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PSYCHOLOGICAL BIRTH ORDER AND CAREER ADAPTABILITY IN AN AT-RISK
COLLEGE POPULATION

A Dissertation
presented in partial fulfillment of requirements
for the degree of Doctor of Philosophy
in the Department of Leadership and Counselor Education
The University of Mississippi

by

JOSHUA A. MAGRUDER

May 2012

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ABSTRACT

The purpose of this study was to explore the psychological birth order and career adaptability of college students who were at-risk academically. Psychological birth order is a main construct from the Individual Psychology of Alfred Adler (1927, 1946). Adler posited that individuals discover life differently when they perceive the world from different birth positions. The literature on psychological birth order outlined four birth order positions: firstborn child, middle born child, youngest child, and only child (White, Campbell, Stewart, & Davies, 1997). The psychological birth order of each participant was assessed using the Psychological Birth Order Inventory (PBOI) (Campbell, White, & Stewart, 1991). The participants were placed in groups according to their psychological birth order results from the PBOI. Also, this study assessed for levels of career adaptability. Career adaptability was defined by Savickas (2002) as “the attitudes, competencies, and behaviors that individuals use in fitting themselves to work that suits them” (Savickas, 2005, p. 45). The participants were given the Career Adapt-Abilities Survey (CAAS) to assess the level of adaptability across four dimensions: concern, control, curiosity, and confidence (Savickas, 2005). The results of the CAAS were compared to the population parameters using multiple one-sample *t*-tests. The researcher used the Kruskal-Wallis nonparametric test to analyze the data collected from the PBOI and the CAAS. Psychological birth order was the grouping variable, and the four dimensions of career adaptability were the dependent variables. Results of the Kruskal-Wallis test and the one-sample *t*-tests are discussed.

DEDICATION

The work on this study is dedicated to my wife, Merrill, and my parents, Neil and Carolyn. This would not have been possible without their love and support.

ACKNOWLEDGEMENTS

My graduate work would not have been possible without the help, support, and guidance of many people. First, I would like to thank my chair and mentor, Dr. Kevin Stoltz. Without his encouragement and support, none of my graduate work would have been possible, including, but not limited to this dissertation. Dr. Stoltz taught me how to be a counselor in my Master's program. He encouraged an interest in research from the first year. Under his mentorship, I became a proficient teacher and supervisor. He then he modeled how to be a professional researcher through his kindness and support, as well as a firm push when needed. Dr. Stoltz kept me stable and grounded throughout the entire graduate process, and my thanks to him surpasses any words.

I would like to thank the rest of my committee members: Dr. Lori Wolff, Dr. Susan Mossing, and Dr. Marc Showalter. Dr. Wolff encouraged my passion for statistics, and taught me the pen and paper math that led to true understanding of complex statistics. Dr. Wolff's support and guidance has been infinitely helpful to the completion of this study and the analysis of the data. I would like to thank Dr. Mossing for her efforts and support during the data collection process. Her insight into the students that comprised my sample helped shape and guide this study, so I offer her many thanks.

The last member of my committee has been a true pillar of support throughout my graduate work and this dissertation. Dr. Showalter's kind words were always held close when difficulties arose. He was always there with helpful guidance and support when I was in need. He provided a professional environment in which I could grow as a counselor and a researcher.

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CHAPTER 1

Introduction

The human ability to adapt to the environment forms in early childhood (Adler, 1927). The family of origin environment impacts the foundation for how individuals adapt to the challenges of living (Stewart & Campbell, 2001). One aspect of early family environment is an individual's psychological birth order (Ansbacher & Ansbacher, 1956). Adler wrote:

It is a common fallacy to imagine that children of the same family are formed in the same environment. Of course there is much which is the same for all children in the same home, but the psychological situation of each child is individual and differs from that of others, because of the order of their succession. (Ansbacher & Ansbacher, p. 376)

According to Adler, every person is born into a family and feels inferior when he or she comes into contact with the outside world. All people have feelings of inferiority that are unique and defined by personal experiences, and psychological birth order is a factor that creates individual experiences. To overcome these feelings of inferiority people strive to be superior. According to Adler, striving to be superior is a universal goal of all humans. He states, "A person would not know what to do with himself were he not oriented toward some goal. We cannot think, feel, will, or act without the perception of some goal" (Ansbacher & Ansbacher, p. 98). Adler believed that "a continuous active adaptation" (Ansbacher & Ansbacher, p.106) was required to move through life. Birth order can affect how an individual adapts to the environment and forms goals. Even in the work life, people are directed by their goals and adaptations (Milliren & Clemmer, 2006).

Goals and adaptations are first shaped by the family of origin and interactions with siblings and parents (Milliren & Clemmer, 2006; Ansbacher & Ansbacher, 1956). Developmentally, college is one of the first experiences to extend separation from the family toward independence (Chickering & Reisser, 1993). According to Chickering and Reisser, moving through autonomy toward interdependence is the third vector of college students' development. This vector includes "freedom from continual and pressing needs for reassurance, affection, or approval from others" (p. 117). Students in this vector are exploring life without the family of origin and need to be seen as adults who are capable of making decisions and choosing goals for themselves. Goal selection may be more independent, but choice is influenced by the position in the family of origin and the psychological birth order of the individual.

Savickas (2005) believes that the goal of students moving into the work force is to learn to find a place in society that fits the personal attributes of each individual. From the developmental view of Career Construction Theory (CCT) (Savickas, 2002), college students moving into the world of work are near the end of the exploration stage of career development. This stage lasts from ages four to twenty-four, and includes three main tasks that must be met before moving on to the establishment stage: crystallization, specification, and actualization. Crystallization is a broad search of how an individual fits into society. This process is marked by an understanding of competencies, attitudes, and beliefs about the world of work and society. Specification is the solidification of an occupational choice. Finally, actualization is the third task. Savickas (2002) states, "The period during which choices are actualized is often referred to as the school-to-work transition" (p. 177). College students must be able to meet the social demands and developmental tasks of the exploration stage.

Savickas (2002) posits that the goal of movement in the exploration stage should be skill development to adapt to the new environment of work. Career adaptability is defined as “the attitudes, competencies, and behaviors that individuals use in fitting themselves to work that suits them” (Savickas, 2005, p. 45). By understanding the adaptability and the personality attributes that arise from psychological birth order, counselors and programs for at-risk students might improve interventions so that students may successfully complete the developmental tasks of the exploration stage. Kun, Kinzie, Schuh, and Whitt (2005) suggested that universities have an obligation to provide academic support when students do not have the resources to succeed. Therefore, the goal of this study was to explore possible differences in career adaptability among birth order groups of students who were at-risk.

Individual Psychology and Psychological Birth Order

Actual Birth Order.

Each individual has an actual birth order and a perception of him or herself in the family. This self-perception is the psychological birth order of an individual (Campbell, White, & Stewart, 1991). Adler describes birth order as being relevant to the assessment of a client’s lifestyle, but, more importantly, he stresses that it is the perceived experience that is more important than actual birth order (1927). He stated, “What the child feels need not actually be the case. It does not matter what really has happened, whether an individual is really inferior or not. What is important is his interpretation of his situation” (Adler, p. 150). Interpretations cause people to think, act, and feel in a very personal and unique way. Certainly, every person is an

individual, but past studies support the idea that people with similar psychological birth orders will think and act in similar ways concerning the work life task (Bliss, 1970; Bradley, 1982; Bradley & Mims, 1992; Bryant, 1987; Melillo, 1983; Watkins, 1992; White et al., 1997).

Psychological Birth Order.

In support of Adler's theory, Campbell et al. (1991) created an instrument to determine the perceived role in the family of origin. These authors found support for Adler's theory of psychological birth order. There are four distinct psychological birth orders: firstborn, middle, youngest, and only. Firstborn children tend to have a feeling of power and influence over their younger siblings. They have a need to please adults and find interest in adult activities such as work. Middle children are in a difficult position because they feel trapped between the first and the younger children. They might have feelings of inferiority as the younger child receives more attention and the older child has more responsibility. They often seek fairness in many situations. Youngest children have a special place in the family of origin. Adults can take responsibility for youngest children and place few demands on them, resulting in feelings of weakness and entitlement. Only children are much like firstborns. They have more interest in adult activities, and their need to please adults is increased as an only child. All family expectations rest with the only children. As children grow, they bring their attributes from the family of origin into their adult lives and their world of work.

Adler theorized that work is a major life task of each individual and how each person meets the work life task is created by childhood experiences (1946; Ansbacher & Ansbacher, 1956). Many researchers have investigated Adler's construct of birth order with career choice

(Bliss, 1970; Bradley, 1982; Bradley & Mims, 1992; Bryant, 1987; Melillo, 1983; Watkins, 1992; White et al., 1997). White et al. found that firstborn children were drawn to social or business careers. Younger children had a negative relationship with science and technology careers. This study concluded that psychological birth order and career interests were related. Several other authors have studied birth order and academic achievement (Hester, Osborne, & Nguyen, 1992; Phillips & Phillips, 1994; Phillips & Phillips, 2000). For college-aged students, work is defined by academics. Hayes and Bronzaft (1979) studied birth order in an academically elite sample, and found that no birth order was more likely to achieve academic, or work, success. These findings suggest that birth order does not play a role in work achievement, but to date there have been no studies that focused on an at-risk college population and psychological birth order.

Watkins and Savickas (1990) summarized Individual Psychology from a career counseling perspective and stated that there is only “a tentative base supporting the relevancy of Adlerian variables to the career counseling process” (p. 93). However, these authors recognized that birth order, lifestyle, early recollections, and social interest are important to understanding vocational behavior. These variables created in the family of origin do impact the work life task and development (Leong, Hartung, Goh, & Gaylor, 2001).

A study by Leong et al. (2001) investigated birth order groups, occupational personality types, occupational interest, and values in a sample of medical students and a sample of college students. The authors attempted to support the Adlerian proposition that birth order can impact future careers. The study by Leong et al. upheld “the contentions within Adlerian vocational theory that individuals of different birth orders develop different vocational patterns (e.g., personalities, interest, and values)” (p. 36). The authors contend that the construct of birth order

is a valid career variable that further expands the use of family dynamics in vocational counseling. Psychological birth order may provide insight for individuals as they meet developmental tasks and attempt to meet social norms.

Career Adaptability

Career Adaptability is a critical part of career development (Savickas, 2005). The concept of career adaptability first came from Donald Super and his Life-Span, Life-Space model of career development (Super, Savickas, & Super, 1996). Super's original term was "career maturity." Super and Kinsel (1981) defined vocational maturity as "the coping behaviours necessary for dealing with career developmental tasks at any life stage" (p. 194). Even before Super conceptualized his complete career model, he wrote that "the label 'vocational maturity' is inappropriate" (Super & Kinsel, p. 198). He believed that the term "maturity" had a developmental and age stigma attached and that another term would be more suitable. As a result, Super took a strong position to make the change from "vocational maturity" to the term "career adaptability" to define an individual's readiness to take on developmental tasks without a focus on maturation. "Adaptability" has since replaced "maturity" as a more appropriate and current model of career development (Super et al.). The term "maturity" implies that all people will eventually reach a set stage, but "adaptability" implies that any person, regardless of age, can meet developmental tasks. Career adaptability was most recently defined by Savickas (2005) as "a psychosocial construct that denotes an individual's readiness and resources for coping with current and imminent vocational developmental tasks, occupational transitions, and personal traumas" (p. 51).

Adaptability is far more accurate than maturity because there is a lack of attachment to natural growth. Another important reason to switch terms was that adaptability focuses on the interaction between a worker and the work environment. Super and Knasel (1981) emphasized that the adaptations would not be made by the environment; only individuals possess the ability to adapt. Savickas (1997) concurred with Super's modification in terms by stating, "The change from career maturity to career adaptability simplifies Life-Span, Life-Space theory by using a single construct to parsimoniously explain development in children, adolescents, and adults" (p. 254). This places the focus of career counseling on developing adaptability regardless of age or career developmental stage. Adaptability can better address transitional periods, as well, without the focus on maturation.

Without a strict adherence to maturation, CCT follows the client's personal story. Savickas (2008) credited David Tiedeman as one of the driving forces of CCT by placing the emphasis back on the client's narrative of his or her career. In Tiedeman's constructivist view, developmental stages were conceptualized as social norms. The constructivist view, again, removed the focus from maturation and stressed the client's adaptability.

Savickas (2002, 2005) outlined four dimensions of adaptability: concern, control, curiosity, and confidence. To adapt successfully, people must have concern about the future of their work lives. They must gain more control of their work lives. People must have curiosity about the future and how they see themselves evolving in their work lives. Finally, people must increase their confidence to chase their goals.

Duffy (2010) conducted a study that focused on control and career adaptability in college students. He found a positive relationship with optimism, self-esteem, social support, and a sense of control. These positive relationships show that adaptability correlates with many life factors

and should be further studied. Savickas et al. (2009) concurred with Duffy that more research needs to be completed with the construct of career adaptability as a variable.

Savickas, Briddick, and Watkins (2002) studied two-hundred college students to find a relationship between career maturity or adaptability, personality type, and social adjustment. These authors came to four major conclusions. The first was that the level of maturity relates positively to self-perceived potential. Social adjustment and career maturity were not found to be related. Career development did relate to styles of adjustment. Most importantly, they found that there is little difference among personality types and level of career maturity. For clinical purposes, this is important because career maturity, or adaptability, can be used to assist in career development regardless of personality type or level of social adjustment.

Another important finding from Savickas et al. (2002) was that norm-questioning people had difficulties moving through the developmental stages and meeting social norms. The authors note that there are different paths to career development, and that norm-questioners can meet the developmental tasks and social norms in an atypical manner. These authors found that norm questioners have different attitudes about planning which suggest that they could have different levels of the adaptability dimensions by their birth order group. Campbell et al. (1991) stated that adult activities are more attractive to firstborns and only children. The attraction to adult activities might result in more career curiosity or control based on this psychological birth order. Although speculative, norm-questioners may be middle or last-born and have different ways of adapting to the social expectations. Savickas et al. believed that the differences among norm-questioners should be studied and career counselors should acknowledge that there are multiple paths of career development. Norm-questioners could be among the students defined as at-risk.

Summary and Research Question

Personality attributes are developed in early childhood (Adler, 1927). One factor that impacts personality development, as understood by Individual Psychology, is psychological birth order. Psychological birth order has an impact on lifestyle, achievement patterns, and vocational choice (Watkins & Savickas, 1990).

Careers develop over a lifetime and all individuals must meet the social norms, and one important variable to meet developmental tasks is career adaptability. Career adaptability has four dimensions: concern, control, curiosity, and confidence (Savickas, 2005). These four dimensions give an individual the ability to adapt to career transitions and to meet socially defined developmental tasks. When an individual lacks the ability to adapt, career development stagnates. Savickas wrote:

Adolescents should approach the task of the exploration stage with a concern for the future, a sense of control over it, the curiosity to experiment with possible selves and explore social opportunities, and the confidence to engage in designing their occupational future and executing plans to make it real. (p. 56)

Savickas et al. (2002) then found that a norm-questioning individual faces the same developmental tasks as all individuals, but norm-questioners find a path that might be different from the social norm. This diversion from the social norm creates a population of individuals whose career development has been studied on a very limited basis and could be part of the at-risk student population that was explored in this study.

Norm-questioning individuals and a diversity of psychological birth orders are expected to be found in an at-risk college population. According to Savickas (2002), this population is in

the exploration stage of career development, and they are in the important transition from school-to-work. This transition is socially defined; however, at-risk students have not been studied to the extent of other populations such as the academically successful. By understanding psychological birth order and levels of career adaptability, this population could receive more research attention as at-risk students' career development could be better understood. This researcher asked the question: Does psychological birth order impact the level of career adaptability of at-risk college students?

Purpose of the Study

The purpose of this study was to examine the construct of psychological birth order and career adaptability in a population of at-risk college students and to compare career adaptability of this sample to the normed parameters that will be published soon (M. Savickas, personal communication, February, 26, 2011). The independent variable was psychological birth order: firstborn, middle, youngest, and only. The dependent variables were the four dimensions of career adaptability: concern, control, curiosity, and confidence. Four groups were formed by birth order, and variance between groups was explored among the four adaptability dimensions.

Hypotheses

1. H_0 : There are no significant differences in psychological birth order groups on the dimensions of career adaptability.

H_a : There are significant differences in psychological birth order groups on the dimensions of career adaptability.

2. H_0 : There is no significant difference in mean scores of the dimensions of career adaptability of this sample and the normative population parameters for the CAAS .

H_{a1} : There is a significant difference in the mean score of the concern dimension of career adaptability of this sample and the normative parameter of the CAAS scale of concern.

H_{a2} : There is a significant difference in the mean score of the control dimension of career adaptability of this sample and the normative parameter of the CAAS scale of control.

H_{a3} : There is a significant difference in the mean score of the curiosity dimension of career adaptability of this sample and the normative parameter of the CAAS scale of curiosity.

H_{a4} : There is a significant difference in the mean score of the confidence dimension of career adaptability of this sample and the normative parameter of the CAAS scale of confidence.

H_{a5}: There is a significant difference in the mean score of the confidence dimension of career adaptability of this sample and the normative parameter of the total score on the CAAS.

Definition of Terms

1. Psychological birth order: the perceived role a child has in the family or origin (Ansbacher & Ansbacher, 1956).
2. Career Adaptability: “a psychosocial construct that denotes an individual’s readiness and resources for coping with current and imminent vocational developmental tasks, occupational transitions, and personal traumas” (Savickas, 2005, p. 51).
3. Norm-questioning: individuals who question the social norms and demands of the world of work. Generally, these individuals have less career maturity (Savickas et al., 2002). For the purpose of this study, a sample of at-risk college students could include norm-questioning individuals because they have not met the social norms of college life. Some of these norms include maintaining an appropriate grade point average or maintaining attendance requirements to complete their selected programs.

Significance of the Study

Psychological birth order has been established as a valid construct for investigating careers (Melillo, 1983; Watkins, 1992; White et al., 1997). The actual birth order is not as important as the behaviors and attitudes that come from the perceived birth order (Adler 1927, 1946; Ansbacher & Ansbacher, 1956; White et al., 1997). The use of the four birth orders as a grouping variable makes this study useful to career counselors working with college populations. By understanding birth order and the behaviors associated with each psychological birth position, career counselors might better understand their clients' career adaptability.

Career adaptability is a construct developed to help understand how an individual meets developmental tasks and social norms in the work environment. Holland (1997) posited that each work environment has a specific personality type. This view, positivist in nature, suggests that by understanding personality on a deeper level through career adaptability, career counselors should be able to match an individual with his or her proper work environment. Thus, this study could add to the positivist literature on person and environment fit.

Opposed to the positivist view, the constructivist nature of CCT should allow this study to be significant because psychological birth order could be a large part of an individual's career narrative. Adler theorized that psychological birth order is a valid construct for understanding personality (Ansbacher & Ansbacher, 1956) and Leong et al. (2001) confirmed birth order as a variable to further study in career counseling.

Because Savickas and Watkins (2002) found differences among norm-questioners, which could include at-risk students, the use of birth order to better understand these differences is significant to the improvement of career counseling for at-risk students. Norm-questioners

certainly have different goals; by understanding the differences through the theoretical lens of psychological birth order, counselors can better understand the goals of this population. Finding the differences of career adaptability among at-risk students by birth order could provide insight for improving programs that work with this population. Also, these differences between birth order groups might lead to a better understanding of how personality and family dynamics impact career adaptability in the at-risk college population.

Limitations

1. The PBOI was used as a grouping variable that provides a score for each of the four birth orders. A standard score was used to find the psychological birth position indicated by the highest score. The other scores will not be used in analysis because of group formation.
2. Validity and reliability statistics have not been published to date for the Career Adapt-Abilities Scale. Confirmation that this information will be available in the near future was received via email communication with the professionals developing the validity and reliability statistics (M. Savickas, personal communication, February, 26, 2011).

Summary and Organization of the Study

Career adaptability is a useful construct that needs further exploration (Creed, Fallon, & Hood, 2008; Duffy, 2010; Duffy & Blustein, 2005; Hartung, Porfeli, & Vondracek, 2008;

Hirschi, 2009; Scholl & Casone, 2010). Psychological birth order has been established as a useful construct in career research (Bliss, 1970; Bradley, 1982; Bradley & Mims, 1992; Bryant, 1987; Melillo, 1983; Watkins, 1992; White et al., 1997). Adler theorized that adaptability is developed and molded in early childhood (1927). By better understanding how individuals develop adaptability, counselors could influence career strategies with at-risk students. University programs could integrate information on psychological birth order and career adaptability to better prepare students for successful career transitions in school and school-to-work.

Chapter II will further explore the literature concerning both constructs. Chapter III will explain the method, instruments, and statistical analysis that will be used in the study. Chapter IV will explain the results of the study, and Chapter V will discuss the findings and suggest future research for career adaptability and psychological birth order.

CHAPTER II

Review of the Literature

This literature review attempts to guide the reader through the theory of Individual Psychology and specifically the construct of psychological birth order. Significant studies of psychological birth order that address career concepts are discussed. The construct of Career Adaptability is defined through a discussion of CCT, and major studies of career adaptability are presented. Finally, the research will be synthesized to form a conclusion and rationale for the study of psychological birth order and career adaptability.

Individual Psychology

Alfred Adler's Individual Psychology (1924) is a comprehensive theory which is used to explain an individual's life by looking at past experiences with family of origin and the individual's attempts to find a place in the family and, eventually, society. This theory has basic constructs and assumptions. The first basic assumption of Individual Psychology is the idea that personality is consistent and unified throughout one's life. Interactions with the environment can sometimes create problems, but an individual chooses his or her identity and develops coping strategies to confront these environmental problems. The second assumption is that each individual has a goal of superiority (Ansbacher & Ansbacher, 1956). Each person strives to be more successful in life and reach his or her goal; superiority is the construct created from this

assumption (Ansbacher & Ansbacher, 1979). Striving for superiority is the motivation for growth as an individual attempts to face the problems that arise in societal living.

Gemeinschaftsgefühl, best translated as a community feeling or “social interest” (Ansbacher & Ansbacher, 1979, p. 368), is another main construct of Individual Psychology. Social interest is necessary for an individual’s development because all individuals must find a place in society. Social interest is shaped throughout life, and is directly formed by a person’s lifestyle. Adler posited that “style of life arises in the child out of his *creative power*, i.e., from the way he perceives the world and from what appears to him as success” (Ansbacher & Ansbacher, p. 25). According to Adler, lifestyle is reinforced by private logic which is the perspective of the world that fulfills each individual’s personal definition of success. Adler posited that lifestyle and private logic could be understood through an investigation of early recollections, childhood disorders, dreams, and birth order (Ansbacher & Ansbacher, 1956).

Each individual has an actual birth order and a perception of him or herself in the family. This perception is the psychological birth order of an individual (Campbell et al., 1991). Adler describes birth order as being relevant to the assessment of a client’s lifestyle, but, more importantly, he stressed that it is the perceived experience that is more important than actual birth order (Adler, 1927). He stated, “What the child feels need not actually be the case. It does not matter what really has happened, whether an individual is really inferior or not. What is important is his interpretation of his situation” (Adler, p. 150).

Birth Order.

Watkins (1992) reviewed the literature and research concerning birth order in *The Journal of Individual Psychology* from 1981 to 1991. The author identified that the main flaw in the previous studies on birth order was that they used actual birth order. There were only five studies that assessed for psychological birth order, and each study used a different methodology to find the psychological birth order of the participants. Based on Adler's original ideas of perceived birth order (1927) and Watkins' review of the existing literature, psychological birth order is the preferred construct over actual birth order for more conclusive results. Until 1991, no valid assessment had been created to actually collect psychological birth order.

Campbell et al. (1991) examined the relationship of psychological birth order and actual birth order. The purpose of this study was to provide support for the construct of psychological birth order compared to actual birth order. Also, the authors introduced the Psychological Birth Order Inventory (PBOI). Finally, they studied the relationship of psychological birth order as scored on the PBOI to actual birth order, age, gender, gender of siblings, and number of siblings. They collected a sample of 561 people from graduate and undergraduate classes. Each participant was given the PBOI and the scores were correlated with the previously mentioned variables using the Pearson r coefficient, chi-square, and asymmetric lambda.

With the conception and creation of the PBOI in 1991, researchers finally had the instrument needed to conduct consistent studies of psychological birth order. Watkins (1992) identified the inconsistency of measuring psychological birth order as one of the major issues of using this construct in career research, and the PBOI finally solved that problem.

In 2001, Stewart and Campbell used the PBOI to study the relationship of psychological birth order, family atmosphere, and personality. In the first study, the authors explored the relationship between perceived family roles, family atmosphere, and perceived social support. In this study, 422 college students participated, and the participants had lived with their families currently or within the last six months. First, the participants completed the *Thinking About Your Family* exercise, which is a writing exercise to articulate family of origin memories, feelings, and experiences. The PBOI, the Perceived Social Support (PSS) from Friends and Family Scale, The Family of Origin Scale (FOS), and the Family Environment Scale (FEW) were given to each participant. Psychological birth order was the dependent variable with the other scales as the independent variables. The authors used separate regression analyses for men and women to study the relationships of the variables in the first study. The analysis used in the study was MANOVA and was intended to explore the relationship of psychological birth order and family atmosphere. The family atmosphere measure explained more variance for the middle child and only child scales of the PBOI, and the youngest child scale had the least amount of variance with the measures. Some gender differences were explained.

The second study had 290 participants and used the PBOI, the Marlowe-Crowne Social Desirability Scale (SDS), and the Personality Research Form (PRF). Regression again was used to study the relationship between variables. Only moderate relationships were found. Overall, the results should be “interpreted cautiously” (Stewart & Campbell, 2001, p. 383) because of the methods and scope of the study.

These studies (Campbell et al., 1991; Watkins, 1992) illustrate the practical use of psychological birth order over actual birth order. The PBOI was used to study perceived birth order, family atmosphere, and personality, demonstrating the PBOI’s usefulness in research.

Psychological birth order has been used in research with career concepts which will be discussed in the following section.

Birth Order and Career.

There have been many studies using birth order to study career concepts (Bliss, 1970; Bradley, 1982; Bryant, 1987). More recent studies use psychological birth order to assess career concepts (Bradley & Mims, 1992; Leong et al., 2001; Watkins & Savickas, 1990; White et al., 1997). Only one of these studies used the PBOI (White et al.), but all of the studies stressed the relevance of studying the construct of birth order and career development.

Bliss (1970) conducted one of the first studies that attempted to find a relationship between birth order and occupational choice. The author surveyed a group of scientists and a group of creative writers to determine if birth positions other than first and only children have an influence in occupational choice. First and only children represented 61% of the sample of scientists. These two birth positions only accounted for 23% of the sample of writers. The author implied that the results of the study indicated that children born into later positions might be more creative than first or only children. This article marked the first attempt to use birth order to study career choice.

Melillo (1983) used birth order to examine the career success of women in academic settings, who were at the time a minority in higher education. The author sent questionnaires to people who were identified as women by their first names and who had a doctorate. The questionnaires asked three questions about birth order and family demographics. Of all the packets mailed out, 174 of were useable when returned. Chi-square was used to analyze the data

and a relationship was found between age and family size. Additionally, oldest children and only children were identified as predominate birth positions for women in academia. This study is significant because it asked a question about the participants' perceptions of their birth order, but found there was little evidence to support a difference between perceived birth order and actual birth order. This finding has since been contradicted by research conducted by Campbell et al. (1991).

Bryant (1987) conducted a study to examine the relationship between birth order and vocational preference. Pre-existing data from high school students' completion of the Strong-Campbell Interest Inventory (SCII) was used in this study. The author reported that three types of data emerged from the SCII: interval, frequency, and rank order. A *t*-test was used to study the interval data, and chi-square was used to examine the frequency and rank order data. The study only used two birth order groups, firstborns and lastborn children. The author excluded data from participants that would complicate the groups, such as step-siblings. Firstborns were found to prefer more school subjects than lastborn children, and they were found to have more Social or Conventional (Holland, 1997) themes. Lastborn children had a significant relationship with introversion when compared to firstborns. Because the study only used two birth order groups that were constructed from actual birth order, further results were limited without the use of psychological birth order and more birth order groups.

In 1982, Bradley wrote an article to inform career counselors about the use of birth order as a tool for counseling. The article presented existing data gathered from the national sample of the Strong Vocational Interest Blank (SVIB) to inform practicing counselors of the usefulness of birth order in career counseling. The author described characteristics of firstborns, second children, and sibling dyads. Sibling dynamics and interactions with the family of origin were

emphasized as critical to the career counseling process. Striving for significance was vital to understanding clients and their career exploration. Bradley used his personal experiences to provide examples of birth order and sibling dynamics and how they can be used in counseling sessions. He went on to mildly integrate birth order into other career theories, but the focus was really to inform counselors about the construct and its usefulness. The author supported the assumption that family patterns influence career exploration. Bradley (1982) stated, “By itself birth order does not always answer questions, but it can be helpful when used in conjunction with other conceptualizations” (p. 30). This was a significant article because it stressed the importance of birth order in career work with clients.

Bradley and Mims (1992) published an article that outlined a college course using family structure and birth order to understand career decisions. The authors reviewed the literature about family structure, birth order, and the Adlerian concept of striving for significance. Next, they outlined the first class with the lecture based on family structure, activities based on genograms, and small-group counseling to discuss and process the experience. The second class lecture was based on birth order with activities designed to understand birth order and the dynamics that influence striving for significance. The small-group activities for this class focused on members interacting with each other about their families as well as how they understood their decision-making process. This study was significant because it outlined a practical use for birth order in a career setting, as well as supported the need for further study of birth order and career ideas to construct a holistic understanding of career development.

In 1990, Watkins and Savickas wrote a book chapter that described psychodynamic career counseling, including psychoanalytic theory, Eriksonian theory, and Adlerian theory. The authors stated, “The best we can now say is that we have a tentative base supporting the

relevancy of Adlerian variables to the career counseling process” (Watkins & Savickas, p. 93). This statement was made over twenty years ago, and today we have more understanding of the relationship of psychological birth order and other career counseling theories (Leong et al., 2001).

Leong et al. (2001) conducted a study with the purpose of examining the relationship of birth order and key constructs from Holland’s and Super’s career models. These authors wanted to examine groups identified by birth order and to find any differences in personality code as defined by Holland’s RIASEC model (1997) and values as defined by Super’s model (Super et al., 1996). The authors conducted two studies, one with medical students and one with undergraduate students. Birth order was identified as one of three choices: oldest, only, or later-born which describes youngest and middle children. The students then completed the Strong-Campbell Interest Inventory (SCII) and the Values Scale (VS). The General Occupational Themes and Basic Interest Scale from the SCII and the score from the VS were explored using ANOVA procedures. The second study excluded the VS, but this study was conducted to eliminate bias from the first study of only medical students. The removal of the VS was a limiting factor in the second study.

In the first study, which only included medical students, later-born children had a higher mean score on the Realistic ($M = 51.00$) and Artistic ($M = 55.10$) scales than firstborns ($M = 48.10$ and $M = 51.59$, respectively). Only children scored higher in the Investigative scale ($M = 58.00$) than firstborn children ($M = 51.83$) (Leong et al., 2001). The only children and firstborns seemed to diverge from past findings by the difference in the Investigative scale. This suggested that firstborns and only children were not as similar as previously thought. The Basic Interest Scale supported the authors’ contention that later-born children have more interest in art, music,

and nature than firstborn children. This suggests that later-born children could be classified as norm-questioners based on the definition used in Chapter I.

Leong et al. (2001) continued and stated that “the present data give further empirical evidence to support the contention within Adlerian vocational theory that individuals of different birth orders develop different vocational patterns based on their position within the family of origin” (Leong et al., p. 36). However, this study was limited by the use of actual birth order as opposed to psychological birth order, though it still confirms the use of birth order as a tool in career development.

White et al. (1997) conducted a study using the PBOI and the UNIACT Interest Inventory to examine the relationship between psychological birth order and career interest. The authors stressed the importance of using psychological birth order over actual birth order, and they stated that “personal perceptions were fundamental to Adler (1927; Ansbacher & Ansbacher, 1956); it appears that this is an important area to pursue” (White et al., p. 92).

The authors then outlined characteristics of the four psychological birth positions. Firstborns have a need to be perfect, please adults, and follow rules. Power is important because firstborns often feel “dethroned” (White et al., 1997, p. 90) by later born siblings. Firstborns might prefer business operations or careers in which leadership skills are valued. Middle children often feel stuck between first and youngest children as if they have no clearly defined role in the family. Fairness is vital to this psychological birth position. Middle children might be drawn to social or creative occupations because they tend to develop interpersonal skills as a result of feeling like they are in the middle.

Psychologically, youngest children are often taken care of by the family (White et al., 1997). They typically have few responsibilities or demands from adults which can result in

feelings of weakness and helplessness. Younger children tend to maintain a sense of imagination and spontaneity which suggests they may prefer occupations where creativity and sociability are important. Only children are similar to firstborns psychologically. More attention from adults creates greater interest in adult activities such as work, and they may prefer scientific or technical occupations (White et al.).

White et al. (1997) used a sample of 491 participants who were part of a first-year college orientation class. The participants completed the UNIACT Interest Inventory and the PBOI. Multiple regressions were used to examine variance in each of the two career scales that could be explained by the four psychological birth order scales. Also, the authors conducted two separate MANOVAs. The first used the PBOI scales as independent variables and the career scales as dependent variables. There was no main effect shown. The second MANOVA used gender and actual birth order, but again no main effect was found.

The authors concluded that the PBOI was useful in understanding the perceived family position and its effect on developing career interest (White et al., 1997). Firstborns were found to be related to social and business contact areas with lower interest around enterprising careers. The youngest children were found to have a negative relationship with science and technology-based careers; the authors suggested that the feeling of helplessness might deter youngest children from those fields. Firstborns and only children appeared to be related to data-driven or conventional careers, but these two career fields are not of interest to middle children. The authors noted that the firstborn children have a need to please adults, and that the oldest child scale had the strongest relationship with developing career interests. Therefore, perfectionism and the need to please others were found to be central to developing ideas around career. The authors noted, "It is not the birth order itself that is important, but the pattern of behaviors and

attitudes that emerge from family experiences, that play a role in career interests” (White et al., 1997, p. 101).

The study by White et al. (1997) was very significant because it defined psychological birth order as a useful tool for career counseling. Psychological birth order is not completely sufficient to work with career; rather, it is part of the holistic view of individuals from the theory of Individual Psychology, and it should be combined with other theoretical constructs to complete the holistic perspective (White et al., 1997).

Psychological birth order was established as a useful construct to explore career development (Bradley & Mims, 1992; Leong et al., 2001; Watkins & Savickas, 1990; White et al., 1997). The majority of these authors believe that psychological birth order should be combined with other career constructs to complete the holistic view of career clients. That is why I proposed a study to gain an understanding of how psychological birth order impacts career adaptability.

Career Construction Theory

CCT (Savickas, 2002, 2005) was developed from two very different philosophical perspectives (Savickas, 2011). The first was from Super (1957), a positivist view of career; CCT used the developmental stages and the idea of the mini and maxicycles. The second philosophical perspective was from Tiedeman (Savickas, 2008). He provided CCT with its post-positivist view that developmental stages were merely social norms that individuals needed to meet to gain social acceptance (Savickas, 2011). Both perspectives took a major role in the

formation of this theory and its constructs, but ultimately CCT is a constructionist view of individuals and career development with a focus on the language and narrative of clients.

CCT (Savickas, 2002, 2005) has five developmental stages that an individual experiences throughout his or her life in terms of career: growth, exploration, establishment, maintenance, and disengagement. The entire development is known as a maxicycle. An individual develops through a maxicycle from birth until death, and each stage has developmental tasks that must be overcome to reach the next stage of development. Also, the five stages describe minicycles. These minicycles occur during such career transitions as re-locations, job losses, or redefinitions of job responsibilities. The developmental tasks must be addressed during minicycles just as in the maxicycle.

Savickas (2002) listed four major life tasks for the growth stage of career development: concern about the future, control over vocational choices in life, creation of concepts about the work life, and the confidence to make decisions and follow through with career choices. Children meet these developmental tasks or social norms through interactions with peers and adults. They model the behaviors of the people around them but begin to form their own opinions and make their own decisions by early adolescence.

The next stage, exploration, begins in adolescence with three main tasks: crystallization, specification, and actualization (Savickas, 2002). Crystallization is the process of finding a role in society and of learning personal preferences. Crystallization is often about the exploration of the self. Individuals must find the differences between themselves and others around them to find a place in society. Savickas believes that during this stage of career development, vocational self-concepts are questioned and redefined. Specification is the identification of a vocation by understanding personal preferences, vocational self-concepts, and past experiences. The

preferences realized during crystallization should be explored to a greater depth and understanding to begin to make choices about career. Actualization is the task of taking the necessary steps to achieve a specified career choice and working to establish a role defined by that choice. This stage usually involves internships or part-time employment to explore the different possibilities. Different positions might be tried to find the most “suitable job” (Savickas, p. 177).

The final vocational choice moves an individual into the establishment stage, which is the third stage of career development (Savickas, 2002). The task of this stage is to find harmony between an internal self-concept and a work environment. Also, establishment includes becoming part of a community including the work life, as well as other aspects of social living.

Maintenance, the fourth stage, is an attempt to maintain harmony by reevaluating life and work experiences. Reevaluation can result in a reverting to a previous stage or continuing what has been established. The final stage, disengagement, involves the task of redefining an occupational self-concept into new life roles that emerge as one leaves a vocation or career. These five stages create the maxicycle, and in a story format the maxicycle is known as the grand narrative.

Career Adaptability.

The grand narrative is the story of an individual’s career development. This narrative is the story of change, and how an individual copes with changes in the work environment. The grand narrative then becomes a story of an individual’s adaptations to specific developmental tasks (Super et al., 1996). Career adaptability is the construct that defines an individual’s

willingness to make changes in his or her life to meet the current developmental tasks or social norms. Savickas (2005) defines adaptability as “the attitudes, competencies, and behaviors that individuals use in fitting themselves to work that suits them” (p. 45). Career adaptability has more focus on the readiness to face social norms and developmental tasks. Within the construct of career adaptability, there are four dimensions that can be addressed to meet the career needs of a client who seeks a developmental examination of his or her career (Savickas, 2005).

The first dimension of career adaptability is concern. An individual must have concern for his or her occupational path and possess a sense that tomorrow has meaning. Without this concern, planning for a career is meaningless. Concern is created from past experiences, attachment styles, and family of origin (Savickas, 2002). Career indifference is the lack of concern, and it can be challenged with interventions that encourage optimism and positive thoughts about future career opportunities. Indifference must be addressed so that individuals can have the opportunity to gain control of their careers.

Career control, the second dimension of career adaptability, is a move toward independence from parents and the family of origin (Savickas, 2002). An individual can gain autonomy and control by “making decisions, delaying gratification, negotiating, and asserting one’s rights” (Savickas, 2002, p. 169). An individual can increase control with decision-making interventions and assertiveness training, but a focus on autonomy and independence is important to begin to develop career curiosity.

The third dimension of adaptability is career curiosity (Savickas, 2005). A lack of curiosity results in an apathetic and closed view of career possibilities. Curiosity can be fostered with interventions that promote exploration of new roles and new experiences. Holland’s

typology (1997) is especially effective because it gives clients an easily understood vocabulary for personality and work environments (Savickas).

Career Confidence is the fourth dimension of adaptability. An individual must have self-belief and confidence to achieve what is wanted in a work life (Savickas, 2002). A lack of confidence can be countered with interventions designed to increase self-efficacy. Interventions that focus on previous achievements, encouragement, and the development of secure self-concepts can be particularly effective (Savickas, 2005).

These four dimensions span the entire career development of an individual. They can be used to address numerous potential career-related problems throughout minicycles and maxicycles. The interventions mentioned can be used in an age-appropriate manner to aid a client regardless of developmental stage. The movement from one stage to the next is dependent on an individual's career adaptability. Because career adaptability is consistent throughout all career stages, career counselors can use an individual's adaptability to address the development tasks outlined by each stages of career development.

Studies on Career Adaptability.

Assessing career adaptability has become a major part of career counseling in recent literature (Creed et al., 2008; Duffy, 2010; Duffy & Blustein, 2004; Hartung & Borges, 2005; Hartung et al., 2008; Hirschi, 2009; Savickas et al., 2002; Savickas et al., 2009; Scholl & Cascone, 2010). The usefulness of CCT and career adaptability seem to have endless research potential.

Scholl and Cascone (2010) proposed a four-session model for career counseling based on constructivist ideas and narrative information from clients. The first session consisted of a card sort facilitated by the counselor. The second session was a review of a constructivist resume' that used alternative, narrative headings such as "Learning and Self-actualizing" and "Risk Taken." The third session was devoted to constructing action plans and goals. Finally, the fourth session was used to describe the client's professional identity. The attempt was to build concern through these exercises, and the authors hoped that this would promote adaptability. The authors outlined the four attitudes, concern, curiosity, confidence, and control, which are used on the Career Adapt-Abilities Scale; however, that instrument was not used in this article. The article then provided a case illustration for the four-session model, and concluded with recommendations for future research such as using a quantitative assessment to measure the effect of the four counseling sessions and addressing all four attitudes of adaptability. This conclusion supported the use of all four dimensions of career adaptability included in the Career Adapt-Abilities Scale (CAAS) with my study.

Hartung and Borges (2005) presented a study using created stories to assess career issues and problems with adaptability. They had students look at cards with pictures on them and create stories about the pictures on the cards. The authors then coded the stories using Holland typology (1997). Once coded, they found that 80% of the stories had elements that were reflective of the individual's Holland code. This suggests that individuals were consistently expressing their vocational self-concept, but adaptability was less evident and only coded in under half of the stories. This only enforces the idea that career assessment can be achieved through interviews and self-reporting stories (Savickas et al., 2009).

Hartung et al. (2008) conceptualized a model for fostering career adaptability in children. They suggested school counselors and parents increase awareness and future planning to strengthen a child's career concern. To increase career control in a child, the authors suggested clarifying the self-concept and decreasing anxiety. The authors encouraged the expansion of curiosity through risk-taking exercises. Confidence could be increased by any self-efficacy building interventions. Many of the applications for helping increase a child's career adaptability were similar to the ones used for adults, but developmentally appropriate interventions should always be encouraged.

Duffy and Blustein (2005) designed a study to predict high levels of adaptability through the individual level of spirituality. They posited that an individual who is more spiritually developed will have higher career adaptability. Their hypothesis was not fully confirmed because a spiritual person is generally more positive, and a positive person has a better outlook on career.

Creed et al. (2009) investigated career adaptability, goal-orientation, social support, and career concerns. They found career adaptability to be related to planning, exploration, and decision-making, supporting the theoretical foundations of career construction. These variables suggested planning, positive social support, and a positive view of exploration all increased career adaptability. Hirschi (2009) conducted a study on Swiss adolescents' career adaptability. He found that positive emotional attitudes predicted higher career adaptability. This is not shocking, but he did find that students who had immigrated to Switzerland had lower developed career adaptability. Both these studies concluded that positive attributes of personality such as planning, social support, and positive, stable environments lead to higher levels of career adaptability.

Duffy (2010) conducted a study to examine the relationship of sense of control, self-esteem, social support, career optimism, and career adaptability. The author wanted to predict career adaptability by understanding individuals' sense of control in a sample of 1,991 undergraduate students. Multiple regressions and correlations were used to study the data. The Career Futures Inventory (CFI) was used to measure career adaptability and career optimism. The Sense of Control Scale (SCS) was used to measure control. Self-esteem was measured with the Rosenberg Self Esteem scale (RSES), and The Multidimensional Scale of Perceived Social Support (MSPSS) measured the students' support level. Moderate to strong correlations were found between adaptability and the other variables: self-esteem ($r = .44$), social support ($r = .35$), career optimism ($r = .48$), and sense of control ($r = .42$). The regressions found that sense of control was a mediating variable for the other variables in the study. One limitation in this study was that the same instrument measured adaptability and optimism. Two separate instruments might have provided stronger results. The final limitation to this study was that there was not a large amount of empirical research in the literature about the construct of career adaptability, but the authors still found a strong relationship between a sense of control and career adaptability. The author of this study supported continued research on the construct of adaptability, but he included that a sense of control should be examined in future studies. The Career Adapt-Abilities Scale includes a scale of control (Savickas & Porfeli, 2011).

Savickas et al. (2002) attempted to study career maturity, or adaptability, personality type, and social adjustment in a college population. These authors discovered a relationship between career adaptability and confidence. College students who had a higher level of adaptability had more confidence in their potential to succeed. These authors found that there was little relation between personality type and career adaptability. But the most significant

finding for my study was a discussion on norm-questioning individuals. Savickas et al. found that norm-questioning individuals, those individuals that do not prescribe to social norms, have differences in career maturity, or adaptability.

These studies (Creed et al., 2009; Duffy, 2010; Duffy & Blustein, 2005; Hartung et al., 2008; Hirschi, 2009; Savickas et al., 2002) imply that career adaptability can be improved by working with an individual around many different factors such as spirituality and career narratives. Savickas et al. (2009) suggested that career adaptability be researched with other constructs to further investigate how adaptability affects the construction of a career. The research possibilities for career adaptability are many, but this construct has already been established as a useful tool in career counseling and career development.

Summary

Many researchers have used birth order to study career concepts (Bradley & Mims, 1992; Leong et al., 2001; Watkins & Savickas, 1990; White et al., 1997). These studies have focused on career decisions, occupational preferences, and career interests. CCT has been explored using career maturity, career adaptability, social adjustment, and even spirituality (Creed et al., 2008; Duffy, 2010; Duffy & Blustein, 2005; Hartung & Borges, 2005; Hartung et al., 2008; Hirschi, 2009; Savickas et al., 2002; Savickas et al., 2009; Scholl & Cascone, 2010). Savickas et al. (2002) found a difference among norm-questioners and career adaptability. This study aimed to focus on psychological birth order differences and the specific social norms or developmental tasks of a population of at-risk students that might include norm-questioners in the exploration stage of career development. Chapter III explains the structure of the study, including the

instruments, the specific population of norm-questioners, defined as student experiencing academic difficulty during their course of study, and the statistical methods for analyzing the data that was collected.

CHAPTER III

Methodology

Design of the Study

The research reviewed in Chapter II explained the need for this study, and the purpose of this study was to determine differences in career adaptability by psychological birth order groups in a sample of academically at-risk college students and to compare the levels of career adaptability with the normative parameters. In this chapter, the population, sample, and sampling procedures are discussed. A power analysis was completed to determine the needed sample size. Two instruments were used to collect data from the participants: the Psychological Birth Order Inventory (PBOI) (White et al., 1991) and the Career Adapt-Abilities Scale (CAAS) (Savickas & Porfeli, 2011). A Multivariate Analysis of Variance (MANOVA) was used to examine the data from the two instruments, and a one-sample *t*-test was used to compare this data with the normed levels of the dimensions of career adaptability.

Population and Sample

The population for this study was full-time college students at a mid-sized, state university located in the southern United States. The sample of students was selected from an academic re-admission program. When a student must leave the university for academic reasons,

upon return they must participate in a program which consists of a class, The Fundamentals of Active Learning. The class is designed as a group experience to process and improve academic performance. Should students not want to participate in groups, an individual academic advisor was assigned for weekly meetings.

Power Analysis.

To ensure for appropriate statistical power, I performed an *a priori* determination of sample size (Faul, Erdfelder, Lang, & Buchner, 2007). This test is appropriate to estimate sample size when using MANOVA. I estimated a moderate effect size, .70 at $\alpha = .05$. G*Power 3 was used to compute the minimum sample size needed. There were four groups with four dependent variables; therefore, a minimum group size of 20 participants, with a total minimum sample size of 80 participants was needed to obtain adequate power.

Instruments

White-Campbell Psychological Birth Order Inventory (PBOI).

The *White-Campbell Psychological Birth Order Inventory (PBOI)* (White et al., 1991) was used to assess psychological birth order. The assessment is a self-report scale with forty-six items. The response to each item is “yes” or “no” with most respondents able to complete the entire questionnaire in fifteen to twenty minutes. The PBOI has separate scoring for men and for women, but gender was not used as a variable in this study. The instrument was scored with each

item receiving one or zero points for a “yes” or a “no” answer. Most items received one point for “yes,” however, some items received a point for “no” (Campbell et al., 1991). Each participant received a score on each of the four birth orders: firstborn, middle, youngest, and only, but the highest standard score was used to determine grouping. The raw scores were converted to z-scores because each scale had a different number of questions on the instrument.

The PBOI was normed using a college population (Campbell et al., 1991; Stewart & Campbell, 1998). The content validity was determined by counselor educators who were trained in Adlerian theory and had an understanding of birth order in context to Individual Psychology. These experts examined the forty original statements and found ten items that corresponded to each birth order group. The construct validity was confirmed by factor analyses for each gender. Reliability was established using test-retest methods (Campbell et al., 1991; Stewart & Campbell, 1998).

Career Adapt-Abilities Scale (CAAS).

The *Career Adapt-Abilities Scale (CAAS)* was created by Savickas and Porfeli (2011). It is a twenty-four item self-report assessment that provides a score for each dimension of career adaptability. The CAAS uses a five-point likert-type scale: 5= Strongest, 4=Very Strong, 3=Strong, 2=Somewhat Strong, and 1=Not Strong. Each item is coded to one of the four dimensions of career adaptability. Therefore, each respondent will have a score for each dimension. The reliability and validity of this instrument have not been published to date. Currently, the authors of the instrument and many other researchers are working on an

international project to determine reliability and validity for this assessment (M. Savickas, personal communication, February 26, 2011).

Procedures

First, I sought approval to conduct this study from my committee and then submitted a report to the Institutional Review Board (IRB) for approval. Once approval from the committee and the IRB was granted, students in the The Fundamentals of Learning Class were asked to participate in this study. The director of the program was willing to offer students extra credit in the class should they complete the research packet. If interested, the students reported to a common location at the department that houses the academic readmission program. The students entered the room and were asked if they wanted to participate in the study. At this point, an information sheet was provided for participants willing to complete the packet of assessments. The researcher distributed a research packet containing a demographic sheet and the two assessments. Each packet was numbered, and a removable tab allowed the students to identify their packets should they want to withdraw from the study. A second tab was presented to the director of the academic readmission program so students would receive the extra credit. The second tab had the packet identification number, and the director provided ACT scores to the researcher for post hoc analysis. I did not have access to the list of students who turned in a tab for extra credit, nor did I have access to the director's list of names and ACT scores. I was only able to match ACT scores with the packet number to insure that the data remained anonymous. The participants had my contact information and my chair's contact information from the

information sheet, and they could simply contact me or my chair with the packet number and that data would have been removed from the study at the student's request.

The packets took no longer than thirty minutes to complete. The completed packets were placed in a box so that I could not link students with their packet. I scored each PBOI according to gender and each CAAS. The information was entered into Statistical Program for the Social Sciences (SPSS) for statistical analysis, and I kept the hard copy information locked in a filing cabinet. No identifiable information was obtained, and I ensured that the information was securely stored and protected.

Hypotheses

1. H_0 : There are no significant differences in psychological birth order groups on the dimensions of career adaptability.
 H_a : There are significant differences in psychological birth order groups on the dimensions of career adaptability.
2. H_0 : There is no significant difference in mean scores of the dimensions of career adaptability of this sample and the normative population parameters for the CAAS .
 H_{a1} : There is a significant difference in the mean score of the concern dimension of career adaptability of this sample and the normative parameter of the CAAS scale of concern.

H_{a2}: There is a significant difference in the mean score of the control dimension of career adaptability of this sample and the normative parameter of the CAAS scale of control.

H_{a3}: There is a significant difference in the mean score of the curiosity dimension of career adaptability of this sample and the normative parameter of the CAAS scale of curiosity.

H_{a4}: There is a significant difference in the mean score of the confidence dimension of career adaptability of this sample and the normative parameter of the CAAS scale of confidence.

H_{a5}: There is a significant difference in the mean score of the confidence dimension of career adaptability of this sample and the normative parameter of the total score on the CAAS.

Data Analysis

Multivariate Analysis of Variance (MANOVA).

The data file was checked for accuracy using procedures outlined by Tabachnick and Fidell (2006). Next, I analyzed the data for the assumptions of MANOVA. Inferential statistics was used to analyze the data received from the research packets. A MANOVA was appropriate for this study because there were four groups determined by the grouping variable, psychological birth order: firstborns, middle children, youngest children, and only children. There were four

dependent variables, the dimensions of career adaptability: concern, control, curiosity, and confidence. The MANOVA was sufficient to address the hypothesis because there was a nominal grouping variable and four dependent variables (Stevens, 2002).

One-Sample *t*-test.

A one-sample *t*-test was used to compare the data from this sample to the normative parameters that will be published in the near future. This test was appropriate to determine the differences in this sample and the population norm.

Summary

The purpose of this study was to determine differences in psychological birth order groups based by career adaptability. The research analysis suggested, MANOVA, provided a parametric method to examine the differences in psychological birth order groups. The assumptions for MANOVA had to be addressed before the statistical analysis could be completed. I will discuss assumptions and any violations of those assumptions in Chapter IV. Multiple one-sample *t*-test were used to compare this sample with the population parameter. Chapter IV presents the result from this study, and Chapter V will discuss the implications and findings.

CHAPTER IV

Results

Introduction

This study was designed to examine differences in the four dimensions of career adaptability by psychological birth order groups. Also, the study was planned to compare the dimensions of career adaptability scores to the normed population parameters. The participants were students enrolled in an academic readmission program, and were identified as at-risk because previously they had been on academic suspension from the university due to grade requirements. The participants were asked to complete the Psychological Birth Order Inventory (PBOI) (White, Campbell, & Stewart, 1991), the Career Adapt-Abilities Scale (Savickas & Porfeli, 2011), and a short demographic sheet. The demographics collected were age, gender, major course of study, and a self-reported actual birth order. A one-way multivariate analysis of variance (MANOVA) was the intended statistical analysis for the study. However, the assumption of normality was violated, and a nonparametric test was used to analyze the data for hypothesis one. The Kruskal-Wallis test was determined to be the most appropriate alternative to MANOVA (Finch, 2005). To test hypothesis two, multiple one-sample *t*-tests were used to examine the scores of the CAAS to the population norms.

Descriptive Statistics

The total number of students who attempted to complete the research packets was $N = 146$. Through examination of the data, five participants were removed from the study due to missing responses. The final $N=141$ was used in the analysis. Data retrieved from the Demographic Sheet indicated that the mean age of participants was $M = 22.47$ ($s = 2.71$), with a minimum age of 19 and a maximum age of 35. Of the participants ($N = 141$), 65.2% ($n = 92$) were male, and 34.3% ($n = 49$) were female. From the self-report of actual birth order, 34.8% ($n = 49$) identified themselves as Firstborn Children, 14.9% ($n = 21$) identified as Middle Children, 38.2% ($n = 54$) identified as Youngest Children, and 12.1% ($n = 17$) identified themselves as Only Children. ACT scores were collected, but only for $N = 101$ participants, with a minimum score of 11 and a maximum score of 29 with a mean of $M = 19.74$ and $s = 3.24$.

The PBOI was scored, and the raw score was converted to a z -score. The participants were grouped by psychological birth order as indicated by the PBOI scores. Of the 141 participants, 53.2% ($n = 75$) were categorized as Firstborn Children, 4.2% ($n = 6$) were categorized as Middle Children, 28.4% ($n = 40$) were categorized as Youngest Children, and 14.2% ($n = 20$) were categorized as Only Children, as shown by Table 1.

Table 1

Psychological Birth Order and Age

PBO Group	n	Minimum Age	Maximum Age	M - Age	s - Age
Firstborn Children	75	19	35	22.59	2.6
Middle Children	6	19	24	21.83	1.72
Youngest Children	40	19	34	22.30	3.09
Only Children	20	19	28	22.55	2.67

The CAAS was scored and descriptive statistics were analyzed across the four dimensions of career adaptability. As shown in Table 2, the mean score for the Concern dimension was $M = 22.69$ ($s = 5.12$). The Control dimension had a mean score of $M = 23.67$ ($s = 4.59$), and the curiosity dimension had a mean score of $M = 22.35$ ($s = 4.88$). The mean score for the Confidence dimension was $M = 22.4$ ($s = 5.11$). The mean score for the total score on the CAAS was $M = 91.11$ ($s = 16.77$) with a minimum of 48 and maximum of 120.

Table 2

Career Adapt-Abilities Scale Scores

Dimension of CAAS	Minimum Raw Scores	Maximum Raw Scores	Group Mean Scores	s	Skewness	Kurtosis
Concern	10	30	22.69	5.12	-.3	-.72
Control	12	30	23.67	4.59	-.36	-.69
Curiosity	8	30	22.35	4.88	-.33	-.38
Confidence	10	30	22.4	5.11	-.16	-.9
Total	48	120	91.11	16.77	-.13	-.66

Assumptions of Related Statistical Analysis

Assumptions of MANOVA.

Stevens (2002) outlines three important assumptions when using MANOVA. The first is that observations must be independent. This assumption is the most important because this can affect significance level and the power of the statistic. To ensure this assumption was met, participants completed each assessment independently without collaboration. The second assumption is that observation of the dependent variables follows a multivariate normal distribution in each of the groups. Stevens (1992) notes that multivariate normality is difficult to

assess, but “normality on each of the variables separately is a necessary but not sufficient condition for multivariate normality to hold” (p. 245). There are two properties that define normal distribution in multivariate analysis: the linear combination of variables and all subsets of variables having a normal distribution. This, in turn, implies a bivariate normality resulting in an elliptical pattern when plotted. Stevens (2002) posited that variations in multivariate normality have only a minor effect on type I error. Independence and multivariate normality must be met in order for MANOVA to maintain the power.

To assess normality in multivariate analysis, a graph was used to visually check for normal distribution. No elliptical pattern was seen in the groups. Also, the Shapiro-Wilk statistic was used to determine normality in SPSS. Because $\alpha = .05$, the Firstborn group was the only group to be distributed normally ($W = .97, p = .04$). The results indicated that the data did not meet the assumption of multivariate normality. Therefore, a nonparametric test, the Kruskal-Wallis test, was used to analyze the psychological birth order groups. This is a non-parametric test that does not depend on the normality assumption (Ruxton & Beauchamp, 2008). The third assumption for MANOVA, equal variance across groups, becomes moot due to the violation of the second assumption and the use of the Kruskal-Wallis analysis.

Assumptions of Kruskal-Wallis test.

The Kruskal-Wallis test requires that several assumptions must be met. The first assumption is that the groups have similar distributions (Green & Salkind, 2005). This assumption was confirmed by visual analysis of the histograms of the three groups. The kurtosis for all three groups was negative which indicated that the groups had similar distributions. The

second assumption is independence (Green & Salkind, 2005), which was confirmed by each participant completing the packet individually. The third assumption is that the groups have equal variance (Ruxton & Beauchamp, 2008). To test this assumption, the raw scores were ranked, and then the means of the ranks were calculated by birth order group. The absolute difference of the rank and the mean rank was obtained, and a One-Way analysis of variance (ANOVA) was performed to determine if the groups had equal variance $F = 1.5 (2, 1201.55), p = .23$. Because the p -value was greater than $\alpha = .05$, the test of equal variance was not significant, and the final assumption was met.

Assumptions of One-Sample t -test.

The first assumption of a One-Sample t test is that the variable is distributed normally across the population, and this was determined by using the Shapiro-Wilk statistic ($W = .98, p = .03$). The results indicated a normal distribution of the variables used in the analysis. Green and Salkind (2005) suggested that the sample be larger than 30 to maintain power of the test. The second assumption is independence and this was ensured by participants completing the instruments individually.

Data Analysis

Hypothesis One.

The Kruskal-Wallis test was used to analyze the data as the assumption of multivariate normality was not met. The nonparametric test replaced the raw data with ranked scores and tested the mean ranks across the groups. This test examines stochastic homogeneity which “implies that each population is equal stochastically to a combination of the other populations” (Ruxton & Beauchamp, 2008, p.1083). Stochastic homogeneity refers to a guess, or probability of difference (Ruxton & Beauchamp). The Kruskal-Wallis test measured the probability that the mean ranks of each psychological birth order groups differed by the dimensions of career adaptability. This test does not depend on multivariate normality (Finch, 2005). The group of Middle Children was removed due to the small group size. The total sample size used for this non-parametric test was $N = 135$.

The Kruskal-Wallis test compared the four dimensions of career adaptability by psychological birth order groups. The dimension of concern had no significant difference by group, $\chi^2(2, 135) = 4.81, p = .09$. The dimension of control had no significant difference by group, $\chi^2(2, 135) = 3.67, p = .16$. The dimension of curiosity had no significant difference by group, $\chi^2(2, 135) = 1.65, p = .44$. Confidence had no significant difference by group, $\chi^2(2, 135) = .83, p = .66$. Finally, the total score on the CAAS had no significant difference by group, $\chi^2(2, 135) = 4.31, p = .12$. These results indicate that the groups did not differ significantly by scores on the dimensions of career adaptability. The null hypothesis was retained.

Hypothesis Two.

The second hypothesis proposed that there would be no difference in mean scores of the four dimensions of career adaptability and the CAAS total with the population norms: concern $\mu = 22.76$, control $\mu = 23.55$, curiosity $\mu = 22.15$, confidence $\mu = 23.59$, and the total mean $\mu = 90$ (Porfeli & Savickas, in press). Both assumptions of a one-sample t test were met. Alpha was set at $\alpha = .05$ for all five t tests.

The test on the dimension of concern indicated no significant difference from the population mean of $\mu = 22.76$, $t(140) = -.17$, $p = .87$. The test of the control dimension indicated no significant difference from the population mean of $\mu = 23.55$, $t(140) = .32$, $p = .75$. The test on the dimension of curiosity indicated no significant difference from the population mean of $\mu = 22.15$, $t(140) = .480$, $p = .63$. As shown in Table 3, the test on the final dimension of confidence indicated a significant difference from the population norm of $\mu = 23.59$, $t(140) = -2.76$, $p = .01$. The 95% confidence interval for the dimension of confidence ranged from 19.08 to 25.72. The population parameter mean was $\mu = 23.59$. Therefore, the null hypothesis was rejected at $\alpha = .05$. The effect size $d = -.23$ indicates a small effect. The test of the total score of the CAAS indicated no significant difference from the population mean of $\mu = 90$, $t(140) = .79$, $p = .43$.

Table 3

One Sample t Tests Results

	μ	M	t	p	d
Concern	22.76	22.69	-.167	.87	-.14
Control	23.55	23.67	.32	.75	.03
Curiosity	22.15	22.35	.48	.63	.04
Confidence	23.59	22.40	-2.76*	.01	-.23
CAAS Total	90	91.11	.79	.43	.07

Note: * significant $\alpha = .05$

Post-hoc Analysis

After the initial analysis of the two hypotheses, two other questions arose. First, does age have a relationship with career adaptability? Pearson's r correlation was used to determine if there was a relationship between age and the four dimensions of career adaptability and the total on the CAAS. There was a positive relationship between age and control at $\alpha = .05$, and a positive relationship between age and confidence at $\alpha = .01$, as shown in Table 4. All other relationships were of no significance.

Second, is there a relationship between ACT scores and career adaptability? Pearson's r correlation was used to determine if any relationship existed between ACT scores, the four dimensions of career adaptability, and the total score of career adaptability. Some ACT scores were not reported by the Academic Readmission Program; therefore the sample size for this

analysis was reduced to $n = 101$. There were no significant relationships between ACT scores, the four dimensions of career adaptability, or the total score on the CAAS.

Table 4

Pearson's r Correlation

	N	Concern <i>r</i>	Control <i>r</i>	Curiosity <i>r</i>	Confidence <i>r</i>	CAAS Total <i>r</i>
Age	141	.07	.2*	.05	.22**	.15
ACT Score	101	-.16	.04	.05	-.08	-.05

Note :* Significant at $\alpha = .05$

Note: ** Significant at $\alpha = .01$

Summary

Because the first assumption of MANOVA was violated, a non-parametric test was used to analyze the data. After analysis was completed on the PBOI and the CAAS, the results indicated that there were no significant differences in psychological birth order groups by the dimensions of career adaptability. The null hypothesis one was retained.

The second hypothesis was designed to explore mean differences in the CAAS scores by the population parameters. There was one significant difference in the results. The dimension of confidence was significant, but the effect size was low. There were no other significant differences between the means of the dimensions of career adaptability and the reported norms.

Further correlations were run to find significant relationships between age and the CAAS, and ACT score and the CAAS. The dimensions of control and confidence had a positive relationship with age, but no other relationships were found. The next chapter will discuss the findings and results from the hypotheses, the post hoc correlations, and implications and suggestions for future research.

CHAPTER V

Discussion

Introduction

This study was designed to explore the differences of psychological birth order groups by levels of career adaptability in an at-risk college population. Through an examination of the data, no differences were discovered in the birth order groups. Additionally, this study was designed to test the scores on the CAAS to the normative population means. The results indicated that the sample had one significant difference, the dimension of confidence, and that the sample scored lower than the population parameter. These results will be discussed in this chapter along with implications for future research.

Hypothesis One

Hypothesis One was designed to examine psychological birth order groups by the dimensions of career adaptability. A MANOVA was originally intended to explore the data from this sample, but due to a lack of multivariate normality, the Kruskal-Wallis test was used (Finch, 2005). The results suggested that psychological birth order has little impact on career adaptability in at-risk college students. However, many researchers suggested the use of psychological birth order to examine career choice (Bliss, 1970; Bradley, 1982; Bradley & Mims, 1992; Bryant, 1987; Melillo, 1983; Watkins, 1992; White et al., 1997). Additionally,

other researchers explored academic achievement and birth order (Hester, Osborne, & Nguyen, 1992; Phillips & Phillips, 1994; Phillips & Phillips, 2000). The results of previous research indicated that birth order is a significant variable in career development research and academic achievement. The present study was executed to further explore the construct of psychological birth order and the emerging construct of career adaptability. Although previous research indicated birth order is a significant variable in career choice and academic success, the results of this study indicated no differences in career adaptability by birth order groups.

Leong et al. (2001) stated that, “Birth order represents a salient and viable variable to consider in career assessment and counseling contexts as well as to examine in future research” (p. 25). In their study, these authors determined that birth order impacts vocational behavior and can even influence vocational patterns. Career adaptability was most recently defined as “a psychosocial construct that denotes an individual’s readiness and resources for coping with current and imminent vocational developmental tasks, occupational transitions, and personal traumas” (Savickas, 2005, p. 51). This definition implied that adaptability is a construct that influences development, in turn affecting career decisions and behavior. All of the previous research suggested that career adaptability would be impacted by psychological birth order; however, the present study suggests no difference among birth order groups.

Hypothesis Two

The second hypothesis was designed to test this sample’s scores on the CAAS to the normative sample (Porfeli & Savickas, in press). There was only one significant difference revealed by the data, and that was in the dimension of confidence. Confidence is a dimension

described by Savickas (2005) as an expectation to achieve what is desired from the challenges that arise in careers. Confidence is created in individuals when they are faced with problem solving situations. School work, household chores, hobbies, and other everyday situations create self-efficacy (Savickas) and raise confidence levels. Confidence is built over time when individuals experience new vocational tasks and challenges. Successful experiences in academics builds self-efficacy and confidence toward educational goals. Savickas posited that individuals who had successful experiences will attempt new tasks. Others who were sheltered or experienced failure will have less confidence and find it difficult to attempt new vocational tasks (Savickas).

This sample of at-risk students experienced academic difficulty at some point in their college careers and these difficulties resulted in these students being placed in the academic readmission program. The difference in the dimension of confidence in this sample could be attributed to the life experiences of this sample of at-risk students. Students who were asked to leave the university may have a lower level of confidence than an average student, but this will remain speculative until further research compares levels of career adaptability between a random sample of college students and at-risk students. The results of this study indicated that this sample of students had lower levels of confidence than the population mean, and that suggests that these students struggle with the confidence to make academic and vocational choices. The lower level of confidence would indicate that this sample is less prepared to face academic or vocational tasks in the future.

Post-hoc Questions

After the initial data analysis, two questions arose. First, does age correlate with the dimensions of adaptability? Savickas (2002) attempted to separate vocational maturity from adaptability. He believed that careers do have a developmental aspect, but that aspect is socially defined. This is a constructivist view of career compared to Super's (Super et al., 1997) positivist perspective that has a linear developmental line. Adaptability was intended to be free of the linear development and age constraints suggested by the term "maturity" (Savickas, 1997). This first question was intended to explore the relationship between age and adaptability.

Even though Savickas (1997) was seeking to separate adaptability from maturity, his theory of career construction outlined a developmental model that was adapted from Super's Life-Span, Life-Space theory (Savickas, 2002; Super et al., 1996). There are five developmental stages that individuals experience as their careers develop over time: growth, exploration, establishment, maintenance, and disengagement. Each stage has several tasks that must be faced in order to move into the next stage. Adaptability was defined as the readiness to face developmental tasks that are required to move from stage to stage (Savickas, 2002). The level of career adaptability was theorized as not being influenced by maturation (Savickas, 1997).

In this study, age had a significant positive relationship with control at $\alpha = .05$ and confidence at $\alpha = .01$. Savickas (2002) posited that the Exploration Stage of development occurs from age 14-24. This age range covers 86.5% of the sample used in this study. Savickas stated that delays in career control and confidence will create problems with this stage, specifically with crystallization. Crystallization is one of the vocational tasks of the exploration stage (Savickas, 2002). Crystallization is the process of securing a role in society that informs

individuals in moving through the following tasks of specification and actualization and eventually vocational choice. The results of this study indicated that there is a small positive relationship between age and two dimensions of career adaptability, which is counterintuitive to the theoretical model of career construction. In this sample, older participants had higher scores of control and confidence. This could mean that the older students have had more time and experiences to crystalize their role in society, giving them a greater sense of control over their career and more confidence to face new vocational tasks.

The second question was used to guide exploration of ACT scores and the dimensions of career adaptability. The ACT is used as a college entrance exam and is a curriculum-based test that measures knowledge in English, science, math, and reading. This aptitude test is used as a predictor of how students will perform on college-level work (Whiston, 2009). The important information that the ACT provided to this study was the level of skills and knowledge that the participants had when they entered college. Their score on the ACT was a prediction of how ready they were for college. Career adaptability was defined as the level of readiness that individuals have to face vocational tasks, such as college (Savickas, 2005). Participants in this study had high, moderate, and low scores on the CAAS, but there was no relationship between these scores and the score on the ACT. The lack of significant relationships could be due to the vast differences in what is measured by the ACT and the CAAS. The instruments measure two very different constructs that might not be related. Adaptability, as measured by the CAAS, should remain constant without interventions (Savickas) while skills and knowledge (aptitude) should change over time (Whiston).

Limitations

This study was limited by several factors that could have influenced the results. First, the study had no screening process. The PBOI could have been used as a screening instrument, but it was only used to obtain the highest psychological birth order score for grouping purposes. Screening could have allowed the researcher to provide group assignments and equal group size in the study. The difference of the group sizes created problems with multivariate normality that could have been avoided by allocated group assignments.

The second limitation was the population. Because there were no published parameters for the CAAS when this study began, it was unknown to the researcher normative population was high school students. The current study used college students with a much higher mean age than the sample from the normative population. Without normative information for this sample of participants, the results are unclear and any interpretation should be faced with critical analysis.

A third weakness in the study is related to the self-reporting aspects of the data. The scores of the CAAS may be artificially inflated due to the self-reporting scoring system of the instrument. Tett, Freund, Christiansen, and Coaster (2012) conducted a study and found that there is 60% greater chance that undergraduate students will fake answers on self-reporting instruments if they believe they will score lower if they answer honestly. Their study supports the need to be cautious when this data is interpreted and informs future researchers that the scores on the CAAS may have been inflated because the participants were being self-conscious about low scores.

Fourth, the sampling procedures in this study created a restricted range on the ACT scores (Cohen & Cohen, 1975; Wiberg & Sundström, 2009). The participants were students enrolled in the academic readmission program, indicating that they have had difficulty with academic tasks in the past. Restricted range is a problem that occurs in correlations when one variable is restricted by the other (Wiberg & Sundström, 2009). This occurred in this study because the participants were selected from the academic readmission program instead of from a random sample from the entire college population. Wiberg and Sundström posited that the correlation can be run, but it is an underestimation of the correlation in the population and that should be taken into account when these results are considered.

Finally, the sample for this study was only taken from one university program that is designed to retain at-risk students. This limitation makes generalizability to other samples difficult. Future researchers are encouraged to take these limitations into account when designing new studies concerning career adaptability and psychological birth order.

Implications for Future Research

The first hypothesis of this study was intended to discover differences in psychological birth order groups by levels of career adaptability. The group sizes created many problems in the analysis of the data. The initial statistical analysis had to be abandoned due to a lack of multivariate normality. A screening process may have eliminated many of the data analysis problems that arose in this study. The PBOI could have been administered in a selection meeting, and the researcher could have then controlled for group size before the CAAS was administered.

This would have led to equal group sizes, resulting in a more powerful statistical analysis of the psychological birth order groups.

The second hypothesis was designed to compare the scores on the CAAS in this sample and the sample that was used to create the population parameters. This hypothesis was designed to gain more information about the CAAS and to improve the scoring procedures of the assessment. The results indicated that this sample's scores were very similar to the population parameters. This indicates that there is not a change in mean scores from high school students to this sample of college students. Porfeli and Savickas (in press) posited that the CAAS measured the resources individuals have to face vocational tasks or even work trauma, but the CAAS does not measure core traits of individuals. The authors suggested that adaptability is a psychosocial trait that changes as the demands of society change. If their theory is correct, adaptability should be higher in college students than in high school students because society has different vocational tasks and expectations for each stage of educational development. However, further studies need to be completed to create parameters for college students and other developmental stages.

Conclusions

This study was designed to explore psychological birth order and career adaptability. There were no differences in the scores of the CAAS by psychological birth order groups. Psychological birth order has been consistently confirmed as a useful construct to explore career variables. Many researchers state that the construct should be continued as a topic for empirical inquiry (Bliss, 1970; Bradley, 1982; Bradley & Mims, 1992; Bryant, 1987; Melillo, 1983;

Watkins, 1992; White, Campbell, Stewart, & Davies, 1997). The lack of significant results in this study should not deter further investigation into these constructs, but future researchers should consider the results of this study and plan for more purposeful sampling procedures to create equal psychological birth order groups.

In addition, this study was designed to compare the scores on the CAAS to the population parameters. This comparison revealed one significant result. The mean score on the dimension of confidence was lower than the population mean. The difference in the dimension of confidence could be related to the sample of at-risk students in this study. Savickas (2002, 2005) notes that the level of confidence is directly related to past experiences. This study used a sample of students who had previously been removed from the university due to low grades. That experience could explain the lower mean score on the dimension of confidence, but the theory suggests that confidence can be fostered through encouragement and specific interventions designed to elicit self-efficacy. The results of this study should be carefully considered because of the sample that was used.

Savickas (2005) posited that adaptability should be unaffected by age or maturity. Savickas believes that the construct of adaptability should not change without purposeful interventions. However, the results from this study indicated a positive relationship between age and the dimensions of control and confidence. This positive relationship creates a contradiction of the theory, and further research should continue to test the constructs of CCT. If career adaptability really has no connection to age or maturity, a longitudinal study could discover if adaptability changes over time.

The results of this study inform those who work with different populations about career adaptability and psychological birth order. First, higher education professionals working with

this population or similar populations should be aware of the lower level of confidence in at-risk college students. This awareness could result in more interventions designed for fostering and building self-efficacy in programs designed to retain at-risk students. Second, the career research community should take note of this study and the sampling procedures that need to be implemented when future researchers are using the construct of psychological birth order. Psychological birth order has empirical support as a valid construct for exploring career variables (Leong et al., 2001), but future researchers should be very purposeful with sampling decisions to create the needed group equality to study this construct when using the general linear model. Finally, career counselors and researchers should continue to explore the construct of career adaptability and CCT. This theory is young, and further exploration is needed to validate the theory and its constructs.

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List of Appendices

Appendix: A

Career Adapt-Abilities Scale Questions and Scoring Instructions

Different people use different strengths to build their careers. No one is good at everything, each of us emphasizes some strengths more than others. Please rate how strongly you have developed each of the following abilities using the scale below.

1. Thinking about what my future will be like
2. Realizing that today's choices shape my future
3. Preparing for the future
4. Becoming aware of the educational and vocational choices that I must make
5. Planning how to achieve my goals
6. Concerned about my career
7. Keeping upbeat
8. Making decisions by myself
9. Taking responsibility for my actions
10. Sticking up for my beliefs
11. Counting on myself
12. Doing what's right for me
13. Exploring my surroundings
14. Looking for opportunities to grow as a person
15. Investigating options before making a choice
16. Observing different ways of doing things
17. Probing deeply into questions that I have
18. Becoming curious about new opportunities
19. Performing tasks efficiently
20. Taking care to do things well
21. Learning new skills
22. Working up to my ability
23. Overcoming obstacles
24. Solving problems

Career Adapt-Abilities Scale Scoring – Mean = 90

Concern Questions 1-6

Control Questions 7-12

Curiosity Questions 13-18

Confidence Questions 19-24

Appendix: B

White-Campbell Psychological Birth Order Inventory (PBOI)
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Instructions:

Please read each item and then circle YES or NO according to how you felt when you lived in the family in which you grew up. If you lived in several families, please think of the one that you spent the most time in as you respond to these items. If you had no brothers or sisters you may ignore items that refer to experiences you had with your siblings.

- YES NO 1. I believed my parents had high expectations of me.
- YES NO 2. I was babied by my family members.
- YES NO 3. My family was more involved in my life than I wanted.
- YES NO 4. It seemed like I was in a race trying to catch up.
- YES NO 5. It was important to me to please adults.
- YES NO 6. My family did not respect my privacy.
- YES NO 7. I felt isolated from others.
- YES NO 8. It was easy to talk my brothers and sisters into giving me things.
- YES NO 9. My parents worried a lot about me.
- YES NO 10. I was taken less seriously than anyone in the family.
- YES NO 11. It was important to me to advise my brothers and sisters about right and wrong.
- YES NO 12. I was seen as being the most charming in the family.
- YES NO 13. It seemed like I never had my parent's full attention.
- YES NO 14. My parents tried to control me.
- YES NO 15. I am more organized and structured than others in my family.
- YES NO 16. I was pampered by my family members.
- YES NO 17. Other family members saw me as the least capable.
- YES NO 18. It was important to me that others do things right.
- YES NO 19. My parents tried to manage my life.
- YES NO 20. I was good at getting others to do things for me.
- YES NO 21. It seemed like I was less important than other members of my family.
- YES NO 22. I wanted to satisfy my parents.

- YES NO 23. My parents wanted to know about everything that was going on in my life.
- YES NO 24. It was easy to talk my parents into giving me things.
- YES NO 25. I often felt less loved than others in my family.
- YES NO 26. I felt smothered by my parents.
- YES NO 27. It was important to me to do things right.
- YES NO 28. When I wanted to I could be the ruler of the family.
- YES NO 29. I often felt that I was treated more unfairly than others in the family.
- YES NO 30. I was good at getting what I wanted from my family.
- YES NO 31. I felt like I lived in a fishbowl.
- YES NO 32. It was important to me to make good grades in school.
- YES NO 33. I felt disconnected from others in my family.
- YES NO 34. My parents considered everything that was my business, their business.
- YES NO 35. It was important to me to be the best.
- YES NO 36. I could be the boss in the family when I wanted to.
- YES NO 37. I felt squeezed out by my brothers and sisters.
- YES NO 38. My parents were busybodies.
- YES NO 39. I liked order more than other people in my family.
- YES NO 40. I was seen as the most adorable in the family.
- YES NO 41. It was important to me that my brothers and sisters do things right.
- YES NO 42. I was treated less justly than others in my family.
- YES NO 43. I wanted others in my family to do things properly.
- YES NO 44. I felt like I was less valuable than other members of my family.
- YES NO 45. I liked doing things the correct way.
- YES NO 46. I felt left out by my brothers and sisters.

Scoring the PBOI

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Instructions: The PBOI is scored differently for women and for men. Find the items pertaining to each gender. Count the number of YES responses that were made for the items listed in each scale. It is recommended that you convert the raw scores into some standard score format (z-scores, T-scores, etc.) to facilitate comparisons between scales since the scales have different numbers of items.

Items for Women:

Pleaser/Organizer (First): 1, 5, 11, 15, 18, 22, 27, 32, 39, 41, 43, 45

Neglected/Rejected (Middle): 4, 7, 10, 13, 17, 21, 25, 29, 33, 37, 42, 44, 46

Charmer/Initiator (Youngest): 2, 8, 12, 16, 20, 24, 28, 30, 40

Scrutinized (Only): 3, 6, 9, 14, 19, 23, 26, 31, 34, 38

Items for Men:

Pleaser/Organizer (First): 5, 18, 22, 27, 32, 35, 39, 41, 43, 45

Neglected/Rejected (Middle): 10, 13, 21, 25, 29, 33, 37, 42, 44, 46

Charmer/Initiator (Youngest): 2, 8, 12, 16, 20, 24, 28, 30, 36, 40

Scrutinized (Only): 3, 6, 9, 14, 19, 23, 26, 31, 34, 38

Appendix: C

Information Sheet

Information to Participate in an Exploratory Study

Title: The Relationship of Psychological Birth Order and Career Adaptability in a College Population

Investigator

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Description

We want to know whether a person's psychological birth order has any relationship to their level of career adaptability. In order to answer our question, we are asking you to take two short assessments. One is a questionnaire about your family. The first assessment asks you to answer "yes" or "no". The second is an assessment about your career adaptability. This assessment asks you to rate yourself on statements on a scale of 1-5. Finally, there is a short questionnaire about you. Also, we will be collecting your ACT score from the director of the EDHE program. Your name will not be attached to the information or your ACT score. The packet number will be used to identify your ACT scores, but the researcher will not have access to your name, only the packet number.

Risks and Benefits

You may feel uncomfortable because some of the questions are about your past. We do not think that there are any other risks. One benefit you can gain from participation is knowing that you have helped further research in the career counseling field. You might also receive extra credit for completing these surveys, but it is not guaranteed by the researcher. You must discuss extra credit with Dr. Susan Mossing at smossing@olemiss.edu.

Cost and Payments

The tests will take about 15-30 minutes to finish. There are no other costs for helping us with this study.

Confidentiality

We will not put your name on any of your surveys. The only information that will be on your survey materials will be your gender (whether you are male or female), your age, your ideas about the sibling order in your family, your major, and an identifying number. You will be the only one that knows that you are identified with that number. The researchers will not be able to identify your assessments without that number. Therefore, we do not believe that you can be identified from any of your tests.

Right to Withdraw

You do not have to take part in this study. If you start the study and decide that you do not want to finish, all you have to do is to tell Joshua Magruder or Dr. Stotlz in person, by letter, or by telephone at the Department of Leadership and Counselor Education, 109 Guyton Hall, The University of Mississippi, University MS 38677, or 915-5373 or 816-5577. Whether or not you choose to participate or to withdraw will not affect your standing with the Department of Leadership and Counselor Education, or with the University, and it will not cause you to lose any benefits to which you are entitled.

The researchers may terminate your participation in the study without regard to your consent and for any reason, such as protecting your safety and protecting the integrity of the research data.

IRB Approval

This study has been reviewed by The University of Mississippi's Institutional Review Board (IRB). The IRB has determined that this study fulfills the human research subject protections obligations required by state and federal law and University policies. If you have any questions, concerns, or reports regarding your rights as a participant of research, please contact the IRB at (662) 915-7482.



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November 9, 2011

Mr. Joshua Magruder
Leadership and Counselor Education
University, MS 38677

Dr. Kevin Stoltz
Leadership and Counselor Education
University, MS 38677

Dear Mr. Magruder and Dr. Stoltz:

This is to inform you that your application to conduct research with human participants, ***Psychological Birth Order and Career Adaptability in an At-Risk College Population (Protocol 12-178)***, has been approved as Exempt under 45 CFR 46.101(b)(2).

Please remember that all of The University of Mississippi's human participant research activities, regardless of whether the research is subject to federal regulations, must be guided by the ethical principles in *The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research*.

It is especially important for you to keep these points in mind:

- You must protect the rights and welfare of human research participants.
- Any changes to your approved protocol must be reviewed and approved before initiating those changes.
- You must report promptly to the IRB any injuries or other unanticipated problems involving risks to participants or others.

If you have any questions, please feel free to call me at (662) 915-7482.

Sincerely,

Diane W. Lindley
Coordinator, Institutional Review Board

Appendix: D

Demographic Sheet

Age: _____

Major: _____

Gender (Circle One): Male Female

Actual Birth Order (Circle one that best represents how you define your sibling order in your family):

Firstborn Child Middle Child Youngest Child Only Child

VITA

Joshua Magruder was born in Charlotte, NC, on May 6, 1982 to Neil and Carolyn Magruder. He moved to Florence, SC, when he was three and began school at All Saint's Episcopal Day School. At the start of the 7th grade, Joshua transferred to James F. Byrnes Academy, a college preparatory school in Florence. While at Byrnes, Joshua was active in the student government as Student Body Vice President. Also, he was a member of the Model United Nations for four years. Joshua played on the tennis team from 8th grade till graduation, serving as Captain for three years. Joshua graduated with honors from James F. Byrnes Academy in 2001.

In the Fall of 2001, Joshua began his college career at The University of Mississippi. He focused on a liberal arts education until he changed majors to Elementary Education. After graduation from that program in 2006, Joshua began work on his Master of Education in Counselor Education at The University of Mississippi. He completed internships at the University Career Center, the Academic Readmission Program, and the Oxford Play Therapy Training Institute, giving him a wide interest in the counseling profession. During his time in the program, his interest in research and teaching grew as he presented at and attended multiple regional, national, and international conferences. He graduated in 2008 and received the award for Outstanding Masters Student of the Year.

In 2008, Joshua began the Doctoral program for Counselor Education and Supervision at The University of Mississippi. His research interests included the fields of career counseling and Individual Psychology. He has taught many classes that range from Counseling Theory to Group

Counseling. During the third year of the program, Joshua took a full-time position at The University Counseling Center at Ole Miss, and currently works as a Staff Counselor.