing on finishing the semester.” By the end of her second semester, Jennifer was back to juggling a wide variety of potential directions, possibly considering a triple major to avoid closing any doors. She reported a sense of being removed from the process: “I’m not sure how I feel about it right now.” She was going through the motions to get everything accomplished, “crossing stuff off my list for what I need” to get the requirements “out of the way,” and not finding time for endeavors outside the classroom.

Synthesis. The individual career counseling in this study represented a single environmental support, which competed for participants’ time, attention, and effort. Issues such as a lack of personal readiness and conflicts with other environmental influences contributed to limiting the potential for career counseling to have a positive influence on participants.

A lack of personal readiness for major and career exploration, with a willingness to engage openly in the process, was a key inhibitor of the career choice process for students such as Angela and Hailey. Both of these students first had to work through personal doubts and biases before they were genuinely able to consider how their options fit with their interests, skills, and values.

Questions of a lack of readiness also emerged regarding the scarcity of follow-up actions taken by many study participants. This research study served as an external source of motivation for participants to engage major and career exploration with the assistance of a career counselor. However, after completing the required steps that were part of the research study, only 4 of the 33 students in the treatment group (12.1%) returned to the career center during their second college semester. This inaction occurred despite the generally recognized value of engaging career services early in their college experiences, the ability to articulate resources and programs they would like to pursue, and the appreciation they expressed for invitations to return for future assistance. Participants attributed their lack of follow-through to many reasons, ranging from struggles finding time in their busy schedules, to awaiting responses from academic departments regarding applications to a major, to simple laziness. Yet regardless of the source of inaction, it is clear that major and career exploration was not viewed as a salient, urgent need for these students during their second college semester.

Finally, some evidence was seen of the influence of individual career counseling competing with other environmental influences that may have been pushing students in different directions (e.g., Jennifer's case). With such brief interactions between career counselors and participants, many of which did not directly address the barriers and stresses that influenced

participants' decision-making difficulties, it is understandable that career counseling had a limited ability to influence students beyond other environmental sources.

Chapter Summary: Reflecting on Students' Perceived Influences of Career Counseling

The following research question guided the inquiries explored in this chapter: What influences do students perceive career counseling to have on their process of selecting an academic major or career? An examination of the primary themes that emerged in interviews with participants regarding their career counseling experiences suggested several insights into students' perceptions and interpretations.

Academic major and career choices are influenced by career counseling, sometimes in unanticipated ways. Discussions with students revealed influences that followed expectations based on SCCT, such as helping students connect interests and skills with options, set goals, and select and implement performance accomplishment activities. Additionally, unexpected influences were uncovered. Of the 15 treatment group members who participated in interviews, 3 participants shared situations in which their career counselor helped them reflect on past performance accomplishment activities, interpreting those experiences in a broader context and reinterpreting the successful nature of those actions. These reinterpretations became embedded in the students' career choice process as additional sources of self-efficacy and outcome expectations. As such, it appears possible that an additional path exists in which environmental supports may influence an individual's career choice process. This finding is explored in more detail in Chapter 9, in which recommendations are made for additional research.

Experiences in career counseling also influence the future use of support services. Beyond participants' immediate choices of an academic major and career, influences were also observed regarding their future engagement of environmental supports. Participants' evaluations

of their experiences with individual career counseling influenced both their (a) knowledge of support services available on the MU campus, and (b) openness to and enthusiasm about seeking additional support.

Influences of career counseling are tempered by a lack of readiness to engage in the career choice process. Although the external motivation of participating in the research study was enough to spark some initial beneficial influences from participation in individual career counseling, a lack of internally motivated readiness to explore options and engage in decision making was a primary inhibitor of continued progress on career choice tasks. This lack of readiness was demonstrated by students who were not open to engaging in authentic self-exploration by focusing on their true selves rather than on the person they thought they should be (as seen in the delayed post-interviews for Angela and Hailey), and by the scarcity of follow-up actions taken by many student participants after the appointments required by the research study. The saliency or urgency of making career choices was simply not a priority for many first-year college students, particularly as compared with tasks such as adjusting to college and performing academically.

Limitations of influences indicate a need to establish support networks both within and beyond career services. Infrequent follow-through on career exploration tasks, as well as the low rates of return visitors to the career center, provided minimal opportunities for career counselors to have a positive influence on students' career choice processes. This is particularly pertinent in comparison with the time and opportunities that other environmental influences (including career barriers) have in students' everyday lives (e.g., Jennifer's struggles with influences from significant others).

Yet despite students' brief interactions with career counselors, their reflections demonstrated that individual career counseling influenced their knowledge of and intention to use environmental supports. An appropriate, and perhaps crucial, role for career counselors may be to help students establish support networks, both within and beyond career services, that can bolster students' progress on career choice tasks in their day-to-day environments. This would, in effect, extend the influence of career counseling beyond the traditional walls and personnel of the career center.

Due to the complexity of career choices, longitudinal research is needed to observe change and influence over time. Finally, the potential of career counseling experiences to influence students' academic and career choices was sometimes impeded by other factors, such as a lack of personal readiness on the part of the students or environmental influences that communicated competing or contradictory messages to students. As such, students were still in the process of making academic and career decisions beyond the 8-month period during which this research study followed their experiences. This signals a need for continued data collection over an extended time to determine actual follow-through on career exploration tasks, key influences that motivate students to take action, and, ultimately, what career counseling professionals may do to reach out and support students throughout their career choice and implementation processes.

Chapter 7

Changes in Career Decision-Making Self-Efficacy

This chapter addresses the study question regarding the relationship between career counseling and changes in career decision-making self-efficacy (CDMSE), which asks whether students who participate in individual career counseling experience an increase in CDMSE beyond that expected due to maturation, as demonstrated by the control group. Additionally, students' reflections on CDMSE are explored by considering how they perceive career counseling, as well as other environmental supports, as influencing their ability to make and implement academic and career choices. Evidence from both the survey data and interviews are explored.

The chapter begins with an examination of changes in CDMSE as observed with the Career Decision Self-Efficacy Scale–Short Form (CDSE Scale; Betz & Taylor, 2001). Increases in CDMSE for the treatment group, beyond those experienced by the control group, would support the study hypotheses and be supported by career intervention outcomes observed in past research (e.g., Luzzo & Day, 1999; Luzzo & Taylor, 1994; Sullivan & Mahalik, 2000). Interview and mixed data analyses are then presented to provide insights into potential contributors to the differences observed in the survey data analyses. The chapter concludes by summarizing the primary themes from all data analyses.

Statistical Analyses of Career Decision Self-Efficacy Scale Scores Over Time

Instrument background. The CDSE Scale “measures an individual’s degree of belief that he/she can successfully complete tasks necessary to making career decisions” (Betz & Taylor, 2006, p. 6). The scale contains 25 items, which are evenly divided into 5 subscales: self-appraisal, gathering occupational information, goal selection, planning, and problem solving.

Respondents are asked how much confidence they have in their ability to complete each of the career decision-making tasks presented. A 5-point scale is provided for each item, with possible responses ranging from 1 (*no confidence at all*) to 5 (*complete confidence*).

Reliability. Reliability values of the CDSE Scale instrument and subscales were examined by calculating Cronbach's alphas for each of three rounds of survey administration. Table 7.1 shows results for this respondent group, as compared with results in the related literature. The total score for the instrument returned alphas ranging from .92 to .96 for each administration in this study, whereas the subscale alphas ranged from .70 to .87, with a median value of .79. These alphas were similar to those reported by Betz, Klein, and Taylor (1996) and provided reasonable evidence of scale reliability.

Table 7.1

Cronbach's Alphas for Each Administration of the Career Decision Self-Efficacy Scale (CDSE Scale)

CDSE Scale	Number of Items	Cronbach's Alpha			
		Reported by Betz, Klein, and Taylor (1996)	Pretest	Posttest	Delayed Posttest
Self-Appraisal	5	.73	.76	.77	.84
Occupational Information	5	.78	.70	.73	.82
Goal Selection	5	.83	.83	.86	.87
Planning	5	.81	.71	.77	.83
Problem Solving	5	.75	.70	.79	.84
Total	25	.94	.92	.94	.96

Statistical analyses. One-way ANOVAs with repeated measures were first conducted to determine whether statistically significant differences existed for (a) experimental groups (treatment and control), and (b) survey times (pretest, posttest, and delayed posttest), as well as (c) to identify interactions between experimental groups and survey time. The Greenhouse-Geisser correction was applied when violations of sphericity were detected. Significant differences were further explored via simple effects analyses calculated with *t*-tests and using a Bonferroni adjusted significance level ($.05/3 = .017$) to account for spurious findings resulting from multiple comparisons (Girden, 1992). The post hoc analyses were conducted one-tailed at a .05 level of significance to explore a potential increase in CDMSE. Finally, Cohen's *d* effect sizes were calculated to evaluate the size of observed differences. Determinations of small, medium, and large effects were made based on Cohen's (1988) conventional definitions.

Findings. Table 7.2 provides a summary of sample sizes, means, and standard deviations related to CDMSE. To determine the effects of the career development intervention on CDMSE, 2 (experimental groups) \times 3 (survey time) ANOVA analyses with repeated measures were conducted. The results of these analyses are provided in Table 7.3. Interpretation of results and further post hoc analyses for the CDSE Scale total score and the five subscale scores (self-appraisal, occupational information, goal selection, planning, and problem solving) are discussed in the following subsections.

CDSE Scale total score. The ANOVA analyses demonstrated significant main effects on the CDSE Scale total score for the experimental groups, $F(1, 127) = 12.72, p = .001$, and survey time, $F(1.83, 232.46) = 10.03, p = .000$, as well as for the interaction between experimental groups and survey time, $F(1.83, 232.46) = 3.16, p = .049$. Post hoc analyses demonstrated no significant differences between the treatment and control groups on the pretest survey,

Table 7.2

Sample Sizes, Means, and Standard Deviations for Career Decision Self-Efficacy Scale (CDSE Scale) Total and Subscale Scores

Scale	Pretest			Posttest			Delayed Posttest		
	<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
<i>CDSE Scale Total Score</i>									
All Participants	130	3.30	0.56	129	3.46	0.60	130	3.46	0.68
Treatment	33	3.48	0.47	32	3.73	0.49	33	3.83	0.65
Control	97	3.25	0.57	97	3.37	0.61	97	3.34	0.64
<i>Self-Appraisal</i>									
All Participants	130	3.38	0.68	129	3.51	0.67	130	3.51	0.73
Treatment	33	3.54	0.61	32	3.78	0.59	33	3.84	0.72
Control	97	3.34	0.69	97	3.42	0.67	97	3.41	0.70
<i>Occupational Information</i>									
All Participants	130	3.57	0.63	129	3.75	0.64	130	3.66	0.72
Treatment	33	3.73	0.46	32	4.02	0.46	33	4.02	0.66
Control	97	3.53	0.67	97	3.66	0.67	97	3.54	0.70
<i>Goal Selection</i>									
All Participants	130	3.00	0.74	129	3.29	0.81	130	3.38	0.79
Treatment	33	3.16	0.73	32	3.55	0.77	33	3.74	0.73
Control	97	2.96	0.74	97	3.20	0.83	97	3.27	0.78
<i>Planning</i>									
All Participants	130	3.22	0.69	129	3.36	0.71	130	3.37	0.76
Treatment	33	3.39	0.56	32	3.66	0.67	33	3.82	0.76
Control	97	3.17	0.72	97	3.25	0.70	97	3.21	0.71
<i>Problem Solving</i>									
All Participants	130	3.32	0.59	129	3.39	0.65	130	3.39	0.75
Treatment	33	3.58	0.43	32	3.65	0.50	33	3.81	0.76
Control	97	3.24	0.61	97	3.30	0.67	97	3.26	0.69

indicating that when the experimental groups began the study, they expressed similar levels of overall CDMSE. However, significant differences existed for experimental groups on the posttest survey, $t(128) = 3.07$, $p = .002$, $d = 0.63$, and the delayed posttest survey, $t(127) = 3.73$, $p = .000$, $d = 0.79$ (see Table 7.4). In both cases, the treatment group reported higher overall CDMSE than did the control group. The Cohen's d effect size calculations showed a medium to large difference between the groups, suggesting the presence of a substantive difference.

Table 7.3

*ANOVA Analyses of Career Decision Self-Efficacy Scale (CDSE Scale) Total and Subscale**Scores*

Scale	Source	SS	df	MS	F	p	
CDSE Scale Total Score	Between Subjects						
	Experimental Groups	9.85	1	9.85	12.72	.001	***
	Error	98.28	127	0.77			
	Within Subjects ^a						
	Survey Time	2.86	1.83	1.56	10.03	.000	***
	Survey Time × Experimental Groups	.90	1.83	0.49	3.16	.049	*
	Error	36.26	232.46	0.16			
Self- Appraisal	Between Subjects						
	Experimental Groups	7.77	1	7.77	8.59	.004	**
	Error	114.91	127	0.91			
	Within Subjects ^a						
	Survey Time	1.98	1.86	1.07	4.16	.019	*
	Survey Time × Experimental Groups	0.70	1.86	0.38	1.47	.232	
	Error	60.25	235.64	0.26			
Occupational Information	Between Subjects						
	Experimental Groups	8.71	1	8.71	9.78	.002	**
	Error	113.11	127	0.89			
	Within Subjects ^a						
	Survey Time	2.24	1.89	1.18	6.04	.003	**
	Survey Time × Experimental Groups	0.89	1.89	0.47	2.39	.097	
	Error	47.00	239.82	0.20			
Goal Selection	Between Subjects						
	Experimental Groups	8.31	1	8.31	6.74	.011	*
	Error	156.44	127	1.23			
	Within Subjects ^a						
	Survey Time	10.21	2	5.11	18.88	.000	***
	Survey Time × Experimental Groups	0.84	2	0.42	1.55	.215	
	Error	68.69	254	0.27			
Planning	Between Subjects						
	Experimental Groups	12.49	1	12.49	11.44	.001	***
	Error	138.57	127	1.09			
	Within Subjects ^a						
	Survey Time	2.91	2	1.46	7.81	.001	***
	Survey Time × Experimental Groups	1.75	2	0.88	4.69	.010	**
	Error	47.36	254	0.19			

(continued)

Table 7.3 (continued)

Variable	Source	SS	df	MS	F	p	
Problem Solving	Between Subjects						
	Experimental Groups	12.28	1	12.28	14.83	.000	***
	Error	105.18	127	0.83			
	Within Subjects ^a						
	Survey Time	0.76	2	0.38	1.90	.152	
	Survey Time × Experimental Groups	0.69	2	0.35	1.72	.182	
	Error	51.04	254	0.20			

^a Mauchly's Test indicated that the sphericity assumption was violated. Therefore, the Greenhouse-Geisser test was applied.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 7.4

Comparisons of Control and Treatment Group Total Scores for Each Administration of the Career Decision Self-Efficacy Scale

Survey	<i>df</i>	<i>t</i>	<i>p</i> ^a	<i>d</i>
Pretest	128	1.85	.022	0.43
Posttest	127	3.07	.002 **	0.63
Delayed Posttest	128	3.73	.000 ***	0.79

^a Significance values for the one-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha ($.05/3 = .017$).

** $p < .01$, *** $p < .001$.

Table 7.5 shows changes across survey times. The main effect of survey time is presented first, and demonstrates a significant increase in the CDSE Scale total score across all participants between the pretest and posttest only, $t(128) = 3.53$, $p = .001$, but the effect size for this comparison is small ($d = 0.26$). This provides limited evidence of an increase in CDSE Scale total scores over the first academic semester. An examination of the interaction effects (also shown in Table 7.5) provides a more nuanced understanding of these changes than offered by the main effects.

Table 7.5

Paired Samples T-Tests Examining Career Decision Self-Efficacy Scale Total Scores Across Survey Times

Group	Survey Comparison	Mean		df	t	p ^a	d
		Difference	SD				
All Participants	Pre vs. Post	0.15	0.49	128	3.53	.001 ***	0.26
	Pre vs. Delayed Post	0.00	1.27	127	-0.04	.486	0.01
	Post vs. Delayed Post	0.01	0.50	128	0.19	.426	0.01
Control	Pre vs. Post	0.12	0.49	96	2.38	.010 ***	0.20
	Pre vs. Delayed Post	0.09	0.63	96	1.45	.076	0.15
	Post vs. Delayed Post	-0.03	0.48	96	-0.55	.293	0.04
Treatment	Pre vs. Post	0.25	0.47	31	3.04	.003 **	0.54
	Pre vs. Delayed Post	0.37	0.53	32	4.00	.000 ***	0.66
	Post vs. Delayed Post	0.11	0.54	31	1.20	.120	0.20

^a Significance values for the one-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha (.05/3 = .017).

p < .01, *p < .001.

A significant increase in the CDSE Scale total score was found for the treatment group between the pretest and posttest, $t(31) = 3.04$, $p = .003$, $d = 0.54$, as well as between the pretest and delayed posttest, $t(32) = 4.00$, $p = .000$, $d = 0.66$, both of which were accompanied by medium effect sizes, offering compelling evidence of a substantive difference after the treatment. No significant differences were found for the treatment group between the posttest and delayed posttest, suggesting that gains observed immediately after the intervention were maintained, but did not increase, over the second college semester.

A significant increase in the CDSE Scale total score was found for the control group between the pretest and posttest only, $t(96) = 2.38$, $p = .010$, however, the effect size for this test was considerably smaller for the control group ($d = 0.20$) as compared with the treatment group ($d = 0.54$). Also note that no significant differences were found for the control group between the posttest and delayed posttest, suggesting that gains observed at the end of the first college semester were not maintained through the students' first college year.

In summary, these analyses suggest that some increase in the CDSE Scale total score may be due to maturation in the first college semester; however, students in the treatment group experienced additional CDSE Scale total score increases beyond maturation and maintained those increases throughout their first college year. As indicated by comparisons with the control group, gains in overall CDMSE for the treatment group can be reasonably attributed to the treatment.

Self-appraisal. The ANOVA analyses demonstrated significant main effects on the CDSE Scale self-appraisal scores for the experimental groups, $F(1,127) = 8.59, p = .004$, and survey time, $F(1.86,235.64) = 4.16, p = .019$. No interaction between experimental groups and survey time was found in the case of this subscale. Post hoc analyses demonstrated no significant differences between the treatment and control groups on the pretest survey, indicating that the experimental groups began the study by expressing similar levels of CDMSE related to self-appraisal. However, significant differences existed for the experimental groups on the posttest survey, $t(127) = 2.64, p = .005, d = 0.54$, and the delayed posttest survey, $t(128) = 2.91, p = .002, d = 0.62$ (see Table 7.6). In both cases, the treatment group reported higher CDMSE related to self-appraisal than did the control group. The Cohen's d effect size calculations showed medium differences between the groups, suggesting the presence of a substantive difference.

Table 7.7 shows changes across the main effect of survey time. Because no interaction effect was present in the ANOVA analyses, the paired samples t -test for differences across survey times was conducted for all participants (not separately for the control and treatment groups). The main effect of survey time demonstrated a significant increase in the CDSE Scale self-appraisal scores across all participants between the pretest and posttest only, $t(128) = 2.14, p = .017$, but the effect size for this comparison was small ($d = 0.18$), and provided only limited

Table 7.6

Comparisons of Control and Treatment Group Career Decision Self-Efficacy Scale Self-Appraisal Scores for Each Survey Administration

Survey	<i>df</i>	<i>t</i>	<i>p</i> ^a		<i>d</i>
Pretest	128	1.20	.117		0.30
Posttest	127	2.64	.005	**	0.54
Delayed Posttest	128	2.91	.002	**	0.62

^a Significance values for the one-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha (.05/3 = .017).

***p* < .01.

Table 7.7

Paired Samples T-Tests Examining Career Decision Self-Efficacy Scale Self-Appraisal Scores Across Survey Times for All Participants

Group	Survey Comparison	Mean Difference	<i>SD</i>	<i>df</i>	<i>t</i>	<i>p</i> ^a		<i>d</i>
All Participants	Pre vs. Post	0.12	0.64	128	2.14	.017	**	0.18
	Pre vs. Delayed Post	0.13	0.78	129	1.94	.054		0.19
	Post vs. Delayed Post	0.01	0.63	128	0.13	.901		0.01

^a Significance values for the one-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha (.05/3 = .017).

***p* < .01.

evidence of an increase in CDSE Scale self-appraisal scores over the first college semester for all participants.

In summary, analyses related to self-appraisal suggest only limited evidence of an increase in CDSE Scale self-appraisal scores over the first college semester. Evidence also indicates that, after the treatment, the treatment group expressed higher CDMSE related to self-appraisal than did the control group. The evidence for attributing this subscale change to the

treatment, although existent, is not as strong as compared with the CDSE Scale total score. When the pretest means for this subscale were considered (presented in Table 7.2), the treatment group pretest mean (3.54) was higher than the control group pretest mean (3.34), although the difference was not statistically significant. However, the gains observed for the treatment group on the posttest (mean = 3.78) and delayed posttest (mean = 3.84), although not large enough to register a statistically significant change beyond that of the control group in regard to an interaction with survey time, were large enough to yield statistically significant differences for experimental groups as a main effect.

Occupational information. The ANOVA analyses demonstrated significant main effects on the CDSE Scale occupational information scores for the experimental groups, $F(1, 127) = 9.78, p = .002$, and survey time, $F(1.89, 239.82) = 6.04, p = .003$. No interaction between experimental groups and survey time was found in the case of this subscale. Post hoc analyses demonstrated no significant differences between the treatment and control groups on the pretest survey, indicating that the experimental groups began the study expressing similar levels of CDMSE related to occupational information. However, significant differences existed for experimental groups on the posttest survey, $t(77.16) = 3.42, p = .001, d = .59$, and the delayed posttest survey, $t(128) = 3.28, p = .001, d = .69$, (see Table 7.8). In both cases, the treatment group reported higher CDMSE related to occupational information than did the control group. The Cohen's d effect size calculations showed medium differences between the groups, suggesting the presence of a substantive difference.

Table 7.9 shows changes across the main effect of survey time. Because no interaction effect was present in the ANOVA analyses, the paired samples t -test for differences across survey time was conducted for all participants (not separately for the control and treatment

Table 7.8

Comparisons of Control and Treatment Group Career Decision Self-Efficacy Scale Occupational Information Scores for Each Survey Administration

Survey	<i>df</i>	<i>t</i>	<i>p</i> ^a	<i>d</i>
Pretest	78.13 ^b	1.70	.046	0.34
Posttest	77.16 ^b	3.42	.001 **	0.59
Delayed Posttest	128	3.28	.001 **	0.69

^a Significance values for the one-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha (.05/3 = .017).

^b Levine's test indicated that the equal variances assumption was violated. An alternate *t*-test calculation was used.

***p* < .01.

Table 7.9

Paired Samples T-Tests Examining Career Decision Self-Efficacy Scale Occupational Information Scores Across Survey Times for All Participants

Group	Survey Comparison	Mean Difference	<i>SD</i>	<i>df</i>	<i>t</i>	<i>p</i> ^a	<i>d</i>
All Participants	Pre vs. Post	0.17	0.56	128	3.45	.001 **	0.27
	Pre vs. Delayed Post	0.09	0.68	129	1.45	.075	0.13
	Post vs. Delayed Post	-0.08	0.59	128	-1.62	.054	0.12

^a Significance values for the one-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha (.05/3 = .017).

***p* < .01.

groups). The main effect for survey time demonstrated a significant increase in the CDSE Scale occupational information scores across all participants between the pretest and posttest only, $t(128) = 3.45, p = .001$, but the effect size for this comparison was small ($d = 0.27$), providing only limited evidence of an increase in CDSE Scale occupational information scores over the first college semester for all participants.

In summary, analyses related to occupational information suggest only limited evidence of an increase in CDSE Scale occupational information scores over the first college semester. Evidence also indicates that, after the treatment, the treatment group expressed higher CDMSE related to occupational information than did the control group. The evidence for attributing this subscale change to the treatment, although existent, is not as strong as compared with the CDSE Scale total score. When the pretest means for this subscale were considered (presented in Table 7.2), the treatment group pretest mean (3.73) was higher than the control group pretest mean (3.53), although the difference was not statistically significant. The gains observed for the treatment group on the posttest (mean = 4.02) and delayed posttest (mean = 4.02), although not large enough to register a statistically significant change beyond that of the control group in regard to an interaction with survey time, were large enough to yield statistically significant differences for experimental groups as a main effect.

Goal selection. The ANOVA analyses demonstrated significant main effects on the CDSE Scale goal selection scores for the experimental groups, $F(1, 127) = 6.74, p = .011$, and survey time, $F(2, 254) = 18.88, p = .000$. No interaction between experimental groups and survey time was found in the case of this subscale. Post hoc analyses demonstrated no significant differences between the treatment and control groups on the pretest survey, indicating that the experimental groups began the study expressing similar levels of CDMSE related to goal selection. However, significant differences existed for experimental groups on the posttest survey, $t(127) = 2.16, p = .017, d = 0.44$, and delayed posttest survey, $t(128) = 2.77, p = .004, d = 0.61$ (see Table 7.10). In both cases, the treatment group reported higher CDMSE related to goal selection than did the control group. The Cohen's d effect size calculations show medium differences between the groups, suggesting the presence of a substantive difference.

Table 7.11 shows changes across the main effect of survey time. Because no interaction effect was present in the ANOVA analyses, the paired samples *t*-test for differences across survey time was conducted for all participants (not separately for the control and treatment groups). The main effects for survey time demonstrated significant increases in the CDSE goal selection scores across all participants between the pretest and posttest, $t(128) = 4.56, p = .000, d = 0.36$, as well as the pretest and delayed posttest, $t(129) = 5.45, p = .000, d = 0.50$, accompanied

Table 7.10

Comparisons of Control and Treatment Group Career Decision Self-Efficacy Scale Goal Selection Scores for Each Survey Administration

Survey	<i>df</i>	<i>t</i>	<i>p</i> ^a	<i>d</i>
Pretest	128	1.20	.116	0.28
Posttest	127	2.16	.017 **	0.44
Delayed Posttest	128	2.77	.004 **	0.61

^a Significance values for the one-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha (.05/3 = .017).

***p* < .01.

Table 7.11

Paired Samples T-Tests Examining Career Decision Self-Efficacy Scale Goal Selection Scores Across Survey Times for All Participants

Group	Survey Comparison	Mean Difference	<i>SD</i>	<i>df</i>	<i>t</i>	<i>p</i> ^a	<i>d</i>
All Participants	Pre vs. Post	0.28	0.70	128	4.56	.000 ***	0.36
	Pre vs. Delayed Post	0.38	0.80	129	5.45	.000 ***	0.50
	Post vs. Delayed Post	0.10	0.71	128	1.63	.053	0.15

^a Significance values for the one-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha (.05/3 = .017).

****p* < .001.

by small to medium effect sizes. No significant difference was found between the posttest and delayed posttest, indicating that increases in CDSE Scale goal selection scales were observed in the first college semester and were maintained, but were not increased, in the second college semester.

In summary, analyses related to goal setting suggest evidence of an increase in CDSE Scale goal selection scores over the first college semester, and these increases appeared to be maintained over the first college year. Evidence also indicates that, after the treatment, the treatment group expressed higher CDMSE related to goal selection than did the control group. The evidence for attributing this subscale change to the treatment, although existent, is not as strong as compared with the CDSE Scale total score. When the pretest means for this subscale were considered (presented in Table 7.2), the treatment group pretest mean (3.16) was higher than the control group pretest mean (2.96), although the difference was not statistically significant. The gains observed for the treatment group on the posttest (mean = 3.55) and delayed posttest (mean = 3.74), although not large enough to register a statistically significant change beyond that of the control group in regard to an interaction with survey time, were large enough to yield statistically significant differences for experimental groups as a main effect.

Planning. The ANOVA analyses demonstrated significant main effects on the CDSE Scale planning scores for the experimental groups, $F(1, 127) = 12.49, p = .001$, and survey time, $F(2, 254) = 7.81, p = .001$, as well as for the interaction between experimental groups and survey time, $F(2, 254) = 4.69, p = .010$. Post hoc analyses demonstrated no significant differences between the treatment and control groups on the pretest survey, indicating that the experimental groups began the study expressing similar levels of CDMSE related to planning. However, significant differences existed for experimental groups on the posttest survey, $t(127) = 2.99, p =$

.002, $d = 0.61$, and the delayed posttest survey, $t(128) = 4.12$, $p = .000$, $d = 0.84$, (see Table 7.12). In both cases, the treatment group reported higher CDMSE related to planning than did the control group. The Cohen's d effect size calculations showed medium to large differences between the groups, suggesting the presence of a substantive difference.

Table 7.13 shows changes across survey times. The main effect of survey time is presented first and demonstrates a significant increase in the CDSE Scale planning score between the pretest and posttest, $t(128) = 2.40$, $p = .009$, $d = 0.19$, as well as the pretest and delayed posttest, $t(128) = 2.51$, $p = .007$, $d = 0.20$, but the effect sizes for these comparisons were small. This result provides limited evidence of an increase in CDSE Scale planning scores during the first college semester that was maintained, but not increased, during the second college semester. However, an examination of the interaction effects (also shown in Table 7.13) provides a more nuanced understanding of these changes than offered by the main effects.

A significant increase in the CDSE Scale planning score was found for the treatment group between the pretest and posttest, $t(31) = 2.99$, $p = .003$, $d = 0.47$, as well as the pretest and delayed posttest, $t(32) = 4.23$, $p = .000$, $d = 0.65$, both of which were accompanied by medium

Table 7.12

Comparisons of Control and Treatment Group Career Decision Self-Efficacy Scale Planning Scores for Each Survey Administration

Survey	df	t	p^a		d
Pretest	128	1.30	.099		0.34
Posttest	127	2.99	.002	**	0.61
Delayed Posttest	128	4.12	.000	***	0.84

^a Significance values for the one-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha ($.05/3 = .017$).

** $p < .01$, *** $p < .001$.

Table 7.13

Paired Samples T-Tests Examining Career Decision Self-Efficacy Scale Planning Scores Across Survey Times

Group	Survey Comparison	Mean Difference	SD	df	t	p ^a	d
All Participants	Pre vs. Post	0.13	0.62	128	2.40	.009 **	0.19
	Pre vs. Delayed Post	0.15	0.68	129	2.51	.007 **	0.21
	Post vs. Delayed Post	0.01	0.56	128	0.13	.447	0.01
Control	Pre vs. Post	0.08	0.65	96	1.26	.106	0.12
	Pre vs. Delayed Post	0.04	0.67	96	0.65	.260	0.06
	Post vs. Delayed Post	-0.04	0.53	96	-0.72	.236	0.06
Treatment	Pre vs. Post	0.28	0.53	31	2.99	.003 **	0.47
	Pre vs. Delayed Post	0.46	0.63	32	4.23	.000 ***	0.65
	Post vs. Delayed Post	0.14	0.64	31	1.27	.107	0.20

^a Significance values for the one-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha ($.05/3 = .017$).

p < .01, *p < .001.

effect sizes offering compelling evidence of a substantive difference after the treatment. No significant differences were found for the treatment group between the posttest and delayed posttest, suggesting that gains observed immediately after the intervention were maintained, but did not increase, over the second college semester. Note that no significant differences in CDSE Scale planning scores were found for the control group, indicating no strong evidence of change attributable to maturation.

In summary, these analyses suggest little evidence that CDMSE related to planning increases due to maturation during the first college year. Despite the treatment and control groups beginning with similar expressions of CDMSE related to planning, the treatment group

experienced increases in CDMSE related to planning over the first college semester and maintained those increases throughout the first college year. As indicated by comparisons with the control group, the gains in CDMSE related to planning made by the treatment group can reasonably be attributed to the treatment.

Problem solving. The ANOVA analyses demonstrated significant main effects on the CDSE Scale problem solving scores for the experimental groups only, $F(1,127) = 14.83$, $P < .001$. No main effect was found for survey time, and no interaction between experimental groups and survey time was found in the case of this subscale. As shown in Table 7.14, post hoc analyses demonstrated significant differences between the treatment and control groups on all three survey administrations: (a) pretest, $t(77.19) = 3.29$, $p = .001$, $d = 0.60$; (b) posttest, $t(127) = 2.70$, $p = .004$, $d = 0.55$; and (c) delayed posttest, $t(128) = 3.62$, $p = .000$, $d = 0.78$. In all three cases, the treatment group reported higher CDMSE related to problem solving than did the control group. The Cohen's d effect size calculations showed medium to large differences between the groups, suggesting the presence of a substantive difference.

Table 7.14

Comparisons of Control and Treatment Group Career Decision Self-Efficacy Scale Problem Solving Scores for Each Survey Administration

Survey	df	t	p^a		d
Pretest	77.19 ^b	3.29	.001	***	0.60
Posttest	127	2.70	.004	**	0.55
Delayed Posttest	128	3.62	.000	***	0.78

^a Significance values for the one-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha ($.05/3 = .017$).

^b Levine's test indicated that the equal variances assumption was violated. An alternate t -test calculation was used.

** $p < .01$, *** $p < .001$.

Considering the use of random assignment to determine treatment and control group membership, the statistically significant difference with a medium effect size observed for CDSE Scale problem solving scores during the pretest is difficult to understand. Further analyses of individual CDSE Scale problem solving subscale items on the pretest demonstrated no significant difference between the treatment and control groups on any of the single items. Rather, small differences between the treatment and control groups on each of the five problem solving scale items, when combined, yielded a large enough difference to be observed as significant. The survey data alone do not clarify reasons that the treatment group expressed higher CDMSE related to problem solving, and it is admittedly troubling to consider the treatment group initially expressing greater efficacy in this area, particularly when the problem solving scale includes items such as the following (Betz & Taylor, 2001):

- Persistently work at your major or career goal even when you get frustrated.
- Identify some reasonable major or career alternatives if you are unable to get your first choice.

However, it is also important to acknowledge that no significant difference was observed in CDSE Scale problem solving scores over the first college year for either the treatment or control groups, indicating no increase in CDSE Scale problem solving scores attributable to maturation or the treatment. These findings indicate some room for concern and should be attended to when interpreting results. Yet the general contribution of differences across all scale items and the lack of change over time suggest that this difference is not expected to be detrimental to the study interpretations.

Synthesis. For the CDSE Scale total score and all subscale scores, the main effects for experimental groups were found to be statistically significant. Table 7.15 summarizes the results of statistically significant post hoc tests. In this table, significant differences between the

treatment and control groups are indicated by the alpha value of the tests and Cohen's *d* effect size. Note that the problem solving scale appeared to be problematic for this study because a statistically significant difference with a medium effect size was found between the treatment and control groups in the pretest survey, and these differences persisted through the posttest and delayed posttest surveys. On the CDSE Scale total score and all other subscales, no differences were found between the treatment and control groups on the pretest survey. Analyses of the Table 7.15

Summary of Statistically Significant Results Comparing the Treatment and Control Group on Each Survey Administration^a

Scale	Pretest	Posttest	Delayed Posttest
CDSE Scale Total Score		$p = .002$ $d = 0.63$	$p = .000$ $d = 0.79$
Self-Appraisal		$p = .005$ $d = 0.54$	$p = .002$ $d = 0.62$
Occupational Information		$p = .001$ $d = 0.59$	$p = .001$ $d = 0.69$
Goal Selection		$p = .017$ $d = 0.44$	$p = .004$ $d = 0.61$
Planning		$p = .002$ $d = 0.61$	$p = .000$ $d = 0.84$
Problem Solving	$p = .001$ $d = 0.60$	$p = .004$ $d = 0.55$	$p = .000$ $d = 0.78$

^a Alpha values and Cohen's *d* effect sizes are reported only for tests found to be significant in comparison with the Bonferroni corrected alpha ($.05/3 = .017$).

immediate posttest survey and delayed posttest data showed significant differences in the CDSE Scale total score and the majority of subscales, such that the treatment group reported higher CDMSE than the control group. In all cases of significance, medium to large differences were found with Cohen's d calculations, which ranged from 0.44 to 0.84.

Table 7.16 provides a summary of main effect comparisons for survey time. When differences between the pretest survey and posttest survey were considered, significant increases in CDMSE were observed for all participants on the CDSE Scale total score, as well as the self-appraisal, occupational information, goal selection, and planning scales. However, effect sizes for these differences were small, ranging from 0.18 to 0.36. Between the pretest and delayed posttest, statistically significant differences were observed for the planning scale (with a small effect size, $d = 0.21$) and for the goal selection scale (with a medium effect size, $d = 0.50$). When interactions were present (for the CDSE Scale total score and planning scale) between experimental groups and survey time, the treatment group experienced greater increases in CDMSE than did the control group. Treatment group increases were consistently observed to have a medium effect size, providing evidence of a substantive difference over time.

When these results were considered as a whole, there appeared to be some small gains in CDMSE over time due to maturation as indicated by findings on the self-appraisal, occupational information, goal selection, and planning subscales. No one subscale stood out as making a particularly strong contribution to increases in CDMSE due to maturation, yet enough small gains were made across the subscales to contribute to the observation of a statistically significant increase in the CDSE Scale total score with a small effect size.

The data also suggest that it is reasonable to attribute additional increases in CDMSE, beyond maturation, to the treatment. The most substantial differences were observed on the

Table 7.16

Summary of Significance Test Results for the Main Effect of Survey Time^a

Scale	Pretest to Posttest	Pretest to Delayed Posttest	Posttest to Delayed Posttest
CDSE Scale Total Score	$p = .001$ $d = 0.26$ †		
Self-Appraisal	$p = .017$ $d = 0.18$		
Occupational Information	$p = .001$ $d = 0.27$		
Goal Selection	$p = .000$ $d = 0.36$	$p = .000$ $d = 0.50$	
Planning	$p = .009$ $d = 0.19$ †	$p = .007$ $d = 0.21$ †	
Problem Solving			

^a Alpha values and Cohen's d effect sizes are reported only for tests found to be significant in comparison with the Bonferroni corrected alpha ($.05/3 = .017$).

† Significant interaction effects were also found, demonstrating significantly greater increases in career decision-making self-efficacy for the treatment group than the control group. In these cases, medium effect sizes, ranging from 0.47 to 0.66, were found for increases associated with the treatment group.

planning subscale, which includes items that address identifying opportunities, organizing goals and next steps, and gathering tools to implement choices (e.g., developing resumes, preparing for interviews). In this area, a significant interaction effect was found such that the treatment group participants expressed significantly greater increases in CDMSE over time than did control group

participants. Smaller contributions to the overall increase in CDMSE were also observed on the self-appraisal, occupational information, and goal selection subscales, all of which contributed to the significant interaction effect between experimental groups and survey time observed on the CDSE Scale total score.

This analysis provided some insights into the influence of individual career counseling on students' career choice process. It is clear from the data that individual career counseling did, in fact, enhance CDMSE beyond what might be expected due to maturation. Additionally, in this case, the data suggest that increases in CDMSE related to planning career choices were particularly substantial. An examination of these findings in light of the interview data and mixed analyses provides insights into what might have contributed to the differences observed between the two experimental groups.

Interview and Mixed Data Analyses of Change in Career Decision-Making Self-Efficacy Over Time

The statistical analyses presented above provided evidence that increases in CDMSE, particularly regarding CDMSE relating to planning, experienced by treatment group participants could be attributed to their engagement with individual career counseling early in their first college semester. Speaking simply, one outcome of participating in individual career counseling was increased CDMSE. This section seeks a deeper understanding of how individual career counseling may have contributed to increases in CDMSE by exploring what students perceived as influencing changes in how they thought about their ability to complete career choice tasks successfully. The section begins with a brief summary of data preparation and the steps taken to ensure credibility; a full discussion of this topic is presented in Chapter 3. Students' experiences are then explored in two ways: (a) by examining students' descriptions of encounters that

influenced their CDMSE, with a focus on the environments in which those salient encounters occurred; and (b) by comparing students' experiences with choosing a major and career in their first college year, based on observed patterns of changes in CDMSE over time. The goal of these analyses was to examine the processes through which individual career counseling may contribute to the outcome of increased CDMSE.

Data preparation and credibility. Interview data preparation and activities were conducted by the researcher in an iterative fashion throughout the study to ensure credibility. This section briefly reviews the general steps taken (a full discussion is available in Chapter 3), and then provides an outline of preparatory activities required for comparisons of environments influencing CDMSE and comparisons by patterns of change in CDMSE over time.

General. The three rounds of interviews (pre, immediate post, and delayed post) in this study were audio recorded and transcribed. The first round of coding transcriptions, conducted concurrently with data collection, was carried out in an emergent fashion, noting primary themes as they evolved within discussions. These emergent codes were used to write thematic narrative summaries of each interview, which were shared with participants for the purpose of member checking. Participant feedback was integrated into the summaries. A coding guide was then developed based on emergent themes and participant feedback.

At the completion of data collection, the full interview transcripts were re-coded from a holistic perspective by using the coding guide developed based on previous analyses. Concerning CDMSE, all instances of students' statements relating to a belief in their ability to engage successfully in career decision making, as well as to pursue academic or career choices, were noted.

Comparisons of environments. Coded statements were subdivided in two ways. First, divisions were made between sources of self-efficacy as suggested by the literature— affective state, vicarious learning, verbal persuasion, performance accomplishment (Bandura, 1986, 1997)—and within an “other” category for statements that indicated an influence on CDMSE that did not fit well into the established categories. Statements within the “other” category most often related to discovering new resources or career information (47.6% of the statements were coded as “other”), followed by seeing new options or a new perspective on options (23.8%); gaining insights about one’s interests, skills, or values (19.1%); and receiving invitations to get involved that increased their confidence to engage in career-related tasks (9.5%). Table 7.17 provides examples of student statements that are representative of the “other” categories.

In addition to indicating the source of self-efficacy, divisions were made by the environment in which each participant example or vignette was situated to facilitate consideration of how different environmental supports might influence CDMSE. Environmental categories emerged from the data; these included (a) classes and academics, (b) career counseling and career services, (c) Midwest University (MU) support services other than career services, (d) jobs and internships, (e) student organizations and sports, (f) volunteer experiences, and (g) general life experiences. The general life experiences category captured day-to-day interactions that did not fit other categories, such as watching a TV program, helping a friend, or experiencing a family member’s illness. To illustrate these coding divisions, consider an example from Adam, who discussed how joining a business fraternity helped solidify his intention to pursue an advertising major and increased his confidence regarding his ability to succeed in this path:

We have these meetings called mentorship for the pledges every other Sunday, and the older members, one time they gave us all different presentations of the different

fields in business. They did ones with accounting, marketing, and- since we're still freshmen we can change our minds on what we want to do. So that really helped too because I found out I'm not interested in a lot of stuff, which made advertising more appealing to me. Just eliminated a lot of choices too. So in case I definitely- that paved the way, I feel, for me being confident in what I'm doing right now.

This vignette was coded as a CDMSE experience that occurred within a student organization and illustrated an example of vicarious learning.

Table 7.17

Example Statements Representing Other Sources of Self-Efficacy

Other sub-category	Example Statement
New resources or career information	Grant, treatment group participant: It just was nice to- [the career counselor] gave me a lot of resources to check out what majors are offered and different resources to just figure out- in the future also how to get an internship and how to- I don't know. They kinda just talk to you and just told me how to figure it out and what to do when you did figure it out.
New options or new perspective on options	Beth, treatment group participant: I mean [the career counselor] actually opened up a lot of avenues I really wouldn't have thought of. Just talking with her- I thought about the international studies stuff that I had actually forgot for the longest time and some different other things I had been interested in before that I could lean into now.
New insights into interests, skills, or values	Wendy, control group participant: So I was really praying about it and thinking about my options and stuff, and I really just felt like- This may seem cheesy or whatever, but I really just felt like if I were to do accounting or advertising, either one would be good and either one I'd be fine in and be good at what I do, but for advertising, I kind of just felt like I would be happier and I could maintain a closer relationship with God, so that was a big thing for me, maintaining my relationship with God. I would overall be happier in advertising and just like my life more.
Invitations for involvement	Jennifer, treatment group participant: [The career counselor] gave me the whole opportunity to come back and get the hands-on experience with what we decided on and then I can figure out if that's what I want to do and then narrow it down even more or expand it.

Patterns of change over time. Participant groups were determined based on individuals' movement on the CDSE Scale over time, rather than the specific numerical values that they selected on the given scale. This strategy is important for two reasons. First, structuring comparison groups based on individuals' change patterns aligns appropriately with the primary focus of the study on changes in student perceptions and self-efficacy over time. Second, this approach recognizes that different participants may interpret numbers on the 5-point rating scale (ranging from *strongly disagree* to *strongly agree*) in different ways. However, it is reasonable to assume that a single person would have a similar interpretation of the rating scale from one time to another. Focusing primarily on differences in ratings for individual study participants from one time to another removed some uncertainty regarding scale interpretation.

For the CDSE Scale total score, difference values were calculated across the three permutations of surveys (posttest minus pretest, delayed posttest minus posttest, delayed posttest minus pretest) for all 130 participants. Because the earlier statistical analyses demonstrated significant differences between the treatment and control groups, the means and standard deviations of the difference values were calculated separately for the experimental groups. For the 12 treatment group interview participants who persisted in all aspects of the study (completing all three rounds of surveys and interviews), the differences in individual participants' CDSE Scale total scores were then compared with the mean and standard deviation for the treatment group as a whole. If the change in a participant's CDSE Scale total score was one or more standard deviations greater than the mean difference value for his or her appropriate group, the participant was flagged as having experienced an increase in CDMSE beyond expectations. A change in the CDSE Scale total score of one or more standard deviations below the mean difference for the group was flagged as a decrease in CDMSE beyond expectations. All

others were flagged in a category indicating no change beyond expectations. The same process was followed for the 6 control group interview participants who persisted in all aspects of the study, except that the differences in individual participants' CDSE Scale total scores were compared with the mean and standard deviation for the control group (rather than the treatment group) as a whole. Divisions into increases beyond expectations, decreases beyond expectations, and no change beyond expectations were made in the same fashion, based on standard deviations from the group mean. This process was repeated for all five subscales of the CDSE Scale.

Comparison of environments influencing career decision-making self-efficacy. Based on Lent, Brown, and Hackett's (1994) discussions of environmental influences on the career choice process, this study framed individual career counseling as an example of an environmental support that could influence students' major and career choices. One potential influence, as explored in this chapter, is an increase in CDMSE. The results of survey analyses indicated a significant increase in CDMSE for treatment group participants, beyond that expected due to maturation as demonstrated by the control group. To understand what may have contributed to the differences observed via the surveys, the interview data were examined in light of the environments that students connected with changes in their CDMSE over time. This consideration is offered in two stages. First, the environments that served as common settings in participants' reflections are considered. This is followed by an exploration of the sources of self-efficacy commonly attributed to each environment.

Environments discussed by participants. For each participant, environments discussed as places that influenced their CDMSE were tallied. For example, over Adam's three interviews, he discussed situations that influenced his CDMSE in four environments: (a) classes and academics, (b) career counseling and career services, (c) student organizations and sports, and

(d) general life experiences. This does not necessarily mean that Adam did not have experiences in the environments of jobs and internships, volunteer experiences, or MU support services other than career services. It simply indicates that the experiences Adam described as most salient to his CDMSE were situated in the four environments that he discussed. Table 7.18 provides the percentage of participants framing experiences related to CDMSE in each environment.

Several of the environment categories were discussed with similar frequency between the treatment and control groups. Classes and academics, as well as general life experiences, were mentioned by all participants. Participants' vignettes indicated experiences that could either increase or decrease CDMSE. For example, Denise, a member of the treatment group, spoke of enthusiasm for her advertising class, which led her to apply to the major:

I'm pretty set on advertising, yeah. I think I'm actually gonna do it because we've had homework assignments that are both- that involve more of a business side and a

Table 7.18

Environments the Participants Attributed to Influences on their Career Decision-Making Self-Efficacy

Environment	Percentage of Participants		
	Treatment	Control	All Participants
Classes and academics	100.0	100.0	100.0
Career counseling and career services	100.0	11.1	66.7
Midwest University support services, other than career services	73.3	88.9	79.2
Student organizations and sports	40.0	33.3	37.5
Jobs and internships	33.3	44.4	37.5
Volunteer experiences	20.0	33.3	25.0
General life experiences	100.0	100.0	100.0

creative side One of our homework assignments actually due this Friday is a creative brief. So we have to make an ad. I think doing an advertising major would be the best for me I think pretty much just definitely the class [helped me make a decision on a major].

Finding success in being accepted to the advertising major, further boosted Denise's confidence in her ability to choose a career path successfully and persist within it:

Getting the advertising major definitely boosted my confidence. I'm like, "Okay, well, I did that, so I think I'll be able to do the business minor if I just keep up the good work. I think I'll be okay." Yeah, it definitely gave me confidence Now I feel like I'm on track and in gear.

On the other hand, Will, a member of the control group, described how a lack of connection with college classes led to a roller coaster of emotions related to his academic and career choices:

I kinda go through phases I get excited about something and then I kind of- it disappoints me. Like history, I was really interested in history and I took a history class here [at MU], and it was that I didn't have the "ah-ha" moment. I didn't fall in love with it. Not that I didn't like it, but I didn't love it.

And it was the same thing with Speech and Human Sciences, it was in Kinesiology; same thing there. I get my hopes up and then a little bit disappointed when I experience it. So I was pretty depressed about this, a week ago actually. But I met with my advisor and she told me about a brand new major hot off the presses that I haven't quite looked into yet because I've had a really busy week, but I didn't look into a little bit. It's called integrative health . . .

It really got me excited again, so you know a hopeful state once again. Hopefully, I won't be disappointed again, but I'm gonna look into that and next year try to see if I like it, and if I don't, that's a problem.

Will worried that he was running out of time to find the "ah-ha moment" in classes that would signal that he was on the right career path. He expressed hesitation regarding his ability to make career choices for which he could be reasonably confident of a successful outcome: "I might just have to pick something and run with it, and hope life turns out okay."

Although not often discussed, volunteer experiences (20.0% of the treatment group, 33.3% of the control group), jobs and internships (33.3% of the treatment group, 44.4% of the

control group), and student organizations and sports (40.0% of the treatment group, 33.3% of the control group) were mentioned with similar frequency between the experimental groups. In these vignettes, all the experiences discussed related to increases in CDMSE. For example, Kari, a treatment group participant, described her experiences as a student aid in a gym class for kids with special needs:

That was really fun, kind of tough, but fun You have to work with [each kid] differently. Sometimes they won't wanna do things, and you have to figure out a way to get them involved. You have to work around what they can do, like abilities, and you have to learn how each and every one of them, how their personality is because you just have to cater to their needs in a way

When they do something, they just get so excited about it. And that's another thing in kinesiology, you work through hard times with [clients] because of like injuries and stuff, and just to see that accomplishment and their progress, it's just nice.

She connects this volunteer experience to her career aspirations in kinesiology, recognizing her appreciation of the required work and potential rewards of this career path.

The greatest disparity between the frequency with which treatment and control group participants mentioned influential environments fell in the categories of career counseling and career services (100% of the treatment group, 11.1% of the control group) and MU support services other than career services (73.3% of the treatment group, 88.9% of the control group). Finding that all the treatment group participants discussed career counseling is not surprising, because the study introduced them to this environment and they were prompted to discuss their experiences within the interviews. However, it is notable that (a) only one control group participant sought and discussed career counseling, even though the services were openly available to all MU students, and (b) the vast majority of treatment group participants discussed their career counseling experiences in relation to increases in CDMSE. For example, Jacob

discussed how his individual career counseling experiences helped keep him “on the right track” to make progress toward a career in architecture:

They helped lead me really quickly so I didn’t go the whole first semester not knowing what to do. It helped me, bringing me in the right direction, and now I think I’m definitely there.

By the end of his first college year, Jacob had applied to the architecture program and reported feeling “comfortable” with his chances of being accepted. A single treatment group participant, Gina, discussed emerging from her individual career counseling experiences with less confidence in her ability to make successful career choices. Her career counseling experiences were brief and were primarily focused on information delivery:

Maybe about 15 minutes I’d say . . . I was in and out. I got the sheet with the pre-med stuff, and then a little- explain here, “Most people go into bio and have a chem minor,” and stuff like that. That’s what most pre-med students do. I got the basics.

Although Gina initially described this information as helpful, by the end of her second college semester, she came to express a sense of being overwhelmed and uncertain about how to apply the information to her own choices: “I don’t know, I have a lot of information, but it doesn’t seem to soak in. I’m aware of it, but I don’t know what to do with it. I don’t know what I’m supposed to do with it.” Congruent with these remarks, a decrease in Gina’s expressed CDMSE was observed on the surveys.

Control group members were also asked directly about experiences with career counseling when they indicated on their surveys that they had used the career center. Susan was the only control group interview participant to indicate using career services in her first college year. She attended a workshop related to exploring majors, and discussed benefiting from the resources that she discovered within that experience.

Interview participants from the control group discussed MU support services other than career services more often than did interview participants from the treatment group. The support services discussed most often related to academic advising (40.0% of the treatment group, 66.7% of the control group) and the required university 101 class (26.7% of the treatment group, 55.6% of the control group). For example, Yvonne, an interview participant from the control group, discussed how meeting with her academic advisor late in her second college semester helped her overcome feelings of frustration and disconnection from her options of academic majors:

I felt like [my academic advisor] could really relate to what I was looking for in a class or major and everything. I was telling her how I thought that I wanted to do something in sociology or psychology, but most of the classes were more research-based, if you wanted to go into the research field. I'm like, "I'm not really feeling that." She's like, "Oh, okay. Well, we have this major." Oh, man. What is it called? It's like human development something

So she started describing to me what it would be more about, and it really sounded like more of a major, because I wanted to do stuff more with one-on-one contact, and not research, but more hands-on, personal interactions and stuff. So I feel like I'm probably gonna lean towards that now

I'm glad that I finally went, and that I finally talked to her, and stuff, because or else I would've picked a major that I wasn't really totally comfortable with So, I'm feeling a little bit more comfortable, and more excited to be here. Not that I wasn't excited to be here, because I was, but I feel like now I have more a direction that I wanna go in, whether taking classes, and figuring out, I feel like now I know what I want to do, or attempt to do, you know? So now I feel like I can move forward, instead of being static.

Yvonne's sense of confidence in her ability to "move forward" and her enthusiasm for pursuing a defined academic field increased considerably as a result of her experiences with her academic advisor. Beyond services and classes offered by academic advisors, a few participants mentioned experiences with departmental advisors and information sessions (20.0% of the treatment group, 11.1% of the control group), academic major information fairs (6.7% of the treatment group,

11.1% of the control group), and peer advisors from diversity programs (6.7% of the treatment group, 11.1% of the control group).

Sources of self-efficacy commonly attributed to environments. Table 7.19 shows the breakdown of sources of self-efficacy identified in participants' statements relating to CDMSE. Sources of self-efficacy are presented for each environment identified, so that similarities and differences may be examined.

The two environmental categories mentioned by all participants had very different patterns of association with sources of self-efficacy. Classes and academics were primarily related to performance accomplishment (91.7%), followed by affective state (79.2%), such that many participants mentioned both how well they did in classes and the emotions that they

Table 7.19

Sources of Self-Efficacy Present when Environments were Discussed by Participants^a

Environment	Source of Self-Efficacy				
	Affective State	Verbal Persuasion	Vicarious Learning	Performance Accomplishment	Other
Classes or academics	79.2	12.5	16.7	91.7	4.2
Career counseling	25.0	43.8	12.5	68.8	68.8
Midwest University support services, other than career services	15.8	52.6	0.0	5.3	68.4
Student organizations or sports	11.1	11.1	44.4	77.8	33.3
Jobs or internships	44.4	0.0	55.6	100.0	0.0
Service or volunteer experiences	50.0	0.0	0.0	83.3	0.0
General life experiences	45.8	41.7	66.7	58.3	20.8

^a Note that rows are not intended to total 100%. Examples provided by participants could indicate multiple sources of self-efficacy (e.g., both affective state and performance accomplishment when positive emotions were associated with successful completion of a task).

experienced in relation to their performance. Self-efficacy source attributions for general life experiences, however, displayed considerable variety, including vicarious learning (66.7%), performance accomplishment (58.3%), affective state (45.8%), and verbal persuasion (41.7%).

Although the environments of volunteer experiences, jobs and internships, and student organizations and sports were discussed infrequently, mention of them often related to performance accomplishment (83.3%, 100%, and 77.8%, respectively). Vicarious learning also emerged frequently for jobs and internships (55.6%) and student organizations and sports (44.4%), whereas affective state emerged frequently for jobs and internships (44.4%) and service and volunteer experiences (50.0%). Verbal persuasion was very rarely associated with these environments.

Career counseling and MU support services other than career services, the two environments with a notable disparity between treatment and control group participants in how frequently they were discussed, also demonstrated a notable difference in associated sources of self-efficacy. For both environmental categories, attributions to the “other” category of self-efficacy sources were found in more than two-thirds of participants’ CDMSE-related statements. These environments emerged as intensively focused on resource and information-giving, as well as on expanding participants’ thinking about options and possibilities. Verbal persuasion was evident in approximately half (43.8% for career counseling and career services; 52.6% for MU support services other than career services) of participants’ statements related to CDMSE. The self-efficacy sources of affective state and vicarious learning were less prevalent.

The largest notable difference between the environments of career counseling and career services versus MU support services other than career services emerged in the area of performance accomplishment- 68.8% of statements related to career counseling and career

services, as compared with 5.3% of statements related to MU support services other than career services. Treatment group participants took active, hands-on steps to put their major and career decision-making skills to the test, often based on the career intervention designated in this study. These participants often emerged more confident in their ability to make choices in the present, as well as to plan for next steps in the future. For example, Denise discussed enhancing her resume as part of her career counseling experiences. She appreciated the opportunity to “not only [to see] everything that I’ve done, but just realizing that there’s still a lot more that I can do, and how to build a resume.” Actively working on her resume with a career counselor helped her understand the difference between a high school resume and a college resume, and helped her plan the types of activities that she would like to add to her resume over the next few years. Denise expressed increased confidence in her ability to create a high-quality resume: “now I have something good that when I turn it in I can feel confident when I hand it over, instead of ‘I hope this is good enough.’”

This is not to say that support services other than career services could not lead participants to have increased confidence, as many did. For example, Yvonne found that meeting with an academic advisor late in her second college semester helped her discover new options for academic majors that left her feeling “a little bit more comfortable, and more excited to be [at MU] I just feel like I can move forward, instead of just being kinda like a static thing.” However, there was an intriguing difference in the use of performance accomplishment activities in career counseling, which carried through into participants’ reflections on their career counseling experiences and progress on the choice of a major.

Synthesis. When the treatment and control groups were compared, environments influencing CDMSE were discussed with similar frequency, with the exception of: (a) career

counseling and career services, which was discussed more frequently by the treatment group, and (b) MU support services other than career services, which were discussed more frequently by the control group. The most striking difference between these two environments emerged when considering the sources of self-efficacy often attributed to the environments. Participants were much more likely to reflect on performance accomplishment tasks associated with career counseling and career services, as compared with MU support services other than career services. Noting that performance accomplishment has been theorized to be the most powerful source of self-efficacy because of its basis in authentic, hands-on experiences (Bandura, 1986, 1997), this environmental characteristic emerged as a possible contributor to the observed differences in CDMSE changes over time between the experimental groups.

Comparisons by patterns of changes in CDMSE over time. This section of the analysis explores trends within interview discussions that may offer insights into factors influencing the observed changes (or the lack of changes) in CDMSE over time. Five categories of change patterns emerged from analyzing changes in the CDSE Scale total and sub-scale scores over time, from the pretest at the beginning of participants' first college semester, to the posttest at the end of participants' first college semester, to the delayed posttest late in participants' second college semester. The five change patterns included (a) a consistent increase in CDMSE; (b) an initial increase in CDMSE that was not maintained in the delayed posttest; (c) an initial decrease in CDMSE, followed by an increase; (d) no change over time; and (e) only decreases in CDMSE. Figure 7.1 provides a visual representation of these groups based on CDSE Scale total scores. Table 7.20 provides information regarding patterns of change on CDSE Scale total and sub-scale scores. Note that for most participants, although two (66.7%) or three (16.7%) different patterns of change were observed in subscale scores on the CDSE Scale, the pattern of change in

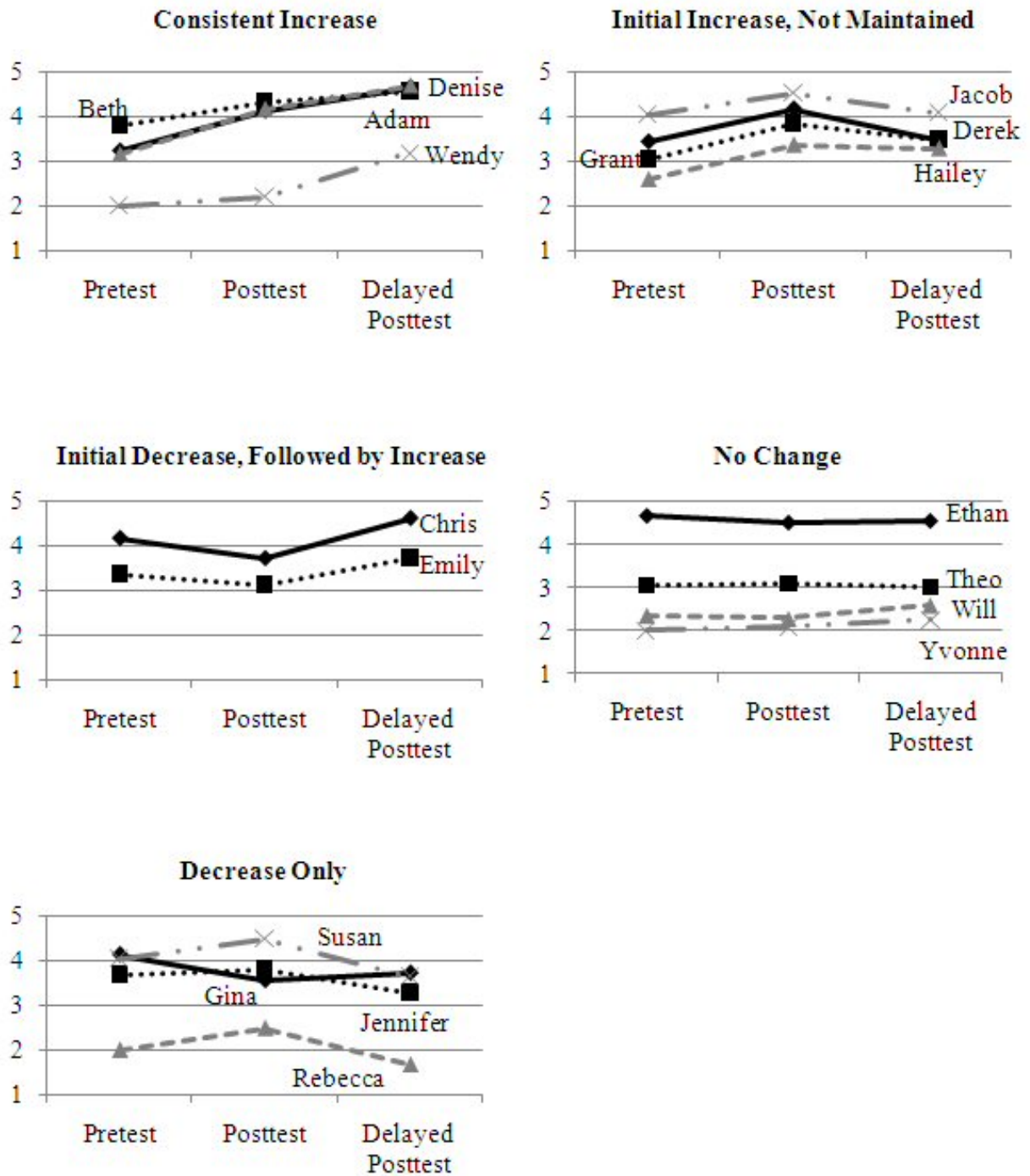


Figure 7.1. Changes in career decision-making self-efficacy total scores over time.

the CDSE total score almost always followed the same pattern as the majority of subscale scores on the CDSE Scale. Therefore, to facilitate clarity in the presentation of data, this discussion

Table 7.20

Number of Career Decision Self-Efficacy Scale sub-scale scores following each pattern of change over time

Participant	Pattern of Change in Subscale Scores Over Time				
	Consistent Increase	Initial Increase, not Maintained	Initial Decrease, Followed by Increase	No Change	Decrease Only
Treatment Group					
Adam	5 ^a	--	--	--	--
Beth	2 ^a	--	--	3	--
Chris	1	--	4 ^a	--	--
Denise	5 ^a	--	--	--	--
Derek	--	3 ^a	--	2	--
Emily	--	--	3 ^a	2	--
Ethan	--	--	--	3 ^a	2
Gina	--	--	1	1	3 ^a
Grant	--	3 ^a	--	2	--
Hailey	--	3 ^a	--	2	--
Jacob	--	2 ^a	--	1	2
Jennifer	--	--	--	2	3 ^a
Control Group					
Rebecca	--	1	--	1	3 ^a
Susan	--	--	--	1	4 ^a
Theo	--	--	--	5 ^a	--
Wendy	3 ^a	--	1	1	--
Will	1	--	--	4 ^a	--
Yvonne	--	--	1	4 ^a	--

^a Indicates change patterns observed in participants' CDSE Scale total score.

focuses on participant groupings as determined by the CDSE Scale total score. Each of the five categories of participants is addressed, followed by a synthesis of key ideas.

Consistent increase. For three treatment group participants (Adam, Beth, Denise) and one control group participant (Wendy), consistent increases were observed in CDSE Scale total scores over time. Across their interviews, there was a consistent theme of finding a connection with an environmental influence on the MU campus that helped them overcome or reinterpret past anxieties. These participants not only began to see new possibilities for their academic majors and careers, but they also took active steps to get involved in opportunities that were directly related to their academic and career goals. This active involvement served as a testing ground for potential future successes by giving them concrete information that influenced their belief in their ability to make satisfying and successful career choices.

For example, during his immediate post-interview at the end of his first college semester, Adam reported “no longer feeling nervous or pressured” to make the “right choice” or find the “perfect major.” He felt “a lot more confident” and “reassured” because he had developed a new perspective on his academic options. Adam acknowledged that many potential majors could lead to desirable and satisfying career paths: “I feel like all of those options that I was thinking about before would be fine for me if I go into it.” Adam primarily attributed this change in perspective to his individual career counseling experiences. Contrary to his prior concerns about being unprepared for individual career counseling, Adam expressed surprise at his ability to articulate his career interests and ideas clearly: “I already had a good idea of what I was gonna do; [the career counselor] didn’t have to do that much. I made it pretty easy on her It was really easy because I had such good ideas.” Additionally, he felt reassured by the career counselor’s reflections of his progress in decision making:

She basically told me that I was in a real good position compared to a lot of people who still aren't sure. And she basically gave me confidence, and I know what I'm doing now. I have my options. I know what I want to get into. I know what classes I need to take. So since I have that under my belt, she was like I'm going in a good direction.

Elements of self-efficacy-enhancing performance accomplishment and verbal persuasion related to career decision making were evident in Adam's reflections.

In his delayed post-interview, Adam reported selecting an academic major and feeling confident about his current plans. He attributed his decision and confidence to two sources on the MU campus, beginning with his individual career counseling experiences, and then moving to involvement in an academically related student organization. Adam was encouraged by his career counselor to become involved in student organizations related to his academic and career interests, and he chose to follow through on this recommendation: "that's why I went out and checked out the business frats." His academic fraternity involvement then provided a direct link to further career development assistance, ranging from resume writing, to interview preparation and experience, to networking events with employers, to experience with advertising club events. Adam reflected that this organization helps its members "become really professional really fast," and it was helping him to overcome future hurdles that would have worried him previously (e.g., being accepted to the business college to pursue a minor).

Likewise, Beth and Denise described experiences with career counseling that led to an initial increase in confidence regarding their career decision-making abilities, followed by deeper involvement in academic and career-related endeavors on campus. In her immediate post-interview, Beth expressed an increased sense of fluidity in the way she considered her academic and career options. She let go of her "inherent fear of failure" and expressed that "the worst-case scenario is I get in [to a major] this year and it sucks so I switch out and it's not that big a deal."

She found that her individual career counseling experiences “actually opened up a lot of avenues I really wouldn’t have thought of,” and helped her make new connections between her options and personal strengths. Near the end of her first year, Beth shared that she had selected a major in communications, had become “severely involved” in student organizations that helped her develop skills related to her academic major (e.g., her resident hall’s judicial commission), and continued to use career services for help with resume development and internship searches. Denise, in her immediate post-interview, communicated an increased sense of clarity regarding her goals (“pretty set on advertising” as an academic major), as well as increased confidence in her ability to navigate future decisions. She attributed these changes to experiences in an introductory advertising class and her interactions with career counseling. Within career counseling, refining her resume led to insights into past successes and areas for improvement, whereas reassurance from the career counselor (“He thinks I’m pretty much on track As a freshman I’m doing pretty well.”) eased Denise’s past worries and self-doubt. At the end of her second college semester, Denise described how her academic successes and an invitation to join a campus honors society “boosted [her] confidence”: “now I feel like I’m on track and in gear for the degree.” Through her involvement in the honors society, Denise heard about the activities and accomplishments of junior and senior students and began to visualize herself taking on similar leadership roles.

Wendy, the sole control group participant in this category, exhibited a similar pattern of connections with environmental supports and personal involvement in academically related activities on campus. Wendy’s pre-interview was filled with strong language describing her indecisiveness when it came to academic and career choices (e.g., really torn, regret, wrong thing, stuck, afraid, ruin my life). However, in the immediate post-interview at the end of her

first semester, Wendy reported that her worry about making “bad decisions,” although still present, was “not as intense.” She had discovered a way to be “more chill . . . [and] peaceful” as she considered her future. She attributed this new-found calm to deepening her religious life (via a the religiously affiliated residence hall that she was living in), connecting with an academic advisor who “encouraged me and [gave] good advice,” and getting involved in student leadership positions in her residence hall, a pattern that is quite similar to those of the other participants in this category of CDSE Scale change patterns.

Initial increase, not maintained. For four treatment group participants (Derek, Grant, Hailey, Jacob), initial increases were observed in CDSE Scale total scores during their first college semester. However, their CDSE Scale total scores did not continue to increase during their second semester and, in two cases (Derek and Jacob), the CDSE Scale total scores decreased beyond expectations, falling back to their original values.

During their immediate post-interviews at the end of the first college semester, all these participants connected their initial increases in CDMSE with their individual career counseling experiences. Performance in classes (Derek, Hailey), independent research and reflection on options (Grant, Hailey), and advisors in academic departments (Derek, Jacob) were also connected to increases in CDMSE. For example, Grant reported feeling “more directed now that I’ve gone through the career counseling appointments and done some research on my own.” His efforts led to considering a new set of academic majors (economics and communications, rather than aviation, communications, and recreation, sport, and tourism), as well as an increased sense of confidence for making major and career choices. He stated, “I don’t feel too worried anymore. I still really wanna find my major and really wanna just get into it, but I don’t feel anxious about anything. So I feel good.”

However, within their second college semester, this group of participants experienced periods of waiting (Jacob, Derek) or regrouping (Grant, Hailey) that may have influenced their stymied increases in CDMSE. Jacob and Derek had both followed the advice of departmental academic advisors and applied to academic majors (architecture and urban planning, respectively). At the time of the delayed post-interview, they were in a “holding period,” awaiting a response regarding their applications. Jacob expressed uncertainty regarding his next steps for career exploration and decision making; he said that he was simply “waiting now for them to tell me if I am in or not.” He felt that the process was currently beyond his influence: “I have done everything I could. I went to the career center and they told me, I went to the actual architecture advisors and they have told me, and I asked all my questions so I guess it’s time.” Likewise, Derek expressed that he was “just waiting to see how the admission goes from the transfer, and if everything goes well, we’ll see what the next step is from there.” Both Jacob and Derek expected to receive a response from the academic departments over the summer. That decision would then influence their next steps. For example, Derek expected that he would want to “be figuring out different opportunities [he] can do while still in college” by visiting the career center, browsing through websites, and looking for volunteer or work opportunities. Yet he did not intend to take any of these actions before hearing the decision on his application from the urban planning department.

Grant and Hailey had considerably different experiences. Rather than applying to a major, they found themselves drawn to making significant shifts in their academic major interests during their second college semester. Grant’s change stemmed from struggles with his economics and communications classes. He was “not really loving [the classes] that much,” and as frustration set in, his motivation to commit to classes dwindled:

School was starting to seem like kind of why am I here- you know what I mean? Am I just here to be here because that's what the next thing after high school is? So it was getting a little bit kind of pointless.

Then halfway through the semester, Grant did “a 180 with [his] major.” He began talking with kinesiology majors about their classes and career goals: “They’re going to go off and become a physical therapist and athletic trainers and whatnot, and that really sparked my interest.” Despite a personal sense of surprise (“Kinesiology is all about science. It’s really science-based. I never would have thought that I would be into these science classes I’m going to have to take.”), Grant felt good about this new direction and began working with his academic advisor to make the necessary changes to his sophomore year class selections. Hailey also made a major shift in her thinking about academic directions. She reflected that “over this year, I learned not exactly what I want to do, but what I don’t want to do.” She made a clear distinction between the “the topics that I really did like” and “the ones I thought maybe I should like or should go into.” Hailey placed her thoughts of going to medical school squarely in the “should” category: “I always thought being a doctor would be fulfilling and stuff, and it is, but the more- I just remember doing the science classes. I don’t love the science enough to be happy.” Coming to this conclusion, Hailey found that she no longer needed to attempt to balance a psychology major with a pre-med curriculum, a prospect that previously left her feeling “overwhelmed.” She enthusiastically looked forward to her future choices, saying, “something clicked this semester, and I got really excited . . . It’s like, this is my goal.” Like Grant, Hailey was in the process of meeting with her academic advisors to outline a new plan for her sophomore year classes.

Initial decrease, followed by increase. For two treatment group participants (Chris, Emily), initial decreases were observed in CDSE Scale total scores during their first college semester, followed by increases in CDSE Scale total scores during their second college semester.

Both of these participants happened to be interested in applying to majors in the business college. They came to their decisions on a major quickly in their first college semester, deciding against alternatives such as engineering and economics. Recognizing little need to focus on academic major choices, their career counseling experiences quickly moved on to other activities such as learning about career opportunities, developing resumes, searching for internships, and building networks. Although initially daunting at times, Chris and Emily both took immediate steps to follow through and engage in these tasks, and they made measureable progress by the end of their first college year. The challenge of recognizing and tackling new career development tasks may have contributed to the initial decrease in CDSE Scale total scores. Moreover, the persistence of Chris and Emily and their eventual success with those tasks (e.g., both found career-related summer internships) may have contributed to the observed rebound in CDMSE.

For example, as a result of attending a career center workshop, Emily found herself overwhelmed by the number and variety of resources that she encountered: “I was shocked by those web sites because I never expected so many websites; they come with so many jobs and so many open positions, and their requirements are really high.” She lamented that there was “too much information” and that “time is not enough” to balance career exploration with her academic coursework. At the end of her first college semester, Emily also expressed frustration regarding her search for a summer internship. She described barriers for international students seeking employment in the United States, as well as struggles being in competition with upper class students: “no one is gonna hire a freshman year student.” Despite these struggles, Emily demonstrated tenacity and persistence in her search for opportunities, eventually landing two summer internships in her hometown in China.

No change. For one treatment group participant (Ethan) and three control group participants (Theo, Will, Yvonne), no changes were observed over time in CDSE Scale total scores. Across their interviews, two consistent themes emerged. First, these participants chose not to seek external assistance in exploring academic majors and careers beyond classes and personal reflection. Second, they often discussed a passive approach to exploration, taking things “day by day” and expecting that solutions would present themselves with time.

Many different reasons contributed to these participants’ preference to explore options alone. Theo hesitated to talk to academic or departmental advisors until after he could complete math and science “foundation courses” (e.g., linear algebra, introductory chemistry): “I figured I should see- do well in these classes that I have right now and then apply . . . just to make myself more, I guess, appealing to them.” He wanted to be a “stronger candidate” before making connections to the next steps. Yvonne considered seeking assistance from a variety of sources (e.g., academic advisors, career counselors, residence hall advisors, or peers) about her choice of an academic major. However, she chose not to pursue these avenues (“not as well as I should have or would have liked to”) because she felt unprepared to articulate her own questions and needs:

The thing is you go to an advisor, they expect you to have questions. Well, I’m not sure of those questions yet. I have a vague idea of where I want to go, in what direction I want to go, but I don’t – I haven’t really pinpointed exactly what I need to ask. So they’ll be like, “Well, why are you here?” I’m like, “Well, I don’t know. Can you just advise me?” And they’ll be like, “Well, I don’t know what to advise you about.” So, I don’t know, just like whatever.

Therefore, Yvonne planned to “just kind of go through my classes, see if I like them” as a strategy for testing out potential majors. Ethan, despite having had two individual career counseling appointments during his first college semester, steered the conversations in those sessions away from the choice of an academic major, choosing instead to focus on distant future

choices, such as strategies for internship and full-time job searches. Ethan took this approach because he felt that choosing a major is “sort of up to me . . . there’s not much somebody could do besides telling me what to do. And I don’t really want to have somebody tell me what to do.” Likewise, Will shared that he felt “very much on my own, in a sense” in regard to making his major and career choices. He expressed doubt about academic advising as a source of assistance:

Something about the advisor that worries me is they don’t personally know me, you know what I mean? . . . So, I couldn’t just go there and be like, what are classes that are going to fit for me personally, because she doesn’t know me personally.

On the other hand, Will was also hesitant to look for assistance from the friends and family members who do know him personally:

I’m trying to avoid opinions of friends and family because they’re not me. I don’t really want to be influenced in the wrong direction

I think the opinion of family and friends, although they mean well, can be biased because they do want the very best. You know, my mother is very like, go make a lot of money because that’s going to be a good life. Oh, yeah we need money to live. But I don’t particularly associate being rich with I’ll be happy. And their own experiences kind of play into that. If I have a friend who hates history but loves Spanish, and I hate Spanish and love history, you know his opinion might not be most what’s right for me.

Will viewed his experiences in classes as the best source of valid information for his academic and career choices.

In addition to participants expressing various reasons for not pursuing assistance with major and career choices, this group of participants made several comments that suggested they preferred a passive approach to exploration and decision making. For example, Yvonne described how she hesitated to create plans for the future to avoid being disappointed if those plans did not come to fruition:

I kind of take it day by day. I don’t really plan so far ahead. I’m just like whatever comes, comes because the thing is I got to have a whole plan and then just like that it’s just ruined. So I don’t like to go too far in the future and think about all that stuff

because too much could happen.

In Theo's delayed post-interview at the end of his first college year, he described himself as a "kind of calm and laid-back" person, and attributed his lack of involvement with advising and other environmental supports to "laziness." Will also expressed a laid-back approach to involvement and problem solving, yet related his approach to a tendency to avoid uncomfortable situations: "I don't really deal with problems until I have to. It's just kinda who I am. That's not good for picking a career at all, but oh well." Of course, a passive approach to exploring major and career options did not necessarily mean a lack of anxiety about the choice process. For example, Will expressed concerns that "at this rate, I'll probably just swing and miss at the very end here. Pick something and run with it." However, he held onto the hope that "things have a way of working out in the end. At least, they always have so far."

Of note, Will and Yvonne sought assistance from their academic advisors late in their second college semester. For both, these meetings resulted in discovering new potential academic majors that left them feeling "hopeful" and "excited" about their options. However, these academic advising experiences occurred too late in the semester to have influenced their survey responses or for the researcher to examine any lasting changes that may have occurred from their eventual use of environmental supports offered by MU.

Decrease only. For two treatment group participants (Gina, Jennifer) and two control group participants (Rebecca, Susan), only decreases in CDSE Scale total scores beyond expectations were observed over time. Consistent themes were difficult to determine across the interviews of these four participants. A mixture of experiences seemed to contribute to the observed decreases in CDMSE, including: (a) barriers or stumbling blocks encountered along the

way, (b) little involvement outside classes in relation to major and career choices, and (c) some lackluster experiences with support services at MU.

In Gina's immediate post-interview, she described her transition to college as "overwhelming" and "a wake-up call." She "bombed" her first college chemistry midterm, and attributed her performance to not adjusting her study habits from high school. Gina "was so confident in high school" regarding her science courses, and she thought college would be similar, that she could "sit back, listen, and soak it up." This was "obviously not" the case; college Chemistry is "taught differently . . . applied differently . . . a lot more complex" than in high school. Gina felt that she had learned the material, but she also developed "a little bit of a test anxiety issue" for this subject only, her preferred major. She openly wondered, "What did I do wrong?" This barrier of poor performance in classes held Gina back from becoming involved outside the classroom. She expressed interest in participating in medically-oriented student organizations, as well as volunteering and shadowing professionals at local hospitals. Yet she did not want these activities to distract her from her academic work and remained "primarily focused on getting [her] grades up." In regard to her reaching out to support services, Gina participated in individual career counseling and sought academic advising, with both activities focused on gathering information on her future options. By the end of her first college year, Gina lamented her struggle to make sense of how all the information fit her personally: "I don't know, I have a lot of information, but it doesn't seem to soak in. I'm aware of it, but I don't know what to do with it. I don't know what I'm supposed to do with it." She felt pressure to decide between her interests in chemistry and biology because the course requirements had begun to diverge and she needed to select a path to follow. She desired to select chemistry but felt impeded by doubts about her ability to succeed in this major.

As discussed in Chapter 6, Jennifer reported having an energizing individual career counseling experience, which took her from feeling “all over the place” regarding potential majors to one specific goal of social work. With the help of her career counselor, Jennifer “came up with a plan” that included “a major in psychology and a minor in religious studies or sociology. And then go get an MSW for social work.” However, sharp and unexpected disapproval from significant others left Jennifer cycling back into a place of confusion. She did not know how to reconcile her interests with the feedback she had received, and therefore became stymied by a barrier of indecision. Jennifer closed down her major and career exploration activities in favor of “focusing on finishing the semester.” By the end of her first college year, Jennifer was back to juggling a wide variety of potential directions, possibly considering a triple major to avoid closing any doors. She reported a sense of being removed from the process: “I’m not sure how I feel about it right now.” She was going through the motions to get everything accomplished, “crossing stuff off my list for what I need” to get the requirements “out of the way,” and not finding time for endeavors outside the classroom. When Jennifer sought assistance from academic advisors on the MU campus, she would leave frustrated and disappointed. She felt that her academic advisor “wasn’t actually really listening to anything I was saying.” She shared that classes were recommended primarily based on “what other people thought were easy” and the academic advisor “didn’t really ask [about her] interests.” These experiences left Jennifer feeling confused about her options and on her own to sort out her choices.

Rebecca’s and Susan’s interview stories, on the other hand, were a bit puzzling. Although they did experience small bumps in the road, their struggles were not as all-encompassing as those experienced by Gina and Jennifer. Rebecca and Susan both came to decisions on academic

majors within their first college year (environmental sciences and nursing, respectively) and planned to apply to the major early in their sophomore year. Rebecca attributed her choice to involvement in a federal work-study research position that gave her hands-on experience in the laboratory and the field. Susan attributed her choice to classes and interactions with her academic advisor. Both showed some interest in student organizations related to their academic interests and attended one or two meetings. Yet they did not maintain involvement throughout their first college year. From here, their stories diverge.

Throughout her first college year, Rebecca continued to gain confidence and momentum to pursue an academic major in environmental sciences, primarily spurred by her bio fuel research experiences. Despite Rebecca's enthusiasm for this direction, she observed that it was "kind of a risk" because the major was "pretty new" on campus, having been offered for fewer than 5 years. She wanted to talk to departmental advisors to learn "where they see it's going . . . where do they see people in this major ending up?" Rebecca acknowledged that some uncertainty was "always up here in my mind, but I feel like this is just something I have to- I have to do something. I cannot just keep waiting and then stay in college my whole life." Therefore, she "suppressed" her hesitation: "I mean I am trying to trust- It's like an instinct that that's what I want to do but I will have to trust it." When Rebecca was asked about her next steps, she replied, "I'm not really sure. I don't know." She hoped that meeting with representatives from the academic department would "give me some advice about what I can do to make myself more rounded for that type of area, or what I can do to find out more or who else I can talk to." Until she could meet with departmental representatives, she was left simply hoping that "all will pan out how I want it to." It is possible that this uncertainty regarding where the environmental sciences major might lead, as well as what may be appropriate next steps for her

to take, influenced the observed decrease in Rebecca's CDMSE, particularly because the largest decreases in her scores were observed on the subscales of goal setting, planning, and problem solving. Rebecca might have felt a dip in confidence about moving on to the next set of career decisions.

Susan wavered in her resolve to pursue nursing during much of her second college semester. She recalled,

I actually had a rough time before in December I thought I was still kind of confused but I totally figured that I was going toward nursing and then lately, [in early April], I met with my counselor and I was so confused again.

She attributed this confusion to her "many interests," such as wanting to pursue a career in criminal forensics. Yet in the morning before Susan's last interview for this study, she met with her academic advisor again and "just decided on nursing." She thought that criminal forensics "didn't seem really realistic." She felt that her hesitations might have been related to concerns about "choosing something and then regretting it." She felt that she could second-guess her decisions forever, yet she decided instead, "I'm sticking to nursing now." Susan completed the delayed posttest survey during this time of wavering resolve. This may account for the observed decrease in CDMSE, which no longer seemed congruent with her story.

Synthesis. The picture that emerged from analysis of these interviews suggests that environmental supports played a pivotal role in participants' changing CDMSE during their first college year. Additionally, environmental supports may have facilitated increases in CDMSE (e.g., as in the cases of Adam, Beth, Denise, and Wendy) or decreases in CDMSE (e.g., as in the cases of Gina and Jennifer), depending on how they were delivered by the environmental source and received by the students.

These findings also suggest a reciprocal relationship between college students and the environmental support services that are designed to assist them. Although supports may be available to open the doors to assistance and opportunities, the readiness of college students to engage those supports plays a considerable role in influencing the outcomes derived from engagement. For environmental supports to make a difference, students need to be willing to ask for help, which means inviting another person into their academic and career choice process. Ethan and Will exemplified students who were hesitant to seek help and experienced little to no change in CDMSE during their first college year. Knowing where to go for help and what questions to ask also plays an important role. Yvonne exemplified of a student who hesitated to seek help because she did not know what to ask. The willingness of students to actively engage in major and career exploration tasks, whether in the form of seeking advice or becoming involved in academic- or career-related activities outside the classroom, contributed to changes in their CDMSE over time. Students who experienced the greatest increases in CDMSE during their first college year both (a) engaged environmental supports, and (b) became involved in academic- or career-related activities outside the classroom (e.g., Adam, Beth, Denise, Wendy). Those students who engaged environmental supports but then waited to take next steps or to get involved outside the classroom, experienced plateaus in their CDMSE over their first college year (e.g., Derek, Jacob). Passive day-by-day approaches to decision making and a lack of involvement in academic or career-related activities outside the classroom appear to be related to little or no change in CDMSE over time (e.g., Will, Yvonne).

It is also worth noting that wavering increases and decreases in CDMSE are to be expected as students take on new tasks related to career decision making. As demonstrated most aptly by Chris and Emily, new tasks may initially spur dissonance and anxieties that cause

CDMSE to decrease for a time. Yet given support, time, and persistence, students can make progress on those tasks, leading their CDMSE to increase once again. This finding encourages caution on the part of researchers who are interpreting changes in numerical values on surveys such as the CDSE Scale, particularly when data are collected over a short time period which does not allow time for development and progress to be observed.

Chapter Summary: Reflecting on Changes in Career Decision-Making Self-Efficacy

Two research questions guided the inquiries in this chapter:

- Do students who participate in career counseling experience greater increase in CDMSE than expected due to maturation, as demonstrated by the control group?
- What influences do students perceive career counseling to have on their CDMSE?

This summary presents insights gained from students' perceptions and interpretations derived from interviews, as well as changes observed on the CDSE Scale.

Career counseling participation leads to increased career decision-making self-efficacy. As indicated via analyses of the survey data, students who participated in individual career counseling early in their first college year experienced an increase in CDMSE beyond that expected due to maturation. The increase was most notable between the pretest and immediate posttest and was maintained over time, as demonstrated by the delayed posttest. The increases in CDMSE were observed despite the fact that participants did not come from a natural client population, given that their participation was solicited as part of this research study.

Readiness to seek out and engage environmental supports plays a role. Although students who participated in career counseling primarily due to the external motivator of this research study made some gains in CDMSE during their first college year, a considerable difference was seen based on students' willingness to seek assistance and become involved in academic- or career-related activities. Students appeared to make consistent CDMSE gains when

they were willing to ask for help, knew where to go for assistance, knew what questions to ask to begin a conversation, and followed-through by engaging environmental supports and asking for help. Those students who were hesitant to ask for help, were content to take a passive approach to decision making, or chose not to get involved in academic- or career-related activities outside the classroom often experienced no change in CDMSE over time.

Active, hands-on involvement in exploration tasks contributes to gains in career decision-making self-efficacy. In Bandura's (1977, 1986, 1997) self-efficacy scholarship, he acknowledged performance accomplishment activities as the most powerful source of self-efficacy. Performance accomplishment activities refer to the active enactment of a particular task, which is then perceived as a successful experience (increasing self-efficacy) or an unsuccessful experience (decreasing self-efficacy). Within the current study, active, hands-on involvement with tasks related to choosing an academic major and career emerged as particularly influential in facilitating students' decision making and increasing their CDMSE. For example, a striking difference emerged between control and treatment group participants in discussions of environments that they perceived as influential to changes in their CDMSE. All treatment group participants discussed individual career counseling experiences, often associating them with performance accomplishment activities. Control group participants, on the other hand, focused on MU support services other than career services more often than did treatment group participants, and performance accomplishment activities were rarely part of those discussions. This difference in environmental experiences emerged as a possible contributor to the observed differences in CDMSE changes over time between the experimental groups. Additionally, students who experienced the greatest increases in CDMSE during their first college year not only engaged environmental supports, but also continued to participate in academic- or career-

related activities outside the classroom, which offered consistent opportunities to undertake and evaluate performance accomplishment activities.

The complexity of observing changes in career decision-making self-efficacy requires time and multiple data collection methods. Beliefs in one's ability to make effective career choices may cycles through increases and decreases over time in response to the decision-making tasks or pressures that one faces. The dissonance created as new challenges are encountered may translate into a decrease in CDMSE. That dissonance may also present important opportunities for growth and development. Successfully overcoming challenges may lead, once again, to increases in CDMSE. However, time and support are required for such development to occur, and each person may require a different amount of time or different types of supports to progress through difficult situations.

Environmental supports can play a role in this process. At times, environmental supports help create dissonance when they present new challenges for students to address (e.g., the overwhelming number of website resources that Emily encountered). At other times, environmental supports may help ease the stresses associated with new challenges (e.g., Denise being told by her career counselor that she is "on track").

The variable time associated with developmental changes in CDMSE and the various roles that environmental supports, such as career counseling, can play, create considerable complexity for researchers to consider when observing changes in CDMSE over time. Survey measurements immediately following an intervention may not adequately represent the true influence of that environmental support. Additionally, interviews may lead to a complex set of information that is difficult to distill. As demonstrated by the research conducted here, when possible, mixed methods data collection over an extended period of time offers a more complete

assessment of students' experiences and the influence of an intervention than short-term or single-method data collection would allow.

Chapter 8

Changes in Perceptions of Career Barriers

This chapter addresses the study question regarding the relationship between career counseling and changes in the perceived likelihood of encountering career barriers, asking whether students who participate in individual career counseling experience a greater change in the magnitude of perceived career barriers than expected due to maturation, as demonstrated by the control group. Additionally, students' reflections on career barriers are explored, with a focus on factors that influence changes in perceptions of career barriers over time. Evidence from both the survey data and interviews is explored.

The chapter begins with an examination of changes in perceptions of career barriers as observed on the Career Barriers Inventory-Revised (CBI-R; Swanson, 1995a). The literature has rarely examined changes in perceptions of career barriers as an outcome of career counseling interventions (see McWhirter, Rasheed, & Crothers, 2000), making this analysis an important contribution of the current study. Challenges with data collection and mixed data analyses are then discussed, and complexities inherent in studies of career barriers are highlighted. Analyses of interviews are then presented to explore the process by which participants changed their perceptions of career barriers, as well as the roles that environmental supports played in that process. The chapter concludes by summarizing primary themes from all the data analyses.

Statistical Analyses of Career Barriers Inventory-Revised Scores Over Time

Instrument background. The CBI-R (Swanson, 1995a) is designed to measure the barriers that individuals' perceive to their academic and career goals. These barriers are conceptualized as the "events or conditions, either within the person or in his or her environment, that make career progress difficult" (Swanson & Woitke, 1997, p. 446). This study used 7 of the

original 13 CBI-R scales. See Table 8.1 for the scales included and the corresponding number of items for each scale. Respondents are asked to indicate how likely they are to encounter each barrier presented. A 7-point scale is provided for each item, with possible responses ranging from 1 (*not likely at all*) to 7 (*extremely likely*).

Reliability. Reliability of the CBI-R instrument and subscales was examined by calculating Cronbach's alphas for each of three rounds of survey administration. Table 8.1 shows results for this respondent group, as compared with those in the related literature. In this study, the full instrument returned alphas ranging from .94 to .96 for each administration, whereas the subscales returned alphas ranging from .51 to .89, with a median value of .81. The subscale entitled "disapproval by significant others" left some room for concern regarding the reliability of the scale only from administration of the pretest survey, with a Cronbach's alpha of .51 (Vogt, 2005). All other subscale and total score alphas for the three survey administrations were similar to those reported by Swanson, Daniels, and Tokar (1996) and provided reasonable evidence of scale reliability.

Statistical analyses. One-way ANOVA with repeated measures were first conducted to determine whether statistically significant differences existed for (a) experimental groups (treatment and control), and (b) survey times (pretest, posttest, and delayed posttest), as well as (c) to identify interactions between experimental groups and survey time. The Greenhouse-Geisser correction was applied when violations of sphericity were detected. Significant differences were further explored via simple effects analyses calculated with *t*-tests using a Bonferroni adjusted significance level ($.05/3 = .017$) to account for spurious findings resulting from multiple comparisons (Girden, 1992). The post hoc analyses were conducted two-tailed and the level of significance was set at .05. Finally, Cohen's *d* effect sizes were calculated to evaluate

Table 8.1

Cronbach's Alphas for Each Administration of the Career Barriers Inventory-Revised (CBI-R)

CBI-R Scale	Number of Items	Cronbach's Alpha			
		Reported by Swanson, Daniels, and Tokar (1996)	Pretest	Posttest	Delayed Posttest
Decision-making difficulties	8	.83	.88	.89	.88
Difficulties with networking or socialization	5	.64	.71	.80	.84
Disapproval by significant others	3	.64	.51	.72	.79
Dissatisfaction with career	5	.79	.79	.81	.81
Inadequate preparation	5	.85	.82	.81	.87
Job market constraints	4	.68	.82	.85	.87
Lack of confidence	4	.77	.75	.78	.82
Total	34	not provided	.94	.96	.96

the size of observed differences. Determinations of small, medium, and large effects were made based on Cohen's (1988) conventional definitions.

Findings. Table 8.2 provides a summary of sample sizes, means, and standard deviations related to perceived career barriers. To determine the effects of the career development intervention on perceived career barriers, 2 (experimental groups) \times 3 (survey time) ANOVA analyses with repeated measures were conducted. The results of these analyses are provided in Table 8.3. Note that significant main effects and interactions were found for the CBI-R total score and three of the seven subscale scores, namely, decision making difficulties, difficulties with networking or socialization, and inadequate preparation. Interpretation of these significant

Table 8.2

Sample Sizes, Means, and Standard Deviations for Career Barriers Inventory-Revised (CBI-R) Total and Subscale Scores

Scale	Pretest			Posttest			Delayed Posttest		
	<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
<i>CBI-R Total Score</i>									
All Participants	130	3.53	0.87	130	3.50	0.99	128	3.30	0.97
Treatment	33	3.49	0.85	33	3.17	0.98	33	3.11	0.90
Control	97	3.56	0.87	97	3.61	0.97	95	3.36	0.98
<i>Decision Making Difficulties</i>									
All Participants	130	4.48	1.16	130	4.18	1.22	128	3.82	1.18
Treatment	33	4.43	1.21	33	3.78	1.29	33	3.57	1.19
Control	97	4.52	1.15	97	4.33	1.17	95	3.91	1.17
<i>Difficulties with Networking or Socialization</i>									
All Participants	130	3.52	0.99	130	3.61	1.17	128	3.39	1.16
Treatment	33	3.55	0.99	33	3.25	1.12	33	3.28	1.18
Control	97	3.53	1.00	97	3.74	1.17	95	3.43	1.16
<i>Disapproval by Significant Others</i>									
All Participants	130	1.87	0.91	130	1.91	1.03	128	1.86	1.03
Treatment	33	2.05	0.83	33	2.07	1.11	33	1.84	0.97
Control	97	1.81	0.94	97	1.86	1.01	95	1.96	1.06
<i>Dissatisfaction with Career</i>									
All Participants	130	3.72	1.11	130	3.69	1.13	128	3.47	1.10
Treatment	33	3.53	0.87	33	3.41	1.14	33	3.38	0.98
Control	97	3.81	1.17	97	3.77	1.11	95	3.50	1.14
<i>Inadequate Preparation</i>									
All Participants	130	3.11	1.12	130	3.12	1.13	128	3.03	1.16
Treatment	33	3.11	0.98	33	2.67	0.96	33	2.72	0.96
Control	97	3.14	1.16	97	3.27	1.16	95	3.14	1.21
<i>Job Market Constraints</i>									
All Participants	130	3.70	1.18	130	3.76	1.31	128	3.63	1.25
Treatment	33	3.67	1.15	33	3.38	1.28	33	3.52	1.18
Control	97	3.72	1.20	97	3.87	1.31	95	3.66	1.28
<i>Lack of Confidence</i>									
All Participants	130	3.00	1.26	130	3.14	1.29	128	3.01	1.24
Treatment	33	2.89	1.17	33	2.75	1.02	33	2.65	1.06
Control	97	3.06	1.29	97	3.26	1.36	95	3.14	1.28

Table 8.3

ANOVA Analyses of Career Barriers Inventory-Revised (CBI-R) Total and Subscale Scores

Variable	Source	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	
CBI-R Total Score	Between Subjects						
	Experimental Groups	4.78	1	4.78	2.28	.134	
	Error	264.55	126	2.10			
	Within Subjects						
	Survey Time	4.18	2	2.09	7.86	.000	***
	Survey Time × Experimental Groups	1.71	2	0.85	3.21	.042	*
	Error	67.01	252	0.27			
Decision Making Difficulties	Between Subjects						
	Experimental Groups	7.75	1	7.75	2.45	.120	
	Error	399.26	126	3.17			
	Within Subjects						
	Survey Time	26.71	2	13.36	26.18	.000	***
	Survey Time × Experimental Groups	2.55	2	1.28	2.50	.084	
	Error	128.55	252	0.51			
Difficulties with Networking or Socialization	Between Subjects						
	Experimental Groups	3.07	1	3.07	1.10	.297	
	Error	352.93	126	2.80			
	Within Subjects						
	Survey Time	1.80	2	0.90	2.00	.138	
	Survey Time × Experimental Groups	3.49	2	1.74	3.87	.022	*
	Error	113.69	252	0.45			
Disapproval by Significant Others	Between Subjects						
	Experimental Groups	1.46	1	1.46	0.67	.413	
	Error	273.74	126	2.17			
	Within Subjects						
	Survey Time	0.70	2	0.35	0.86	.425	
	Survey Time × Experimental Groups	1.03	2	0.51	1.26	.287	
	Error	102.90	252	0.41			
Dissatisfaction with Career	Between Subjects						
	Experimental Groups	4.71	1	4.71	1.77	.186	
	Error	335.29	126	2.66			
	Within Subjects						
	Survey Time	2.77	2	1.39	2.72	.068	
	Survey Time × Experimental Groups	0.69	2	0.35	0.68	.507	
	Error	128.12	252	0.51			

(continued)

Table 8.3 (continued)

Variable	Source	SS	df	MS	F	p
Inadequate Preparation	Between Subjects					
	Experimental Groups	8.95	1	8.95	3.00	.085
	Error	375.19	126	2.98		
	Within Subjects					
	Survey Time	2.09	2	1.04	2.94	.085
	Survey Time \times Experimental Groups	4.19	2	2.09	5.01	.007 **
	Error	105.38	252	0.42		
Job Market Constraints	Between Subjects					
	Experimental Groups	3.80	1	3.80	1.13	.290
	Error	423.09	126	3.36		
	Within Subjects					
	Survey Time	0.58	2	0.29	0.43	.651
	Survey Time \times Experimental Groups	2.66	2	1.33	1.99	.139
	Error	168.41	252	0.67		
Lack of Confidence	Between Subjects					
	Experimental Groups	11.024	1	11.02	2.82	.096
	Error	92.90	126	3.91		
	Within Subjects					
	Survey Time	0.67	2	0.34	0.83	.438
	Survey Time \times Experimental Groups	1.88	2	0.94	2.31	.101
	Error	102.56	252	0.41		

* $p < .05$, ** $p < .01$, *** $p < .001$.

findings and post hoc analyses are discussed in the following subsections. The four subscales for which ANOVA analyses did not demonstrate main or interaction effects (i.e., disapproval by significant others, dissatisfaction with career, job market constraints, lack of confidence) did not require further analyses and are therefore omitted from the following discussion.

CBI-R total score. The ANOVA analyses demonstrated a significant main effect on the CBI-R total score for survey time, $F(2, 252) = 7.86$, $p = .000$, as well as for the interaction between experimental groups and survey time, $F(2, 252) = 3.21$, $p = .042$. No significant main effect was found for experimental groups for the CBI-R total score. Table 8.4 shows changes across survey times. The main effect of survey time is presented first and demonstrates significant decreases in the perceived likelihood of encountering career barriers across all

participants (a) between the pretest survey and delayed posttest survey, $t(127) = -3.90, p = .000, d = 0.27$; and (b) between the posttest survey and delayed posttest survey, $t(127) = -2.88, p = .005, d = 0.20$. The effect sizes were small in both cases, however. This provided limited evidence of a decrease in perceived career barriers over the second college semester. Examination of the interaction effects provided a more nuanced understanding of these changes than offered by the main effects alone.

A significant decrease in the CBI-R total score was found for the treatment group between the pretest and posttest, $t(32) = -2.95, p = .006, d = 0.36$, as well as the pretest and delayed posttest, $t(32) = -3.24, p = .003, d = 0.45$, both of which were accompanied by small to

Table 8.4

Paired Samples T-Tests Examining Career Barriers Inventory-Revised Total Scores Across Survey Times

Group	Survey Comparison	Mean Difference	SD	df	t	p ^a		d
All Participants	Pre vs. Post	-0.03	0.72	129	-0.49	.623		0.03
	Pre vs. Delayed Post	-0.25	0.71	127	-3.90	.000	***	0.27
	Post vs. Delayed Post	-0.20	0.78	127	-2.88	.005	**	0.20
Control	Pre vs. Post	0.07	0.72	96	0.93	.353		0.05
	Pre vs. Delayed Post	-0.20	0.72	94	-2.67	.009	**	0.21
	Post vs. Delayed Post	-0.25	0.81	94	-2.96	.004	**	0.25
Treatment	Pre vs. Post	-0.32	0.63	32	-2.95	.006	**	0.36
	Pre vs. Delayed Post	-0.39	0.69	32	-3.24	.003	**	0.45
	Post vs. Delayed Post	-0.06	0.68	32	-0.53	.600		0.07

^a Significance values for the two-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha (.05/3 = .017).

p < .01, *p < .001.

medium effect sizes, offering evidence of a substantive difference in perceptions of career barriers after the treatment. No significant differences were found for the treatment group between the posttest and delayed posttest, suggesting that gains observed immediately after the intervention were maintained, but did not change, over the second college semester.

A significant decrease in the CBI-R total score was found for the control group between the pretest and delayed posttest, $t(94) = -2.67, p = .009, d = 0.21$, as well as between the posttest and delayed posttest, $t(94) = -2.96, p = .004, d = 0.25$; however, the effect sizes were considerably smaller for the control group as compared with the treatment group. Also note that no significant differences between the pretest and posttest were found for the control group, suggesting that decreases in perceptions of career barriers occurred during the second college semester, rather than the first college semester, as was the case for the treatment group.

In summary, these analyses suggest that some decreases in the CBI-R total score occurred during the second college semester due to maturation. However, the treatment group experienced decreases in perceived career barriers during the first college semester. Significant differences in perceived barriers were not found between the treatment and control groups on any single survey administration (no main effect for experimental groups), suggesting that the experimental groups began and ended with similar perceptions regarding the likelihood of encountering career barriers. However, it seems, based on the interaction effects analysis, that participants in the treatment group experienced decreases in perceived career barriers earlier in their first college year than did control group participants, and those earlier decreases could be reasonably attributed to the treatment.

Decision-making difficulties. The ANOVA analyses demonstrated a significant main effect on the CBI-R decision-making difficulties subscale for the survey time, $F(2, 252) = 26.18$,

$p = .000$. No significant main effect was found for experimental groups, and no interaction between experimental groups and survey time was found in the case of this subscale.

Table 8.5 shows changes across the main effect of survey time. Because no interaction effect was present in the ANOVA analyses, the paired samples t -test for differences across survey times was conducted for all participants (not separately for the control and treatment groups). The main effect of survey time showed a significant decrease in the CBI-R decision-making difficulties subscale across all participants between all survey administrations: (a) pretest and posttest, $t(129) = -3.43$, $p = .001$, $d = 0.25$; (b) posttest and delayed posttest, $t(127) = -3.83$, $p = .000$, $d = 0.31$; and (c) pretest and the delayed posttest, $t(127) = -7.91$, $p = .000$, $d = 0.58$. These tests were accompanied by small to medium effect sizes offering evidence of a substantive and steady decrease in perceptions of career barriers related to decision-making difficulties over the first college year, most likely due to maturation.

Difficulties with networking or socialization. The ANOVA analyses demonstrated no significant main effects on the CBI-R difficulties with networking or socialization subscale for Table 8.5

Paired Samples T-Tests Examining Career Barriers Inventory-Revised Decision Making Difficulty Scores Across Survey Times for All Participants

Group	Survey Comparison	Mean Difference	SD	df	t	p^a	d
All Participants	Pre vs. Post	-0.30	0.98	129	-3.43	.001 **	0.25
	Pre vs. Delayed Post	-0.68	0.97	127	-7.91	.000 ***	0.58
	Post vs. Delayed Post	-0.37	1.09	127	-3.83	.000 ***	0.31

^a Significance values for the two-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha ($.05/3 = .017$).

** $p < .01$, *** $p < .001$.

the experimental groups or survey time. However, an interaction was found between experimental groups and survey time, $F(2, 252) = 3.87, p = .022$.

As shown in Table 8.6, post hoc analyses related to the treatment group revealed a significant decrease in the perceived likelihood of encountering career barriers related to difficulties with networking or socialization between the pretest and the posttest, $t(32) = -2.39, p = .023, d = 0.29$; however, the effect size for this comparison was small. This offers limited evidence that the treatment group experienced a decrease in this type of career barrier during their first college semester.

For the control group, a significant increase in the perceived likelihood of encountering career barriers related to difficulties with networking or socialization was found over the first college semester, between the pretest and posttest, $t(96) = 2.50, p = .014, d = 0.20$. Over the

Table 8.6

Paired Samples T-Tests Examining Career Barriers Inventory-Revised Difficulties with Networking and Socialization Scores Across Survey Times

Group	Survey Comparison	Mean Difference	SD	df	t	p ^a		d
Control	Pre vs. Post	0.23	0.90	96	2.50	.014	*	0.20
	Pre vs. Delayed Post	-0.10	0.99	94	-0.98	.332		0.09
	Post vs. Delayed Post	-.032	1.04	94	-2.95	.004	**	0.27
Treatment	Pre vs. Post	-0.31	0.74	32	-2.39	.023	*	0.29
	Pre vs. Delayed Post	-0.27	1.02	32	-1.51	.140		0.25
	Post vs. Delayed Post	0.04	0.74	32	0.29	.772		0.03

^a Significance values for the two-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha ($.05/3 = .017$).

* $p < .05$, ** $p < .01$.

second college semester, a significant decrease was found between the posttest and delayed posttest, $t(94) = -2.95, p = .004, d = 0.27$. No significant differences were found between the pretest and the delayed posttest, suggesting that the average subscale scores of control group participants returned to their baseline values. Note that the effect size for each of these observed changes was small.

In summary, these analyses suggest some limited evidence of changes in perceptions of the likelihood of encountering career barriers related to difficulties with networking or socialization over the first college year that were attributable to maturation. This was demonstrated by the initial increase in perceptions of career barriers for the control group during the first college semester, followed by a decrease during the second college semester. The treatment group participants, on the other hand, experienced changes that were different from this maturation pattern. They experienced decreases in career barriers related to this scale during their first college semester, which were maintained without change during their second college semester. It is reasonable to assume that these different patterns of change in perceptions of career barriers perceptions were due to the treatment.

Inadequate preparation. The ANOVA analyses demonstrated no significant main effects on the CBI-R inadequate preparation subscale for the experimental groups or survey time. However, an interaction was found between experimental groups and survey time, $F(2, 252) = 5.01, p = .007$.

As shown in Table 8.7, post hoc analyses related to the treatment group revealed a significant decrease in the perceived likelihood of encountering career barriers related to inadequate preparation between the pretest and posttest only, $t(32) = -2.95, p = .006, d = 0.46$, accompanied by a medium effect size. In comparison, no changes were found for the control

Table 8.7

Paired Samples T-Tests Examining Inadequate Preparation Scores Across Survey Times

Group	Survey Comparison	Mean Difference	SD	df	t	p ^a	d
Control	Pre vs. Post	0.15	0.93	96	1.63	.108	0.11
	Pre vs. Delayed Post	0.00	0.91	94	0.03	.977	0.00
	Post vs. Delayed Post	-0.13	1.00	94	-1.27	.208	0.11
Treatment	Pre vs. Post	-0.44	0.85	32	-2.95	.006 **	0.46
	Pre vs. Delayed Post	-0.40	0.93	32	-2.44	.020	0.41
	Post vs. Delayed Post	0.04	0.73	32	0.33	.741	0.04

^a Significance values of the two-tailed test are presented. Significance is indicated only for tests found to be significant in comparison with the Bonferroni corrected alpha ($.05/3 = .017$).

**p < .01.

group over time, suggesting that changes were not due to maturation. Rather, it seems reasonable that for the treatment groups, the first college semester decrease in perceptions of career barriers related to inadequate preparation may have been due to the treatment.

Synthesis. In comparison with the changes observed in career decision-making self-efficacy examined in Chapter 7, considerably fewer changes in perceptions of the likelihood of encountering career barriers were observed throughout the study. There is limited evidence that students' perceptions of barriers generally decreased over the course of the first college year due to maturation, as demonstrated by the main effects for survey time on the CBI-R total scores between the pretest and delayed posttest ($p = .000$, $d = 0.27$), as well as between the posttest and delayed posttest ($p = .005$, $d = 0.20$). The most compelling changes over this time were in the area of perceived likelihood of encountering barriers related to decision-making difficulties. For this subscale, across all participants, consistent decreases in perceived barriers were observed

throughout the year as comparisons were made between the pretest and posttest ($p = .001$, $d = 0.25$), the posttest and delayed posttest ($p = .000$, $d = 0.31$), and particularly, the pretest and the delayed posttest ($p = .000$, $d = 0.58$).

Notably, there is some evidence that the treatment group experienced a decrease in perceived career barriers earlier in the academic year than did control group students. The significant differences in total perceived barriers for the treatment group were observed between the pretest and posttest ($p = .006$, $d = 0.36$), and those changes were maintained over the second college semester, as indicated by the pretest and delayed posttest comparisons ($p = .003$, $d = 0.45$). For the treatment group, the subscale of inadequate preparation stood out as a prominent area of decreased perceived barriers between the pretest and posttest ($p = .006$, $d = 0.46$). Although the control group exhibited a general decrease in perceived barriers over time as indicated by the CBI-R total score between the pretest and delayed posttest ($p = .009$, $d = 0.21$) and between the posttest and delayed posttest ($p = .004$, $d = 0.25$), no single subscale on the instrument offered compelling evidence of a focus area for this overall decrease.

Caution is encouraged in interpreting these findings, considering the scarcity of significant results and number of small effect sizes for the results that are statistically significant. However, considering the exploratory nature of the inquiry regarding the influence that a career development intervention may have on an individual's perception of barriers, these findings signal a need for closer study.

Interview and Mixed Data Analyses of Changes in Perceived Career Barriers Over Time

The statistical analyses presented above provided some evidence that treatment group participants experienced decreases in the perceived likelihood of encountering career barriers earlier in their first college year than did control group students. This is a potential outcome of

participating in individual career counseling. This section seeks a deeper understanding of the influences that contributed to changes in career barrier perceptions over time. The section begins with a brief summary of data preparation and steps taken to ensure credibility; a full discussion of this topic is presented in Chapter 3. Challenges encountered with mixed data analyses are then discussed, and complexities encountered in studies of career barriers are highlighted. Finally, analyses of interview data explore what participants saw as the primary contributors to changes in perceptions of career barriers to their progress in choosing an academic major and career. When appropriate, these explorations focus on the influences of environmental supports.

Data preparation and credibility. Interview data preparation and activities were conducted by the researcher in an iterative fashion throughout the study to ensure credibility. This section briefly reviews the general steps taken (a full discussion is available in Chapter 3), and then provides an outline of the preparatory activities completed in an effort to compare students' perceptions of career barriers according to patterns of changes in their CBI-R results over time.

General. The three rounds of interviews (pre, immediate-post, and delayed-post) in this study were audio recorded and transcribed. The first round of coding transcriptions, conducted concurrently with data collection, was carried out in an emergent fashion, noting primary themes as they evolved within discussions. These emergent codes were used to write thematic narrative summaries of each interview, which were shared with participants for the purpose of member checking. Participant feedback was integrated into the summaries. A coding guide was then developed based on emergent themes and participant feedback.

At the completion of data collection, the full interview transcripts were re-coded from a holistic perspective by using the coding guide developed in previous analyses. Concerning

perceived career barriers, all instances of participants' statements relating to factors that could hinder their ability to make or carry out academic and career choices were noted.

Patterns of change over time. Efforts were made to determine categories of participants based on individuals' movement on the CBI-R scales over time. Change over time was the focus of analysis, rather than the specific numerical values that participants selected on the given scale, for two reasons. First, structuring comparison groups based on individuals' change patterns appropriately aligns with the primary focus of the study, namely, changes in students' perceptions of career barriers over time. Second, this approach recognizes that different participants may interpret numbers on the 7-point, likelihood rating scale (ranging from *not likely at all*, to *extremely likely* to encounter each barrier) of perceived barriers in different ways. However, it is reasonable to assume that a single person would use a similar interpretation of the rating scale from one time to another. Focusing primarily on differences in ratings for individual study participants from one time to another removed some uncertainty regarding scale interpretation.

For the CBI-R total score, difference values were calculated across the three permutations of surveys (posttest minus pretest, delayed posttest minus posttest, delayed posttest minus pretest) for all 130 participants. Because the earlier statistical analyses demonstrated some significant differences regarding interactions between experimental groups and survey time, the means and standard deviations of the difference values were calculated separately for the experimental groups. For the 12 treatment group interview participants who persisted in all aspects of the study (completing all three rounds of surveys and interviews), the differences in individual participants' CBI-R total scores were compared with the mean and standard deviation for the treatment group as a whole. If the change in a participants' CBI-R total score

was one or more standard deviations greater than the mean difference value for their appropriate group, they were flagged as having experienced an increase in overall perceived career barriers beyond expectations. A change in the CBI-R total score of one or more standard deviations below the mean difference for the group was flagged as a decrease in overall perceived career barriers beyond expectations. All others were flagged in a category indicating no change beyond expectations. The same process was followed for the 6 control group interview participants who persisted in all aspects of the study, except that the differences in individual participants' CBI-R total scores were compared with the mean and standard deviation for the control group (rather than the treatment group) as a whole. Divisions into increases beyond expectations, decreases beyond expectations, and no change beyond expectations were made in the same fashion, based on standard deviations from the control group mean. This process was repeated for all seven CBI-R subscales.

Mixed data analysis challenges. Efforts were made to explore trends within interview discussions that might offer insights into factors influencing the observed changes (or the lack of change) in CBI-R scores over time. Five categories of patterns emerged from analyses of changes in CBI-R total and subscale scores over time: (a) a consistent decrease in perceptions of barriers; (b) an initial decrease in perceptions of barriers that was not maintained in the delayed posttest; (c) an initial increase in perceptions of barriers, followed by a decrease; (d) no change over time; and (e) increases only in perceptions of barriers observed.

Table 8.8 provides information regarding patterns of change on the CBI-R total and subscale scores. An examination of these data, as well as basic comparisons made between the survey and interview data, highlighted a number of challenges for the mixed data analyses. Two such challenges are discussed here: (a) the difficulty of establishing distinct groupings of

Table 8.8

Number of Career Barriers Inventory-Revised subscale scores following each pattern of change over time^a

Participant	Patterns of Change in Subscale Scores Over Time				
	Consistent Decrease	Initial Decrease, Not Maintained	Initial Increase, Followed by Decrease	No Change	Increase Only
Treatment Group					
Adam	3 ^a	1	--	3	--
Beth	1 ^a	--	3	3	--
Chris	2 ^a	--	2	3	--
Denise	2 ^a	--	2	3	--
Derek	--	--	3 ^a	2	2
Emily	5 ^a	1	--	1	--
Ethan	--	--	--	7 ^a	--
Gina	--	1	--	4 ^a	2
Grant	2	--	--	4 ^a	1
Hailey	4	1	--	1 ^a	1
Jacob	--	1	--	4	2 ^a
Jennifer	--	1	--	2	4 ^a
Control Group					
Rebecca	1 ^a	2	1	3	--
Susan	--	2	--	3 ^a	2
Theo	--	--	--	5	2 ^a
Wendy	3 ^a	--	2	2	--
Will	--	1	--	6 ^a	--
Yvonne	1	--	--	6 ^a	--

^a Indicates change patterns observed in participants' CBI-R total score.

participants based on changes in perceptions of barriers over time, and (b) the considerable difference in the breadth and depth of data collected by surveys versus interviews.

Categorization of participants by survey responses. A review of Table 8.8 reveals several areas of concern regarding establishing categories of participants based on the patterns of change in CBI-R scores that were observed over time. Across the seven subscales, the majority of participants (77.8%) exhibited three or more (out of five possible) change patterns. Additionally, for 38.9% of the participants, a mismatch was observed between the change pattern associated with the CBI-R total score and the change pattern that fit the majority of their CBI-R subscale scores (i.e., Beth, Chris, Denise, Hailey, Jacob, Rebecca, Theo). As a result, it was untenable to assume that creating groups of participants based on the CBI-R total score would provide a reasonable approximation of students' changing perceptions of barriers. The CBI-R total score masked changes that occurred on the subscale scores, leading to an inadequate representation. Moreover, creating groups of participants based on CBI-R subscale scores was equally problematic, because each subscale led to different combinations of participants. With both survey and interview data available from only 18 participants, there was not enough common ground to defend the selection of any single set of participant groups.

Difference in the scope of data between surveys and interviews. The CBI-R instrument used in this study, with 34 items divided among seven barrier subscales, consistently provided participants with a wide variety of career barriers to consider briefly. The interviews, on the other hand, allowed discussion of possible career barriers to emerge and to be explored from the participants' points of view. Some prompts regarding possible perceived career barriers were included on the interview guides, such as (a) direct questions regarding any barriers mentioned in the write-in portion of the surveys, (b) a list of social and cultural identity dimensions that might

influence academic and career choices, and (c) follow-up questions regarding perceived barriers mentioned in previous interviews (see Appendix B for interview guides). These two strategies for exploring barriers (responses to a pre-determined list on a survey vs. self-directed generation of ideas in semi-structured interviews) generally resulted in participants sharing different insights. Within each interview, participants discussed between zero and nine barriers, with an average of four barriers discussed during a single interview. On two occasions, participants reflected that they could not think of barriers that might influence their academic and career choices or progress:

- Ethan, treatment group participant, pre-interview:

Well, I'm motivated, but I need to push myself. Not that I've ever had problems pushing myself to do something . . . not lose sight of where I want to be. I guess it's pretty much. Nothing's stopping me from transferring. So nothing's in my way.

- Grant, treatment group participant, post-interview:

If anything, I've seen them disappear. I've seen that I can do it and I just need to figure out if I want to and just- I feel like, if anything, barriers are disappearing.

In other cases, participants delved deeply into discussions of perceived career barriers, as well as the source and nature of those barriers. For example, Wendy, a control group participant, spoke of eight different career barriers during her pre-interview. She focused heavily on struggles with decision making, stating,

I'm very indecisive. I can't even decide if I want a cup of coffee in the morning . . . I seriously don't even know how I make half my decisions I have to make because it's really hard for me. The reason why it's so hard for me is because I'd never want to choose the wrong thing. You know, I'm always afraid of making a mistake or doing the wrong decision. I'm afraid that that will just ruin my life or something.

When asked about past experiences that may have influenced her challenges with decision making, Wendy described her participation in a family decision to bring three foster children into their home, which later led to considerable stress and pain: "it's been really hard on my parents,

my parents' marriage, my relationship with my parents. Everything has just been so hard on our family." In her pretest survey, Wendy identified strongly with career barriers relating to decision-making difficulties (averaging a 6 on the 7-point scale, indicating a high likelihood of encountering barriers). However, the interviews provided a greater depth of understanding of the origin of these career barriers, as well as how they influenced her day-to-day life.

When the data collected were examined, considerable differences were evident between (a) the scope of the data collected between the surveys and interviews, and (b) the depth of data between and among interview participants. The gaps between the scope and depth of data collected hindered effective comparisons using mixed data analyses.

Reflections and recommendations. The difficulties encountered with these mixed data analyses indicate a need for focused research specifically to address changes in perceptions of career barriers over time. Improved strategies are needed for quantifying and measuring perceptions of career barriers, and enhanced interview techniques are needed to help individuals articulate and explore potential struggles. Embedding this data collection and analysis as one part of a larger study did not provide the resources and dedicated focus needed to address the research questions adequately with mixed data analysis. However, some insights regarding changes in perceptions of career barriers over time can be gleaned from examining trends that emerged in the interview data. These insights are discussed in the following section.

Interview Data Analysis. Turning solely to the interview data, when participants reflected on their perceptions of career barriers that changed during their first college year, the influences they saw as primary contributors to that change were explored. Four primary themes were uncovered in these analyses: (a) cognitive reframing regarding influence of the career

barrier, (b) re-evaluation of career barriers because of personal action, (c) changes in targets or goals, and (d) new challenges or career barriers emerging. This section explores each theme.

Cognitive reframing regarding the influence of a career barrier. When participants reflected on changes in the career barriers they perceived, those changes did not generally relate to outside influences that diminished or enhanced the career barrier. Rather, participants most often demonstrated new, internal ways of thinking about potential career barriers that helped them move past obstacles toward making and implementing career choices. Adam, Grant, Rebecca, and Wendy provided illustrative examples of this type of cognitive reframing.

During Adam's pre-interview and immediate post-interview, he suggested that maintaining a high GPA despite taking challenging, required classes was a primary barrier to his academic and career progress. For example, nearing the end of his first college semester and heading into final exams, Adam reflected,

I'm still trying as best as I can in my classes. I feel like I'm gonna have a pretty good GPA. My lowest grade is a C, and I have one C in one of the classes. My other classes I have A's and B's in, so as of right now I feel like I'm pretty solid. But you never know at this school. It's really hard, so I'll just find out. I can only do my best and just see what happens.

In his first semester, Adam focused on difficult classes as hurdles to be overcome; he would be able to pursue an academic major of his choice only if his performance in these courses was satisfactory. Within his delayed post-interview near the end of his second college semester, Adam reflected on difficult classes quite differently, stating,

I mean, there are gonna be some classes that I know I'm gonna have to take- like I'll have to take an accounting class, marketing class, a finance class, general business classes, which is kinda like what I didn't want to do as a major, but if I only have to take one of them, I can get through that just to have the background knowledge of something that's going on in like accounting. I think that's gonna be huge and really beneficial, but- so even though I don't like- it doesn't really interest me that much, I'd feel like it's something that will help me in the long run.

These classes were no longer simply a hurdle to be overcome. Rather, despite the challenge they posed, the classes were worthwhile pursuits offering “good knowledge to have even though it’s not your favorite classes to take.”

Grant also expressed a cognitive reframing of career barriers related to required classes. During his pre-interview at the beginning of his first college semester, Grant expressed concern about being unprepared for college-level work because of his class selections in high school: “I’d have to try hard to catch up on the math because I didn’t take math senior year.” Because of his concerns about falling behind in subjects such as math and physics, Grant initially hesitated to consider math- or science-intense majors. However, by the end of his first college semester, Grant had changed his perspective considerably, stating, “I haven’t really been worried about [math classes] because I feel like I can make it up fast because when I see something that I’ve known in the past but I kind of forgot, it comes back very fast.” This revised perspective opened new academic major and career possibilities for Grant, who settled on kinesiology by the end of his first college year. He expressed surprise at his own choice:

I’ve kind of done a 180 with my major The past month or so, I’ve been in the direction of doing kinesiology to become a physical therapist I never thought I would be- because kinesiology is all about science. It’s really science-based. I never would have thought that I would be into these science classes I’m going to have to take.

However, Grant no longer saw math and science classes as a firm barrier to his major and career choice. Instead, they were challenges to be addressed along the way and he expressed readiness to “get [his] scientific gears running again.”

Rebecca and Wendy, both control group participants, shared examples of cognitive reframing regarding their decision-making processes. During her first college semester, Rebecca worried about limiting her options by choosing an academic major, saying, “I don’t know what I

wanna do because I don't know if I could see myself doing the same thing for the rest of my life. I don't wanna do the same thing for the rest of my life." She reflected on her tendency to second-guess decisions and to hesitate to make choices in case something better might come along:

I'm never gonna be sure . . . I feel I should be able to just like something that much to be 100 percent, "Yeah. This is what I wanna do," but I know I'm just gonna never feel that way, so I just gotta pick something . . . I'm just never 100 percent sure, because there's always- you don't know if that's the best for you, because there's always something else that could be better.

However, by the end of her first college year, Rebecca selected an academic major in environmental sciences and worked past her struggles with decision making by reframing the way she thought about the impact of making this choice. She eased the pressure on herself by recognizing that "they always say that your major is not always directly even linked to your job," which would provide her "an out" in case she later discovered a better direction. Additionally, Rebecca reported making efforts to "suppress" her second-guessing by trusting her instincts: "I mean I am trying to trust my- It's like an instinct that that's what I want to do, but I will have to trust it." These new ways of thinking about her choices facilitated Rebecca's ability to make and pursue a choice of major.

Finally, as discussed previously, Wendy struggled immensely with decision making because of past experiences. She initially described herself as "indecisive," "really torn" about making choices, and "afraid of making a mistake." However, through deepening her religious life during her first year in college, Wendy found a way to move past her decision-making anxieties:

I've deepened in my religious life, so I guess I feel more at peace a little bit with my decisions and stuff. If I make a decision, I'm just, like, well, if it was meant to be, it was meant to be. It's all part of God's plan. I'm more chill now . . . The thing with the bad decision about careers, it's still a worry. It's not completely gone. It's still a worry, but not as intense.

As a result, Wendy was able to declare a major in advertising by the end of her first college year. She marveled at the “big turnaround” she had made in such a short time: “It’s weird for me to think that I actually have a major. I know what I want to do.”

Re-evaluation of career barriers due to personal action. Participants’ perceptions of career barriers also changed when they took personal action to address challenging situations. Some reconsidered career barriers in relation to their performance in college-related tasks, such as classes and involvement in student organizations. For example, Denise illustrated how reflecting on successes in her first college semester helped her overcome worries about finding opportunities that she would enjoy and being accepted into the programs of her choice. She reflected,

I think getting the advertising major definitely boosted my confidence. I’m like, “Okay, well, I did that, so I think I’ll be able to do the business minor if I just keep up the good work. I think I’ll be okay.” Yeah, it definitely gave me confidence . . . [and] my GPA is pretty strong, and if I just keep this up and keep my GPA up and that sort of thing, I should be able to get the business minor.

Other participants developed coping strategies to overcome challenges. Gina reflected that her struggles with chemistry during her first college semester stemmed from neglecting to adjust her study habits from high school. Gina “was so confident in high school” regarding her science courses, and she thought college would be similar, that she could “sit back, listen, and soak it up.” However, she discovered that college chemistry was “taught differently . . . applied differently . . . a lot more complex” than in high school. After struggling through her first semester, Gina used a variety of new study strategies that helped her approach difficult classes more confidently:

I started making study guides, and I typically listened to music while doing homework, so I stopped that. I figure I probably pay attention more to the music than I do to my work . . . I studied at the library for the first time. It was good, actually. I

did a practice exam, and I timed myself. I sat down and I did it.

Susan, a control group participant who also struggled with chemistry, chose to use a credit/no credit option in her first college semester to give herself additional time to learn the material. At the end of her second semester, she reported that her chemistry experiences were

Definitely better. I mean, I know that was kind of one of my things that definitely kind of discouraged me from the medical, nursing and stuff like that, because it's a lot of chemistry, but I am really trying to push myself; it's definitely better.

Susan also found her career barriers related to decision-making difficulties diminished by the action of making a clear commitment to one direction. She had previously experienced “a rough time” when she wavered between several major options, saying “I was so confused!” Late in her second college semester, Susan worked with her academic advisor and ultimately chose to make a firm commitment to a major in nursing. Making this commitment allowed Susan to move past the stress and worry of whether she was making the “right” decision and to focus on being successful in her chosen path:

I am definitely on my way to overcoming that, you know? And now, the main thing would be that nursing is very competitive. That is discouraging itself to me. It makes me nervous, but I just have to try my best and see what comes of it. But, we will see. I always have to have a backup plan, so that would be probably in community health, so we will see. I am just going to try my best.

This commitment to a decision served as a source of strength for Susan to help her overcome one set of career barriers and to prepare to meet future challenges.

Change in targets or goals. Other students found that their perceived career barriers diminished when they changed the academic majors that they were targeting. Beth came to Midwest University (MU) focused on applying to the business college, and she stepped right into calculus and economics prerequisite courses. During her first semester, these courses did not go well. During her delayed post-interview, she shared,

I was just finding that in economics I didn't care about the class at all, I didn't really – I didn't enjoy it; I wasn't doing well in it. It was kind of one of those lose-lose situations . . . I had to pass economics 102 and 103 to be considered for the [business] college–so I would have had to double up in econ this semester, and I was just like, “Not gonna happen.”

Beth acknowledged her lack of enjoyment and poor performance in classes as a signal to consider other directions:

I was looking at stuff I could do with business, and it was interesting, I'd love to do it, but at the same time a lot of the different kinds of businesses that I actually was more interested in, dealt with communication, and it's just like marketing, public relations, public policy. And I'm like . . . why stress out and add it to a further workload when I can't believe I'm enjoying myself a lot more in communications, branching out to see what kind of communications I'd center on as compared to just focus straight on to business communication?

Refining her focus, Beth applied and was accepted into a communications major during her second college semester, and she found her experiences more rewarding. Her first communications class focused on argumentation, an excellent fit for her enjoyment of debating. She found it to be a “really fun class.” She no longer feared encountering barriers with failing her math-oriented classes, because they were no longer required for her major, and she looked forward to the opportunity to take additional communications classes in her sophomore year.

Likewise, Hailey changed her academic goals, resulting in a decrease in perceived career barriers. In her pre-interview, Hailey described herself as “a very indecisive person.” She reflected that “I make decisions a lot and then I just change my mind. I get a new idea every week, and then I'm like, oh, no, last week's idea wasn't good enough, so we're gonna change it up.” Not wanting to let go of any of her many interests, Hailey began her time in college attempting to balance her interests in social sciences and humanities (e.g., psychology, global studies) with a desire to complete a pre-med curriculum so she could apply to medical school. She reported feeling “scared” to focus on any one area, saying, “I like to have options open. I

just don't want to later on say, oh wait, maybe I should have taken a different class." Yet, the prospect of keeping all possible directions open left Hailey feeling "overwhelmed." It was not until the middle of her second college semester that Hailey began to step back, reflect, and listen to her own thoughts. She felt pulled in so many directions that she was missing out on the things that she enjoyed most. For example, she stated, "I miss my psych classes from high school and stuff, and I don't know, I've just been really researching a lot about majors and different fields I could go into. Now, I know that's the major I want." Hailey found that much of what was holding her back was a tension between what she felt she should do and what she wanted to do:

This year has definitely taught me what I really like, even if I haven't taken here at [MU], just in general the topics that I really did like, not the ones I thought maybe I should like or should go into.

Hailey placed her thoughts of going to medical school squarely in the "should" category:

I always thought being a doctor would be fulfilling and stuff, and it is, but the more- I just remember doing the science classes. I don't love the science enough to be happy with . . . they don't let me like that track as much as I would want to, and I feel more like psychology is more one on one like I would want to do.

Through a major in psychology, Hailey saw opportunities to get involved in areas that connected with her values and motivated her, such as family, social justice, community, health care, and immigration issues. Hailey's new target major would require fewer "hardcore science" classes with long hours in the laboratory, while allowing her to focus her energies on issues and people, rather than feeling burdened with struggles related to balancing multiple academic priorities. Near the end of her second college semester, Hailey expressed enthusiasm and optimism about the future: "I don't know, something clicked this semester, and I got really excited . . . It's like, this is my goal."

New challenges or career barriers emerging. Finally, a few participants discussed new challenges or career barriers that emerged during their first college year. These career barriers

stemmed from a variety of sources, such as (a) encountering frustrations that became salient as decision deadlines approached, (b) experiencing unexpected struggles, and (c) gaining new insights into past experiences.

Frustrations become more salient as decision points near. Chris and Emily expressed similar frustrations at the end of their second college semester as they were preparing to submit their applications to the business college. This is a period of high stress for students, because admission is competitive and students can apply only one time. They were concerned about their GPA's and were dismayed to encounter a need to "play the game" in college to strategize ways to improve their chances of receiving good grades. Chris reached out to friends for advice on course selection because he experienced that "getting the right teachers and getting the right section of class is so much more important than just picking up a class and working hard at it [because each section uses] different styles of teaching and different grading materials." Additionally, Chris and Emily struggled with what they perceived as "unfair" practices in business college admission decisions, such as saving spaces for transfer students who may not have encountered the competition and challenges that they had overcome in "weed-out classes" at MU. For instance, Chris stated, "I don't think it's fair to be compared to people who transfer in from other universities . . . I wouldn't say community colleges face as much competition, or they don't face as much harder grading than we do over here." Finally, both Chris and Emily expressed frustration with what they perceived to be a closed environment in the business college. Hoping to gather information for his application, Chris sought help from the business advising office and was turned away: "I want to talk to a college business advisor, and I can't do that because college business advisors don't really talk to people." Likewise, Emily expressed dismay at the closed community of the business college, not only for the lack of information for

students who were interested in applying, but also for the disadvantageous position this would leave her in even after she was accepted:

They're closing their own community, and yeah, eliminate the students out of the community, and they think- even your potential students the understand the department now, but we're already behind so we have a lot to catch up when we get in the department.

Chris' and Emily's delayed post-interviews, in which they first expressed these concerns about potential barriers to their admission to the business college, occurred less than 3 weeks before applications to the business college were due. With such a high-stakes event in the near future, it is perhaps not surprising that these students expressed new concerns.

Unanticipated struggles. Other participants shared stories of unanticipated struggles encountered during their first college year. Gina's struggle was academic in nature. She reported that she "bombed" her first chemistry midterm and, as a result, developed a debilitating case of test anxiety:

We were sent an e-mail about [test anxiety] actually. And it was like, "Answer these questions. And if you answered them all 'yes,' then you might have test anxiety." And it was like, "Do you get distracted? When you're taking the test, is your mind on something else?" Or, "Do you always think you're gonna fail?"

And I remember, I always called up my dad before a test. I'm like, "Dad, I'm gonna fail. I'm nervous. I don't know what to do." And he's like, "Relax, relax." I try, but-like I'd get there, and I'd get my stomach in knots, and I'd be shaking

I took the final, and I walked out of there, and I was like, "I did good." You know? I was really confident. And then I got my grade, and I didn't. So I was like, "What did I do wrong?"

Gina expressed that she felt as though she understood the material, but she had difficulty demonstrating that understanding on the test. Finding a way to overcome this block would be an important first step for Gina to advance in her choice of a science-oriented major and career.

As discussed in Chapter 6, Jennifer encountered unanticipated barriers stemming from disapproval of significant others regarding her major and career choice. With the help of her career counselor, Jennifer “came up with a plan” that included “a major in psychology and a minor in religious studies or sociology. And then go get an MSW for social work.” However, sharp and unexpected disapproval from significant others left Jennifer cycling back into a place of confusion. She did not know how to reconcile her interests with the feedback she had received and, therefore, became stymied by a barrier of indecision.

New insights on past experiences. During her immediate post-interview, Gina described ways in which her parents and high school friends influenced her thinking about career paths. Gina had aspired to be a doctor for many years, and had talked about her goals and even acted out the part: “I was a doctor for Halloween when I was a little kid. So I have the little coat.” Her family and friends developed an image of her as a scientist in a medical profession, and they express this in everyday banter. For example,

- I have my best friends. They are actually seniors in high school. They always, though- I’ll come home and they’re like, “Oh, our big [MU] kid’s back- our big doctor.” I’m like, “I’m not a doctor yet, but-” so it’s there.
- And my parents are too, subconsciously, joking, or they’ll be like, “Oh, do you wanna go out for dinner?” “No, I wanna save money.” And they’re like, “Oh, that’s okay. You can pay us back when you’re a doctor.”

Although Gina suspected that these comments were made jokingly and as a sign of support, she came to recognize via the research interviews that they also had the effect of creating pressure and stress in her life. She openly wondered, “What if I don’t become [a doctor], what am I gonna do?” She worried that she would have a lot of explaining to do if she changed her mind along the way: “I don’t want people to be like ‘why?’ [I’ll have] explaining to do. I

don't think they're going to take, like, 'Oh, because I wanted to.' And I don't think they're gonna understand that . . . if I change my mind."

Gina reflected that she had not articulated these sources of stress in the past; she had not realized how they affected her: "I didn't realize until we started talking [in the research interviews] the pressure from the family or the pressure from other people. I never realized all these different things that played with it." Although recognizing the barriers did not change them, the recognition allowed her to process her feelings and gain comfort in knowing that she would not be surprised by such unanticipated challenges in the future: "I feel better now knowing that it's there because I don't like knowing things that aren't there. I don't want it to creep up behind me, you know?"

Synthesis. Analyses of changes in participants' perceptions of career barriers were limited by the number of examples from which to draw. To be considered, students had to (a) recognize a particular barrier to their academic or career progress, (b) be motivated to address the career barrier during their first college year, and (c) acknowledge recognizable progress in working with that career barrier. That said, some interesting patterns emerged from the interview data.

When participants took steps to address perceived career barriers, they demonstrated a variety of approaches. In a few cases, students found alternate solutions to academic and career struggles that removed career barriers from their paths. For example, Beth and Hailey acknowledged external (e.g., poor class performance) or internal (e.g., not enjoying classes) cues signaling barriers to their academic progress, and they changed their intended academic majors to diminish these challenges. More often, participants continued to acknowledge career barriers in their paths, but found ways to minimize their impact. Adam, Grant, Rebecca, and Wendy

changed the way they thought about career barriers by facilitating their ability to move past struggles and toward implementing academic and career choices. This was the case for career barriers that stemmed from both external sources (e.g., difficult classes, high GPA requirements) and internal pressures (e.g., viewing oneself as indecisive, second-guessing decisions). Gina developed a deeper understanding of the potential career barrier of pressure from significant others. This new knowledge did not necessarily change her thinking or diminish the barrier in any way, yet it did make the barrier less intimidating and decreased worries about having the barrier “creep up behind [her].” Finally, Denise, Gina, and Susan took specific actions to diminish perceived career barriers, including gaining confidence from other successes in the college environment, developing coping strategies, and making firm commitments.

Moreover, some of the examples provided by participants demonstrated evidence of environmental supports playing a role in assisting students with addressing career barriers. Susan took action to overcome her challenges with career indecision by making a personal commitment to an academic major, with the assistance of her academic advisor who served as a witness to that commitment. Wendy changed the way she thought about her struggles with decision making by deepening her religious life, assisted by the religiously affiliated residence hall in which she lived. Gina developed a deeper understanding of pressures from her significant others via participation in the interviews that were part of this research study. These research interviews served as an actual, although unintended, environmental support offering an intervention by facilitating self-reflection. These three scenarios provide glimpses into the roles that environmental supports can play in helping students address career barriers, and they suggest the need for further research in this area.

Chapter Summary: Reflecting on Changes in Perceived Career Barriers

Explorations of perceived career barriers represented an exploratory inquiry in this research study. Little past research has examined change in perceived career barriers over time, and structuring this type of inquiry within an intervention evaluation study is particularly rare.

Two research questions guided the inquiries in this chapter:

- Do students who participate in career counseling experience greater change in the magnitude of perceived career barriers than expected due to maturation, as demonstrated by the control group?
- What influences do students perceive career counseling to have on their perceptions of career barriers?

This summary presents insights gained from students' perceptions and interpretations derived from the interviews, as well as changes observed via the CBI-R.

Limited evidence suggests decreases in perceived career barriers due to both maturation and the career counseling intervention. As indicated via analyses of the survey data, limited evidence exists indicating that students' perceptions of career barriers generally decreased over the course of the first college year due to maturation, particularly in the area of decision-making difficulties. Some evidence also exists that the treatment group participants experienced a decrease in perceived career barriers earlier in the academic year (during their first college semester) than did control group participants (during their second college semester). A decrease in perceived career barriers related to inadequate preparation for academic and career endeavors stood out as particularly influential for treatment group participants. Caution is advised in interpreting these findings, considering the scarcity of significant results and number of small effect sizes for the results that are statistically significant. However, considering the exploratory nature of these inquiries, these findings signal a need for further study.

Students used a variety of strategies for addressing perceived career barriers. When interview participants described changes in perceptions of career barriers, that change was rarely associated with a complete removal of the barrier. More often, participants changed how they thought about the career barrier, based on cognitive reframing, re-evaluation in light of new performance accomplishment activities or personal actions, or the development of coping strategies.

Environmental supports can play a role in helping students to address barriers. Several participants addressed perceived career barriers with the assistance of environmental supports, such as academic advising and residence life networks on the MU campus. This raises questions regarding how support services can best position themselves to help students address career barriers: When is it appropriate to explore career barriers with students? How can safe and supportive environments be created? What types of safety nets might be needed when newly discovered career barriers or stresses emerge? Further research is needed in these areas.

Improved data collection techniques are needed. Finally, challenges were encountered in this study with the collection of adequate data for mixed methods analyses of perceived career barriers. Improved quantitative and qualitative techniques are needed, along with research studies that dedicate appropriate time and effort to this problem, to adequately address students' perceptions of career barriers and changes over time.

Chapter 9

Discussion

This study was motivated by concerns regarding the difficult academic and career choices facing today's college students as they navigate higher education and encounter career barriers along their paths. It sought to understand the role that individual career counseling could play as an environmental support to help students explore options, make choices, set goals, and take the necessary steps to implement their choices and persist to their goals. The research questions examined both the outcomes of participating in individual career counseling (e.g., changes in career decision-making self-efficacy [CDMSE] and perceptions of career barriers), and the process of participation as viewed from students' perspectives (e.g., components of career counseling that students found most helpful). This chapter explores key findings, suggests implications for theory, research, and practice, and discusses directions for future research.

Discussion of Findings

This section integrates the findings presented in Chapters 5 through 8 with past literature and with reflections from the peer review session with participating career counselors. This study was designed to examine both the outcomes and process of individual career counseling, as perceived by first-year college students. The outcomes elements were incorporated to facilitate connections with past career intervention outcomes research, whereas the process-oriented inquiries aimed to advance the literature by examining students' interpretations of the processes that contributed to observed outcomes.

Because the primary contribution of this study related to insights gained regarding the process of individual career counseling, these findings are presented first. Process is considered in terms of both the components of career counseling that made a difference for students and the

areas in which career counseling influenced students' career choices. A discussion of the observed outcomes of individual career counseling is presented next. Outcomes specifically outlined within the research questions for this study (changes in CDMSE and perceptions of career barriers) are addressed, as well as additional insights that emerged within participant interviews, including making progress on career choice tasks, experiencing affective changes, and motivating future help-seeking. This section concludes with discussion of two findings that were not initially central to the study, yet emerged as important issues during the data collection and analyses. These issues include (a) client readiness for seeking assistance and (b) potential spaces for career counseling to affect career barrier reduction and connections with environmental supports.

Career counseling process. The career intervention for this study was based on intervention components that have facilitated the achievement of desirable outcomes in past research. This design decision was expected to increase the likelihood of observing desired outcomes following the treatment, thus allowing this study to connect with past career intervention outcomes research, while advancing the literature by examining students' interpretations of the processes that contributed to those outcomes. This section reviews influential process elements, including components of the career counseling and areas in which career counseling influenced students' career choices.

Components of career counseling. Ryan (1999) and Brown and Ryan Krane (2000) proposed five critical components of career interventions: (a) workbooks and written exercises, (b) individualized interpretations and feedback, (c) world of work information, (d) modeling opportunities, and (e) attention to building support. Two of these five components formed a foundation for the individual career counseling within this study: individualized interpretations

and feedback, and world of work information. Within the research interviews, evidence emerged that the career counselors often used the three other components based on their understanding of participants' needs. For example, Jennifer completed written exercises to explore links between academic majors and careers, Adam engaged in modeling opportunities through involvement in a business fraternity, and Kari learned about building supports on campus via multicultural centers and tutoring services.

Additionally, informed by Bandura's (1997) work regarding sources of self-efficacy, the individual career counseling experiences for this study included engagement in a performance accomplishment activity between career counseling appointments. These activities were tailored to each participant's unique needs and were designed to give participants first-hand experience with career exploration and decision-making tasks. Placing the activity between the two established individual career counseling appointments encouraged completion of the task and provided an opportunity for individualized feedback, reflection, and discussions of next steps.

Confirming the critical components of Ryan (1999) and Brown and Ryan Krane's (2000), treatment group participants unanimously described their individual career counseling experiences in terms of the resources and information they gained. These resources came in a wide variety of formats (e.g., print materials, websites, events and programs on campus) and covered an array of topics (e.g., information on academic majors, recommended courses, links between majors and careers, internship and job postings, networking contacts). However, resources alone were not sufficient to bring about positive outcomes. In fact, as demonstrated in conversations with Gina (and, to a lesser extent, Emily), resources alone could actually have a negative influence, leaving students more overwhelmed and less confident in their abilities to make career choices than prior to their individual career counseling experiences.

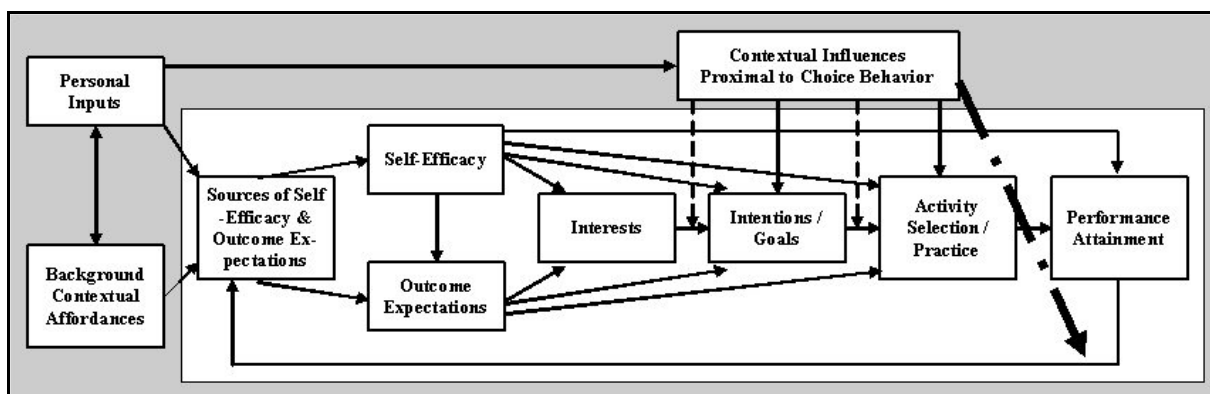
The relationship established between the career counselor and student emerged as a central component of the process, in terms of both what participants desired from individual career counseling and their reflections on their experiences. Participants' experiences were enhanced by relationships with the following qualities: (a) conversations marked by a sense of openness, flexibility, and unbiased information; (b) demonstrations of genuine interest and attentiveness to students' stories; and (c) invitations to return for further assistance. Additionally, many participants appreciated the career counselors' use of a nondirective style to encourage self-driven exploration of options and opportunities. Although building a strong relationship and rapport with clients is a foundational component of many counseling and career development approaches (see, for example, Corey, 2001; Harris-Bowlsbey, Suddarth, & Reile, 2005), relationship qualities such as those that emerged in this study have not had a strong presence in literature evaluating career interventions, and may offer interesting directions for scholarship.

This study also found support for including performance accomplishment activities as a component of career interventions, complementing the work of Luzzo et al. (1999) and Luzzo and Day (1999). Of the 15 treatment group members who participated in interviews, 11 made direct references to engaging in performance accomplishment activities when discussing how individual career counseling contributed to their ability to engage confidently in career decision making. Approximately half of the treatment group participants acknowledged that the most helpful aspect of their career counseling experience was engaging in activities designed to help them explore academic majors and career options. They appreciated both the "extra push" to try a career-related task (e.g., exploring careers that related to majors, writing a resume, attending a meeting of an academic student organization) and the opportunity to discuss their experiences with a career counselor afterward. This structure of embedding performance accomplishment

activities within the individual career counseling experiences provided students with two types of feedback on their actions: (a) personal reflections on their performance and experiences, and (b) insights from a career counselor who could help deepen their understanding of their experience, make comparisons with peers, and discuss potential next steps. Additionally, participants discussed performance accomplishment activities with much greater prevalence when reflecting on individual career counseling experiences (68.8% of examples) than when reflecting on interactions with other campus-based support services (5.3% of examples). This finding stood out as the primary difference between individual career counseling and other support services. Performance accomplishment activities have been theorized as being the most powerful source of self-efficacy because of their basis in authentic, hands-on experiences (Bandura, 1986, 1997), and this environmental characteristic of career counseling experiences emerged as a possible contributor to the observed differences in CDMSE between the treatment and control groups on the posttest and delayed posttest surveys.

Areas of influence. Within the research interviews, treatment group participants shared their perspectives regarding how individual career counseling contributed to their career choices. Many of the connections made by students were congruent with areas of influence theorized by Social Cognitive Career Theory (SCCT; Lent, Brown, & Hackett, 1994). Individual career counseling helped students connect interests and skills with options, set goals, and select and implement performance accomplishment activities. These paths of influence are depicted in Figure 9.1 by the four thin arrows linking the box entitled “contextual influences proximal to choice behavior” to (a) interests, (b) intentions and goals, and (c) activity selection and practice. An additional path of influence, not present in the original model of Lent et al. (1994), was uncovered in participants’ discussions. Of the 15 treatment group members who participated in

interviews, 3 participants shared situations in which their career counselor helped them reflect on past performance accomplishment activities by interpreting those experiences within a broader context and reinterpreting the successful nature of those actions. These reinterpretations became embedded in the students' career choice process as additional sources of self-efficacy and outcome expectations. As such, it appears possible that an additional path exists by which environmental supports may influence an individual's career choice process, as indicated by the heavy dashed-and-dotted line in Figure 9.1. Following the structure of hypotheses regarding environmental supports and career barriers in Lent et al., an additional hypothesis may be presented as follows: "The relation of performance attainment to self-efficacy and outcome expectations may be moderated by environmental supports, which can influence interpretations of performance attainment activities as successes or failures." Additional research is needed to test this proposed hypothesis.



Within the presentation of findings for this study, these experiences were discussed in light of building relationships marked by openness, attentiveness to students' needs, and a nondirective style. Clear ties can also be made between these data and the work of some social cognitive theorists, who suggest the existence of psychological processes that contribute to sources of self-efficacy beyond the four suggested by Bandura (1977, 1986, 1997). For example, Purkey and Novak (1996) presented the idea of an invitational approach to considering how people view the world and interpret experiences; they suggested that the invitations people send and receive play a key role in the development of self-beliefs. Invitational theorists have argued that "caring, proactive messages" (Purkey & Novak, 1996, p. 4) convey to students that they are "capable, valuable, and responsible" (Pajares & Zeldin, 1999, p. 50). These messages help to shape self-beliefs that facilitate persistence and resiliency by, bolstering students when they encounter challenges or barriers. Pajares (1994) suggested a complementary relationship between the invitational approach and self-efficacy theories, particularly by relating invitations to the concept of verbal persuasion. Pajares and Zelden (1999) demonstrated ways in which self-beliefs have been nurtured by invitations sent to and received from environmental supports, such as family members, teachers, and mentors. The current study provides further evidence that invitations from career counselors that are received by students may influence self-beliefs. Students may come to view themselves as increasingly capable of making career choices, as well as being welcomed in an environment that is designed to support their individual needs. Further examination of the connections between self-efficacy theories and the invitational approach offers an intriguing area for future research: How are self-beliefs and self-efficacy influenced when career counselors, educators, or other environmental supports "strive to be intentionally inviting" (Purkey & Novak, 1996, p. 59)?

Career counseling outcomes. This study explored the outcomes of participating in individual career counseling by considering how participants had (or had not) changed as a result of participating in the intervention. This section provides an overview of changes observed in this study, including progress on career choice tasks, affective changes, motivations for future help-seeking intentions and behaviors, an increase in CDMSE, and a decrease in perceived career barriers.

Progress on career choice tasks. Past literature using career development process models to connect career development interventions with progress on career choice tasks is limited to a handful of studies that show increases in interests and the intent to pursue specified academic subjects (e.g., Diegelman & Subich, 2001; Luzzo, Hasper, Albert, Bibby, & Martinelli, 1999). The current study demonstrated progress on career choice tasks in a more comprehensive fashion than in past research. In the research interviews, treatment group participants shared insights regarding how participating in individual career counseling helped them: (a) gain a better understanding of their interests, skills, values, and strengths; (b) discover new academic major and career options; (c) learn about academic majors and careers; (d) connect knowledge of themselves with knowledge of their options; (d) choose an academic major; (e) become involved in activities and organizations related to their intended major; and (f) plan goals and next steps to explore options, make decisions, and implement choices. Even when this progress was later overshadowed by revised goals and redirections (e.g., Grant, Hailey, Jennifer), interview participants expressed appreciation for the gains obtained from individual career counseling.

However, the delayed posttest interviews demonstrated that, for many students, the initial progress made on career choice tasks slowed, or even stagnated, with time. Students' motivations waned for a variety of reasons (e.g., waiting for a response to an application, focusing on

academics in lieu of exploration activities), which they sometimes found difficult to articulate. Regardless of which specific reason the student gave for not following through with career choice tasks, focusing on career choices and actions did not maintain salience for students beyond the externally driven motivation to participate in the individual career counseling provided by this research study.

Affective changes. Prior to their experiences with individual career counseling, the majority of treatment group participants (9 out of 15) expressed uncertainty about what to expect in individual career counseling. They had limited past experience with career counseling on which to base expectations. In addition to a general feeling of uncertainty, three participants expressed anxiety related to feeling unprepared to meet with a career counselor. Another student expressed fears that individual career counseling might leave her more lost and overwhelmed than she was already feeling. The remaining participants expressed neutral feelings of interest and curiosity about trying individual career counseling.

After their individual career counseling experiences, the tone of feelings shared by participants changed considerably. Uncertainties and anxieties quickly faded, most often replaced by expressions of hopefulness (e.g., Derek, Jacob), confidence (e.g., Grant), and feeling confirmed or validated (e.g., Adam, Denise). These emotions were bolstered by students' informed statements regarding the career resources and services they had used or planned to use in the future, thus demonstrating congruence between students' affective feelings and their cognitions and behaviors.

Two students, on the other hand, found themselves increasingly unsettled by the new discoveries that emerged from their career counseling experiences. Unsettling emotions are not, in and of themselves, an undesirable outcome. Such dissonance can come from a recognition of

new developmental tasks to engage in and can spur action, as in the case of Emily. However, as in Gina's case, these unsettling feelings can be troublesome when they lead to a sense of being lost, disconnected from the process of making active career choices, or confused about where to turn for help.

Motivating future help-seeking intentions and behavior. Interviews with participants indicated that their individual career counseling experiences influenced their knowledge of and openness to future sources of assistance. This influence began well before students participated in their first individual career counseling appointment. For some students, the act of scheduling an appointment was enough to motivate self-help actions to explore careers (e.g., Grant), whereas others (e.g., Lacy) were possibly steered away by fears that individual career counseling might leave them more overwhelmed than before.

The majority of participants reported positive experiences with individual career counseling, which encouraged knowledge of and enthusiasm for using additional support services, both at the career center and across the Midwest University (MU) campus (e.g., tutoring, multicultural programs, departmental advising). Neutral and negative experiences with individual career counseling left students with a limited view of the assistance offered by campus support services, as well as little intention to pursue assistance in the near future.

Increased career decision-making self-efficacy. As indicated by analyses of the survey data, students who participated in individual career counseling with performance accomplishment activities early in their first college year experienced an increase in CDMSE beyond that expected due to maturation, as demonstrated by the control group. Although the Career Decision Self-Efficacy Scale (CDSE Scale; Betz & Taylor, 2001) total score showed no difference between the experimental groups in the pretest, comparisons of the posttest ($p = .002$,

$d = 0.63$) and delayed posttest ($p = .000$, $d = 0.79$) suggested the presence of a substantive difference based on observations of both t -tests with a Bonferroni-adjusted significance level and medium to large effect sizes. Studies examining the exact career intervention of individual career counseling with performance accomplishment activities have not been reported in past literature for comparison with this study. However, findings from this study complemented past studies that have reported increases in CDMSE related to career interventions with similar components, including individual career counseling (e.g., Krieschok, Ulven, Hecox, & Wettersten, 2000; Luzzo & Day, 1999; Luzzo & Taylor, 1994; Uffelman, Subich, Diegelman, Wagner, & Bardash, 2004) and examinations of Bandura's theorized sources of self-efficacy (e.g., Foltz & Luzzo, 1998; Foss & Slaney, 1986; Krieschok et al., 2000; Luzzo & Taylor, 1994; O'Brien et al., 2000; Sullivan & Mahalik, 2000). This confirming evidence suggests that individual career counseling, which incorporates performance accomplishment tasks, helps increase students' confidence in their ability to successfully complete the tasks necessary to make and implement career choices. Findings from past research suggest that these increases in CDMSE may also reflect connections with desirable outcomes such as increased engagement in career exploration activities (Blustein, 1989; Gushue, Clarke, Pantzer, & Scanlan, 2006; Gushue, Scanlan, Pantzer, & Clarke, 2006), increased vocational identity (Gushue, Clarke, et al., 2006; Gushue, Scanlan, et al., 2006; Robbins, 1985), increased career decidedness (Robbins, 1985; Taylor & Popma, 1990), and decreased career indecision (Betz & Luzzo, 1996; Robbins, 1985; Taylor & Betz, 1983; Taylor & Popma, 1990).

Decreases in perceptions of career barriers. As indicated by analyses of the survey data, limited evidence was found indicating a general decrease in students' perceptions of career barriers during their first college year. The Career Barriers Inventory-Revised (CBI-R;

Swanson, 1995a) total score showed significant decreases in perceived career barriers, which emerged primarily during the participants' second college semester. Although no significant difference was found for participants between the pretest and the posttest, comparisons of the pretest and delayed posttest ($p = .000$, $d = 0.27$) as well as the posttest and delayed posttest ($p = .005$, $d = 0.20$) did result in significant differences. The most compelling CBI-R changes for the full sample over this time frame emerged on the subscale of perceived likelihood of encountering barriers related to decision-making difficulties. For this subscale, consistent decreases in perceived barriers were observed throughout the year as indicated by comparisons between the pretest and posttest ($p = .001$, $d = 0.25$), the posttest and delayed posttest ($p = .000$, $d = 0.31$), and particularly, the pretest and the delayed posttest ($p = .000$, $d = 0.58$). Although the small to medium effect sizes for these tests signal a need for caution in interpreting results, the exploratory nature of this part of the study indicates a direction that deserves further consideration. This finding mirrors the study by McWhirter, Rasheed, and Crothers (2000) indicating that high school students experience a decrease in perceived career barriers during their first academic semester. McWhirter et al. attributed this change to participants' increasing familiarity with their schedules and the expectations placed on them as students, and it is possible that similar influences were at work in the current study. Transitioning to college is a stressful time for many students, heightening concerns that may have been reflected in participants' pretest surveys. By the end of the first college year, the participants generally had a better sense of the academic environment and the expectations that would be placed on them, which may have decreased their concerns regarding potential career barriers. Additionally, these participants had access to environmental supports outside the career intervention for this study (e.g., the required University 101 class, academic advising) that offered assistance with decision

making. It is possible that the general decrease in barriers over time reflects support services, programs, or resources that are available to students at MU beyond individual career counseling.

It is also intriguing to note findings that diverged from those of McWhirter et al. (2000), who found no difference in the changes in perceptions of career barriers between their treatment and control groups. Results of the current study showed that the treatment group participants experienced a decrease in perceived career barriers earlier in the academic year than did the control group participants. Significant differences were observed in the CBI-R total scores for the treatment group during the first college semester, between the pretest and posttest ($p = .006$, $d = 0.36$). Those changes were maintained over time as indicated by the pretest and delayed posttest comparisons ($p = .003$, $d = 0.45$); however, during the second college semester, no additional significant differences were found between the posttest and delayed posttest. On the other hand, during the first college semester, the control group exhibited no significant differences in the CBI-R total score between the pretest and posttest. A significant decrease in CBI-R total scores was found for the control group during the second college semester, as indicated by comparisons between the pretest and delayed posttest ($p = .009$, $d = 0.21$) and posttest and delayed posttest ($p = .004$, $d = 0.25$).

The subscale of inadequate preparation stood out as a prominent area of difference between the treatment and control groups, such that only the treatment group demonstrated a statistically significant decrease in perceived career barriers on this subscale between the pretest and posttest ($p = .006$, $d = 0.46$). Although it is difficult to determine the aspects of individual career counseling that may have contributed to this decrease in perceptions of career barriers, the interview discussions provide some potential insights and directions for future inquiry. For example, Denise and Adam reflected on the confirming nature of their individual career

counseling, which helped normalize their experiences. They left with a sense of where they stood in relation to their peers, and they no longer felt underprepared, alone, or behind. These findings, although limited, suggest that individual career counseling may, in fact, influence students' perceptions of career barriers in ways that lessen the perceived likelihood of encountering struggles as they work toward achieving their goals.

Readiness. Students' readiness to seek support and follow through with career exploration tasks played a considerable role in their progress with career choices and in implementing those choices over their first college year. For example, students appeared to make consistent CDMSE gains when they were willing to ask for help, knew where to go for assistance, knew what questions to ask to begin a conversation, and followed through by engaging environmental supports and asking for help. Those students who were hesitant to ask for help, who were content to take a passive approach to decision making, or who chose not to get involved in academic- or career-related activities outside the classroom often experienced no change in CDMSE over time.

It is interesting to note that although motivation had to be maintained by the individual student, the initial motivation did not have to be internally driven to experience positive outcomes from individual career counseling. Several interview participants from the treatment group commented that their participation in individual career counseling was primarily derived from the external motivation of this research study. They stated that they would not have attended these appointments during their first college semester without the impetus of the study. Despite this initial external motivator, these students still experienced positive outcomes from their individual career counseling experiences (e.g., an increase in CDMSE; selection of a major; a deeper understanding gained of their interests, values, or skills).

Challenges with a lack of readiness for career exploration and decision making were exhibited in many ways, including (a) premature goal setting when students were not ready to explore their interests, values, and skills authentically by focusing on their true selves rather than the persons they thought they should be (e.g., Angela, Hailey); (b) a lack of follow-through on selected next steps (e.g., Kari); and (c) decisions revised in light of other environmental influences (e.g., Jennifer). In the peer review session, career counselors reflected on these challenges, focusing on the short duration of their interactions with students. They noted having difficulty encouraging students to commit to more than one or two career counseling appointments. Although the career counselors felt these sessions could be helpful to the students, the time available for career counselors to cultivate and influence student choices was minimal in comparison with other environmental influences (e.g., input from significant others, financial pressures, experiences of discrimination in the day-to-day environment).

Career counseling, career barriers, and environmental supports. When interview participants described changes in perceived career barriers, those changes were rarely associated with a complete removal of the barrier. More often, participants changed how they thought about the barrier, based on cognitive reframing, re-evaluation in light of new performance accomplishment activities, or the development of coping strategies (see, for example, Beck, 1976; Beck & Weishaar, 1995; Meichenbaum, 1977; Sampson, Peterson, Lenz, Reardon, & Saunders, 1996). Nearly one third of the interview participants (Adam, Denise, Grant, and Gina in the treatment group; Rebecca, Susan and Wendy in the control group) provided examples of reframing thoughts about career barriers that helped them move beyond career choice difficulties, indicating that reducing barriers can be a helpful strategy for facilitating the career choice process. Future research regarding the influence of career interventions on perceived

career barriers may benefit from explicit connections with theoretical frameworks that focus on cognitive reframing and coping techniques, such as the work on dysfunctional career thinking that is part of the Cognitive Information Processing approach to career counseling and services (see Sampson et al., 1996; Sampson, Reardon, Peterson, & Lenz, 2004).

Several interview participants addressed perceived career barriers with the assistance of environmental supports such as academic advising and residential life networks on the MU campus. This finding raised questions regarding how and when support services should focus on helping students address career barriers. During the peer review session, several career counselors expressed hesitation about engaging in conversations about career barriers in which they might encounter topics that were outside their areas of training and expertise (e.g., pressures from family relationships, suicidal ideations). They questioned the appropriateness of using barrier reduction techniques, such as cognitive reframing, during individual career counseling, given how their programs and services were communicated to students. Despite their hesitations, the career counselors also recognized, at a minimum, the need to encourage cognitive awareness of factors that might hinder career progress and the need to be prepared to make referrals when difficulties arose that were beyond the scope of their services or expertise.

Implications

The findings from this study lend themselves to a number of implications for theory, research, and practice. Each area is addressed briefly.

Theory. SCCT (Lent et al., 1994, 2000) and Social Cognitive Theory (Bandura, 1977, 1986, 1997) served as the primary theoretical foundations for this study. The study findings offered supportive evidence for both theories, with some suggestions for new conceptual links and additional areas of inquiry, as discussed below.

Social Cognitive Career Theory. Supporting past literature that points to SCCT as a useful conceptualization for considering environmental influences on the career choice process (e.g., Albert & Luzzo, 1999; Chartrand & Rose, 1996; Swanson & Woitke, 1997), this study provides confirming evidence of the relationships between environmental supports and individuals' engagement in the career choice process as theorized by SCCT (Lent et al., 1994). Based on students' reflections in interviews, evidence was found linking the environmental support of individual career counseling with students' connections of interests and skills to options, decision making, goal setting, and selection and their implementation of performance accomplishment activities. An additional path was found through which environmental supports could influence individuals' career choices, which was not present in the original model of Lent et al. The study findings demonstrate that environmental supports can inform individuals' reflections on the success or failure of their performance accomplishment activities. If opportunities for reflection do, in fact, signal a space for influence, this new theoretical link could affect the way researchers and practitioners think about engaging college students. For practitioners, it would signal a need to focus on follow-up interactions that allow space for guided reflection, such as return appointments, journaling, and written exercises for career exploration. For researchers, it would signal an opportunity for further integration of theoretical perspectives. For example, researchers might consider how sources of self-efficacy, such as verbal persuasion, may be used in follow-up interactions and guided reflections.

Social Cognitive Theory. This study also provided supportive evidence for Bandura's (1977, 1986, 1997) theories regarding sources of self-efficacy. Performance accomplishment activities emerged as a key component of individual career counseling that influenced increases in CDMSE, as well as other desirable outcomes (e.g., affective changes, progress on career

choice tasks). Beyond this, some evidence emerged regarding a link between increased CDMSE and invitations to return to career services or to become involved in other career-related activities. These findings mirror suggestions in the literature examining relationships between invitational approaches, self-beliefs, and self-efficacy theory (e.g., Pajares, 1994; Pajares & Zeldin, 1999; Purkey, 2000; Purkey & Novak, 1996). A worthwhile endeavor may be to explore the types and qualities of invitations that can lead to enhanced self-efficacy: What messages are delivered to college students regarding career exploration and trial opportunities? How are these messages received? When do they promote knowledge and confidence in one's own ability to engage in the process of choosing and pursuing a career?

Research. This study contributed to the research literature by combining the demonstration of career intervention outcomes with efforts to understand the elements of the individual career counseling process that contributed to the observed outcomes. Several implications for future research emerged regarding research design, data collection and measurement challenges, and consideration of moderating influences.

Research design. One of the primary contributions of this study was provided by the research design. The study included design components that are rarely found in the research on and evaluation of career interventions, such as (a) extended data collection over an 8-month period, (b) concurrent and iterative collection of survey and interview data, and (c) the integration of qualitative and quantitative data sources in data analysis. This strategy addressed calls to incorporate qualitative research in order to clarify the complex nature of the career choice process (Luzzo, 1999; McWhirter, 1997; Rivera, Chen, Flores, Blumberg, & Ponterotto, 2007) and to allow enough temporal lag time to observe development (Lent et al., 2000; Luzzo et al., 1999). The findings demonstrated strengths of this design, from revealing participants'

expectations and understandings of their individual career counseling experiences (e.g., the central roles of affect and relationships), to providing compelling evidence regarding the role of performance accomplishment activities in increasing CDMSE (e.g., insights into the differences between career counseling and other campus-based support services), to clarifying unexpected treatment results (e.g., Chris' and Emily's initial decrease in CDMSE). Future research could benefit greatly from embracing similar design elements, data collection strategies, and analysis techniques.

Data collection and measurement. Relevant implications for research were also found in the areas of data collection and measurement. As found in previous studies (e.g., Krieschok et al., 2000; Luzzo & Day, 1999; Maples & Luzzo, 2005), the Career Decision Self-Efficacy Scale continued to serve as a useful tool for examining career intervention outcomes. However, it is important to recognize that the Problem Solving subscale performed differently from the other subscales and the total score in this study. It was the only subscale for which (a) a significant difference was found between the treatment and control groups on the pretest ($p = .001$, $d = 0.60$); and (b) no differences were observed based on the main effect of survey time or the interaction between experimental groups and survey time. Clarifications for these differences were not found within the survey data. This subscale deserves careful consideration in future research.

Concerning the measurement of career barriers, several challenges emerged in this study. First, across the career development literature, the CBI-R has been used with a variety of rating scales. Cognitive laboratory interviews conducted as a part of the pilot study for this research indicated widely varying participant interpretations of the instrument based on which scale was used. Researchers are strongly encouraged to test this instrument (and others like it) thoroughly

with the population of interest to understand their perceptions and interpretations before study implementation. Additionally, considerable difficulties were experienced in establishing distinct groups of participants for data analyses that examined patterns of change over time as reflected by the CBI-R. The CBI-R total score masked changes occurring on the subscale scores, meaning that groups based on the CBI-R total score provided an inadequate representation of the data. Moreover, creating groups of participants based on CBI-R subscale scores was equally problematic because each subscale led to different combinations of participants. With both survey and interview data available from only 18 participants, not enough common ground was found to defend the selection of any single set of participant groups.

An examination of career barriers within interviews resulted in another set of challenges. As experienced by Luzzo and Hutcheson (1996), the career barriers discussed by participants were limited in number and detail, making it difficult to explore change over time with such a small amount of data with which to work. It is unclear whether the lack of depth related to a lack of perceived barriers or to difficulties in articulating experiences with challenges to career progress. Challenges in accessing detailed information about career barriers, whether on survey instruments or via interview techniques, signal an area that requires careful and focused attention within future research. Past research has clearly demonstrated that students perceive career barriers (e.g., Lent et al., 2002; McWhirter, Torres, & Rasheed, 1998; Swanson & Woitke, 1997), yet improved methods are needed to understand how those barriers influence career choices, as well as what can be done to support students in addressing and moving beyond those barriers.

Moderating influences. Finally, a number of moderating influences were recognized in the process of conducting this research, such as participants' readiness to explore career choices,

internal versus external motivations for seeking assistance, and the use of a recruited group of participants versus a natural career counseling client population. Continued attention to moderating influences such as these is needed in the design, data collection, analysis, and interpretation of future research. Research with natural career counseling client populations may address questions of readiness, as well as internal versus external motivations (Oliver & Spokane, 1988; Whiston, Brecheisen, & Stephens, 2003).

Practice. The career counselors who offered the intervention for this study also participated in a 3-hour peer review session several months after their involvement in the study to consider the findings and discuss what they had learned for their work with future students. Seven implications and recommendations for career counselors and professionals were derived from reflections on the study data, as well as on the debriefing conversation between the researcher and the career counselors.

Tailor communications about career services offerings. Students in this study made quick first impressions regarding the types of assistance the career center could offer, and these early impressions influenced students' motivations, as well as their future help-seeking intentions and behaviors. For example, Derek expected the career center at MU to be limited to "pamphlets of different majors and stuff." His impressions changed considerably after his individual career counseling appointments as he came to view the career center as offering assistance for students in all stages of their college experiences. Derek felt energized by and excited about using the new resources, and he ultimately used the peer resume review services three times in his first college semester.

This suggests a need to think carefully about the messages that are communicated to students regarding career services offerings. Career counselors in the peer review session also

discussed the necessity of tailoring messages to the needs of particular students. Rather than listing the many and varied services that the center offers, the career counselors desired to connect with individual students to demonstrate what the career center could do for them. For example, the career counselors discussed interacting with students who felt lost and worried about not being able to answer the career counselors' questions. As paraphrased from one career counselor, "We need to figure out how to reassure students who come in. When they say 'I don't know what I want to do,' we need to respond with 'That's our business. We can help.' And, then proceed to show them how." Similar to Kegan's (1982) ideas regarding building developmental bridges, career counselors recognized that their communications need to meet students where they are, with language that is familiar and inviting.

Discussion in the peer review session also recognized that career counselors' messages were not the only important communications. All staff members, from career counselors, to support staff, to student workers, contribute to students' impressions of career services at MU. Therefore, tailored messages need to be strategized and agreed on by all staff members to ensure that communications with students are clear and consistent.

Meet students where they are. Study participants moved quickly from uncertainty and anxieties surrounding career counseling to familiarity with specific resources and ideas for the next steps to continue exploring major and career options. As paraphrased from one career counselor in the peer review session, "students may move even faster than we as counselors want to go." Career counselors are encouraged to focus on building a strong rapport that allows them to meet students where they are, even if that place is a moving target. The career counselor-student relationship is a key tool for building an enduring partnership that can support students

through the varied career choices and tasks they will encounter throughout their college experience.

Check in on feelings. Emotional components of the career choice process emerged prominently in the research interviews, whether the emotions facilitated (e.g., hopeful, confident, committed) or hindered (e.g., overwhelmed, afraid) career choice progress. Discussions of emotions prompted one career counselor to suggest that the affective components of individual career counseling (encouraging hope and confidence; assuaging fears) may be as important as the sharing of resources. Career counselors should attend to emotions throughout their work with clients, checking in periodically to assess how students are feeling about the process and addressing tensions that may arise.

Incorporate performance accomplishment activities. Engaging students in hands-on activities for career exploration, decision making, and implementation emerged in this study as a critical component of career counseling that increased self-confidence for making career choices and encouraged progress on career choice tasks. In fact, in this study, this component of performance accomplishment activities set career services apart from other campus support services used by participants when thinking about major and career choices. Career counselors are encouraged to create opportunities for students to actively engage career choices, as well as to set incentives (such as follow-up appointments) to encourage follow-through and reflection.

Facilitate future help-seeking. Individual career counseling interactions were generally a brief intervention for treatment group participants. After their two appointments during the first college semester, only 4 of the 33 students (12.1%) returned for assistance during their second college semester. Some students did not return because they found support for their career choices and implementation via other sources (e.g., Adam's involvement in the business

fraternity that provided access to career-related resources and activities), yet others struggled deeply with career choices on their own (e.g., Angela, Gina, Hailey, Jennifer). The general lack of continued engagement with career counseling creates a challenge for career centers as they continue to offer support to students who are making and implementing career choices. This challenge is particularly difficult to address when students know the next steps they want to pursue with career services but cannot articulate the reasons they do not pursue them.

Career counselors can address this challenge by focusing on facilitating future help-seeking behaviors when students and career counselors agree that additional help would be valuable. When it is appropriate to encourage students to return for additional assistance, career counselors can begin by creating a hook—a specific reason to return that the student views as tangible and practical. Returning to discuss performance accomplishment activities related to career exploration, decision making and implementation provides a meaningful hook, as suggested by the increases in CDMSE observed in this study and nearly half of the students reflected that this was the most helpful part of their career counseling experiences. With the hook, career counselors are encouraged to extend a clear invitation to return, preferably by scheduling a specific day and time to provide a commitment that may motivate follow-through.

Recognize and develop awareness of career barriers. At a minimum, career counselors should demonstrate awareness of the career barriers that influence career exploration, decision making, and implementation. Staying within the ethical limits of their professional competence and training (e.g., see the Code of Ethics of the National Career Development Association, 2007), career counselors can help students recognize career barriers that may impede academic and career progress by providing a safe environment that allows for discussion. Beyond

encouraging awareness, career counselors can consider cognitive reframing or other techniques to overcome career barriers (e.g., Sampson et al., 1996), or they can make appropriate referrals.

Encourage development of support networks. Career counselors should discuss available environmental supports with students, connecting students to resources within and beyond the career center. This is an essential ingredient in career interventions (Borgen & Maglio, 2007), particularly in light of the short duration of influence that career counselors have in students' lives. Many students, even though they may leave their career counseling experiences well-intentioned to carry out agreed on next steps, will not follow-through on those tasks or return to career counseling in a timely fashion. As such, students can benefit from access to support networks in their everyday environments that can facilitate continued career progress, while helping them avoid becoming stymied by career barriers.

Directions for Future Research

This study points to several interesting topics for future exploration. New theoretical paths and connections were suggested regarding sources of self-efficacy and ways in which environmental supports can influence individuals' consideration of career choices. The exploratory analysis of changes in perceptions of career barriers due to individual career counseling and maturation indicates another intriguing area for further study. This study also pointed to a number of process elements (e.g., affect, client–counselor relationships) and moderating influences (e.g., readiness, sources of motivation for seeking help) that may affect career intervention outcomes. Additional research is needed to gain a deeper understanding of these constructs and how they relate to one another. This study also offers evidence of the importance of considering environmental supports (e.g., career counseling, academic advising, significant others) in the career choice process. Although this topic has not sustained a research

focus in the past (Lent et al., 2000), the limited research that is available has consistently shown environmental supports to be influential in the career choice process (Brown & Ryan Krane, 2000). As suggested by many scholars (e.g., Borgen & Maglio, 2007; Brown & Ryan Krane, 2000; Lent & Brown, 2006; McWhirter, Torres, Salgado, & Valdez, 2007), an examination of support networks, and the role of career counseling in developing these networks, is a promising area for future research.

Additionally, a great need remains to diversify the research available regarding career intervention outcomes and processes, a suggestion offered by several other scholars (e.g., Bernes, Bardick, & Orr, 2007; Whiston, Sexton, & Lasoff, 1998). In this sense, the current study was limited (e.g., by focusing on one client population at one university, addressing one type of career choice via one intervention type). Some possible directions for diversifying research include (a) examining the outcomes and processes of multiple career intervention types (e.g., workshops, career classes), (b) focusing on different career choices (e.g., finding a job, making mid-career changes), (c) including a variety of environments (e.g., community colleges, liberal arts colleges), and (d) focusing on diverse populations (e.g., age, gender, race, ethnicity, socioeconomic status, geographic location).

Finally, this study contributed to the career intervention literature not only by demonstrating the outcomes of individual career counseling, but also by seeking elements of the counseling process that contributed to the observed outcomes. The design of this study can serve as a template for future research that integrates qualitative methods, mixed methods, and longitudinal elements into research projects and agendas. Although this study provided an intriguing start, a great need remains for additional nuanced understandings of the process by which career interventions influence clients in order to help career professionals in higher

education understand how best to support students as they make career choices and persist to reach their academic and career goals.

References

- ACT, Inc. (1998). *DISCOVER*. Hung Valley, MD, Author.
- Albert, K. A., & Luzzo, D. A. (1999). The role of perceived barriers in career development: A social cognitive perspective. *Journal of Counseling & Development*, 77(4), 431–436.
- Ali, S. R., & McWhirter, E. H. (2006). Rural Appalachian youth's vocational/educational postsecondary aspirations: Applying social cognitive career theory. *Journal of Career Development*, 33(2), 87–111.
- Ali, S. R., McWhirter, E. H., & Chronister, K. M. (2005). Self-efficacy and vocational outcome expectations for adolescents of lower socioeconomic status: A pilot study. *Journal of Career Assessment*, 13(1), 40–58.
- Ali, S. R., & Saunders, J. L. (2006). College expectations of rural Appalachian youth: An exploration of social cognitive career theory factors. *Career Development Quarterly*, 55(1), 38–51.
- American College Personnel Association, & National Association of Student Personnel Administrators. (2004). *Learning reconsidered: A campus-wide focus on the student experience*. Washington, DC: Author.
- Astin, A. (1970). The methodology of research on college impact, part one. *Sociology of Education*, 43(3), 223–254.
- Astin, A. (1993). *What matters in college? Four critical years revisited*. San Francisco, CA: Jossey Bass.
- Austin, R. J. (2006). *The relationship between racial identity attitudes and perceived barriers to career self-efficacy among African American men* Doctoral dissertation. Retrieved from Dissertation Abstracts International. 3210258
- Baker, S. B., & Popowicz, C. L. (1983). Meta-analysis as a strategy for evaluating effects of career education interventions. *Vocational Guidance Quarterly*, 31, 178–186.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1997). *Self-Efficacy: The exercise of self control*. New York, NY: W. H. Freeman.
- Beck, A. T. (1976). *Cognitive therapies and emotional disorders*. New York, NY: International Universities Press.

- Beck, A. T., & Weishaar, M. (1995). Cognitive therapy. In R. J. Corsini, & D. Wedding (Eds.), *Current psychotherapies* (5th ed., pp. 229-261). Itasca, IL: F. E. Peacock.
- Bedsworth, W., Colby, S., & Doctor, J. (2006). *Reclaiming the American dream*. Boston, MA: The Bridgespan Group.
- Bernes, K. B., Bardick, A. D., & Orr, D. T. (2007). Career guidance and counselling efficacy studies: An international research agenda. *International Journal for Educational and Vocational Guidance*, 7(2), 81–96.
- Bers, T., McGowan, M., & Rubin, A. (1996). The disposition to think critically among community college students: The California Critical Thinking Disposition Inventory. *Journal of General Education*, 45, 197–223.
- Betz, N. E. (1992). Counseling uses of career self-efficacy theory. *Career Development Quarterly*, 41, 22–26.
- Betz, N. E., (2000). Self-efficacy theory as a basis for career assessment. *Journal of Career Assessment*, 8(3), 205–222.
- Betz, N. E. (2004). Contributions of self-efficacy theory to career counseling: A personal perspective. *Career Development Quarterly*, 52(4), 340–353.
- Betz, N. E. (2007). Career self-efficacy: Exemplary recent research and emerging directions. *Journal of Career Assessment*, 15(4), 403–422.
- Betz, N. E., Hammond, M. S., & Multon, K. D. (2005). Reliability and validity of five-level response continua for the Career Decision Self-Efficacy Scale. *Journal of Career Assessment*, 13, 131–149.
- Betz, N. E., Klein, K. L., & Taylor, K. M. (1996). Evaluation of a short form of the career decision-making self-efficacy scale. *Journal of Career Assessment*, 4, 47–57.
- Betz, N. E., & Luzzo, D. A. (1996). Career assessment and the Career Decision-Making Self-Efficacy Scale. *Journal of Career Assessment*, 4, 313–328.
- Betz, N. E., & Taylor, K. M. (2001). *Career Decision Self-Efficacy Scale–Short Form*. Columbus, OH: Department of Psychology, The Ohio State University.
- Betz, N. E., & Taylor, K. M. (2006). *Manual for the Career Decision Self-Efficacy Scale and CDSE–Short Form*. Columbus, OH: Department of Psychology, The Ohio State University.
- Bickman, L., Rog, D. J., & Hendrick, T. E. (1998). Applied research design: A practical approach. In L. Bickman & D. J. Rog (Eds.), *Handbook of Applied Social Research Methods* (pp. 5-38). Thousand Oaks, CA: Sage.

- Bikos, L. H., & Furry, T. S. (1999). The job search club for international students: An evaluation. *Career Development Quarterly*, 48, 31–48.
- Blau, F., Ferber, M., & Winkler, A. (1998). *The economics of women, men, and work* (2nd. ed.). Englewood Cliffs, NJ: Prentice-Hill.
- Blustein, D. L. (1989). The role of goal instability and career self-efficacy in the career exploration process. *Journal of Vocational Behavior*, 35, 194–203.
- Bogdan, R. C., & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theories and methods* (5th ed.). Boston, MA: Pearson Education.
- Borgen, W. A., & Maglio, A. T. (2007). Putting action back into action planning: Experiences of career clients. *Journal of Employment Counseling*, 44, 173–184.
- Brown, S. D., & Ryan Krane, N. E. (2000). Four (or five) sessions and a cloud of dust: Old assumptions and new observations about career counseling. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology* (3rd ed., pp. 740–766). New York, NY: John Wiley & Sons.
- Bucher, H., & Ragland, D. (1995). Socioeconomic indicators and mortality from coronary heart disease and cancer: A 23-year follow-up of middle-aged men. *American Journal of Public Health*, 85, 1231–1236.
- Buescher, K. L., Johnston, J. A., Lucas, E. B., & Hughey, K. F. (1989). Early intervention with undecided college students. *Journal of College Student Development*, 30, 375–376.
- Chartrand, J. M., & Rose, M. L. (1996). Career interventions for at-risk populations: Incorporating social cognitive influences. *Career Development Quarterly*, 44(4), 341–353.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum.
- Constantine, M. G., Wallace, B. C., & Kindaichi, M. M. (2005). Examining contextual factors in the career decision status of African American adolescents. *Journal of Career Assessment*, 13(3), 307–319.
- Corey, G. (2001). *Theory and practice of counseling and psychotherapy* (6th ed.). Belmont, CA: Brooks/Cole.
- Creed, P. A., Patton, W., & Bartrum, D. (2004). Internal and external barriers, cognitive style, and the career development variables of focus and indecision. *Journal of Career Development*, 30(4), 277–294.

- Cress, C., Astin, H., Zimmerman-Oster, K., & Burkhardt, J. (2001). Developmental outcomes of college students' involvement in leadership activities. *Journal of College Student Development, 42*, 15–27.
- Creswell, J. W., Clark, V. L. C., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. In A. Tashakkori, & C. Teddlie (Eds.), *Handbook of Mixed Methods in Social and Behavioral Research* (pp. 209-240). Thousand Oaks, CA: Sage.
- Crites, J. O. (1969). *Vocational psychology: The study of vocational behavior and development*. New York, NY: McGraw-Hill.
- Crites, J. O. (1978). *Career Maturity Inventory*. Monterey, CA: CTB/McGraw Hill.
- Davey, F. H., & Stoppard, J. M. (1993). Some factors affecting the occupational expectations of female adolescents. *Journal of Vocational Behavior, 43*, 235–250.
- Diegelman, N. M., & Subich, L. M. (2001). Academic and vocational interests as a function of outcome expectancies in social cognitive career theory. *Journal of Vocational Behavior, 59*, 394–405.
- Drouin, L. (1992). An investigation of the critical thinking ability of engineering students seeking a bachelor of science degree Doctoral dissertation. Retrieved from ProQuest. 746949971
- Ewell, P. T. (2001). *Accreditation and student learning outcomes: A proposed point of departure*. Washington, DC: Council for Higher Education Accreditation.
- Facione, N. (1997). *Critical thinking assessment in nursing education programs: An aggregate data analysis*. Millbrae, CA: California Academic Press.
- Farmer, H. S. (1976). What inhibits achievement and career motivation in women? *Counseling Psychologist, 6*(2), 12–15.
- Ferry, T. R., Fouad, N. A., & Smith, P. L. (2000). The role of family context in a social cognitive model for career-related choice behavior: A math and science perspective. *Journal of Vocational Behavior, 57*, 348–364.
- Flores, L. Y., & O'Brien, K. M. (2002). The career development of Mexican American adolescent women: A test of social cognitive career theory. *Journal of Counseling Psychology, 49*(1), 14–27.
- Flores, L. Y., Navarro, R. L., Smith, J. L., & Ploszaj, A. M. (2006). Testing a model of nontraditional career choice goals with Mexican American adolescent men. *Journal of Career Assessment, 14*(2), 214–234.

- Flowers, L., & Pascarella, E. (1999). Cognitive effects of college racial composition on African-American students after three years of college. *Journal of College Student Development*, 40, 669–677.
- Foltz, B. M., & Luzzo, D. A. (1998). Increasing career decision-making self-efficacy of nontraditional college students. *Journal of College Counseling*, 1, 35–44.
- Foss, C. J., & Slaney, R. B. (1986). Increasing nontraditional career choices in women: Relation of attitudes toward women and responses to a career intervention. *Journal of Vocational Behavior*, 28, 191–202.
- Fouad, N. A., & Arbona, C. (1994). Careers in a cultural context. *Career Development Quarterly*, 43(1), 96–105.
- Fowler, F. J., Jr. (2002). *Survey research methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Fretz, B. R. (1981). Evaluating the effectiveness of career interventions [Monograph]. *Journal of Counseling Psychology*, 28, 77–90.
- Fukuyama, M. A., Probert, B. S., Neimeyer, G. J., Nevill, D. D., & Metzler, A. E. (1988). Effects of DISCOVER on career self-efficacy and decision making of undergraduates. *Career Development Quarterly*, 37, 56–62.
- Gainor, K. A. (2006). Twenty-five years of self-efficacy in career assessment and practice. *Journal of Career Assessment*, 14(1), 161–178.
- Ganske, K. H., & Ashby, J. S. (2007). Perfectionism and career decision-making self-efficacy. *Journal of employment counseling*, 44, 17–28.
- Gilleskie, D., & Harrison, A. (1998). The effect of endogenous health inputs on the relationship between health and education. *Economics of Education Review*, 17, 279–297.
- Girden, E. R. (1992). *ANOVA: Repeated measures*. London, United Kingdom: Sage.
- Gordon, V. N. (1985). Students with uncertain academic goals. In L. Noel, R. Levitz, D. Saluri, & Associates (Eds.), *Increasing student retention* (pp. 116–137). San Francisco, CA: Jossey-Bass.
- Gottfredson, L. S. (1981). Circumscription and compromise: A developmental theory of occupational aspirations. *Journal of Counseling Psychology*, 28(6), 545–579.
- Greene, J. C. (2007). *Mixed methods in social inquiry*. San Francisco, CA: John Wiley & Sons.
- Greene, J. C., Benjamin, L., & Goodyear, L. (2001). The merits of mixing methods in evaluation. *Evaluation*, 7, 25–44.

- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11*, 255–274.
- Groccia, J. E., & Harrity, M. B. (1991). The major selection program: A proactive retention and enrichment program for undecided freshmen. *Journal of College Student Development, 32*, 178–179.
- Gushue, G. V., Clarke, C. P., Pantzer, K. M., & Scanlan, K. R. L. (2006). Self-efficacy, perceptions of barriers, vocational identity, and the career exploration of Latino/a high school students. *Career Development Quarterly, 54*, 307–317.
- Gushue, G. V., Scanlan, K. R. L., Pantzer, K. M., & Clarke, C. P. (2006). The relationship of career decision-making self-efficacy, vocational identity, and career exploration behavior in African American high school students. *Journal of Career Development, 33*(1), 19–28.
- Hackett, G., & Betz, N. E. (1981). A self-efficacy approach to the career development of women. *Journal of Vocational Behavior, 18*, 326–339.
- Hackett, G., Betz, N. E., Casas, J. M., & Rocha-Singh, I. A. (1992). Gender, ethnicity, and social cognitive factors predicting the academic achievement of students in engineering. *Journal of Counseling Psychology, 39*(4), 527–538.
- Hackett, G., Lent, R. W., & Greenhouse, J. H. (1991). Advances in vocational theory and research: A 20-year retrospective. *Journal of Vocational Behavior, 38*, 3–38.
- Hagedorn, L., Siadat, M., Nora, A., & Pascarella, E. (1997). Factors leading to gains in mathematics during the first year of college: An analysis by gender and ethnicity. *Journal of Women and Minorities in Science and Engineering, 3*, 185–202.
- Harris-Bowlsbey, J., Suddarth, B. H., & Reile, D. M. (2005). *Facilitating career development: Student manual* (2nd ed.). Broken Arrow, OK: National Career Development Association.
- Hartung, P. J. (1995). Developing a theory-based measure of career decision-making: The decisional process inventory. *Journal of Career Assessment, 3*, 299–313.
- Heppner, M. J., & Heppner, P. P. (2003). Identifying process variables in career counseling: A research agenda. *Journal of Vocational Behavior, 62*, 429–452.
- Holland, J. L., Fritzsche, B. A., & Powell, A. B. (1994). *The Self-Directed Search technical manual*. Odessa, FL: Psychological Assessment Resources.
- Hughes, K. L., & Karp, M. M. (2004). *School-based career development: A synthesis of literature*. New York, NY: Institute on Education and the Economy, Teachers College, Columbia University.

- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14–26.
- Jurgens, J. C. (2002). The career navigator sails. *Journal of College Student Development*, 43(1), 137–142.
- Karl-Lam, M. (2006). *Protective factors, endurance characteristics, and persistence of first-generation, non-traditional, and traditional college students* Doctoral dissertation. Retrieved from Dissertation Abstracts International. 3213878
- Kegan, R. (1982). *The evolving self: Problem and process in human development*. Cambridge, MA: Harvard University Press.
- Knox, W., Lindsay, P., & Kolb, M. (1992). Higher education, college characteristics, and student experiences: Long-term effects on educational satisfactions and perceptions. *Journal of Higher Education*, 63, 303–328.
- Knox, W., Lindsay, P., & Kolb, M. (1993). *Does college make a difference? Long-term changes in activities and attitudes*. Westport, CT: Greenwood Press.
- Krathwohl, D. R. (1998). *Methods of educational and social science research: An integrated approach* (2nd ed.). Long Grove, IL: Waveland Press.
- Krieshok, T. S., Ulven, J. C., Hecox, J. L., & Wettersten, K. (2000). Resume therapy and vocational test feedback: Tailoring interventions to self-efficacy outcomes. *Journal of Career Assessment*, 8(3), 267–281.
- Kush, K., & Cochran, L. (1993). Enhancing a sense of agency through career planning. *Journal of Counseling Psychology*, 40(4), 434–439.
- Kvale, S. (1996). *InterViews: An introduction to qualitative research interviewing*. Thousand Oaks, CA: Sage.
- Lapan, R. T., Hinkelman, J. M., Adams, A., & Turner, S. (1999). Understanding rural adolescents' interest, values, and efficacy expectations. *Journal of Career Development*, 26(2), 107–124.
- Lavin, D., & Hyllegard, D. (1991). *The value of college*. New Haven, CT: Yale University Press.
- Leal-Muniz, V., & Constantine, M. G. (2005). Predictors of the career commitment process in Mexican American college students. *Journal of Career Assessment*, 13(2), 204–215.
- Lent, R. W., & Brown, S. D. (1996). Social cognitive approach to career development: An overview. *Career Development Quarterly*, 44(4), 310–321.

- Lent, R. W., & Brown, S. D. (2006). On conceptualizing and assessing social cognitive constructs in career research: A measurement guide. *Journal of Career Assessment*, 14(1), 12–35.
- Lent, R. W., Brown, S. D., Brenner, B., Chopra, S. B., Davis, T., Talleyrand, R., & Suthakaran, V. (2001). The role of contextual supports and barriers in the choice of math/science educational options: A test of social cognitive hypotheses. *Journal of Counseling Psychology*, 48(4), 474–483.
- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance [Monograph]. *Journal of Vocational Behavior*, 45, 79–122.
- Lent, R. W., Brown, S. D., & Hackett, G. (2000). Contextual supports and barriers to career choice: A social cognitive analysis. *Journal of Counseling Psychology*, 47(1), 36–49.
- Lent, R. W., Brown, S. D., Schmidt, J., Brenner, B., Lyons, H., & Treistman, D. (2003). Relation of contextual supports and barriers to choice behavior in engineering majors: Test of alternative social cognitive models. *Journal of Counseling Psychology*, 50(4), 458–465.
- Lent, R. W., Brown, S. D., Sheu, H., Schmidt, J., Brenner, B. R., Gloster, C. S., . . . Treistman, D. (2005). Social cognitive predictors of academic interests and goals in engineering: Utility for women and students at historically Black universities. *Journal of Counseling Psychology*, 52(1), 84–92.
- Lent, R. W., Brown, S. D., Talleyrand, R., McPartland, E. B., Davis, T., Chopra, S. B., . . . Chai, C. (2002). Career choice barriers, supports, and coping strategies: College students' experiences. *Journal of Vocational Behavior*, 60(1), 61–72.
- Light, R. J. (2001). *Making the most of college: Students speak their minds*. Cambridge, MA: Harvard University Press.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Newbury Park, CA: Sage.
- Lindley, L. D. (2005). Perceived barriers to career development in the context of social cognitive career theory. *Journal of Career Assessment*, 13(3), 271–287.
- Lopez, F. G., & Ann-Yi, S. (2006). Predictors of career indecision in three racial/ethnic groups of college women. *Journal of Career Development*, 33(1), 29–46.
- Luzzo, D. A. (1993). Ethnic differences in college students' perceptions of barriers to career development. *Journal of Multicultural Counseling and Development*, 21(4), 227–236.
- Luzzo, D. A. (1995). Gender differences in college students' career maturity and perceived barriers in career development. *Journal of Counseling & Development*, 73(3), 319–322.

- Luzzo, D. A. (1996). Exploring the relationship between the perception of occupational barriers and career development. *Journal of Career Development*, 22, 239–248.
- Luzzo, D. A. (1999). Identifying the career decision-making needs of nontraditional college students. *Journal of Counseling & Development*, 77(2), 135–140.
- Luzzo, D. A., & Day, M. A. (1999). Effects of Strong Interest Inventory feedback on career decision-making self-efficacy and social cognitive career beliefs. *Journal of Career Assessment*, 7(1), 1–17.
- Luzzo, D. A., Hasper, P., Albert, K. A., Bibby, M. A., & Martinelli, E. A., Jr. (1999). Effects of self-efficacy-enhancing interventions on the math/science self-efficacy and career interests, goals, and actions of career undecided college students. *Journal of Counseling Psychology*, 46(2), 233–243.
- Luzzo, D. A., & Hutcheson, K. G. (1996). Causal attributions and sex differences associated with perceptions of occupational barriers. *Journal of Counseling & Development*, 75(2), 124–130.
- Luzzo, D. A., & McWhirter, E. H. (2001). Sex and ethnic differences in the perception of educational and career-related barriers and levels of coping efficacy. *Journal of Counseling & Development*, 79(1), 61–67.
- Luzzo, D. A., & Taylor, M. (1994). Effects of verbal persuasion on the career self-efficacy of college freshmen. *California Association for Counseling and Development Journal*, 14, 31–34.
- Mann, L. (1972). Use of a “balance sheet” procedure to improve the quality of personal decision making: A field experiment with college applicants. *Journal of Vocational Behavior*, 2, 291–300.
- Maples, M. R., & Luzzo, D. A. (2005). Evaluating DISCOVER’s effectiveness in enhancing college students’ social cognitive career development. *Career Development Quarterly*, 53, 274–285.
- McCracken, G. (1988). *The long interview*. Newbury Park, CA: Sage.
- McWhirter, E. H. (1997). Perceived barriers to education and career: Ethnic and gender differences. *Journal of Vocational Behavior*, 50, 124–140.
- McWhirter, E. H., Rasheed, S., & Crothers, M. (2000). The effects of high school career education on social-cognitive variables. *Journal of Counseling Psychology*, 47(3), 330–341.
- McWhirter, E. H., Torres, D., & Rasheed, S. (1998). Assessing barriers to women's career adjustment. *Journal of Career Assessment*, 6, 449–479.

- McWhirter, E. H., Torres, D. M., Salgado, S., & Valdez, M. (2007). Perceived barriers and postsecondary plans in Mexican American and White adolescents. *Journal of Career Assessment, 15*(1), 119–138.
- Meichenbaum, D. (1977). *Cognitive behavior modification: An integrative approach*. New York, NY: Plenum Press.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: Sage.
- Monahan, C. J. (1987). Construct validation of a modified differentiation index. *Journal of Vocational Behavior, 30*, 217–226.
- Myers, R. A. (1986). Research on educational and vocational counseling. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change: An empirical analysis* (3rd ed., pp. 715–738). New York: John Wiley & Sons.
- Myerson, J., Rank, M., Raines, F., & Schnitzler, M. (1998). Race and general cognitive ability: The myth of diminishing returns to education. *Psychological Science, 9*, 139–142.
- National Career Development Association. (2007). *National Career Development Association Code of Ethics*. Retrieved from <http://associationdatabase.com/aws/NCDA/pt/sp/guidelines>
- Nieva, V. F., & Gutek, B. A. (1981). *Women and work: A psychological perspective*. New York, NY: Praeger.
- Niles, S. G., & Hartung, P. J. (2000). Emerging career theories. In D. A. Luzzo (Ed.), *Career Counseling of College Students: An empirical guide to strategies that work* (pp. 23–42). Washington, D.C.: American Psychological Association.
- O'Brien, K. M., Bikos, L. H., Epstein, K. L., Flores, L. Y., Dukstein, R. D., & Kamatuka, N. A. (2000). Enhancing the career decision-making self-efficacy of Upward Bound students. *Journal of Career Development, 26*(4), 277–293.
- O'Leary, V. E. (1974). Some attitudinal barriers to occupational aspirations in women. *Psychological Bulletin, 81*, 809–826.
- Oliver, L. W., & Spokane, A. R. (1988). Career-intervention outcome: What contributes to client gain? *Journal of Counseling Psychology, 35*(4), 447–462.
- Onwuegbuzie, A. J., & Johnson, R. B. (2006). The validity issues in mixed research. *Research in the Schools, 13*, 48–63.
- Onwuegbuzie, A. J., & Teddlie, C. (2003). A framework for analyzing data in mixed methods research. In A. Tashakkori and C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 351–383). Thousand Oaks, CA: Sage.

- Pajares, F. (1994). Inviting self-efficacy: The role of invitations in the development of confidence and competence in writing. *Journal of Invitational Theory and Practice*, 3(1), 13–24.
- Pajares, F., & Zeldin, A. L. (1999). Inviting self-efficacy revisited: The role of invitations in the lives of women with mathematics-related careers. *Journal of Invitational Theory and Practice*, 6(1), 48–68.
- Palmer, S., & Cochran, L. (1988). Parents as agents of career development. *Journal of Counseling Psychology*, 35 (1), 71–76.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students* (Vol. 2). San Francisco, CA: Jossey-Bass.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Paulsen, M. (1998). Recent research on the economics of attending college: Returns on investment and responsiveness to price. *Research in Higher Education*, 39, 471–198.
- Peterson, S. L. (1993). Career decision-making self-efficacy and institutional integration of under prepared college students. *Research in Higher Education*, 34(6), 659–685.
- Peterson, G. W., Ryan-Jones, R. E., Sampson, J. P., Jr., Reardon, R. C., & Shahnasarian, M. (1994). A comparison of the effectiveness of three computer-assisted career guidance systems: DISCOVER, SIGI, and SIGI PLUS. *Computers in Human Behavior*, 10, 189–198.
- Purkey, W. W. (2000). *What students say to themselves: Internal dialog and school success*. Thousand Oaks, CA: Corwin Press.
- Purkey, W. W., & Novak, J. M. (1996). *Inviting school success* (3rd ed.). Belmont, CA: Wadsworth.
- Quimby, J. L., & O'Brien, K. M. (2004). Predictors of student and career decision-making self-efficacy among nontraditional college women. *Career Development Quarterly*, 52(4), 323–339.
- Reardon, R. C., Lenz, J. G., Sampson, J. P., & Peterson, G. W. (2000). *Career development and planning: A comprehensive approach*. Belmont, CA: Wadsworth/Thompson Learning.
- Reichardt, C. S., & Mark, M. M. (1998) Quasi-experimentation. In L. Bickman & D. J. Rog (Eds.), *Handbook of applied social research methods* (pp. 193–228). Thousand Oaks, CA: Sage.
- Richie, B. S., Fassinger, R. E., Linn, S. G., Johnson, J., Prosser, J. & Robinson, S. (1997). Persistence, connection, and passion: A qualitative study of the career development of

- highly achieving African American-Black and White women. *Journal of Counseling Psychology*, 44(2), 133–148.
- Rivera, L. M. (2002). *Relations of perceived barriers, acculturation, and role models to the career self-efficacy and career considerations of Hispanic women*. Doctoral dissertation. Retrieved from Dissertation Abstracts International. 3056154
- Rivera, L. M., Chen, E. C., Flores, L. Y., Blumberg, F., & Ponterotto, J. G. (2007). The effects of perceived barriers, role models, and acculturation on the career self-efficacy and career consideration of Hispanic women. *Career Development Quarterly*, 56(1), 47–61.
- Robbins, S. B. (1985). Validity estimates for the Career Decision-Making Self-Efficacy Scale. *Measurement and Evaluation in Counseling and Development*, 18, 64–71.
- Robinson, D. A. G., & Cooper, S. E. (1988). The relationship of Kohut's self-psychology to career choice certainty and satisfaction. *Journal of College Student Development*, 29(3), 228–232.
- Rubin, H. J., & Rubin, I. S. (2005). *Qualitative interviewing: The art of hearing data*. (2nd ed.). Thousand Oaks, CA: Sage.
- Ryan, N. E. (1999). *Career counseling and career choice goal attainment: A meta-analytically derived model for career counseling practice* Doctoral dissertation. Retrieved from ProQuest. 9930585
- Sampson, J. P., Jr. Peterson, G. W., Lenz, J. G., Reardon, R. C., & Saunders, D. E. (1996). *Career Thoughts Inventory: Professional manual*. Lutz, FL: Psychological Assessment Resources.
- Sampson, J. P., Jr., Reardon, R. C., Peterson, G. W., & Lenz, J. G. (2004). *Career counseling and services: A cognitive information processing approach*. Belmont, CA: Brooks/Cole.
- Savickas, M. L. (2003). Advancing the career counseling profession: Objectives and strategies for the next decade. *Career Development Quarterly*, 52, 87–96.
- Schroeder, C. C. (1996). Focus on student learning: An imperative for student affairs. *Journal of College Student Development*, 37, 115–117.
- Sears, S. (1982). A definition of career guidance terms: A National Vocational Guidance Association perspective. *The Vocational Guidance Quarterly*, 31, 137–143.
- Sieber, J. (1998). Planning ethically responsible research. In L. Bickman & D. J. Rog (Eds.), *Handbook of Applied Social Research Methods* (pp. 127–156). Thousand Oaks, CA: Sage.
- Slaney, R. B. (1978). Expressed and inventoried vocational interests: A comparison of instruments. *Journal of Counseling Psychology*, 25, 520–529.

- Slaney, R. B. (1980a). An investigation of racial differences on vocational variables among college women. *Journal of Vocational Behavior*, 16, 197–207.
- Slaney, R. B. (1980b). Expressed vocational choice and vocational indecision. *Journal of Counseling Psychology*, 27, 122–129.
- Slaney, R. B., & Brown, M. T. (1983). Effects of race and socioeconomic status on career choice variables among college men. *Journal of Vocational Behavior*, 23, 257–269.
- Sobol, M. G. (1963). Commitment to work. In F. I. Nye & L. W. Hoffman (Eds.), *The employed mother in America* (pp. 40-63). Chicago, IL: Rand McNally.
- Smith, J. K., & Heshusius, L. (1986). Closing down the conversation: The end of the qualitative-quantitative debate among educational inquirers. *Educational Researcher*, 15(1), 4–12.
- Strong, E. K., Hansen, J. I., & Campbell, D. P. (1994). *Strong Interest Inventory*. Palo Alto, CA: Stanford University Press.
- Sullivan, K. R., & Mahalik, J. R. (2000). Increasing career self-efficacy for women: Evaluating a group intervention. *Journal of Counseling and Development*, 78, 54–62.
- Sun, S., Pan, W., & Wang, L. L. (2010). A comprehensive review of effect size reporting and interpreting practices in academic journals in education and psychology. *Journal of Educational Psychology*, 102(4), 989–1004.
- Swanson, J. L. (1995a). *Career Barriers Inventory-Revised*. Carbondale, IL: Department of Psychology, Southern Illinois University.
- Swanson, J. L. (1995b). The process and outcome of career counseling. In W. B. Walsh & S. H. Osipow (Eds.), *Handbook of vocational psychology* (2nd ed., pp. 217–259). Mahwah, NJ: Erlbaum.
- Swanson, J. L., Daniels, K. K., & Tokar, D. M. (1996). Assessing perceptions of career-related barriers: The career barriers inventory. *Journal of Career Assessment*, 4(2), 219–244.
- Swanson, J. L., & Tokar, D. M. (1991). College students' perceptions of barriers to career development. *Journal of Vocational Behavior*, 38(1), 92–106.
- Swanson, J. L., & Woitke, M. B. (1997). Theory into practice in career assessment for women: Assessment and interventions regarding perceived career barriers. *Journal of Career Assessment*, 5(4), 443–462.
- Taylor, K. M., & Betz, N. E. (1983). Applications of self-efficacy theory to the understanding and treatment of career indecision. *Journal of Vocational Behavior*, 22, 63–81.

- Taylor, K. M., & Popma, J. (1990). An examination of the relationships among career decision-making self-efficacy, career salience, locus of control, and vocational indecision. *Journal of Vocational Behavior*, 37, 17–31.
- Teddlie, C., & Tashakkori, A. (2003). Major issues and controversies in the use of mixed methods in the social and behavioral sciences. In A. Tashakkori and C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 11–58). Thousand Oaks, CA: Sage.
- Teddlie, C., & Tashakkori, A. (2006). A general typology of research designs featuring mixed methods. *Research in the Schools*, 13, 12–28.
- Thompson, B. (2002). What future quantitative social science research could look like: Confidence intervals for effect sizes. *Educational Researcher*, 31(3), 25–32.
- Tinsley, D. J., & Faunce, P. S. (1980). Enabling, facilitating, and precipitating factors associated with women's career orientation. *Journal of Vocational Behavior*, 17 (183–194).
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: University of Chicago Press.
- Tinto, V. (1999). Taking college seriously: Rethinking the first year of college. *NACADA Journal*, 19(2), 5–9.
- Uffelman, R. A., Subich, L. M., Diegelman, N. M., Wagner, K. S., & Bardash, R. J. (2004). Effect of mode of interest assessment on clients' career decision-making self-efficacy. *Journal of Career Assessment*, 12(4), 366–380.
- U. S. Department of Education. (2006). *A Test of Leadership: Charting the Future of U.S. Higher Education* (Education Contract No. ED-06-C0-0013). Washington, DC: Author.
- Usher, E. L., & Pajares, F. (2008). Sources of self-efficacy in school: Critical review of the literature and future directions. *Review of Educational Research*, 78, 751–796.
- Vogt, W. P. (2005). *Dictionary of statistics and methodology: A nontechnical guide for the social sciences* (3rd ed.). Thousand Oaks, CA: Sage.
- Weiss, K. I. (2000). *The social cognitive model of career choice: A cross cultural analysis*. Doctoral dissertation. Retrieved from ProQuest. 9987117
- Whiston, S. C. (2003). Career counseling: 90 years old yet still healthy and vital. *Career Development Quarterly*, 52, 35–42.
- Whiston, S. C., Brecheisen, B. K., & Stephens, J. (2003). Does treatment modality affect career counseling effectiveness? *Journal of Vocational Behavior*, 62, 390–410.

- Whiston, S. C., Sexton, T. L., & Lasoff, D. L. (1998). Career-intervention outcome: A replication and extension of Oliver and Spokane. *Journal of Counseling Psychology*, 45, 150–165.
- Wingspread Group on Higher Education. (1993). *An American imperative: Higher expectations for higher education*. Racine, WI: Johnson Foundation.
- Winkleby, M. Fortmann, S., & Barrett, D. (1990). Social class disparities in risk factors for disease: Eight-year prevalence patterns by level of education. *Preventative Medicine*, 19, 1–12.
- Wolcott, H. (2005). *The art of fieldwork*. Walnut Creek, CA: AltaMira Press.
- Zener, T. B., & Schnuelle, L. (1972). *An evaluation of the Self-Directed Search: A guide to educational and vocational planning*. Baltimore, MD: Center for the Social Organization of Schools, The Johns Hopkins University. (ERIC Document Reproduction Service No. ED061458)

Appendix A

Voluntary Consent Form

You are invited to participate in this research survey designed to gain a deeper understanding of the supports and barriers that college student experience as they transition to college and explore majors and careers. The information learned from this study will be used to inform the development of effective support systems to help students make smooth transitions to college, persist to their degrees, and find meaningful, rewarding careers. This part of a dissertation carried out by Julia Panke Makela, under the direction of Professor Debra Bragg, a faculty member in the Department of Educational Organization and Leadership at the University of Illinois at Urbana-Champaign.

Participants are asked to complete a set of three online surveys, each of which is expected to take approximately 10 – 15 minutes to complete. Additionally, if randomly selected to do so, participants are asked to take part in two 45-minute interviews and/or two 45-minute career counseling appointments as described in the attached study description.

The information that you provide will be kept strictly confidential, and will not be connected to your name or any other identifiable information. The following steps will be taken to protect your confidentiality and privacy at each step of the study:

- **Survey responses** will only be connected by a unique identifier that you create, and which will not be traced back to your name or identifying information.
- **Interviews** will be audio recorded, only with your permission. Transcriptions of interviews will be made using pseudonyms, which cannot be traced back to your name or identifying information.
- The researchers will NOT have access to any information about the topics discussed in the **career counseling appointments**. That information is confidential, and will be kept only between the you and the career counselor. [The career center] will only inform the researchers of the number of appointments that you participated in for this study, so that the proper thank you gifts may be provided.

For each survey that you participating in, you will be entered into a raffle for a cash gift of \$50. For each career counseling appointment that you participate in, you will receive a cash gift of \$5. For each interview you participate in you will receive a cash gift -- \$5 for the first two interviews, and \$10 for the third interview. These raffles and gifts are intended as a thank you to participants for the time and energy that they put into the survey. All gifts will be delivered to recipients by the research staff.

Participation is not anticipated to create any risks greater than normal life. ***Please only participate in this study if you are 18 years of age or older.***

Data collected for this project will be stored on secure, password protected computers, accessible only to the researchers. The researchers will keep the information you provide confidential. However, the service hosting this survey may have access to the data you submit and your IP number. While we cannot guarantee that this service will keep information you submit confidential, we have a reasonable expectation that they will do so. At the conclusion of the project, these materials will be archived for a period of seven years and then destroyed.

Findings from this study may be used in publications and conference presentations aimed at furthering an understanding of supports and barriers that college students perceive to their persisting in higher education and finding rewarding careers. Identifying information will not be included in any dissemination of study results.

Please note that your participation in this project is completely voluntary, and you are free to withdraw at any time and for any reason without penalty. You are also free to refuse to answer any questions you do not wish to answer. Refusal to participate will not result in any negative impact on your current or future relationship with [Midwest University].

If you have any questions or concerns, please contact Julia Makela by email at jpmakela@illinois.edu or Debra Bragg, project director, by telephone (call collect) at 217-244-8974 or email at dbragg@illinois.edu. If you have any questions about your rights as a research participant, please contact XXXXXXXX at XXXXXXXX, by telephone (call collect) at ###-###-#### or email at XXXXXXXX.

Please indicate your willingness to participate using the check boxes and signature line below.

Would you be willing to participate in this major and career exploration study?

Please indicate whether or not you are willing to participate in this study by checking the appropriate box (☑).

- ☐ Yes, I would like to participate in the surveys and, if I am randomly selected to do so, the interviews and/or career counseling appointments.

I have read and understand the information provided in this consent form and voluntarily agree to participate in this interview study.

Signature

Date

- ☐ No, I would not like to participate in this study.
Please indicate why you would not like to participate. (*This information will only be used in aggregate to give context to the study.*)
- ☐ I am 17 years of age or younger
 - ☐ I have already selected a single major or career option to pursue
 - ☐ Other reason / would prefer not to say

Appendix B

Interview Guides

Pre-Interview

For all participants . . .

- You are in your first few weeks at (*Midwest University*). Why did you choose to come here over your other options?
- And, you have come in through the (*Exploring Majors College*). Tell me about your decision to do that over selecting a particular college right away.
- How would you describe your experience at (*Midwest University*) so far?
- What majors or colleges are you currently considering? What careers are you considering?

Which is your top choice? On a scale of 1 to 5 (1 being *very unsure*, 5 being *very certain*) how confident are you in your top choice?

- What might get in the way of your finding a major or career that is a good fit for you?
Or if a clear major / career expressed: What might get in the way of your pursuing the major or career that you desire?
(*Probing questions for further clarification – likelihood of barriers, difficulty to overcome, etc.*)
- What might help you find a major or career that is a good fit for you?
Or if a clear major / career expressed: What might help you pursue the major or career that you desire?
(*Probing questions for further clarification – likelihood of support, degree of helpfulness, etc.*)
- Sometimes when we make major or career choices, they can be influenced by the world around us - socially, culturally how we see ourselves and how other see us. I have a brainstormed list of some social and cultural identity dimensions to share to get us started:
 - Ability / disability
 - Age
 - Appearance (e.g., size, skin color, facial features, hair texture)
 - Family heritage / traditions
 - Gender
 - Geographic region
 - Nationality
 - Personality qualities / characteristics
 - Political affiliation
 - Professional affiliation / occupation
 - Race / ethnicity

Religion
Sexual orientation
Socioeconomic class
Values

I'm wondering, is there anything on this list (or not on the list?) that resonates with you as being important to your major or career choice?

If yes, how does _____ influence your choices?

For treatment group participants . . .

- As part of this study, you are scheduled to participate in a set of two career counseling appointments.

How do you feel about going to a career counseling appointment?
What do you think the experience of career counseling might be like?

What would you want to take away from this experience? How might you benefit?
What concerns do you have about meeting with a career counselor?

For those who report using career services in their first few weeks at (Midwest University) . . .

- You reported earlier that you went to (Midwest University's) career center for _____.
Tell me about how you decided to go to the career center. What were you hoping to find?
- Tell me about your experience at the career center.
What was it like to _____? What was helpful about _____?

What did you take away from that experience? How did you benefit?

What new questions or tasks came out of your experience?
What will you do next related to exploring majors and careers?

For those who report that they did not use career services in their first few weeks at (Midwest University) . . .

- How might you go about exploring majors or careers?
What benefits would you expect from _____ (*method of exploring majors and careers*)?

Post-Interview

For all participants . . .

- You have had a chance to review the summary that I created from your first interview.
What do you think?

How accurately does this description fit your experiences?
Did I get anything wrong that you would like to correct?
Would you like to expand on anything?

- You are wrapping up your first semester at (*Midwest University*). Imagine you are talking to a friend of family member who has never visited (*Midwest University*). How would you describe what it is like to be a first-year student here?
- Last time we talked, you mentioned a few majors that you were considering, such as _____. What majors or colleges are you currently considering now? What careers are you considering?

(*If the major / career thoughts have changed*) How did you come to consider these new major / career options?

Which is your top choice? On a scale of 1 to 5 (1 being *very unsure*, 5 being *very certain*), how confident are you in your top choice?

For treatment group participants . . .

- You participated in some career counseling appointments as part of this study. Tell me about your experiences at (*the career center*).

What was it like to have an individual appointment with a career counselor? What did you like about the appointment? What did you not like?

Between your appointments, what major or career exploration activities did you do?

Did you gain something from these experiences? If so, what did you gain? How do you know you gained something?

- What other steps, if any, have you taken to explore majors and careers?

For control group participants who report using career services on their posttest survey . . .

- You reported in your most recent survey responses that you went to (*Midwest University's*) career center for _____. Tell me about how you decided to go to the career center.

What were you hoping to find?

Tell me about your experience at the career center.

What was it like to _____? What was helpful about _____?

What did you take away from that experience? How did you benefit?

What new questions or tasks came out of your experience?

- What other steps, if any, have you taken to explore majors and careers?
- What will you do next related to exploring majors and careers?

For control group participants who report NOT using career services on their posttest survey . . .

- What steps have you taken to explore majors or careers?
How did you decide to ____?
What benefits did you experience?
What new questions or tasks came out of the experience?

For all participants . . .

- Last time we talked, you said that ____ might get in the way of your finding a major or career that is a good fit for you. How do you feel about ____ now?
(*Probing questions for further clarification – likelihood of barriers, difficulty to overcome, etc.*)

Have you come across anything new that might get in the way? If so, what?

- Last time we talked, you said that ____ might help you find a major or career that is a good fit for you. How do you feel about ____ now?
(*Probing questions for further clarification – likelihood of support, degree of helpfulness, etc.*)

Have you come across anything new that might support your major / career choice process?

- You are wrapping up your first semester at (*Midwest University*). Imagine you are talking to a friend or family member who has never visited (*Midwest University*). How would you describe what it is like to be a first-year student here?

Delayed Post-Interview

For all participants . . .

- You have had a chance to review the summary that I created from your second interview. What do you think?
How accurately does this description fit your experiences?
Did I get anything wrong that you would like to correct?
Would you like to expand on anything?
- Last time we talked, you mentioned a few majors that you were considering, such as _____. What majors or colleges are you currently considering now? What careers are you considering?

(*If the major / career thoughts have changed*) How did you come to consider these new major / career options?

Which is your top choice? On a scale of 1 to 5 (1 being *very unsure*, 5 being *very certain*), how confident are you in your top choice?

For treatment group participants . . .

- Last fall, you participated in some career counseling appointments as part of this study. Reflecting back, what do you now think about these experiences now? How were they helpful? What could have been better?
- What steps have you taken since then to explore majors and careers? Tell me about those experiences.

What was it like to ____? What did you like about ____? What did you not like?

Did you gain something from these experiences? If so, what did you gain? How do you know you gained something?

For control group participants who report using career services on their delayed posttest survey...

- You reported in your most recent survey responses that you went to (*Midwest University's*) career center for _____. Tell me about how you decided to go to the career center.

What were you hoping to find?

Tell me about your experience at the career center.

What was it like to ____?

What did you take away from that experience? How did you benefit?

What new questions or tasks came out of your experience?

- What other steps, if any, have you taken to explore majors and careers?
How did you decide to ____ (*method of exploring majors and careers*)?
What benefits did you experience?
What new questions or tasks came out of the experience?
- What will you do next related to exploring majors and careers?

For control group participants who report NOT using career services on their delayed posttest survey . . .

- What steps have you taken to explore majors or careers?
How did you decide to ____ (*method of exploring majors and careers*)?
What benefits did you experience?
What new questions or tasks came out of the experience?

For all participants . . . Barriers and Supports

- Last time we talked, you said that ____ might get in the way of your finding a major or career that is a good fit for you. How do you feel about ____ now?
(*Probing questions for further clarification – likelihood of barriers, difficulty to overcome, etc.*)

Have you come across anything new that might get in the way? If so, what?

- Last time we talked, you said that _____ might help you find a major or career that is a good fit for you. How do you feel about _____ now?
(*Probing questions for further clarification – likelihood of support, degree of helpfulness, etc.*)

Have you come across anything new that might support your major / career choice process?

- During our first interview, we talked about some social and cultural identity dimensions that may influence how you think about your major or career choices. Do you recall this list, which helped us brainstorm some potential identity areas?

Ability / disability

Age

Appearance (e.g., size, skin color, facial features, hair texture)

Family heritage / traditions

Gender

Geographic region

Nationality

Personality qualities / characteristics

Political affiliation

Professional affiliation / occupation

Race / ethnicity

Religion

Sexual orientation

Socioeconomic class

Values

I'd like to revisit this question, because sometimes people's thoughts on these change. Is there anything on this list (or not on the list) that resonates with you as being important to your major or career choice?

If yes, how does _____ influence your choices?

For all participants . . . Reflections on the First Year

- Thinking back over your first year of college . . .
Can you share one of your best experiences on campus?
What has been your biggest challenge(s)?
- What is next for you?
What plans do you have for the summer?
What steps will you take to continue to explore majors and careers?

Appendix C

Sample Contact Summary Narratives

This appendix provides sample contact summary narratives for three participants: Gina, Grant, and Wendy. For each participant, a full set of three narratives are provided, for the pre-interview, post-interview, and delayed post-interview.

Gina, Treatment Group

Pre-interview—Aspiring doctor with many potential paths. Gina strikes me as an optimistic young woman, who is beginning to find ways to navigate the college environment. She is highly connected to and inspired by her family; her parents play a particularly strong role in her thoughts about potential majors and careers. She describes herself as a “very indecisive” individual who is “not good at making decisions at all.” Although she has found ways to narrow down her career interests, there are many possible academic paths to achieve those goals, leaving her uncertain of what path might fit her best.

Gina’s father is an alumnus of Midwest University (MU). He obtained his degree in biology and even stayed in the same dorm that Gina currently lives in. Gina’s father now works on “drug discovery” projects at a large corporation – “that’s really cool.” As early as junior high school, Gina says that she and her father “always talked about it” – where might she want to go to college and what about MU? To some extent, Gina feels that she is “following in his footsteps,” which she likes. She was set on MU fairly early, and applied for early admission. In addition to the family connection, she liked the “big campus,” where she could be “meeting new people” all the time. She also “heard good stories about the curriculum and stuff” and visited a couple of times “to make sure I did like it and I wasn’t just making a decision on a whim.”

She initially applied to the college for students who are exploring majors because:

I know what I want to do; I just didn't know what area to go into. And then I didn't want to slim down my chances of making it into the school by applying to something that I'm not even good at.

Yet she also felt “a little bit worried” about this choice – “I was like, oh, I feel kind of stupid saying that my major is undecided and stuff like that because everyone I talk to always has a major. And I'm like, oh, I'm undecided.” Gathering more information on this college helped calm her concerns when she found out that “there are a lot of people who are undecided... I'll fit in.” She also heard that it was “easier to switch colleges once you're already admitted,” so applying to the college for students who are exploring became a strategic move for her.

Gina's career aspiration is to be a doctor, “particularly, a surgeon.” She is drawn toward that direction because she grew up doing things with her father, which cultivated her interest in biology. She also describes her enjoyment of dissection projects in her junior high school science classes. While other students were shy about getting involved or touching anything, she was “like a maniac. I was, like, oh, cool.” In addition, Gina's environment is quite supportive of this career aspiration.

Every person I talk to, because I'm Indian, they're like, oh, what do you want to do? I want to be a doctor. And the first thing they say is, oh, yeah, “typical Indian career.” I don't know, we always get put with the Math and Science things... pretty much every Indian I've met kind of fit that. They're like, oh, I'm a Bio major, oh, I'm an Engineering major, oh, I'm this. So we have, not really expectations, but kind of a little bit.

While Gina does not feel her nationality necessarily restricts her major or career choices (“It doesn't really bother me, too much... I'm smart enough to do something else too.”), she does feel an underlying current of support because her current options fit the mold.

This sense of ‘fitting the mold’ also seems to have a connection to her view of family heritage and traditions. Gina reflects that both of her parents are “extremely, extremely intelligent.” This can be “intimidating” as Gina wants to “make them proud” by “having a

distinguished job.” It is not that Gina fears outward, adverse reactions from her parents if she chooses another route. Yet she feels that “it a little bit affects me” and “would discourage me from doing something like [becoming a teacher].”

I am also intrigued by Gina’s discussion of gender stereotypes in the field of surgical medicine.

Being a woman and being a surgeon, I think, would be kind of interesting. Even on doctor shows, typically, the guy or a man is performing. You see women as nurses, and you see men as the big operating people. So that’s stereotypical.

When asked how she feels about this, Gina replies, “I don’t think it’s gonna scare me.” She recognizes “competition everywhere” and feels that she has what it takes to “not let it get to me.” She has had opportunities to “[build] up her emotions” in the past, such as when her best friend died of cancer at the age of 11. Gina learned to create a protective wall that she needed to “be strong for [my friend], more than myself.”

With becoming a doctor as a goal, Gina recognizes that there are many academic paths that could possibly take her there. She is currently debating between chemistry and biology “because I love science.” Between these two majors, she expresses “I really don’t know what direction to go... it’s a toss up right now.” To explore her options, Gina has chosen to take courses in both areas in her first semester. While she most enjoys the hands-on chemistry labs, she finds college chemistry “a lot harder than high school” and reports not doing so well on the first exam. In high school, she found that she could do well in high school by doing homework but not really studying. Here in college, she says, “I studied, but I think I studied the wrong way.” She plans to change her study habits by doing problems from the text book from “every single little subtopic” and possibly joining a study group. Biology is a bit challenging for Gina because she “hadn’t taken bio since freshman year of high school.” She feels she is falling a bit

behind because she lacks familiarity with the material – “Everyone else knew exactly what they were doing, and I’m like, I don’t remember any of this.”

Other majors that have been on the table for Gina, although they do not stand out as prominently, include law (another area that can be pursued from many undergraduate majors) and psychology. Law stems from Gina’s enjoyment and skill at “arguing” and “articulating stuff.” Psychology stems from her enjoyment of her class this semester, which she describes as “really fascinating because we’re learning about the brain, which I think is really cool. I was thinking like brain surgery... that’s a really ambitious goal. But, I like psychology a lot.”

When asked what might help her figure out which major is a good direction for her, Gina pauses, then says, “I don’t really know, actually. I hadn’t really thought about that, like how I was gonna pick.” With some discussion, we arrive at the idea that she seems to have started with considering majors and taking classes that spark her interest. The next step for her is then to evaluate her performance in each of the classes to see “how well I did in them... my success.” She has also “heard the career center provides a lot of information.” She looks forward to attending her individual appointments, hoping to learn “some guidelines... tell me exactly what to do and how to do it.” She adds “obviously, they’re not gonna tell me, okay, go major in this,” but that understanding some general guidelines for how to consider major and career options would be very helpful. She would also like “information on other careers” that chemistry and biology might lead to. While she might have a “one track mind for doctor” right now, she wonders what will happen if “I do bad, poorly?... What if I don’t make it into medical school?... What if I don’t get to what I wanted to do?” Alternatively, what will happen if she changes her mind about being a doctor? “I feel like I’d be stuck, I wouldn’t know what to do... that’s probably what I’m most scared about is dead ends.” Learning about alternative career directions

for the majors she is considering would help calm some of those fears. Other than this, Gina says that “I don’t really think about the negative.” For the most part, she is optimistically and enthusiastically plowing forward.

Post-interview—Wavering between options; Recognizing challenges to overcome. As in our first interview, Gina continues to waver between biology and chemistry as possible majors. While she seems to like chemistry more than biology, Gina struggled more with chemistry than she expected to in the fall. She says that she “bombed” her first college chemistry test, probably because she had not yet adjusted her study habits from high school. Gina “was so confident in high school” regarding her science courses, and she thought college would be similar – she could “sit back, listen, and soak it up.” This was “obviously not” the case; college chemistry is “taught differently... applied differently... a lot more complex” than high school. Gina says that she learned the material, it was just difficult. She even developed a case of test anxiety that “happened in chemistry only.” She is frustrated because she walked away from the final feeling that she did well, but later found out that that was not the case. She openly wonders, “What did I do wrong?” She worries about getting a “C” in this class because medical schools do not care about the effort put in or how much you feel you learned; “they only care about your final – your product.”

“First semester was a wake-up call” for Gina. She recognized a need to focus on “homework every single day – reading and taking notes and highlighting.” And so far this spring semester, she is “keeping up on it. I’m pretty confident.” She is taking courses in chemistry, biology, calculus and rhetoric. Despite her solid start to the semester, she expresses that “I thought first semester was hard, but this is gonna be even tougher.” She is focused on the end goal of medical school, and feels pressure to succeed at every step along the way in order to be a

strong candidate. Recognizing that involvement is something medical schools look for, Gina has been thinking about ways that she would like to become involved on campus to further explore options. The American Medical Club is one potential option, but at this point she remains “primarily focused on bring[ing] my grades up.” Perhaps over the summer she will work on branching out to volunteer or shadow professionals at hospitals near her home.

During the first interview, Gina expressed a desire to find “some guidelines... tell me exactly what to do and how to do it” from her career counseling appointments. She found the appointments to be highly resource-intensive, with many guidelines to offer regarding a wide range of topics from what classes to take, to potential career options, to preparing for the MCAT.

I got a sheet of the breakdown of – that this is where you wanna go and this is the classes you should take. And then I – there was the major fair – like the majors and minors fair which I attended. And I picked up a bunch of sheets from bio and chem. And I looked at – I think I even looked at maybe psychology. There’s one other one, but I forgot. So and then it was good.

I asked her questions I had like, “With this major, what can I do?” Or, “From med school, where can you go?” I got a lot of answers. I have a lot of sheets that I could go through and see what I like. And then there’s on the brochures I picked up, there’s informational stuff that I went to.

Gina appreciated talking with someone who specialized in health advising – “she knew exactly what she was talking about. And every question I had was answered. And there’s no gray area. I got the concrete answer.” She left the experience feeling “informed” regarding her options and potential pathways. And yet, Gina felt that her appointments were “kinda short... we got to the point, then in and out” in about 15 minutes (she was scheduled for two 45-minute appointments). She was left wanting more – “there’s only so many questions I can ask.” Gina is not certain what else she could have gotten. Perhaps she could have benefited from a discussion of “what makes you unique on a transcript or resume? What are med schools looking for?” How can she stand out from the crowd? And, what if she takes a less traditional path (than biology or chemistry)

through her undergraduate experience? A discussion of alternatives and a “Plan B” would have made a considerable difference for Gina.

Gina finds that her family and friends offer an interesting mixture of support and pressure regarding her career choices. Over the winter break, her friends from home greeted her with comments such as, “Oh, our big Midwest University kid’s back – our big doctor!” And her parents joke about going out for dinner and letting her “pay us back when you’re a doctor.” While these comments are made from a well-meant place – perhaps intended to motivate and connect with Gina’s aspirations – the comments also create an underlying sense of pressure. She has wanted to be a doctor for so long (“I was a doctor for Halloween when I was a little kid. So I have the little coat.”) that this has almost become part of her identity – part of her that others readily perceive and celebrate. Yet Gina wonders:

In the back of my head, I’m thinking like, “Are they gonna be disappointed in me if I’m not one?” Or are they just gonna accept the other thing. Like, “Oh, researcher?” My dad’s in research. So it’s not like – it’s not a bad profession. Nothing’s really a bad profession, but since I’ve had this goal for so long, I think if I don’t get it, it’s just gonna be really bad.

[If I change my mind along the way], I don’t want people to be like “why?” [I’ll have] explaining to do. I don’t think they’re going to take, like, “Oh, because I wanted to.” And I don’t think they’re gonna understand that.

Gina finds herself “still nervous” about how the “whole process” of college is going to go for her. She says,

Even like this year. I already wanna go home. Yeah, I already miss home and not like – I didn’t make a whole lot of mistakes, but one test here killed me here. I don’t want it to happen again. So I’m just really, really worried. And again, I keep – with every bad grade I get, I’m like, “Oh, that’s one thing I’m not gonna get in med school.” I keep thinking I’m just not gonna make it. Like I’m gonna get to it and then it’s not gonna work.

I openly admit in the interview to being surprised to hear of Gina’s worries, nervousness, and shaken self-confidence. She comes across as such an optimistic and energetic young woman with

a clear direction (see first interview summary). Gina responds that: “I don’t talk about this with anyone – or this in-depth. I don’t tell my parents, like, ‘Oh, Mom, I’m not confident.’ It’s just something we can’t talk about.” Yet the interviews for this study have given her a safe place to identify her feelings, to put words to her reflections, and to process some of the unexpected pressures that she experiences:

I didn’t realize until we started talking the pressure from the family or the pressure from other people. I never realized all these different things that played with it... I feel better now knowing that it’s there because I don’t like knowing things that aren’t there. I don’t want it to creep up behind me, you know?

This seems like an important and meaningful personal insight. On the one hand, I am pleased that Gina has found an outlet for these needs – and honored that she would share them with me. On the other hand, I wonder if she might have found other outlets – outlets that other students like her would typically have access to, since very few have the opportunity to participate in a study such as this. For instance, could the career counseling relationship have been a safe, confidential place to explore her needs if the counselor took the time to ask additional questions and to ask about how she was experiencing and feeling about the process?

Gina does find some support for her concerns and uncertainties from her parents. She laments not being more independent at this point, saying she is “still very indecisive – not good at making decisions” and she relies on others to help her through. Yet, her parents are “supportive” – they are available when she needs them, and they “always just know what to say.” Rather than offering pity or sympathy, they provide “straight up, honest” encouragement and good advice from their experience. This is better than talking with college friends who “try to bounce their problems back,” leaving her challenges unsettled. Gina’s parents give her the motivation to continue to “push myself... don’t give up.”

While the transition to college has been “overwhelming” for Gina at times, she says that “you get over it.” It is simply a feeling that comes with the territory of moving from one place to another. She stays focused by remembering the goals that she has set for herself and recognizing that, each step of the way, “oh, I’m just one step closer to it.”

Delayed post-interview—Seeking confidence to commit. As Gina’s first college year comes to a close, she says that she continues to waver between chemistry and biology as her major options. What holds her back from making a choice? She jokes that she is waiting for “an epiphany” to help her know which way to go. She has sought advice from several people regarding her choice, and their responses are quite similar. Her father, for instance, “he’s like, it’s up to you... I’m like, I know it’s up to me. I’m asking for your advice.” Gina’s academic advisor also expresses “it’s up to you,” and adds an extra dynamic to the mix. Gina must select courses for the fall and the required classes for chemistry and biology are different – “I need to continue with calculus if I want to be a chem major, and for bio I don’t need calculus, I actually need stats.” As a result, Gina’s advisor pushes a bit – “you need to pick.”

As we talk, the required courses for biology and chemistry seem to emerge as the deciding factor for Gina. She is concerned about her ability to succeed in calculus and statistics courses, as well as the impact that her performance would have on later courses in her major.

It’s depending on how well I do in calculus and how I can keep up in stats because calculus is gonna get harder and harder because you need calculus to determine different equations in chemistry. If you can’t do the basic calculus, you’re obviously not gonna get the stuff in chemistry. I would be fine in calc now, but we’ll see how that goes on. I guess right now that’s the only thing I have.

Gaining the sense that “I can do this” in pre-requisite courses would give Gina the confidence to commit herself to a major, specifically “it’s chemistry.” Gina leans towards chemistry for two reasons “one, because I liked it, and two, because it was unique.” She describes the typical pre-

med student as a biology major, so she “could stand out” by taking a different path. The price for standing out in this way is the rigor of the chemistry program. Reflecting on her classes thus far, Gina has had moments of questioning her alternate route – “Then chem went on and I was like, wow, maybe this is why people are bio majors. Chem is just – and you know, bio makes more sense with medicine. Chemistry is more like pharmaceutical chemistry and stuff.”

In conversations with her father, Gina found a class selection option that helps her get around the need to make an immediate choice between statistics and calculus. She can take calculus over the summer and statistics next fall. This allows her to keep a hold on both directions, while still completing all the pre-requisite courses to apply to the chemistry major next year if all goes well:

My advisor said you can declare a major the beginning of your sophomore year, but to declare a chem major you have to have chem 102 and 104, and then calc I and calc II, which is why I’m taking it in the summer so that by the time I enter the fall, I can do it for it. She’s like, oh, you could just take it in sophomore year, but then I’m like, but then I won’t have a major until junior year. I don’t want to wait that long. I’ve waited long enough. I don’t think waiting a whole other year is gonna make me decide any differently...

I feel like it’s not gonna make a difference. I’m taking organic chemistry, which I’ve already gotten an introduction to, so I know how that’s gonna be. Genetics, I had that previously. I don’t think waiting a whole other year is gonna be like, oh, yes, I want chemistry now.

As we talk further, I come to see that perhaps Gina’s feeling of wavering between majors is primarily a concern of “I don’t want to pick something that I’m not going to do well in.” She desires to make an “informed decision.”

Gina’s desires her decision not only to be informed by the knowledge that she can succeed in classes, but also by understanding the options of “what you can do with your certain degrees.” Her father’s feedback on chemistry is an area of concern for Gina. He expresses that “back in my day, it was more of a booming field. Science is always changing, so it will always

be in demand, but you don't really see chemists around anymore." If pursuing a medical degree does not work out for Gina, what other options might she have? She says, "I think I should have a backup plan right now because I don't. It's med school or the other thing that pops up is research, which – but I haven't explored research opportunities yet."

Gina has continued to gather information resources about career options. She returned to the career center this semester – "a quick in and out thing" – because "they have the sheets about health professions and stuff. I wanted to get those." She has added these to her "huge folder" of information handouts – "this is the [biology] major, this is the chem major, this is this, this and this." She occasionally pulls the folder out to look through things, but struggles with how to make sense of how all the information fits her:

Yeah. I don't know, I have a lot of information, but it doesn't seem to soak in. I'm aware of it, but I don't know what to do with it. I don't know what I'm supposed to do with it.

Gina would like to go back to the career center "to talk about my alternatives." She expresses that she has found these interviews (for the research study) helpful. She has the chance to talk with an "outside," impartial person – "friends and parents don't necessarily give you what you need." And yet, gaining the benefit of a conversation like this requires a willingness to "open up" to someone – to show her uncertainty, a vulnerability... a depth that I didn't have a glimpse of until our second interview. Is this something that Gina would be willing and able to do in a career counseling appointment or in other services on campus? "I don't see a lot of kids be like, yeah, I'm gonna go talk to this person, like a random person about my problems."

Many of the social pressures that we have discussed in the past remain for Gina. On a weekend trip home, Gina's friends greet her with, "oh, you have time for us, little doctor." She also continues to recognize the portrayal of men in positions of power on TV and in the media:

Guys are superior sort of thing. They're smarter. I probably mentioned before, a lot of shows portray men as the powerful one, like, the CEO or the top chef or... It's kind of intimidating. If you're gonna get rejected just because you are a girl, I don't know. I don't know if that happens. It might.

At times, Gina feels frustrated by the model minority myth that all "Asians and Indians are good in math and science, like those are our two favorite subjects." While her "favorite subject is science, so I kind of fit the stereotype," it is not an exact match for her. She says that she "gets by" in math, and is unhappy by insinuations that she "should be good in math" because of her race. When she succeeds in these areas, she says it is because "I'm smart, I apply myself."

Looking back over her first year, Gina is happy that she took time to explore:

I liked the opportunity to be able to not be anything, and then I can go any path I want instead of being hooked on something and either staying with it and not liking it, or having the struggle to change it.

There is part of her that worries about what others might think of her indecision: "Just thinking about what the other person thinks... Everyone looks at you, and you're like, I don't know what to do." Despite this, she is pleased with her opportunity to take time to pick her direction.

Gina recognizes that she has taken a lot of steps to adjust to the college environment. She has changed her study strategies. She now makes study guides, turns off distracting music while studying, takes timed practice exams, and even "studied at the library for the first time." She also recognizes the need to adjust her strategies to the unique challenges and teaching styles of each course. For instance, her molecular and cellular biology class is "super extensive... it's a lot more pictures [than previous biology classes]... and you have to write down what you think you should." Sophomore year fall is known as "a hell semester" for pre-med students who must take organic chemistry with a lab, genetics with a lab, and statistics. So, she will round out her schedule with something interesting and different – maybe a history class or ice skating.

Over the summer, Gina will make time for “some relaxation” to recharge for the fall. She is also “excited” about volunteering at a local hospital – “I want to see if the doctor profession is for me, so I’m thinking it will be a good opportunity, and it looks good on the transcript.”

Grant, Treatment Group

Pre-interview—Finding a fit that builds on natural talent. Grant strikes me as an individual who is exploring his interests in several areas, and appreciates the opportunity and flexibility to “try different things.” While Midwest University (MU) was not his original, first-choice college, Grant appreciates the variety of resources and options (“different paths you can take”) available to him in such a “large university atmosphere.” He is also intrigued by the strong academic reputation of the institution, and “proud” to be accepted to an institution that is “really hard to get into.”

Decision making, particularly when those decisions have long-term impacts, can be challenging for Grant. He expresses that “one of the biggest fears is that I’m gonna pick something I’m gonna end up hating.” He worries about dedicating time and energy in one direction, only to find that the direction is not a good fit for him. [Perhaps I should have asked what he perceives as the consequences of taking a path that doesn’t work out. What happens if he finds himself in this situation? Has he found himself in this situation in the past? If so, how did he address it?] However, once a decision is made, Grant is not particularly concerned about successfully pursuing that direction – “I think just making the decision for me is probably gonna be the hardest part because I can work hard at something; it’s just making that decision, making the leap is gonna be difficult.” He has confidence in his ability to carry out a choice and to overcome challenges along the way, once he commits himself to a goal or direction.

Finding a good fit between himself and his major or career is a theme that comes up repeatedly in our conversation. For instance, Grant originally considered applying to the Agricultural Sciences College at MU. His high school Horticulture class sparked an interest in this direction, and he was considering pursuing some type of environmental studies. However, attending an orientation meeting for this college influenced his decision:

My dad and I kinda looked during orientation... we were in the meeting, and it kinda just didn't feel right for some reason. The atmosphere wasn't really – kinda felt like it wasn't gonna fit for some reason. It was kinda just we had a mutual feeling. We looked at each other, and were like okay.

Well, then we left early from that meeting, and we went over to [the college for exploring students], and it seemed like it was a really cool fit for me because I don't really know what I wanna do, and they seemed like they were really open to trying different things for the first couple years, and really letting you to explore all that MU has to offer. So it kinda just felt right.

Grant describes this decision as a result of a “gut feeling” that is difficult to describe in words. He “wanted to have leeway to try a bunch of different things,” and appreciated the feel that the college for exploring students offered. He felt a deeper connection with the exploring student pathway than he did with the Agricultural Sciences College, and he followed that sense of a good personal fit.

And yet, the search for a strong personal fit can be challenging as Grant looks toward the future. While he can experience the gut feelings in the present, he wrestles with projecting forward with ideas regarding the “feel for what the major or what the career actually would be like.” He is eager to talk to students and professionals in the fields that he is considering to “see what a regular day in the life” is like for them. He views this type of “hands-on experience” as offering unique insights that would “be the best way to figure out if it would work or not.”

Grant is currently considering three majors – Communications, Aviation, and Recreation Sport & Tourism. He describes himself as “kinda floating between” the options, and his

discussion of the potential directions offers interesting insights into his decision-making processes. The idea of Communications emerged from a required exploring majors class. Within this class, students complete several inventories that examine strengths, interests, talents, etc. Grant has experienced consistent messages from these inventories that a Communications major might be a good fit for him – “everything seems to be kind of pointing me in that direction.” The career options related to this major (“a business management type thing, or a speech writer”) sound like interesting options to Grant. Additionally, he feels that he may have a natural fit with this direction:

I think that the communications route I think that I'd be really good at it. I feel like it comes naturally to me to communicate, and to talk to other people, and I'm comfortable around other people. And I've been considered a leader in the past, like I was the captain of my lacrosse team. So that seems like- I feel like that would come naturally to me.

He expresses that communications is a “safe route,” with many potential career paths, job security, and a natural connection to his skills.

The Recreation, Sport & Tourism (RST) major was also suggested by Grant's class inventories, but the stronger influence for this direction has been his mother (“She's really great.”). Grant's mother plays a role of a supportive information-gatherer in his major and career choices:

I haven't done that much research [on the RST major], but my mom is all about doing research, and she always sends me things like, “You know, you should really check this out.” And I've been meaning to, but I don't know... She knows what I like to do, probably even more than I do.

Grant remains intrigued about this major, and feels like “I'd be pretty naturally good at that.” He is naturally drawn to the outdoors and works well with people. Yet not having done much research on the area leaves him tentative about this choice – “I don't really know what that

would lead to. I don't know what career I would get, what I would do with that. It's kind of unclear to me."

Finally, Aviation is an interest that Grant "has been rekindling" from his freshman year in high school when he wanted to be an airline pilot. He carries a general interest – perhaps fascination? – with that possible career direction. Yet, he also mentions a number of potential barriers, such as needing to catch up in math and physics classes and being concerned about limited career options with little job security "because people are getting fired left and right" in economic hard-times.

Another theme that emerges in our conversation, which is perhaps part of the idea of finding a good fit, is that Grant would like to find a major in which he could build on the skills and talents that he already has. (This idea has strong connections to the StrengthsQuest inventory and ideas that are discussed in the exploring majors class.) Grant says,

Even if I wanted to try my very, very hardest I'm still not gonna be as good as I would be at something that I'm naturally good at, and that I could put my efforts into something that I'm already pretty good, and get to be the best maybe.

I think that finding something that I would- finding a career path that would allow me to do something that I'm already good at, that I don't need to work at necessarily, I feel like that would make me for inclined to do it, or to make it work.

Grant draws motivation and energy from the idea of building on his current skills and abilities; from focusing on and further developing the talents that are naturally part of him.

Grant then extends this idea of fit to a social perspective including the broader environment around him. He draws comfort and confidence from working in environments in which those around him share similarities in interests, strengths, socioeconomic status, personality, and so on.

When I'm in a room, and I have completely different abilities than everybody else in the room... it's not that I'd feel uncomfortable, it's that I just feel less included, or

less like I understand what's going on. Like I'm in an astronomy class right now, and everybody in there has- they're either really science people, or really math people, and I'm fine with that. I get along with people in there, but it's just I feel- I guess I feel like that's a disability. I feel like I'm less equipped to handle what's going on in the class, and I guess I should feel less confident maybe. So I feel like if I need a place where people have the same abilities as me, or the same natural inclinations to doing something, than I'd feel more comfortable.

He feels that he would thrive best in an “easy going,” “work hard – play hard,” “team environment,” where competition exists to push yourself further. Rather than competing against others for individual achievement, Grant would like to use a spirit of competition to “help other people” and move the entire group forward.

In regard to his upcoming career counseling appointments, Grant is uncertain of what to expect (“can you tell what a career counseling meeting would be like?”), yet optimistic (“it sounds like it'll help a lot”). He would find it most helpful if a career counselor could be an unbiased source of information and advice – “a third party that could just shoot me straight.” Finding resources and “inside information on what it's really like to go through the major, and if people are actually happy in that major” are key goals for Grant. He is skeptical of messages or people who discuss major options as a sales pitch – “just trying to sell you on why you should try this major out.”

Grant's concern about participating in career counseling is not feeling prepared enough to make the most of the experience.

I feel like I would wanna get more prepared, so I can have more to talk about, and wanna feel like I would – like if they asked me a question on what my abilities are, what I like to do, I'd wanna have firm answers like, “I don't like doing this. I like doing this.”

Not having clear responses and directions leaves Grant a bit hesitant to seek this type of assistance:

I feel like I would want to explore myself, and then go, and then explore more, than rather than just go, and then explore because then I just feel like I'd be more prepared to make a decision after that.

Post-interview—Gaining confidence and feeling well informed about options and resources. Grant came to the second interview saying that he feels “more directed now that I’ve gone through the career counseling appointments and kind of done some research on my own.” His efforts have led to a whole new set of majors to consider (Economics and Communication, with Business as a potential minor; rather than Aviation, Communication, and Recreation Sport and Tourism), as well as an increased sense of confidence for making major and career choices. He says, “I don’t feel too worried anymore. I still really wanna find my major and really wanna just get into it, but I don’t feel anxious about anything. So I feel good.”

Grant “pushed away” two of the majors that he was originally considering. He decided against Recreation, Sport and Tourism (originally suggested in his exploring majors class and advocated for by his mother) based on some independent internet research. After looking at the required classes and information on the type of work alumni are engaged in, Grant was left with the feeling that:

It didn’t seem as, I don’t know, serious enough... and it seemed more like in the sports marketing field; like people were working for minor league baseball teams and stuff like that. I was more into the recreation and tourism side where I could be in the outdoors.

This research “shifted [his] view” of what the major entailed. He could no longer envision himself pursuing this kind of work. On the other hand, he has decided against Aviation (a rekindled interest from his early high school years) due to concerns about an uncertain job market, extra educational expenses, and a lack of sufficient passion for the field.

And then Aviation, I just felt like – well first of all the job market is really – in the future is really meager, there’s not that much. And also, it’s a lot more money to take the courses because you have to pay like another \$5,000 for each semester...

So it kinda seemed like a little stretch. Actually, if I was gonna really wanna pursue the Aviation and become a professional pilot, I thought that it would be probably smarter to just go to an accredited pilot school instead of having to pay for the university and that. So I felt like it was just not really economical and it wasn't – I didn't have the huge passion for it that if I was gonna invest this much time and money, would that really be the right thing for me?

Communications is the one major that Grant continues to consider. Yet, this is not without its uncertainties. On the positive side, he feels that he would be “pretty naturally good at it,” that it would be “a laid back major,” and that “it has a good job outlook.” On the negative side, he remains “slightly worried” about pursuing this direction due to uncertainty regarding what the major leads to:

Communications sounds like it's the right fit, but again I said it's kind of laid back and I don't want it to be too laid back and I want there to be a core – I still don't really know what Communications is. Do you know what I mean? It's kind of like, it's like people communicating and different forms of that, but I don't know.

Grant's new consideration of an economics major and business minor stem from reflections on career paths that he has considered over time:

I've always been like an entrepreneur in my past and lately when I've been thinking and researching jobs and ideas, the reoccurring theme is I want to be my own boss and I really want to – at some point in my life, have my own business.

He expects that the skills he could gain in economics- and business-related courses would provide a strong foundation from which to “launch my own small business.” Grant hesitates to pursue business as a major because it is “way too vigorous” and “competitive” for someone who is not interested in getting “hired by the Fortune 500 companies and having a desk job for the rest of their lives.” Grant is “more interested in the skills [he would gain from these classes] than having that on my transcript I'm a business major.” Additionally, he has been enjoying the theory-based learning that he has been exploring in his current economics classes, which leads to an added sense of enthusiasm for pursuing these options.

As he considers all his options, Grant states, “I’m still kind of juggling what I should do.” He is concerned about making the right choice the first time because: “it’s not cheap to go here. It’s a lot of time, it’s a lot of money to be dedicating to something and if it turns out that I don’t like it.” And yet, he remains confident that once he makes a choice he will be able to successfully take the steps to carry it out.

During the first interview, Grant expressed some hesitation about attending career counseling appointments because he was not sure he would be adequately prepared – he wanted to “have firm answers” to the counselor’s questions, and worried that he may not be ready for that. Having this appointment scheduled motivated Grant to do some preparatory work even before his first meeting with the career counselor – “I did a good amount of research to know what each college meant and just be able to ask more educated questions and ask them more specific questions about the majors and the minors.” This led to a productive and enjoyable experience for Grant, during which he learned about a wide variety of services that the career center offered students.

It just kind of seemed like they had help for every step of the way. There was just help for deciding the major, there was help for working at the majors, there was help for after you get out of school. I felt like it’s gonna be a place that I’m gonna definitely be at later in my college career.

He appreciated that the conversation with the career counselor provided a “pretty unbiased” source of information.

They weren’t really representing any of the majors or any of the colleges. They were kind of just there to guide me whatever way I wanted to go, not where they wanted to go... I feel like that would be my unbiased source to tell you the truth.

Grant walked away from the experience with a host of new resources to use, ranging from websites that provide “really simple” access to information on courses to explore majors and job

outlooks for careers, to resources for finding internships in small businesses. He could not think of any way that the career counseling appointments could be improved for him.

When asked about concerns or stumbling blocks that Grant sees in the future, I see a new sense of confidence and drive in his responses. For instance, we talked a bit about the math classes that he was concerned about when first arriving on campus. Now, rather than feeling worried about his ability to pick up this material after having a break from it since high school, Grant states that the material “comes back very fast.” He is debating plans to take math courses at Midwest University in the fall or at a community college near his home over the summer. The biggest remaining question is not can he do it (“I realize that it’s not gonna be that hard.”); rather he is trying to decide if it is something that he wants to pursue (“Am I really gonna wanna take Calc 1 and Calc 2 for Econ?”). This confidence in his ability to succeed permeates other areas as well. Grant reflects: “I’ve seen that I can do it... I feel like, if anything, barriers are disappearing.”

In regard to next steps, Grant is focusing on “taking classes next semester that kind of hit on the different majors that I have been kind of discussing and debating.” He has already enrolled in both economics and communications classes. If he finds that “things don’t work out with those majors,” he will plan to return to the career center for additional assistance. He recognizes that “I got a lot to think about still, but I feel way more informed after I’ve gone through all of what I’ve done.”

Delayed post-interview—Starting with a career in mind, Making his move. Grant found himself struggling in his second semester. The communication and economics classes that he expected to find a good fit in were “all right” but he was “not really loving [them] that much.” Frustration set in and his motivation to commit to classes dwindled.

School was starting to seem like kind of why am I here - you know what I mean? Am I just here to be here because that's what the next thing after high school is? So it was getting a little bit kind of pointless, I thought.

Then, halfway through the semester, Grant did “a 180 with [his] major.” He began talking with kinesiology majors about their classes and career goals. “They’re going to go off and become a physical therapist and athletic trainers and whatnot, and that really sparked my interest.” Despite a personal sense of surprise – “Kinesiology is all about science. It’s really science-based. I never would have thought that I would be into these science classes I’m going to have to take.” – Grant says that he feels good about this new direction. As he explains his transition, I begin to see interesting connections to our past discussions.

Grant sees a kinesiology major as based in “the same skills that drew me to maybe think about communications.” He likes the idea of working with people every day, as well as “not working in an office, which was one of my concerns” with communications or economics. Additionally, a career in physical therapy would keep him “active, using my body,” which sounds to him like “a cooler job than trying to be a businessman.” Additionally, the work environments fit the blend of fun and challenge that Grant desires.

The major seems – from what I’ve heard – to be very fun, but yet kind of challenging at points... I didn't want to be in the business major because it was maybe too competitive, but I also didn't want to be in recreation sport and tourism because that was almost too laid back.

The competition that Grant perceives in kinesiology fits with his personal style. In our first interview, Grant talked about enjoying the type of competition that “[helps] other people” to move an entire group forward. Within the kinesiology major at Midwest University, he seems to recognize a “family feel,” in which “there’s going to be a lot of help for me from my peers and from the administration” as he pushes through challenging science-courses in areas such as chemistry, anatomy, and physics.

What is particularly different about Grant's current major choice is the decision-making route that he took, particularly as compared with other majors he has explored. He reflects that "I thought more about my career path rather than the classes." When he focused primarily on the academic classes, he found himself focusing on classes that he did not want to take. Now, rather than viewing the classes as obstacles, he sees them as necessary steps along the way to his end goal.

This is only going to be four years of my life, or three years of my life, but my job is going to be the rest of my life. So if I really think I would enjoy something, I think I should make the sacrifice of these couple of years, taking a couple of chemistry classes that I won't really enjoy, but – you know what I mean?

This perspective shift helps Grant overcome frustrations and find meaning in his academic pursuits.

Adding to his sense of confidence about pursuing kinesiology, Grant says that "every time I tell somebody that's known me for a while, they're, 'I could see you doing that, being a physical therapist.'" This offers a confirming, positive feeling.

Grant feels "happy" and "positive" as he is "starting [his] move." Next week, he will talk to his academic advisor about making the switch. It will "be hard to kind of get that [science] mind state again because I've been taking mostly completely other classes... it's a different way of approaching your work." Yet, Grant is "not really worried about it." Rather, he is excited to move forward – "I've had a clue, but I've never had this feeling, like I'm going to go do that." As a result, it "makes everything seem a lot more useful... I got some of my motivation back to keep my grades up so I could get into this school."

Regarding his next steps, Grant continues to consider a minor in business, "just for the knowledge... I just think that it's good skills to have." He also plans to build his support

networks on campus, whether it is seeking out a chemistry tutor or getting more involved in major-related clubs.

I hadn't really gotten involved as much as I would have liked... Next year, I think I'm going to get more involved in some things. One of the kinesiology people said that they're in kinesiology club or something, so maybe I'll look into that, which will probably help me out with getting in touch with more people.

He looks forward to his appointment with his academic advisor. Assistance with choosing classes will be particularly important as he changes directions.

I just need to take the step, talk to my advisor about what classes would be best for me to take because virtually none of my classes that I took this year are going to help with my major. I mean, I did take gen-eds that I needed to take, which is fine. But knowing what classes I should start off on and work my way up would really help me.

Grant is also considering returning to the career center – “I should probably go check out another appointment.” Even though his career direction has changed significantly, Grant still feels that his appointments during the first semester were helpful. The career center is “a really good place to kind of map out what you could do.” He expects that they can “help you out every step of the way.”

In our first interview, I recall that Grant was primarily concerned about making a major choice. Once he committed to a direction, he was confident that he could carry out that choice and overcome any challenges in the way. I see hints of this confidence already in the way that Grant talks about pursuing kinesiology. While other students express worry about making it into this competitive major, Grant states “I think I can get in... I got a pretty darn good GPA this semester, so I got a good start, which many people have told me is very, very important.”

Finally, after the recorder was turned off for this interview, Grant mentioned that these research interviews have helped him reflect on his experiences. Day by day, he says, you just go to class and get through tasks. Yet, the interviews have given him a space to think about how he

got here and where his decisions came from. This is a good reminder for me of the potential that research interviews have to influence participants' experiences.

Wendy, Control Group

Pre-interview—Many options, Worried about making the “right” decision. Wendy generally prefers to keep many doors open as she considers the options that she has before her. She expresses that “I just feel I have so many interests, but then I never want to settle down in any one thing.” She describes herself as creative and “artsy,” particularly when working with ideas, while at the same time she is skilled at organization, mathematics, and working with numbers. She also finds she has a natural tendency toward embracing leadership positions, and has “a lot of insight” into interpersonal dynamics and relationships with and between others. Her main goal in choosing a major is to find something that will lead to a job that she can enjoy (“I want to be happy everyday when I work.”) and be good at doing. In addition, job security, financial security, and potential economic impact on her chosen career path are very important. Wendy wonders if she will ever find the “best of both worlds.”

The choice to attend Midwest University (MU) was a challenge for Wendy. She was “really torn” between MU and a small private college (let’s call it SPC) – uncertain if she wanted a small or large school, and so on. Getting first-hand experience by visiting each campus made the difference for Wendy. She said that, during her visit to SPC, she “just didn’t like the feeling I got from it.” The small environment and class sizes felt too much like a high school setting to her, and she was looking for a more involved and open religious community than she experienced. Her visit to MU was considerably different – “I just loved it here.” She discovered that the larger class sizes were a better fit for her preferred learning style of sitting back and soaking in the information provided, as well as an intriguing connection with a private,

university-certified housing option with programming and services provided by an affiliated Catholic church. Other factors, such as “a good reputation” and many academic options (“[MU] has everything to choose from basically.”), also impacted her decision. Wendy was concerned that she might regret her college choice. Yet, she was surprised to find that “I’ve never regretted it in my mind one time.” Quite to the contrary, once she made the decision, she became more enthusiastic and committed to it over time.

When I first decided I was like I’m not sure still, but then just thinking about it more... I just started thinking about [MU] more and getting more excited about it and about the [Catholic residence] and stuff. So, I started getting happy about it progressively after I made my decision.

Wendy’s positive experience thus far with her college choice is a notable accomplishment, particularly considering the heavy weight that she felt in making this choice. While in hindsight the decision may seem like it was an easy one, at the time, Wendy “felt like choosing which college I was going to go to was going to determine the rest of my life basically.”

In general, Wendy truly struggles with decision making. Even the day’s simplest choices can sometimes be a strain – “I’m very indecisive. I can’t even decide if I want a cup of coffee in the morning.” She provides several reasons for worrying about decision making, including: (a) “I’m always going to regret it somehow,” (b) “I’d never want to choose the wrong thing,” (c) “I don’t want to be stuck anywhere,” and (d) “I’m always afraid of making a mistake or doing the wrong decision. I’m afraid that that will just like ruin my life or something.” Personally, I was struck by the strong language that Wendy uses to describe her concerns (regret, wrong thing, stuck, afraid, ruin my life). So, I asked her about any past experiences with difficult decisions that did not work out the way she had hoped. She described a situation in which her family chose to welcome three foster kids into their home. She was an integral part of making the initial family decision and the results were “a really bad experience... detrimental... horrible” as she

experienced the strain that this endeavor placed on her parents' marriage and her own relationship with her parents. "It's just like been really hard ever since." Personally, I can sense the truly life-altering nature of this decision with far-reaching ramifications. It provides a compelling context for the strong language that Wendy uses when describing her struggles with current-day decision making.

Looking at possible college majors, Wendy is considering a wide variety of options, including accounting, business management, psychology, advertising, photography, and math education. Accounting relates to her skills with math and numbers, and a suggestion from her father that this major might be a good fit for those skills. Business administration relates to her organizational skills and a natural ability to take on leadership roles. Her interest in psychology relates to personal experiences that she has had in working with issues in the home (such as those spurred by her family's adoption of foster children) and her recognition that people tend to come to her with their stories and struggles. She expresses "I just feel like I got a lot of insight on situations that are going on." Advertising relates to Wendy's artistic side and her creativity with ideas. She is intrigued by ways in which psychology and advertising overlap and complement one another. Photography relates to her artistic side, while pursuing an education degree with a specialization in math teaching relates to her interests and skill in math.

With all these ideas on the table, Wendy has decided to apply to the business college during her spring semester. Although she is "definitely applying," Wendy makes a clear distinction that whether or not she would chose to pursue a major in business is "still questionable." She has prioritized this application primarily as a means of keeping options open. She explains,

I figured if I want to do anything into accounting or business administration I absolutely need to apply... So, once I decided those could be majors I'm interested in,

the [business college] is— I’m not saying it’s my top major choice right now. But, it’s if you want to do anything related to that you have to apply, I know your freshman year. So, it’s kind of like a priority thing right now. If I want to do that, I have to take action right now... I have to do it in order – if I’m even considering that.

Wendy foresees that she will have some difficult decisions to make once her business college application has been accepted or denied. If accepted, she will have new pressure to “actually ultimately decide” whether she will transfer to the business college (thereby closing doors to other majors) or she will turn down the acceptance in favor of other directions. Additionally, since Wendy is spending her first year preparing herself for her business college application, she feels a tension with the idea of choosing a different path if she is accepted:

I’m trying so hard to get in. It’s like all my efforts are for nothing almost. I almost feel like I’ll have so much commitment already in business, that it will be hard for me to choose something else.

Alternatively, if Wendy’s application is denied, she may wrestle with feelings of disappointment and concern about needing to find an alternate path.

Wendy expresses uncertainty about what might help her along the way of making major and career decisions. She describes her decision-making strategies as “a little bit of everything,” mixing techniques such as making lists of pros and cons with tuning into her own gut feelings. Having such a varied approach leaves Wendy uncertain of where to start – “I seriously don’t even know how I make half my decisions.” She thinks it would be helpful to take classes in the areas that she is considering as a way to “get the feel” of different subjects via first-hand experience. This fall she is enrolled in business calculus, macro economics, psychology, and rhetoric. In the spring, she plans to take a class in advertising. Wendy also would like to talk with her academic advisor and stay involved in the many club and student organization activities that she has participated in this fall (e.g., working on a leadership certificate, helping with food bank charity work, serving on the executive board for her dorm, participating in her dorm’s choir).

Post-interview—Re-evaluating priorities to find peace despite uncertainty. When I first met Wendy, our conversation was filled with strong language to describe her indecisiveness when it came to decision making (really torn, regret, wrong thing, stuck, afraid, ruin my life). During this second conversation, she says that the “worry” about making “bad decisions” is still there, but that it is “not as intense.” In the two months between our conversations, Wendy has found a way to be “more chill... [and] peaceful” as she considers her future. As she talks, she smiles easily and I can visually see a sense of relaxation in her body language (e.g., her shoulders are relaxed; not as tense as they were before).

Considering possible majors, Wendy says “I’m still all over the place kind of.” She remains interested in applying to the Business college at the end of the spring semester. This decision is partially strategic – if she is to apply, she is required to do it then. Yet for her, the decision to apply does not equal a decision to pursue a business major: “If I get in, then I’m still not sure if I’m gonna do that or not.” The Communication College remains another option – “I’m kind of leaning more towards advertising, a communications major right now.” In addition, she is strongly considering a double major so that she could pursue psychology or sociology along with her business or communications degree. She expresses that:

The sociology and psychology, either one I choose, is more because I wanna learn more about it. I think that would help in any work environment... So no matter what I do, I’m either gonna major in sociology or psychology, but, I’m still gonna major in something else.

It seems as though she is looking to balance her opportunities to pursue both a major that has a professional focus that she can envision for herself, as well as a major that fits her personal interests and could be applied to many situations.

Wendy has also changed some of her perceptions on pathways to business degrees. In her first interview, she expressed that she would not want to pursue business through the

Agricultural Business program at MU because of a stigma or second-best status that could be associated with this. In this second interview, she reflects that those thoughts were primarily based in “pride... a mental thing for me.” Today, she feels that “if you really like it, then you should just pursue it anyways.” It is up to her to find her own path to achieve her goals. As a result, if she is not accepted to the business college, she is open to considering the agricultural business program as a potential major.

So, how did Wendy come to this new viewpoint and approach? First, she expresses the impact of her religious faith:

Since the last interview, I’ve deepened in my religious life, so I guess I feel more at peace a little bit with my decisions and stuff. If I make a decision, I’m just, like, well – I think about if I messed up a lot in it or not, or if I made the wrong decision would it – it’s, well, if it was meant to be, it was meant to be. It’s all part of God’s plan... Yeah, you might have made a wrong decision but, all in all, that wasn’t meant to be and that wasn’t God’s plan. That’s my view.

This viewpoint releases some of the pressure that Wendy had been putting on herself to make the “right” choice, allowing her to feel “more relaxed” about the process. She can now trust that “everything will work out,” even if “it’s still scary” to be exploring and deciding.

A second key influence on Wendy’s new outlook relates to her involvement on campus. She applied to and was hired as a Residential Assistant (RA), which “kinda took some stress off recently.” She has been pursuing a leadership certificate, which has her working on a personal development plan and portfolio of leadership experiences, as well as pursuing leadership courses. She is also currently working at her residence hall office, and will likely be chosen for a supervisory position next fall. Finally, she has taken on a student advisory group role in the college for students who are exploring majors. As she talks about these activities, Wendy’s eyes light up and excitement fills her voice. These contributions help her feel connected to the university and grounded in day-to-day contributions that motivate her to persist.

Wendy has also experienced a very positive relationship with her academic advisor (who also serves as her leadership coach in the leadership certificate program). Wendy's interactions with her advisor are marked by "communication [that] is very open." When Wendy talked about pursuing a business and accounting major, her advisor provided candid, personalized feedback – "She even asked me 'why do you want to be an accountant?' ... She just sees me as so much of a people person, working with people and talking to people." Wendy's advisor has never pushed her towards an "exact career," yet she has consistently "encouraged me and given good advice."

In terms of next steps for exploring her major options, Wendy is looking to take a wide variety of classes in the spring (e.g., community health, math, economics, educational psychology, advertising). These classes will provide first-hand experience with material related to her potential directions.

Wendy's biggest concern at this time is taking good care of herself. "Being happy and not being so crazy stressed all the time" is incredibly important to her, whether those potential stressors stem from her academic classes, her interpersonal relationships, or other areas of her life. Caring for herself requires that Wendy set and remember the priorities in her life and that she continually strive to find a sense of balance:

I've had a lot of trauma in the past with my adoptive siblings and stuff like that. I think that it's better for my wellbeing and my psyche to not be so stressful all the time. Because if I am stressed like that, then I'll put school first, when really, I think that my faith should come first. So I made that decision kinda so, put my faith first. And if I'm super stressed that might be on the back burner.

Wendy recognizes that, having just finished her final exams for the fall, she is "not in a stress point in my life right now." Stepping back and finding perspective may be a bit easier now than at other times. Yet, the ease and peace that she feels are certainly palpable. Even though she may

still be in a place where she is uncertain of where she is heading with majors and careers, her way of managing the strain of uncertainty has changed considerably over the past two months.

Delayed post-interview—Gotta love what you do. Wendy continued “weighing out [her] options” as her second college semester began, focusing on “advertising versus accounting.” Her father “encouraged” her to pursue accounting by “talking about the money and the job security,” two things that have “always been really scary for me” (as discussed in previous interviews). She reflects that these conversations “pulled her in” to the major – “I’m not going to have to worry about money like my dad or I’m not going to have to be nervous all the time if I’m going to have a job or not.” And yet, Wendy found it difficult to commit to or get excited about accounting – “I do not want to be crunching numbers all day, and I don’t want to be sitting in a cubicle all day.” Advertising, on the other hand, is “something I kind of found on my own... doing research on it myself and talking to people in the major.” She reflects that “I didn’t get encouraged by anybody.” If anything, she experienced a little discouragement in regard to this direction, particularly from her mother who questioned whether Wendy could find a job with an advertising major. Wendy found herself intrigued by the options of business and creative opportunities that she saw in advertising, as well as the chance to pursue “social majors and careers” – “I love talking to people. I just love working with other people.”

Shortly before spring break, Wendy found herself at a key “decision point.” She was enrolled in a math course that was a prerequisite for applying to the business college and “on the first test, [she] didn’t do so hot.” She had to decide whether to drop the course before the drop deadline (meaning that she would not have the pre-requisite courses to apply to the business college) or to “stay in the class and work my butt off.” She wondered, “do I really want to do this or not?” She had a “feeling that [she] was going to do bad in the class” and, as a result, “might

not even be able to get into the [business college]” despite her efforts. She “[stalled] for a long time” because she was “nervous” – “What if I change my mind or something like that?” She was “scared to make a mistake” and then to “have to live with it.”

Meanwhile, Wendy was taking an introductory course in advertising. She reports “I really like it. I love it.” As the professor described the “two different sides of advertising” (creative and business / account management), Wendy “loved everything he was talking about. I was like I want to do that right now.” Through her personal research, Wendy discovered that Midwest University (MU) “has one of the best advertising programs in the country.” Being a person who values prestige (“I guess prestige is still a thing for me.”), this made her “feel better about it.” Looking through the career center website and online career information databases, she discovered a variety of “different jobs you can get in advertising,” as well as related fields such as “event planning or human relations or anything. I feel I could go into almost anything. Not almost anything, but a lot of things.” Additionally, Wendy discovered salary data that led her to decide that “money isn’t going to be as big an issue as I thought it would be.”

Wendy spent time “praying about it and thinking about [her] options.” She reflected that “my Catholic faith as one of the bigger factors in helping me make my decision.” While she expected that “either one would be good and either one I’d be fine in and be good at,” Wendy noticed a different quality to her reflections on each major – “I just get really excited when I talk about advertising, and when I talk about accounting, I’m just kind of like, ‘Oh, gosh. Can we change the subject or something?’” She felt like she “would overall be happier in advertising and just [her] life more.” Imagining her future choices, Wendy also had a gut feeling about the direction she would take – “I just felt like I was going to do advertising even if I did get into the [business college]. I just felt like that.”

Ultimately, Wendy decided to drop the math class because she did not feel motivated to continue on the path toward a business major. She expressed surprise that “I didn’t feel any regret at all” after implementing her choice. Rather, she felt a mysterious sense that “I think I kind of always knew I was going to do advertising once I started researching it.” And now that Wendy is “really excited” to be “pretty sure I’m set in advertising,” she finds it strange to “actually have a major.” She finds that being able to state her decision provides a strange new self-image.

It’s weird for me to think that I actually have a major. I know what I want to do. For so long, I felt like, I’m never going to be able to decide what I want to do. I’ll never be able to come to a decision. Now it’s weird for me to say, “I’m doing advertising.” When people ask what’s my major, I’ll be like, “I’m undecided, but I’m going to do advertising.” It’s so weird not to be like, “Oh, I don’t know. I might do business or I might do advertising or psychology or something like that,” so it’s nice to just be like, “I’m doing advertising now.” It’s weird... I just never thought I would get to that point. I’m like, whoa, that I am.

Wendy plans to apply to advertising at the beginning of next fall, her third semester on campus, and feels she has a good chance of getting accepted – “I’ve been told that I should be fine because my GPA is up there and I am really involved in stuff, but you never know.”

Of course, Wendy hasn’t necessarily lost the many, varied interests that she brought to her college experience – “If I could get as many majors as I wanted to, I would totally do it. I just love learning.” Yet, she has found ways to prioritize or categorize her interests, with some falling under the category of career possibilities and others as side interests.

I’m really interested in psychology and sociology and anthropology – all those ologies. I’m really interested in everything, so I think that’s why it was so hard for me to decide because I didn’t want to be stuck in something that I was interested in, but didn’t want to make my life. But I think advertising is something that I’m interested in, and I do want to make it what I’m doing every day. Psychology – I thought I was going to be a psychologist at first. It’s something I’m really interested in, but I don’t want to make my career... That’s why I’m not going to get a double major in psychology because I can read on it and research it myself. I don’t think I need to

have a degree to know that I know what it's about.

Wendy “kids around” about alternative paths – “I’m pretty sure I’m set in advertising, but knowing me, you never really know. I’ve barely taken classes yet.” It seems a matter of continuing to feel her interests piqued by stimuli in the environment (e.g., a forensic anthropologist on the TV show *Bones*), and wishing that she had the time to indulge all her curiosities. Yet she says that “at the end of the day, I just want to be loving what I’m doing, and I think that I will love advertising.” She is focused on “actual experiences, getting to know people, stuff like that,” which she feels is “more important than academics.” She finds advertising to be fundamentally about “getting to know people, so [you] know how to advertise to people.” The strong fit feels too right to pass up.

During the spring semester, Wendy has had a number of experiences that offered “confirmation” regarding her choice of advertising. For example, she had lined up a spring break job shadowing externship at a small accounting firm before she made the decision to stop pursuing business. While she was “not looking forward to it,” she figured “it’s still kind of industry experience... so [she] just did it anyways.” While Wendy “loved the people” at the office, she did not like the “little accounting stuff” that she was doing – “I was like, ‘I don’t want to be here right now.’” On the other hand, Wendy has greatly enjoyed some of the leadership positions on campus that she has pursued, such as RA training, working toward her leadership certificate, and serving as the marketing chair for her residence hall board. She is finding that all these opportunities, which at one point seemed random and disparate, now seem to be falling together quite well in preparation for pursuing advertising and leadership positions – “Everything else is working out pretty well.”

I also note that Wendy seems to have developed a good rapport with her advertising professor, who provides helpful advice regarding her next steps. For instance, Wendy talked to him about her thoughts on a double major in advertising and psychology.

He said that it would look good if you had a double major, but he'd rather see industry experience. He said it would be more important for me to focus on getting experience in the advertising field or anything advertising-related than it would be to have a double major.

Wendy finds a sense of relief in response to his advice – “So I figured, why go to school for another year?... It would be less stressful anyways.” She has decided to consider a minor, perhaps in business, communication, or leadership, rather than trying to fit in two majors from different colleges.

A few “worries” remain for Wendy regarding her choice of advertising. She wonders if “people might think I’m in an easy major or something like that” – is she just taking an easy pathway? Yet she combats this worry by focusing on “pushing those thoughts out of [her] mind.” Easy or difficult, advertising is what she enjoys. And, if it does turn out to be easy, that is okay “because now I have more time to go out and meet people” to build networks and to gain life experiences. Another concern that has crossed Wendy’s mind is that she “might be asked to advertise something that I don’t personally approve of... something that I don’t agree with or that goes against my morals or my religion.” It would be a difficult situation for Wendy to handle, and it is hard to know how to prepare for it – “I’ll cross that bridge when I get to it, I guess.” Wendy follows this conversation by expressing a need to find ways to minimize her stress about things that are beyond her current control.

Another thing that worries me, too, is I think ahead a lot. I think that’s good, but almost to a point where I worry about stuff in the future that I don’t need to be worrying about right now. So yeah, I think that adds to my stress level, but I don’t know. I can’t do anything about it right now, so I don’t need to worry about it.

Reflecting over her first year in college, Wendy finds that the combination of being an undecided student who was planning to apply to the business college to be “one of the best things that could have happened to me.” Being in the college for students who are exploring majors created a sense of urgency and necessity for Wendy.

It helped me almost – since I wasn’t in a college, I couldn’t just choose a major. I made me really think about what I wanted to do because I had to get into a college eventually. I have to pick by the end of sophomore year, so I couldn’t just not think about it... it made me actually have to go looking for what I wanted to do, instead of just sitting on my butt and just being like, “I’m in college.”

Additionally, focusing on the business college in particular was helpful because of the competitive nature of the application process.

I knew that you needed a lot of leadership experience. I knew that academics were really important... it made me jumpstart everything instead of waiting until next year... I knew the bar was very high, so I started right away getting involved and getting leadership stuff, and getting industry experience and keeping my grades up... Yeah, it made me make sure that I stay on top of things right away.

As a result, Wendy can look back over the year and vividly see all the “progress” that she has made – a “big turnaround” for her. She no longer feels stressed about choosing a major or career (“I don’t think about it all the time.”) and she reflects, “I wouldn’t want to do it any other way... I’m really glad with my freshman year.”