GENDERED OCCUPATIONAL ASPIRATIONS AND INITIAL OCCUPATIONAL CHOICES: THE ROLE OF PARENTS AND CHILDREN’S ATTRIBUTES DURING LATE CHILDHOOD

A Dissertation In
Human Development and Family Studies
by
Katie M. Lawson

© 2014 Katie M. Lawson

Submitted in Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy

August 2014
The dissertation of Katie M. Lawson was reviewed and approved* by the following:

Ann C. Crouter
Dean of the College of Health and Human Development
Professor of Human Development and Family Studies
Dissertation Adviser
Chair of committee

David M. Almeida
Professor of Human Development and Family Studies

Susan M. McHale
Director of the Social Science Research Institute
Professor of Human Development and Family Studies

Rachel A. Smith
Associate Professor of Communication Arts and Sciences

Eva S. Lefkowitz
Associate Professor of Human Development and Family Studies
Professor-in-Charge, Human Development and Family Studies Graduate Program

*Signatures are on file in the Graduate School.
ABSTRACT

Despite recent gains made by women in the U.S. labor market, gendered occupational segregation continues to be prevalent not only in the United States (Hegewisch, Liepmann, Hayes, & Hartmann, 2010), but across the world (Anker, 1998). Gendered occupational segregation has negative implications at the individual, employer, and societal levels. The present dissertation aimed to better understand the development and correlates of gendered occupational aspirations and initial occupational choices, including the role of children and parents’ attributes. The dissertation consists of three interrelated papers with the following goals: (1) To examine the consistency between gendered occupational aspirations in late childhood, adolescence, and initial occupational choices in young adulthood (including the role of children’s attributes in occupational aspirations and initial occupational choices); (2) To test whether parents’ attitudes and behaviors, measured when their children were in late childhood, predicted the gender typicality of occupations acquired in young adulthood; and (3) To review past literature examining parent and child occupational consistency, propose mechanisms that may account for this consistency (including the consistency in the gender typicality of parents and children’s occupations), and to make recommendations for future research. Results of the first paper suggested that for boys, gendered occupational aspirations in late childhood and adolescence were associated with occupational choices acquired in young adulthood. In contrast, girls desired less sex-typed occupations than they obtained in young adulthood. Sex-typed attributes in late childhood—including attitudes toward women’s roles, personal qualities, interests, and skills—predicted the gender typicality of occupational aspirations in late childhood and/or adolescence, but not initial occupational choices. Results of the second paper indicated that socialization experiences in late childhood – namely mothers’ attitudes towards women’s
roles and mothers and fathers’ time spent with children – were associated with the gender
typicality of initial occupations acquired 15 years later in young adulthood. However, many of
the findings were moderated by child’s gender. Overall, the gender typicality of occupational
aspirations and initial occupational choices were related to both children and parents’ attributes
reported during late childhood, suggesting that the gendered distribution of the labor force may
be, at least in part, the result of early socialization practices.
TABLE OF CONTENTS

List of Tables .................................................................................................................. viii

List of Figures .................................................................................................................. ix

Acknowledgements .......................................................................................................... x

Chapter 1. INTRODUCTION ......................................................................................... 1
  Theory ............................................................................................................................. 2
  Career Development ....................................................................................................... 2
  Gender and Career Development .................................................................................... 3
  Parental Influence on Children’s Occupational Choices .................................................. 4
  Childhood Experiences and Career Development ........................................................... 5
  Overview of Three Dissertation Papers .......................................................................... 6
    Development of Gendered Occupational Aspirations and Occupational Choices in Young
      Adulthood: The Role of Childhood Attributes .............................................................. 6
    Links between Gendered Socialization Experiences in Middle Childhood and Initial
      Occupational Choices in Young Adulthood .................................................................. 7
    Parent and Child Occupational Consistency ................................................................... 7
    Overall Summary ......................................................................................................... 8

Chapter 2. DEVELOPMENT OF GENDERED OCCUPATIONAL ASPIRATIONS AND
  INITIAL OCCUPATIONAL CHOICES: THE ROLE OF CHILDHOOD ATTRIBUTES ...... 10
  The Development of Occupational Aspirations ............................................................... 11
  Are Occupational Aspirations Related to Initial Occupational Choices? ...................... 13
  Do Child Attributes Predict Occupational Aspirations and Actual Occupations? .......... 14
  Present Study ............................................................................................................... 15
  Method ......................................................................................................................... 15
    Participants/Procedures .............................................................................................. 15
    Measures ..................................................................................................................... 17
      Gender Typicality of Occupational Aspirations and Initial Occupational Choices ....... 17
      Child Attributes ....................................................................................................... 18
    Analyses ..................................................................................................................... 20
  Results ......................................................................................................................... 20
    Research Question 1: Changes in the Gender Typicality of Occupational Aspirations
      and Initial Occupational Choices ............................................................................. 21
    Research Question 2: Do Child Attributes Predict Occupational Aspirations and
      Initial Occupational Choices ................................................................................. 22
      Late Childhood Aspirations ....................................................................................... 23
      Adolescence Aspirations ............................................................................................ 23
      Young Adulthood Initial Occupational Choices ....................................................... 24
    Discussion ................................................................................................................... 24
      The Development of Occupational Aspirations from Childhood to Adolescence ....... 24
      The Associations between Occupational Aspirations and Initial Occupational Choices ... 25
      Child Attributes as Predictors of Aspirations and Initial Occupational Choices ........ 28
Chapter 3. LINKS BETWEEN GENDERED CHILDHOOD SOCIALIZATION EXPERIENCES AND INITIAL OCCUPATIONAL CHOICES IN YOUNG ADULTHOOD...37
Parental Influence on Children’s Occupational Aspirations..........................37
Parental Gender Role Attitudes .................................................................38
Parental Work Behaviors ..................................................................38
Parental Home Behaviors ....................................................................40
Parental Influence on Children’s Actual Occupations..............................41
Child Gender and Parent-Child Relationship Quality .................................42
Present Study ..................................................................................43
Method ..............................................................................................44
Participants/Procedures .........................................................................44
Measures ............................................................................................46
  Gender Typicality of Children’s Occupations ........................................46
  Parent Characteristics .......................................................................46
Analyses ............................................................................................49
Results ...............................................................................................49
Descriptive Statistics ............................................................................49
Mothers’ Models ................................................................................50
Fathers’ Models ..................................................................................51
Discussion ...........................................................................................52
  Parent-Child Relationship Quality ....................................................54
Strengths and Limitations .......................................................................55
Conclusions .........................................................................................56

Chapter 4. PARENT AND CHILD OCCUPATIONAL CONSISTENCY ...............62
Section I: Measuring Parent and Child Career Consistency .........................62
Section II: Mechanisms Underlying Parent and Child Career Consistency ......64
  Most Referenced Mechanisms Proposed in Past Research .......................65
    Resources .....................................................................................65
    Socialization .................................................................................67
    Modeling ......................................................................................69
  Less Referenced and Newly Proposed Mechanisms ................................70
    Genetics .......................................................................................70
    Culture ............................................................................................72
    Cognitions .....................................................................................72
  Proposed Model of Mechanisms Underlying Parent and Child Career Consistency ....74
    Proposed Model ............................................................................75
    Strengths of the Proposed Model ..................................................75
    Moderators in the Proposed Model ................................................76
    Limitations of the Proposed Model ..................................................79
Section III: Future Recommendations .......................................................81
Section IV: Conclusion .......................................................................84
References ......................................................................................................................... 90
LIST OF TABLES

Table 1. Child, Parent, and Family Demographics during Late Childhood, Adolescence, and Young Adulthood: Mean (SD) or N (%) ..........................................................32

Table 2. Average Gender Typicality Scores of Occupational Aspirations in Late Childhood/Adolescence and Initial Occupational Choices in Young Adulthood ..................33

Table 3. Correlations between the Gender Typicality of Occupational Aspirations in Late Childhood/Adolescence and Initial Occupational Choices in Young Adulthood ..............34

Table 4. Correlations between Attributes during Late Childhood and Occupational Aspirations and Choices ........................................................................................................35

Table 5. Standardized Results of Reduced Regression Models – Child Attributes Predicting Aspirations ...........................................................................................................36

Table 6. Child, Parent, and Family Demographics during Late Childhood and Young Adulthood: Mean (SD) or N (%) ..................................................................................57

Table 7. Descriptive Data for Parent Attitudes, Work Behaviors, Home Behaviors, and Parent-Child Relationship Qualities during Late Childhood........................................58

Table 8. Correlations between Parent Characteristics and the Gender Typicality of Occupational Choices in Young Adulthood ........................................................................59

Table 9: Results of Regression Analyses Examining Mothers’ Attitudes, Work Behaviors, and Home Behaviors during Late Childhood as Predictors of the Gender Typicality of Initial Occupational Choices in Young Adulthood ...............................................60

Table 10: Results of Regression Analyses Examining Fathers’ Attitudes, Work Behaviors, and Home Behaviors during Late Childhood as Predictors of the Gender Typicality of Initial Occupational Choices in Young Adulthood .........................................................61

Table 11: Examples of Parent and Child Job Dimensions Examined in Research from 1980-2014 .........................................................................................................................85
LIST OF FIGURES

Figure 1. Occupational Linkage Hypothesis.................................................................9

Figure 2. Most Referenced Mechanisms Proposed in Past Research Underlying Parent and
Child Career Consistency .............................................................................................86

Figure 3. Components of Research on the Occupational Linkage Hypothesis.................87

Figure 4. Less Referenced and Newly Proposed Mechanisms Underlying Parent and
Child Career Consistency .............................................................................................88

Figure 5. Proposed Model of Mechanisms Underlying Parent and Child Occupational
Consistency .....................................................................................................................89
ACKNOWLEDGEMENTS

This work was funded by a grant from the National Institute of Child Health and Human Development, RO1-HD32336.
CHAPTER 1

Introduction

Despite recent gains made by women in the U.S. labor market, gendered occupational segregation continues to be prevalent not only in the United States (Hegewisch et al., 2010), but across the world (Anker, 1998). There are two types of gendered segregation: vertical and horizontal. Vertical segregation refers to the fact that women and men are disproportionately represented at different levels within the same occupation. In contrast, horizontal segregation refers to the fact that men and women concentrate within different types of occupations (Woodfield, 2007). On average, women are more likely to pursue occupations related to education, health, clerical work, and sales, whereas men are more likely to pursue managerial, administrative, and scientific occupations in engineering, physics, mathematics (Steinmetz, 2012).

There are four major social problems with gendered occupational segregation. First, it is economically inefficient because it prevents some workers from choosing occupations in which they could perform well, which in turn deprives society and employers of their skills and talents. Second, it contributes to the gender wage gap by excluding women from occupations that are better-paid and more prestigious than female-dominated occupations (Hegewisch et al., 2010). Indeed, women working full-time still earn less than men all over the world (Hausmann, Tyson, & Zahidi, 2008). In 2006 in the U.S., women who worked full-time and year-round only earned 77.5 cents compared to every dollar earned by men (Bishaw & Semega, 2008). Third, women are less likely than men to hold positions of power (e.g., 77.8% of chief executives and legislators are male; U.S. Census Bureau, 2010), which contributes to gender differences in power and influence within a society. Fourth, work influences an individual’s mental health, physical
health, relationships with others, general life satisfaction, and the health and well-being of other family members (e.g., Allen, Herst, Bruck, & Sutton, 2000; Amstad, Meier, Fasel, Elfering, & Semmer, 2011). Therefore, the gendered segregation of the labor market may have implications for the health and well-being of both men and women.

It is important to understand early roots of these gendered occupational choices, such as childhood experiences. My dissertation consists of three interrelated papers with the following goals: (1) To examine the consistency between gendered occupational aspirations in late childhood, aspirations in adolescence, and occupational choices in young adulthood, including the role of children’s attributes in occupational aspirations and early occupational choices; (2) To examine parents’ attitudes and behaviors, measured when their children were in late childhood, as predictors of the gender typicality of occupational choices in young adulthood; and (3) To review past literature examining parent and child occupational consistency, propose mechanisms that may account for this consistency (including the consistency in the gender typicality of parents and children’s occupations), and make recommendations for future research.

Theory

Career Development. Numerous career development theories have been proposed, leading to a wide array of ideas about contributors to occupational choices. Most career development theories focus on one of three areas: person-environment fit, social cognition, or development. Theories emphasizing person-environment fit rest on the assumption that individuals choose occupations based on interests, values, and skills (e.g., Holland, 1966). Proponents of these theories argue that women may choose different types of occupations than men because they have different types of interests, values, and skills. Social cognitive theories focus on the cognitive evaluations of occupations. More specifically, many of these theories
assert that if individuals feel that they can succeed in an occupation, they are more likely pursue that occupation (Lent et al., 2005). For example, the expectancy-value theory asserts that individuals’ occupational choices, persistence, and performance is dependent on individuals’ beliefs that they can be successful and whether or not they value the tasks associated with the occupation (Wigfield & Eccles, 2000). Proponents of social cognitive theories assert that women do not pursue math or science occupations because they do not believe they will be successful in those occupations. Developmental theories view individuals as in a continual state of development as they grow and mature, and thus career choices are based on individuals’ current self-concept (Duffy & Dik, 2009). For example, Vondracek, Lerner, and Schulenberg's (1986) developmental-contextual perspective asserts that career development is the product of a developing individual within a changing context. Vondracek’s perspective is unique because it takes into account contextual influences on career development, which many researchers argue are missing from numerous career development theories (Duffy & Dik, 2009; Fouad, 2007).

Although there are numerous contexts that influence career development, the family may be one of the more important contexts (Schulenberg, Vondracek, & Crouter, 1984). Therefore, my dissertation focused on how gendered family socialization experiences in late childhood may contribute to the gender typicality of initial occupational choices in young adulthood.

**Gender and Career Development.** Researchers have long recognized the importance of gender in occupational choices. For example, Gottfredson (1981) theorized that children narrow occupations of interest based on gender by the ages of six to eight years. According to Gottfredson, boys and girls rule out occupations that are perceived to be inappropriate for their sex. In addition, the gendered distribution of the work force may stem from gender differences in occupational self-efficacy (Hackett & Betz, 1981). Whereas men often report equivalent levels of
self-efficacy for both male-typed and female-typed occupations, research indicates that women often report higher levels of self-efficacy for female-typed occupations and lower levels of self-efficacy for male-typed occupations (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001). Thus, women may be less likely to pursue male-typed occupations because they do not believe they will be successful in the occupation.

Several theorists have also acknowledged that career development in general differs for men and women. For example, Mainiero and Sullivan (2005) assert that women are more likely to make career decisions (including initial occupational choices) through a relational lens. In other words, women often consider the needs of children (or future children), spouses, friends, aging parents, and coworkers in their career decisions. In contrast, Mainiero and Sullivan assert that men tend to make career decisions based on a desire to advance their careers. Because of this, men and women may choose to enter different types of occupations. For example, women may be more likely to choose careers that allow for greater flexibility at work (to account for family needs), compared to men.

**Parental Influence on Children’s Occupational Choices.** Whiston and Keller (2004) argued that there is a lack of theory on how the family of origin influences children’s career development. Many researchers refer to three underlying mechanisms to explain how parents’ attitudes, behaviors, and occupations influence children’s occupational choices: socialization, modeling, and resources (Bosco & Bianco, 2005). Socialization and social learning theory posit that parents’ attitudes and behavior influence children’s occupational choices by influencing family processes. For example, a mother with traditional attitudes about women’s roles will likely reinforce her child for engaging in more sex-typed behaviors and also provide an environment that encourages the child to behave in a sex-typed manner (e.g., sign her daughter
Parents’ occupations may also influence children’s occupational choices through socialization mechanisms. The occupational linkage hypothesis states that characteristics of parents’ work and work demands influence children’s psychological attributes and values through parents’ personalities, values, parenting, and socialization practices (Ryu & Mortimer, 1996). In turn, children’s psychological attributes and values influence children’s occupational choices (see Figure 1). For example, a lawyer may value assertiveness because he/she has observed this to be beneficial at work. Therefore, this lawyer may engage in parenting practices that encourage his/her child to become assertive.

Modeling, which refers to a child adopting similar behaviors, values, and attitudes as his or her parents, is often discussed within the socialization argument. The main difference between modeling and socialization is that modeling can occur without reinforcement or punishment from the parents (i.e., imitative learning; Maccoby, 1992).

The resources argument, which is based on Blau and Duncan's (1967) model of inheritance, asserts that parents’ occupations may influence children’s occupational choices because socioeconomic status is transmitted from parents to children through the differential availability of resources (i.e., cultural capital), including finances, knowledge, social networks, and skills. Although past researchers have focused on socialization, modeling, and resources as the mechanisms underlying parents influence on children’s occupational choices, there are likely other mechanisms involved as well, such as genetics, culture, and cognitions. These mechanisms are discussed in more detail in the third paper of the dissertation.

**Childhood Experiences and Career Development**

Although a significant amount of research has been conducted on career development in adolescence, relatively little research has focused on childhood (Whiston & Keller, 2004),
Despite the fact that many researchers have demonstrated the need for longitudinal research starting in childhood (e.g., Hartung, Porfeli, & Vondracek, 2005; Porfeli, Wang, & Hartung, 2008). Erikson argues that middle childhood (approximately age 6 years to puberty) is a time when children focus on developing and mastering new skills, such as schoolwork (Santrock, 2013). Because many career developmental theories assert that individuals choose occupations based on skills, more research is needed on experiences in childhood that contribute to career choices. In addition, research in childhood may be especially relevant when trying to understand the gendered segregation of the workforce. A more complete understanding of factors related to occupational choices in childhood will put researchers in a better position to prevent children from foreclosing possible future occupations due to factors such as sex. In other words, researchers should consider childhood, “before gendered conceptions of the world of work crystallize” (Porfeli, Hartung, et al., 2008, p. 29).

Overview of Three Dissertation Papers

Development of Gendered Occupational Aspirations and Occupational Choices in Young Adulthood: The Role of Childhood Attributes. A majority of research assessing the “development” of career choices is cross-sectional, which only allows researchers to assess age differences (as opposed to true developmental change). Longitudinal research with repeated measures is needed in order to assess developmental change in career aspirations and choices (Vondracek et al., 1986). My first paper focused on the developmental trajectories of the gender typicality of girls’ and boys’ desired and initial occupational choices. More specifically, I examined the developmental trajectory of gendered occupational aspirations from late childhood to adolescence and whether gendered occupational aspirations in late childhood and adolescence were associated with the gender typicality of initial occupational choices in early adulthood. In
addition, I examined children’s attributes – including attitudes toward women’s roles, personal qualities, interests, and skills – as predictors of the gender typicality of occupational aspirations and initial occupational choices.

**Links between Gendered Childhood Socialization Experiences and Initial Occupational Choices in Young Adulthood.** Parents may have a significant influence on children’s occupational choices (Schulenberg et al., 1984). In addition, many researchers express the need for longitudinal research examining childhood family influences on career development (e.g., Hartung et al., 2005; Porfeli, Wang, et al., 2008). My second paper addressed this gap in the literature by examining parents’ gendered attitudes and behaviors (work and home) when their children were in late childhood as predictors of the gender typicality of children’s initial occupational choices in young adulthood. In addition, I examined whether the association between attitudes/behaviors and children’s gendered occupations differed for boys and girls and as a function of the quality of the parent-child relationship.

**Parent and Child Occupational Consistency.** Past research provides evidence of parent and child career consistency, although results vary depending on the job dimension studied (Whiston & Keller, 2004). My third paper – a review paper – discusses past research on parent and child career consistency, summarizes mechanisms that have been previously cited as contributors to parent and child career consistency, proposes three new mechanisms, and provides future directions and recommendations for research. The review paper includes a discussion of job dimensions studied in past research. Parent job dimensions previously studied include socioeconomic status variables, maternal employment, type of occupation, and characteristics/demands of the job. Relative to parents’ job dimensions, a much wider range of children’s job dimensions has been examined. Children’s desired, expected, and current job
dimensions explored in past research include type of work (e.g., Holland’s types; Holland, 1966), salaries, employed versus unemployed, job prestige, career maturity, career self-efficacy, and the important (yet understudied) job dimension assessing the gender typicality of the occupation.

**Overall Summary**

Overall, my dissertation will focus on gendered occupational choices, including the role of parents and children’s attributes in late childhood. The two empirical articles address limitations of past research by using data collected from late childhood to young adulthood. This unique dataset allows for an examination of children’s attributes in late childhood and childhood socialization experiences as contributors to individuals’ initial occupational choices in early adulthood. In addition, the review paper critically examines and proposes mechanisms that may underlie parent and child occupational consistency. The empirical and review papers are aimed at advancing the understanding of the development of gendered occupational choices, which may be useful for parents, educators, and other professionals who are seeking to reduce the gendered segregation of the labor market.
Figure 1. Occupational Linkage Hypothesis
CHAPTER 2

Development of Gendered Occupational Aspirations and Initial Occupational Choices:

The Role of Childhood Attributes

Despite recent gains made by women in the work force, the U.S. labor market is still gendered. Women are more likely to pursue “serving” and “caring” occupations, such as occupations in health, clerical work, and education. In contrast, men are more likely to pursue occupations associated with “power” and “physical strength,” such as administrative, scientific, manual labor, and managerial jobs (Steinmetz, 2012). Gendered occupational segregation has negative implications at the individual, employer, and societal levels: it deprives individuals of the personal satisfaction that they may derive from working in gender atypical occupations, limits the number of skilled job applicants for employees to hire, contributes to the gender wage gap and gender differences in power and influence within a society, and deprives society of the skills and talents of individuals (Hegewisch et al., 2010).

Metaphors such as a “leaky pipeline” have been used to describe the phenomenon of women who originally express interest in science, technology, engineering, and mathematics (STEM) careers changing their minds at different stages of the career development process: when choosing high school courses, applying to college/university, choosing majors during college, finding a non-STEM occupation after earning a STEM degree, or switching from a STEM to a non-STEM occupation after working in the field. Little attention, however, has been given to men’s foreclosure of occupations due to gender. In addition, a majority of research on the “leaky pipeline” has focused on individuals who are adolescent-aged and older, despite the fact that researchers have called for longitudinal research starting in childhood (Porfeli, Hartung, et al., 2008). The goal of the present study was to better understand the development and
correlates of sex-typed occupational aspirations and initial occupational choices from childhood to young adulthood.

**The Development of Occupational Aspirations**

Developmental theories view individuals as in a constant state of growth and change, and thus career choices are based on individuals’ current self-concept (Duffy & Dik, 2009). For example, Vondracek, Lerner, and Schulenberg's (1986) developmental-contextual perspective asserts that career development is the product of a developing individual within a changing context. In other words, the interaction between person characteristics and the environment ultimately lead to occupational choices. In contrast, other theories also focus on changes in occupational aspirations over time, although less emphasis is placed on the context. For example, Gottfredson's (1981) circumscription and compromise theory on career development asserts that individuals narrow down occupations of interest based on gender roles at around 6 to 8 years of age.

There are methodological limitations of past research that examines the development of occupational aspirations of children and adolescence. First, a majority of research is cross-sectional. This is problematic because it does not allow researchers to examine change in aspirations over time, but rather only allows for an examination of age differences. Second, a majority of research on career development has neglected the occupational aspirations of children, likely due in part to assumptions that children are unable to comprehend the world of work. However, research indicates that children as young as 4 years of age can distinguish occupations based on the sex of the typical worker in the occupation (Porfeli, Hartung, et al., 2008).
Overall, the limited longitudinal research suggests that career aspirations are relatively stable across the grade school years and become more stable as children get older. As children get older, they often become more realistic in their occupational aspirations, moving away from more glamorous occupations such as professional athlete (Porfeli, Hartung, et al., 2008). Although there is some research investigating the development of occupational aspirations across adolescence by examining changes in types of desired occupations (e.g., professional v. non-professional or Holland’s Types of Occupations; Mello, 2008; Tracey & Robbins, 2005), little research has examined how the gender typicality of occupational aspirations develops from childhood to adolescence. For example, Helwig (2008) examined the development of occupational aspirations using longitudinal data collected from second grade to senior year of high school. Results indicated that in middle childhood (second and fourth grade), both boys and girls reported strong preferences for sex-typed occupations. In late childhood (sixth and eighth grade), boys still preferred male-typed occupations, but a group of girls switched from desiring female-typed occupations to male-typed occupations. Unfortunately, the researcher missed an opportunity to examine how the gender typicality changed from late childhood to adolescence. Even though the researcher had the data, he did not report on any changes in aspirations from middle childhood to adolescence. Sandberg and colleagues (1991), however, found that the gender typicality of occupational aspirations was fairly constant for boys from middle childhood to adolescence. In contrast, girls aspired to less sex-typed jobs in adolescence, compared to middle childhood. It is important to note, however, that this research is nearly 25 years old, and thus more recent research is needed.

Longitudinal research on the gender typicality of occupational aspirations from childhood to adolescence is scarce. This research is needed because longitudinal designs (unlike cross-
sectional designs) allow researchers to examine change in occupational aspirations, as opposed to group differences between children and adolescents. This information may be of particular interest to interventionists seeking to find the appropriate times to intervene in order to reduce the likelihood that children will foreclose occupational aspirations due to gender. The present study addressed this gap in the literature by examining changes in the gender typicality of desired occupations from middle childhood to adolescence for boys and girls.

**Are Occupational Aspirations Related to Initial Occupational Choices?**

Past research suggests that occupational aspirations are associated with occupations obtained in later life (Croll, 2008; Mello, 2008; Schoon, Martin, & Ross, 2007; Schoon & Parsons, 2002; Trice & McClellan, 1993). A majority of past research on this topic has focused on types of occupations. For example, Croll (2008) found that approximately half of a sample that reported desiring to work in professional, managerial, and technical occupations at the age of 15 were either working in such an occupation or on their way to obtaining a career in that field (e.g., based on student majors) by their early twenties.

Less attention has been devoted to studying the consistency of the gender typicality of occupational aspirations and actual occupations. There is evidence that there is continuity between the gender typicality of occupational aspirations and actual occupations (Almquist, Angrist, & Mickelsen, 1980; Okamoto & England, 1999; Trice & McClellan, 1993). The research is inconclusive about the strength of this association, with some studies finding a relatively weak positive association (Jacobs, 1987; Levine & Zimmerman, 1995). In addition, with the exception of Trice and McClellan (1993), these past studies only examined adolescents’ and young adults’ occupational aspirations (ages ranged from 14-21 years old) and are relatively outdated, given that gender roles are not static constructs (Twenge, 1997). This body of research
has also mainly utilized crude nominal groupings of gender typicality: male-typed, female-typed, and gender-neutral. There are many limitations to reducing continuous data into groups, such as the loss of information and statistical power (Royston, Altman, & Sauerbrei, 2006). The present study addressed these gaps in the literature by examining the association between the gender typicality of occupational aspirations of children (approximately 11 years old) and adolescents (approximately 17 years old) with initial occupational choices in young adulthood (approximately 26 years old) using a continuous variable to reflect the gender typicality of occupations: the percent of women working in the occupation based on census data.

**Do Child Attributes Predict Occupational Aspirations and Actual Occupations?**

Many theorists have asserted that individuals choose occupations based on “fit” with their personality and attitudes (e.g., Duffy & Dik, 2009). For example, Holland (1966) theorized that there are six types of occupational environments: realistic, investigative, artistic, social, enterprising, and conventional. In his theory, Holland proposed that individuals self-select into occupational environments based on their personal characteristics. Research provides evidence to support this assertion. Sex-typed attitudes (Steele & Barling, 1996), personal qualities (Rainey & Borders, 1997; Weisgram, Dinella, & Fulcher, 2011), interests (Cooper & Robinson, 1989), and skills (Wang, Eccles, & Kenny, 2013) have been found to be associated with individuals aspiring to or working in more sex-typed occupations. There are, however, several limitations to the literature. First, most research on this topic has focused on women and neglected men’s occupational aspirations and actual occupations. Second, most of the research focuses on adolescents and young adults and fails to consider children. Third, most of the research is cross-sectional and fails to consider longitudinal associations between childhood attributes and later occupational aspirations and achievements. Therefore, the present study examined individuals’
attributes reported in childhood – including sex-typed attitudes toward women’s roles, personal qualities, interests, and skills – as predictors of the gender typicality of their occupational aspirations in childhood and adolescence and initial occupational choices in young adulthood.

**Present Study**

In summary, the present study addressed two research questions: (1) How does the gender typicality of occupational aspirations and initial occupational choices change from late childhood to young adulthood; and (2) Do individuals’ attributes during late childhood predict the gender typicality of occupational aspirations in late childhood and adolescence and initial occupational choices in young adulthood? Based on past research, it was predicted that: (1) For girls only, occupational aspirations would become less sex-typed from childhood to adolescence; (2) The gender typicality of desired occupations in middle childhood and adolescence would be positively associated with the gender typicality of initial occupational choices; and 3) More sex-typed attributes of children would be associated with more sex-typed occupational aspirations and initial occupational choices.

**Method**

**Participants/Procedures**

Data from the Family Relationships Project were used to address the research questions. This project is a longitudinal study of family socialization experiences from middle childhood to young adulthood. Data were gathered from 203 families residing in a Northeastern state (mothers, fathers, first-born, and second-born siblings). Researchers recruited families by sending letters home with children from 16 school districts. Families interested in participating who also met study criteria (first-born child in the fourth or fifth grade; second-born child approximately one to three years younger; two always-married parents; both parents employed)
returned post cards to the project office. The vast majority of families (90%) who returned postcards and met study criteria agreed to participate in the study. Data collection began in 1995-1996. Follow-up home/phone interviews were conducted nearly annually until the year following the first-borns graduation from high school and then about six years later.

For the current study, data were drawn from phases 1, 7, and 11. During phases 1 and 7, youth were asked to report their desired occupation (both siblings reported at phase 1; only the first-born siblings reported at phase 7). During phase 11, both first-born and second-born siblings reported their current occupation and schooling. Second-born siblings were not included in the current analyses due to the fact that they did not report occupational aspirations during adolescence and because many were still in school and not yet employed during phase 11.

A total of 203 first-born siblings completed phase 1 assessments, 191 completed phase 7 assessments, and 157 completed phase 11 assessments. Family demographic information for each of the phases can be seen in Table 1. Independent samples t-tests and chi-square analyses were conducted to determine whether the attriters at phase 7 and phase 11 were significantly different from those who did not drop out of the study on basic demographic variables (i.e., children’s age, gender, parents’ education, income, family size, and employment status). Analyses indicated that the attriters at phase 7 did not significantly differ from non-attribiters in basic demographic variables. However, the attriters at phase 11 had significantly younger mothers and fathers at baseline, \textit{mothers: }t(199) = -3.29, \( p < .01 \); attriter mean = 34.99, SD = 3.49; non-attribiter mean = 37.14, SD = 3.92; \textit{fathers: }t(199) = -2.70, \( p < .01 \); attriter mean = 37.15, SD = 3.75; non-attribiter mean = 39.42, SD = 5.20. In addition, mothers and fathers of attriters reported significantly lower education levels at baseline, compared to non-attribiters, \textit{mothers: }t(199) = -2.74, \( p < .01 \); attriter mean = 13.80, SD = 2.22; non-attribiter mean = 14.78, SD
Measures

**Gender Typicality of Occupational Aspirations and Initial Occupational Choices.**

During phases 1 and 7, first-born siblings were asked to report their ideal occupation. During the phase 11 assessment, first-born siblings reported their current occupation and schooling. Occupations were coded if the participant was not currently in school or if the current schooling was related to the occupation (e.g., an elementary teacher earning his/her Master’s degree in education). If a student was currently working in an occupation that did not appear to be a “long-term” occupation or related to current schooling, the occupation was coded as missing (e.g., a student majoring in Media Studies who was working as a bartender). Two independent coders agreed 76.8% of the time on whether the occupation should be considered “long-term” and coded. The coders discussed all disagreements to make the final decisions. Out of the total 157 individuals who completed the phase 11 assessment, 123 occupations (65 females, 58 males) were coded (14 females and 9 males were still in school, 5 females and 3 males were unemployed, and 1 female and 1 male did not give enough information about the occupation to be coded). Gender typicality was coded based on the percent of females in each occupation using data from the U.S. Census Bureau in 2000 (U.S. Census Bureau, 2000). Boys’ scores were reverse-coded so that higher scores reflected more sex-typed occupations for both boys and girls. For example, if a young man reported working in an occupation in which 10% of employees were female, the man’s score was recoded to 90%, which indicates that 90% of the employees were male (and thus, higher scores reflected more sex-typed occupations for both males and females). To assess the reliability of the coding, a second individual coded 10% of the
occupations. Reliability was satisfactory for Phase 1 (87.5%), Phase 7 (81.1%), and Phase 11 (84.6%).

**Child Attributes.** Child attributes included attitudes toward women’s roles, personal qualities, interests, and skills reported during phase 1 (late childhood when the children were in the fourth or fifth grade). *Attitudes toward women* were assessed using Antill and colleagues’ (1993) Children’s Attitudes Toward Women Scale. Children reported their agreement with 19 statements regarding the role of women in society using a 4-point rating scale (*1 = Really Untrue, 4 = Really True*; example item: “Girls should be allowed to have toys like model trains and cars”). Items were summed so that higher scores reflected more traditional attitudes toward women’s roles (Cronbach’s alpha = .84).

*Personal qualities* were assessed using the Antill Questionnaire (Antill et al., 1993). Children rated how well 12 traits described them on a 5-point numerical rating scale (*1 = Almost Never, 5 = Almost Always*). Six of the items (e.g., considerate, sensitive to the needs of others) were summed to reflect children’s expressivity (Cronbach’s alpha = .80). Due to a low alpha, only three of the six items (i.e., adventurous, athletic, brave) were summed to create the instrumentality score (Cronbach’s alpha = .72). A series of steps were conducted in order to create one variable that represented sex-typed personal attributes. First, boys’ expressivity scores and girls’ instrumentality scores were reverse-coded so that higher scores reflected more sex-typed attributes. The reverse-coded expressivity and instrumentality scores were highly correlated, *r*(201) = -.57, *p* < .001. Second, the reverse-coded instrumentality and expressivity scores were standardized. Third, the standardized instrumentality and expressivity scores were summed to create the “sex-typed personal attributes” variable. Higher scores reflected more sex-typed personal attributes.
Sex-typed interests were measured using a scale adapted from Huston, McHale, and Crouter (1985). Children were asked to rate their interest in 31 activities using a 4-point scale (1 = Not interested at all, 4 = Very interested). Sex differences in mothers’ versus fathers’ ratings of activities at phase 1 were used to classify children’s activities as female-typed, male-typed, or gender-neutral. Interests were coded as female-typed if mothers reported significantly more interest in the activity than fathers, whereas interests were coded as male-typed if fathers reported significantly more interest in the activity than mothers. A total of 11 items (e.g., dancing, handicrafts) were averaged together to create a female-typed interests score. A total of 7 items (e.g., sports, hunting) were averaged together to create a male-typed interests score. Boys’ female-typed interests and girls’ male-typed interests were reverse-scored so that higher scores reflected more sex-typed interests for both boys and girls. The reverse-coded male- and female-typed interests scores were highly correlated, r(201) = -.78, p < .001. Similarly to the personal attributes variable, the new male- and female-typed interests scores were standardized and summed to create one variable representing sex-typed interests. Higher scores reflected more sex-typed interests.

In addition to reporting interests, children also reported their sex-typed skills in 22 out of the 31 activities using a 4-point scale (1 = Unskillful, 4 = Very skillful). Only 22 of the activities were included because it was inappropriate to assess the skill of 9 activities (e.g., playing with pets). The same process was used to categorize skills as male-typed or female-typed: Items were coded as sex-typed based on the responses of parents. A total of 7 items (e.g., dance, handicrafts) were averaged to reflect female-typed skills. A total of 6 items (e.g., sports, hunting) were averaged together to reflect male-typed skills. Boys’ female-typed skills and females’ male-typed skills were reverse-coded so that higher scores reflected more sex-typed skills. The reverse-
coded male- and female-typed skills scores were highly correlated, \( r(201) = -0.68, p < 0.001 \). The new male-typed and female-typed skills scores were standardized and summed to create one variable representing sex-typed skills. Higher scores reflected more sex-typed skills.

**Analyses**

To address the first research question, analyses were conducted to examine associations between the gender typicality of aspirations in late childhood, adolescence, and initial occupational choices in young adulthood. To examine mean-level consistency in aspirations and initial occupational choices, an ANOVA was conducted. To examine rank-order consistency, correlations between the gender typicality of aspirations and initial occupational choices were conducted. All analyses were conducted for the total sample and separately for boys and girls.

To address the second research question examining the associations between children’s attributes in childhood, gender typicality of desired occupations in childhood and adolescence, and initial occupational choices in young adulthood, three steps were conducted. First, child attributes at phase 1 (attitudes toward women’s roles, personal qualities, skills, and interests) were examined as predictors of occupational aspirations and initial occupational choices using regression analyses. Second, child gender was added in the model as a moderator. Third, a final trimmed model was run that only included the child attributes that significantly predicted aspirations and initial occupational choices.

**Results**

Prior to examining the consistency of gender typicality scores across time, we examined whether children actually acquired the exact occupation that they desired in late childhood and adolescence. A majority of individuals obtained different occupations than desired in late childhood: only 10 individuals (8.62%) reported obtaining their desired occupation. These
children reported desiring and obtaining jobs as teachers (n = 7), contractors, nurses, and sports broadcasters. A majority of the individuals also reported obtaining different occupations in young adulthood than they desired during adolescence: only 17 individuals (15.32%) reported obtaining their desired occupation. These children reported desiring and obtaining jobs as teachers (n = 5), pastors/ministers (n=2), nurses (n=2), physician assistants, editors for a magazine, certified prosthetists, pharmacists, machinists, engineers, computer science technicians, and sports broadcasters.

Preliminary analyses were also conducted to examine gender differences in gender typicality scores at each phase of data collection (see Table 2). Compared to girls, boys reported desiring significantly more sex-typed occupations during late childhood, $t(191.51) = -5.59, p < .001$, and adolescence, $t(170) = -7.20, p < .001$. Boys and girls, however, did not significantly differ in the gender traditionality of their occupational choices in young adulthood.

**Research Question 1: Changes in the Gender Typicality of Occupational Aspirations and Initial Occupational Choices**

Table 2 shows the average gender typicality scores for occupational aspirations and initial occupational choices for the total sample, boys, and girls across time. Boys reported desiring and acquiring occupations with similar gender typicality scores across all time points (with the average score around 70, indicating that 70% of employees were men within the occupations reported). Over half of the boys desired or obtained a male-typed occupation (i.e., over two-thirds of employees in the occupation are men) during childhood, adolescence, and young adulthood. In contrast, girls reported acquiring more sex-typed occupations than they desired during late childhood, $F(1, 253) = 3.92, p < .05$, and adolescence, $F(1, 490) = 9.80, p < .01$. Over
20% of girls desired to work in a male-typed occupation during childhood and adolescence, but less than 20% actually obtained a male-typed occupation.

Results of the correlations examining the rank order stability in gender typicality scores across time can be seen in Table 3. Occupational aspirations in late childhood and adolescence were significantly correlated for the total sample, boys, and girls. In addition, for the total sample, the gender typicality of occupational aspirations in middle childhood and adolescence was significantly positively correlated with the gender typicality of initial occupational choices in young adulthood. However, further examination of the correlations by gender revealed a different story. For boys, only occupational aspirations in adolescence were significantly correlated with young adulthood occupational choices. In contrast, for girls, only occupational aspirations in late childhood were significantly correlated with young adulthood occupational choices.

**Research Question 2: Do Child Attributes Predict Occupational Aspirations and Initial Occupational Choices?**

Descriptive statistics and correlations between the gender typicality of desired and actual occupations with child attributes can be seen in Table 4. Overall, many of the correlations between the child attributes and aspirations differed for boys and girls. For example, for girls only, there was a positive association between attitudes toward women’s roles and the gender typicality of occupational aspirations, indicating that girls with more traditional attitudes during late childhood aspired to more sex-typed occupations in both late childhood and adolescence. In addition, skills and aspirations were highly correlated, boys: $r(201) = .71, p < .001$; girls: $r(201) = .60, p < .001$. To avoid multicollinearity, two regression models were conducted for late childhood aspirations, adolescent aspirations, and actual occupations in young adulthood. The
first model excluded sex-typed skills, and the second model excluded sex-typed interests. Models were pruned so that only significant variables were included in the final model. Based on the pruning (as can be seen in Table 5), interests and skills were never included together in a model, thus reducing the possibility of multicollinearity.

**Late Childhood Aspirations.** Results of the trimmed regression model indicated that attitudes toward women’s roles and sex-typed personal qualities in late childhood were significant predictors of the gender typicality of occupational aspirations during late childhood (see Table 5). For both boys and girls, more sex-typed personal qualities were associated with aspiring to more sex-typed occupations in late childhood, $\beta = .22, p < .01$. For girls only, traditional attitudes toward women’s roles were associated with desiring more sex-typed occupations, girls: $\beta = .37, p < .01$; boys: $\beta = .03, p > .05$. In addition, at the trend level, more sex-typed interests were associated with boys and girls aspiring to more sex-typed occupations during late childhood, $\beta = .13, p < .10$.

**Adolescence Aspirations.** Results of the reduced regression model indicated that attitudes toward women’s roles and sex-typed skills in late childhood were significant predictors of the gender typicality of occupational aspirations in adolescence (see Table 5). These results, however, were moderated by gender. For girls only, more traditional attitudes toward women’s roles were associated with more sex-typed occupational aspirations in adolescence, girls: $\beta = .28, p < .05$, boys: $\beta = .01, p > .05$. For boys only, more sex-typed skills in late childhood were associated with more sex-typed occupational aspirations during adolescence, boys: $\beta = .27, p < .01$, girls: $\beta = -.13, p > .05$. 
Young Adulthood Initial Occupational Choices. Results of the reduced regression model indicated that more sex-typed interests in late childhood were associated with more sex-typed initial occupational choices in young adulthood, $\beta = .20$, $p < .05$.

Discussion

The present study used longitudinal data to examine the consistency of the gender typicality of occupational aspirations and initial occupational choices from childhood to young adulthood. It also examined children’s attributes as contributors to occupational aspirations and initial occupational choices. Overall, the findings suggest that the gender typicality of occupational aspirations is relatively consistent from childhood to adolescence. The consistency between aspirations and initial occupational choices, however, appears to be dependent on the sex of the individual and on how consistency is measured. Overall, the gender typicality of boys’ aspirations more closely aligned with initial occupational choices, compared to girls. In addition, several children’s attributes during childhood predicted the gender typicality of occupational aspirations in childhood and adolescence.

The Development of Occupational Aspirations from Childhood to Adolescence

Even though a majority of the individuals did not aspire to the same occupation during childhood and adolescence, participants were quite consistent in terms of their gender typicality. In fact, 15% of girls and 49% of boys who desired a sex-typed job during childhood also desired a sex-typed job during adolescence. The results partially support past research, which indicates that the gender typicality of boys’ occupational aspirations are relatively constant from middle childhood to adolescence, whereas girls’ occupational aspirations become less sex-typed (Sandberg et al., 1991). However, for the current study, the pattern of change for girls was not statistically significant. It is possible that the timing of assessments can partially explain the
inconsistent results: Sandberg and colleagues assessed individuals during middle childhood, whereas the individuals in the present study reported their occupational aspirations during late childhood. Overall, even though the assessments were approximately 5 years apart, and many researchers acknowledge that occupational aspirations in childhood are often less realistic than later occupational aspirations (Porfeli, Hartung, et al., 2008), the consistency suggests that for many of the participants, ideas about gender roles have clearly been internalized by late childhood – particularly for boys.

The Associations between Occupational Aspirations and Initial Occupational Choices

Some researchers argue that women are absent from male-typed occupations such as the STEM fields because they are less interested in working in male-typed occupations (Sadler, Sonnert, Hazari, & Tai, 2012). At the mean-level, our results suggest the opposite – that women desired less sex-typed occupations in childhood and adolescence than they actually achieved in young adulthood. In addition, the gender typicality of occupational aspirations reported during adolescence was not correlated with initial occupational choices. A more thorough examination of the data indicated that over 20% of the women desired a career in the STEM field during childhood, yet did not attain this goal in young adulthood. For example, three girls who desired to work as marine biologists later acquired jobs as a classroom assistant, caregiver for juvenile delinquents, and store manager. This may be particularly problematic in the current labor force environment, given that the United States is being outperformed in math and science by other nations that are considered our economic competitors (Schmidt, McKnight, & Raizen, 1997).

So why is there a discrepancy between occupational aspirations and initial occupational choices for women? A number of researchers have attempted to answer this question, with a majority focusing on women in STEM fields. Researchers from a broad array of disciplines have
proposed a number of explanations for this “leaky pipeline,” including biological differences between men and women, a lack of academic preparation, the absence of female role models in the STEM fields, a lack of positive experiences with science, a “chilly climate” for women in STEM fields resulting in feelings of isolation, cultural pressure to conform to sex-typed roles, and concerns about balancing career and family (Blickenstaff, 2005; Frome, Alfeld, Eccles, & Barber, 2006). Our research indicates that this “leaky pipeline” may occur after adolescence. At least in this sample, during adolescence, women still appear to desire less sex-typed occupations. It is also possible that discrimination may have blocked or deterred women from obtaining male-typed occupations, given that discrimination against women pursuing male-typed occupations is common in simulated employment contexts (Davison & Burke, 2000).

The historical context may have also played a role in the discrepancy between girls’ occupational aspirations and initial occupational choices. In the United States, the 2007-2009 economic recession led to a 44% decrease in job openings (U.S. Bureau of Labor Statistics, 2012). Unfortunately for the children in the current study, many were coming of age and attempting to enter the labor force during this economic recession. These individuals were at a time when there were fewer job openings and tougher competition for jobs, which likely resulted in many individuals being unable to obtain their desired occupation. Because of this unique economic context, it is unclear if the discrepancy between occupational aspirations and initial occupational choices would be similar among different cohorts who were not entering the labor market at such an economically unstable time.

Compared to girls, our results indicate that the gender typicality of boys’ aspirations in childhood and adolescence more closely aligned with their initial occupational choices in young adulthood. These results could suggest that men are able to achieve their occupational
aspirations, or it may mean that they are foreclosing occupations due to gender by late childhood. In general, men face more pressure than women to conform to gender role norms (Golombok & Fivush, 1994). It may be that this pressure caused boys in late childhood to report more male-typed occupations, whereas the girls in the sample may have felt less pressure to conform to gender role norms. In fact, our data indicated that boys aspired to significantly more sex-typed occupations at each phase of data collection, relative to girls.

Little research has devoted attention to the fact that few men work in female-typed occupations. Men’s foreclosure of occupations due to gender at an early age is problematic for a number of reasons, including the fact that it deprives men of the personal satisfaction that they may derive from working in female-typed occupations. For example, many female-typed jobs are “serving” and “caring” occupations (Steinmetz, 2012), which allows employees to interact with others on a daily basis and gives employees the opportunity to help others in need – something that can foster a sense of accomplishment and personal satisfaction. Men who desire to work closely with others and help those in need may be at risk for reduced life and work satisfaction if they avoid female-typed occupations due to pressure to conform to gender role norms.

Men’s foreclosure of female-typed occupations also has negative implications for their future financial security, health, and safety. A common belief is that male-typed occupations are more prestigious and pay higher salaries than female-typed occupations. Unfortunately, this assumption is not completely accurate. Due to economic restructuring, blue-collar male-typed occupations have exhibited declines in wages and job growth, leaving many non-college educated men either unemployed or working in low-paying occupations (McCall, 2001). In addition, many male-typed jobs are actually more dangerous and hazardous to health than female-typed jobs (Padavic & Reskin, 2002). In this middle and working class sample, many of
the boys aspired to and attained blue-collar occupations (e.g., laborer). In other words, for this sample, avoiding female-typed occupations may have led these men to work in *more dangerous* environments in which they earned *less* money and/or had a *more difficult* time finding a job. Therefore, even though male’s aspirations were more consistent with their occupational achievements, relative to females, they may have foreclosed a number of promising occupational paths due to gender norms.

**Child Attributes as Predictors of Aspirations and Initial Occupational Choices**

Individuals’ attributes during childhood – including attitudes toward women’s roles, personal qualities, interests, and skills – predicted the gender typicality of occupational aspirations during childhood and/or adolescence. The results of our longitudinal analyses indicated that more sex-typed attributes in childhood were associated with individuals’ desiring more sex-typed occupations in childhood and adolescence. This supports theories asserting that individuals choose occupations based on person-environment fit (Holland, 1966). In addition, it supports past cross-sectional research (e.g., Weisgram et al., 2011).

Many of these findings were moderated by child gender. For example, for boys only, sex-typed skills reported in late childhood were associated with more sex-typed occupational aspirations during adolescence. This finding is important given calls for teaching girls male-typed skills in order to help desegregate the labor market. In fact, there has been a push for young girls to acquire more male-typed skills. For example, Sterling created the toy “Goldiblox” in an effort to promote girls’ development of engineering skills. Sterling designed the toys to attract girls’ attention (e.g., a story comes with the toy, a girl is the main character) and she was able to raise enough money to fund the project in just 5 days due to an overwhelmingly positive response to the idea (Rosen, 2012). Unfortunately, there has been less interest in boys’
development of female-typed skills, even though the results of the present study suggest that boys’ sex-typed skills are related to occupational aspirations in adolescence.

In the regression analysis, only individuals’ interests in late childhood were significant predictors of initial occupational choice in young adulthood – approximately 15 years later. There were, however, significant bivariate correlations between sex-typed interests and skills in late childhood and the gender typicality of initial occupational choices, for girls. In addition, at trend-level, holding more traditional attitudes was associated with girls achieving more sex-typed occupations as young adults. These bivariate correlations were likely reduced in the regression models for a number of reasons: the predictor variables were correlated, the associations differed between boys and girls, and the statistical power was reduced due to the smaller sample size. Future longitudinal research with larger samples is needed to examine the role of child attributes in the gender typicality of initial occupational choices.

**Strengths and Weaknesses**

In the face of its contributions, the present study had several limitations that provide direction for future research. First, the sample included mainly white participants from working and middle class families living in a northeastern state. Further research with more diverse samples is needed in order to assess the generalizability of the results. Second, during the last phase of assessment, we were only able to code occupations for 123 participants due to sample attrition and the fact that individuals were still in school. This smaller sample size reduced statistical power and limited our ability to examine boys’ and girls’ patterns separately. In addition, it limited the generalizability of results given that the attriters at phase 11 had significantly younger parents with less education, compared to non-attriters. Third, it is possible that we measured actual occupations too early, given that 12 individuals were still in school and
24 individuals were currently working and attending school. In addition, people often do not start off working in their ideal occupation, but rather have to work their way into desired roles. The timing of our assessment does not necessarily reflect ultimate occupational achievement. Fourth, we only have children’s reports of attributes during childhood – we do not have more objective measures or outside reporters of these attributes. Future research may benefit from using more objective indicators and multiple reporters, particularly when researching skills.

Despite the limitations, there are a number of strengths that allowed this study to address gaps in past research. The longitudinal design allowed us to examine the development of occupational aspirations and actual occupations across three developmental periods: late childhood, adolescence, and young adulthood. This is particularly important given that many researchers have argued that career development research needs to begin during childhood, “before gendered conceptions of the world of work crystallize” (Porfeli, Hartung, et al., 2008, p. 29). In addition, it allowed us to examine the longitudinal associations between children’s attributes and both occupational aspirations and initial occupational choices. A majority of past research has utilized cross-sectional data or retrospective data and has completely neglected childhood experiences. Finally, we included both males and females in the analyses. A majority of past research focuses on women’s choices about entering into male-typed occupations, but relatively little research has focused on men’s choice to enter female-typed occupations.

**Conclusion**

Overall, we found that the gender typicality of occupational aspirations is more closely related to actual occupations for males than for females. Boys consistently desired and as young men, obtained sex-typed occupations, whereas girls desired to work in less sex-typed occupations than they acquired in young adulthood. In addition, we found evidence that
individuals’ sex-typed attributes during childhood were related to occupational aspirations in childhood and adolescence. These findings fill some gaps in the literature by including males and by using longitudinal data from childhood to young adulthood. Future research is needed to better understand factors that may influence discrepancies between women’s occupational aspirations and initial occupational choices and barriers to boys aspiring to non-traditional careers.
Table 1

*Child, Parent, and Family Demographics during Late Childhood, Adolescence, and Young Adulthood: Mean (SD) or N (%)*

<table>
<thead>
<tr>
<th></th>
<th>Late Childhood (Phase 1)</th>
<th>Adolescence (Phase 7)</th>
<th>Young Adulthood (Phase 11)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Children Completed Survey</strong></td>
<td>203</td>
<td>191</td>
<td>157</td>
</tr>
<tr>
<td><strong>Child Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>10.87 (.54)</td>
<td>17.34 (.79)</td>
<td>26.26 (.80)</td>
</tr>
<tr>
<td>Gender (% Female)</td>
<td>105 (51.72%)</td>
<td>98 (51.31%)</td>
<td>85 (54.14%)</td>
</tr>
<tr>
<td>Desired Occupation (%)</td>
<td>196 (96.55%)</td>
<td>172 (90.05%)</td>
<td>N/A</td>
</tr>
<tr>
<td>(Not Missing that Completed the Home Interview)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Occupational Choice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N (%) Student Only</td>
<td>N/A</td>
<td>N/A</td>
<td>12 (7.69%)</td>
</tr>
<tr>
<td>N (%) Unemployed</td>
<td>N/A</td>
<td>N/A</td>
<td>8 (5.13%)</td>
</tr>
<tr>
<td>N (%) Student &amp; Working</td>
<td>N/A</td>
<td>N/A</td>
<td>24 (15.38%)</td>
</tr>
<tr>
<td>N (%) Only Working</td>
<td>N/A</td>
<td>N/A</td>
<td>112 (71.94%)</td>
</tr>
<tr>
<td><strong>Family Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity (% White)</td>
<td>202 (99.51%)</td>
<td>190 (99.48%)</td>
<td>156 (99.36%)</td>
</tr>
<tr>
<td>Family Income</td>
<td>60,233 (28,473)</td>
<td>83,093 (45,926)</td>
<td>115,993 (90,375)</td>
</tr>
</tbody>
</table>
Table 2

Average Gender Typicality Scores of Occupational Aspirations in Late Childhood/Adolescence and Initial Occupational Choices in Young Adulthood

<table>
<thead>
<tr>
<th></th>
<th>Occupational Aspiration: Late Childhood* (Phase 1, N = 196)</th>
<th>Occupational Aspiration: Adolescence* (Phase 7, N = 172)</th>
<th>Initial Occupational Choice: Young Adulthood (Phase 11, N = 123)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Sample</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>61.45 (22.35)</td>
<td>59.74 (22.61)</td>
<td>63.61 (25.37)</td>
</tr>
<tr>
<td>N (%) Male-Typed</td>
<td>89 (45.41%)</td>
<td>84 (48.84%)</td>
<td>42 (34.15%)</td>
</tr>
<tr>
<td>N (%) Female-Typed</td>
<td>43 (21.94%)</td>
<td>21 (12.21%)</td>
<td>35 (28.46%)</td>
</tr>
<tr>
<td>N (%) Neutral</td>
<td>64 (32.65%)</td>
<td>67 (38.95%)</td>
<td>46 (37.40%)</td>
</tr>
<tr>
<td><strong>Boys</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>70.10 (18.35)a</td>
<td>70.88 (17.71)a</td>
<td>66.74 (26.17)a</td>
</tr>
<tr>
<td>N (%) Male-Typed</td>
<td>65 (69.89%)</td>
<td>59 (70.24%)</td>
<td>30 (51.72%)</td>
</tr>
<tr>
<td>N (%) Female-Typed</td>
<td>4 (4.30%)</td>
<td>3 (3.57%)</td>
<td>8 (13.79%)</td>
</tr>
<tr>
<td>N (%) Neutral</td>
<td>24 (25.81%)</td>
<td>22 (26.19%)</td>
<td>20 (34.48%)</td>
</tr>
<tr>
<td><strong>Girls</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>53.64 (22.68)b</td>
<td>49.10 (21.70)b</td>
<td>60.81 (24.51)c</td>
</tr>
<tr>
<td>N (%) Male-Typed</td>
<td>24 (23.30%)</td>
<td>25 (28.41%)</td>
<td>12 (18.46%)</td>
</tr>
<tr>
<td>N (%) Female-Typed</td>
<td>39 (37.86%)</td>
<td>18 (20.45%)</td>
<td>27 (41.54%)</td>
</tr>
<tr>
<td>N (%) Neutral</td>
<td>40 (38.83%)</td>
<td>45 (51.14%)</td>
<td>26 (40.00%)</td>
</tr>
</tbody>
</table>

*Note. The gender typicality score was coded as the percent of women in an occupation. Boys’ scores were reverse-coded so that higher scores reflected more sex-typed occupations for both boys and girls. An ANOVA was used to examine mean-level differences between phases. An independent samples t-test was used to examine gender differences at each phase. For boys and girls separately, phases that did not significantly differ are labeled with the same letter. Phases that significantly differed are labeled with different letters.

*Significant gender differences within each phase.
Table 3

**Correlations between the Gender Typicality of Occupational Aspirations in Late Childhood/Adolescence and Initial Occupational Choices in Young Adulthood**

<table>
<thead>
<tr>
<th></th>
<th>Late Childhood (Phase 1)</th>
<th>Adolescence (Phase 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adolescence (Phase 7)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.42***</td>
<td>-</td>
</tr>
<tr>
<td>Boys</td>
<td>.24*</td>
<td>-</td>
</tr>
<tr>
<td>Girls</td>
<td>.34**</td>
<td>-</td>
</tr>
<tr>
<td><strong>Young Adulthood (Phase 11)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.20*</td>
<td>.20*</td>
</tr>
<tr>
<td>Boys</td>
<td>.02</td>
<td>.34*</td>
</tr>
<tr>
<td>Girls</td>
<td>.28*</td>
<td>.06</td>
</tr>
</tbody>
</table>

*Note.* The gender typicality score was coded as the percent of women in an occupation. Boys’ scores were reverse-coded so that higher scores reflected more sex-typed occupations for both boys and girls.

*p < .05, ** p < .01, *** p < .001.*
Table 4

Correlations between Attributes during Late Childhood and Occupational Aspirations and Choices

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Childhood Attitudes Toward Women’s Roles*</td>
<td>32.00 (8.29)</td>
<td>28.12 (6.06)</td>
<td>1.00</td>
<td>0.05</td>
<td>0.02</td>
<td>0.03</td>
<td>0.07</td>
<td>0.03</td>
<td>-0.07</td>
</tr>
<tr>
<td>2 Childhood Sex-Typed Personal Qualities</td>
<td>-0.06 (.79)</td>
<td>.06 (1.05)</td>
<td>-0.06</td>
<td>1.00</td>
<td>0.24*</td>
<td>0.39***</td>
<td>0.25*</td>
<td>0.10</td>
<td>0.16</td>
</tr>
<tr>
<td>3 Childhood Sex-Typed Skills*</td>
<td>-0.13 (.79)</td>
<td>.12 (.78)</td>
<td>0.08</td>
<td>0.26**</td>
<td>1.00</td>
<td>0.71***</td>
<td>0.08</td>
<td>0.35***</td>
<td>0.21</td>
</tr>
<tr>
<td>4 Childhood Sex-Typed Interests</td>
<td>0.01 (.68)</td>
<td>-.01 (.65)</td>
<td>-0.07</td>
<td>0.44***</td>
<td>0.60***</td>
<td>1.00</td>
<td>0.15</td>
<td>0.08</td>
<td>0.19</td>
</tr>
<tr>
<td>5 Childhood Occupational Aspirations*</td>
<td>70.10 (18.35)</td>
<td>53.64 (22.82)</td>
<td>0.26**</td>
<td>0.30**</td>
<td>0.21*</td>
<td>0.33***</td>
<td>1.00</td>
<td>0.24*</td>
<td>0.02</td>
</tr>
<tr>
<td>6 Adolescent Occupational Aspirations*</td>
<td>70.88 (17.71)</td>
<td>49.10 (21.70)</td>
<td>0.23*</td>
<td>-0.04</td>
<td>-0.08</td>
<td>0.00</td>
<td>0.34**</td>
<td>1.00</td>
<td>0.34*</td>
</tr>
<tr>
<td>7 Young Adulthood Occupations</td>
<td>66.74 (26.17)</td>
<td>60.81 (24.51)</td>
<td>0.22</td>
<td>0.19</td>
<td>0.30*</td>
<td>0.29*</td>
<td>0.28*</td>
<td>0.06</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note. Boys’ correlations are above the diagonal. Girls’ correlations are below the diagonal. The gender typicality score was coded as the percent of women in an occupation. Boys’ scores were reverse-coded so that higher scores reflected more traditional occupations for both boys and girls. Independent samples t-tests were conducted to examine gender differences.

*p < .10, *p < .05, **p < .01, ***p < .001
Table 5

Standardized Results of Reduced Regression Models - Child Attributes Predicting Aspirations

<table>
<thead>
<tr>
<th></th>
<th>Late Childhood Aspirations (Phase 1)</th>
<th>Adolescence Aspirations (Phase 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Covariates</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents’ Education</td>
<td>-0.01</td>
<td>-0.01</td>
</tr>
<tr>
<td>Child Gender</td>
<td>0.34 ***</td>
<td>0.47 ***</td>
</tr>
<tr>
<td><strong>Main Effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes Toward Women’s Roles</td>
<td>0.37 **</td>
<td>0.29 *</td>
</tr>
<tr>
<td>Sex-Typed Personal Qualities</td>
<td>0.22 **</td>
<td>.</td>
</tr>
<tr>
<td>Sex-Typed Skills</td>
<td>.</td>
<td>-0.12</td>
</tr>
<tr>
<td>Sex-Typed Interests</td>
<td>0.13 †</td>
<td>.</td>
</tr>
<tr>
<td><strong>Interactions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes * Gender</td>
<td>-0.26 *</td>
<td>-0.22 †</td>
</tr>
<tr>
<td>Sex-Typed Personal Qualities * Gender</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>Sex-Typed Skills * Gender</td>
<td>.</td>
<td>0.28 **</td>
</tr>
<tr>
<td>Sex-Typed Interests * Gender</td>
<td>.</td>
<td>.</td>
</tr>
</tbody>
</table>

*Note.* For both boys and girls, higher scores reflected more sex-typed attributes. To create the reduced regression model, only significant predictors were included.

*p < .10, *p < .05, **p < .01, ***p < .001
CHAPTER 3

Links between Gendered Childhood Socialization Experiences and Initial Occupational Choices in Young Adulthood

Researchers have long acknowledged that parents are primary socializers of children (Maccoby, 1992). Parents serve as role models for their children, reinforce/punish children’s behaviors, play a role in the selection of children’s environments (and opportunities within the environments), and interact with children on a daily basis. Therefore, parents’ gendered attitudes and behaviors likely contribute to the gendered segregation of the labor market. The present study will examine parents’ attitudes and behaviors reported when their children were in late childhood as predictors of the gender typicality of their children’s initial occupational choices in young adulthood.

Parental Influences on Children’s Occupational Aspirations

During the 1980s, Corcoran and Courant (1987) recommended that future research should examine the role of early socialization experiences on gendered occupational choices in adulthood using longitudinal data. After more than 25 years, little research has addressed this gap in the literature. Rather, many researchers have continued to focus on concurrent associations between parents’ characteristics and their children’s occupational aspirations (typically collected when the children were adolescents or college students). Therefore, due to the limited research on early socialization experiences and actual occupations in adulthood, this literature review will first summarize previous research examining associations between parents’ gender role attitudes and work and home behaviors with children’s occupational aspirations, and then discuss parental influences on children’s actual occupations in young adulthood.
**Parental Gender Role Attitudes.** Mothers’ gender role attitudes have been linked to the gender typicality of daughters’ desired careers, with less traditional maternal attitudes predicting more male-typed desired careers in daughters (Fiebig & Beauregard, 2011; Fulcher, 2011). It is important to note, however, that a majority of research has focused on mainly white samples from higher socioeconomic backgrounds. Further research is needed with more diverse samples, including those from working and middle class families.

Less attention has been given to fathers’ gender role attitudes as predictors of children’s desired careers, although preliminary evidence suggests that they may not be related to the gender typicality of daughters’ occupational aspirations (Steele & Barling, 1996). Research has also failed to adequately assess the association between parents’ gender role attitudes and sons’ desired occupations. However, research has found that mothers’ gender role attitudes predicted mothers’ perceptions of children’s ability in math, sports, and social domains. More specifically, mothers with more traditional gender role attitudes were more likely to overestimate their children’s ability if the child’s sex matched the perceived gender stereotype of the domain. In turn, the researchers found that mothers’ perceptions of children’s ability were associated with children’s perceived ability in these domains (Jacobs & Eccles, 1992). These linkages suggest that parental gender role attitudes may play a role in children’s perceptions of their abilities, and, in turn, their occupational aspirations and choices.

**Parental Work Behaviors.** Children often aspire to the careers of their parents (e.g., Trice, Hughes, Odom, Woods, & McClellan, 1995). In addition, parents tend to show support for the occupational choices of children that are similar to their own occupational choices and also encourage the development of similar work values, which have been found to be associated with occupational choices (Kniveton, 2004; Lips & Lawson, 2009). The time parents devote to paid
employment is one parental work behavior that children can view on a daily basis through their parents’ absence and presence in the home. Their labor force involvement reflects a parent’s effort to provide financial support to the family and/or commitment to and emotional investment in the job. Hoffman, Goldsmith, and Hofacker (1992) found that children expect to work similar work hours as their parents when they are adults. In addition, many researchers have examined maternal employment status (i.e., mothers work 0 hours per week versus mothers work at least a few hours a week outside the home) as a predictor of children’s occupational aspirations. Maternal employment status has been found to be associated with daughters’ expected employment, job prestige, career maturity, and the gender typicality of occupational aspirations (Bosco & Bianco, 2005; Selkow, 1984; Weinshenker, 2006; Whiston & Keller, 2004). A majority of this research has focused on samples from higher socioeconomic backgrounds, however, and thus research is needed to better understand the role of parents’ work on children’s occupational choices in working and middle class families.

The gender typicality of parents’ occupations may also have implications for children’s occupational aspirations (Whiston & Keller, 2004). For example, research from the 1980s to the early 1990s found that more sex-typed occupations of mothers (but not fathers) were associated with daughters aspiring to more sex-typed occupations (Barak, Feldman, & Noy, 1991; Zuckerman, 1981). The results were less conclusive in regard to the associations with son’s occupations, possibly due to the fact that the age of the participants in the two studies differed dramatically (elementary school v. college aged). Only one out of the two studies found that sons of mothers’ working in less sex-typed occupations also desired to work in less sex-typed occupations (Barak et al., 1991). More current research using a more ethnically and socioeconomically diverse sample, however, found contrasting results. Schuette, Ponton, and
Charlton (2012) found that the gender typicality of the occupations of female adults living in the home (who may not always be parents) was not associated with the gender typicality of male and female preadolescents’ desired occupations. Boys’ occupational aspirations, however, were associated with the gender typicality of the adult males’ occupations. More research is needed to better understand the association between the gender typicality of parents’ occupations and their children’s occupational aspirations and choices.

**Parental Home Behaviors.** Parental household behaviors, which can be directly observed by children on a daily basis, may also be linked to the gender typicality of children’s occupational choices. Mothers spend more time doing household chores than fathers (Bianchi, Milkie, Sayer, & Robinson, 2000). Less traditional division of household work by parents has been found to be associated with children reporting less sex-typed role preferences and interests, knowledge about stereotypes, adherence to gender role stereotypes, and less sex-typed occupational preferences during the preschool and middle childhood years (McHale, Crouter, & Tucker, 1999; Serbin, Powlishta, Gulko, Martin, & Lockheed, 1993; Turner & Gervai, 1995).

Preliminary evidence also suggests that spending more time engaged in joint activities with parents in middle childhood is associated with greater occupational exploration and career planning in high school. Researchers argue that this may be a product of parents teaching children ways to explore their likes and dislikes and the fact that parents and children may be forming a stronger, more open relationship by engaging in these activities together (which may lead the parents to continue to help foster exploration in the future, lead children to continue to engage their parents in such exploration, or both; Schmitt-Rodermund & Vondracek, 1999).

The association between time spent with children and children’s occupational outcomes may differ depending on the sex composition of the parent-child dyad. On average, mothers
spend more time with their children, compared to fathers (Craig, 2006). Deutsch, Servis, and Payne (2001) suggest that the amount of time that a parent spends with children is less important in terms of its effects on children’s gender-role attitudes than the type of activities the parent engages in during that time. Research suggests that mothers and fathers engage in different behaviors when they spend time with their children. Fathers are more likely to encourage risk-taking, exploration, taking chances, and standing up for oneself, whereas mothers are more likely to engage in role-playing and object-mediated play (Paquette, 2004). Therefore, it is possible that fathers may be more likely to encourage children to explore a wider range of future occupations (including gender atypical occupations) compared to mothers. Due to strong societal pressure for males to act “masculine,” however, fathers may encourage daughters to explore a wide array of occupations but discourage sons from exploring female-typed careers. In fact, Baruch and Barnett (1986) found that spending more time with fathers in childhood was associated with less sex-typed occupational aspirations for daughters but more sex-typed occupational aspirations for sons. In other words, for both daughters and sons, spending time with fathers was associated with children desiring more male-typed occupations. It is important to remember that these data were collected nearly 30 years ago. Thus, more current research is needed.

**Parental Influence on Children’s Actual Occupations**

Despite calls for longitudinal research examining the influence of early socialization within families on actual occupations in young adulthood (e.g., Corcoran & Courant, 1987), little research has attempted to fill this gap in the literature, likely due to data limitations. In order to examine the role of early socialization experiences, data would have to be collected over a long period of time and, ideally, from multiple respondents (e.g., parent and child). Studies using retrospective reports from young adults found that mothers and fathers are often cited as primary
influences on career achievement (Helwig, 2008), and that parents’ messages about careers influence later views of careers (Messersmith, Garrett, Davis-Kean, Malanchuk, & Eccles, 2008).

The limited number of longitudinal studies assessing early childhood experiences as predictors of actual occupations suggests that parents may play a role in children’s occupational choices, yet more research is needed. Using longitudinal data collected from at-risk boys at ages 9 to 24 years old, Wiesner, Vondracek, Capaldi, and Porfeli (2003) found that family distress during childhood (e.g., numerous parental transitions, poor parental discipline) was associated with higher odds of being unemployed in early adulthood. In contrast, more parental involvement was associated with higher odds that the boys attended college. Another study by Corcoran and Courant (1987) utilized a nationally representative, longitudinal dataset collected when individuals were 12-17 and 25-30 years old. The researchers found that the proportion of time mothers worked (relative to fathers) when the children were adolescents did not predict the gender typicality of daughters’ actual occupations in young adulthood. However, it is important to note that this research is over 25 years old. Because gender roles, parenting, and other related factors have significantly changed over time, more current research is needed to better understand the role of parents’ behaviors in their children’s occupational choices in adulthood.

Child Gender and Parent-Child Relationship Quality

The association between parents’ attributes and children’s occupational choices may be dependent on the gender constellation of the parent-child dyad. A common theme among research studies investigating parental influence on children’s desired occupations is that researchers often address the linkages between parents and children of the same sex, likely due in part to expectations that intergenerational transmission is strongest among same-sex parent-child
dyads (Aldous & Hill, 1965). In fact, a majority of the past research on parental influences on their children’s occupational choices has focused solely on the influence of one parent (typically the mother), failing to acknowledge the role of fathers or the importance of sons’ occupational choices. To address this gap in the literature, the present study included mothers, fathers, daughters, and sons. I tested the prediction that the associations between parents’ attributes and the gender typicality of children’s initial occupational choices will be strongest for same-sex dyads.

In addition, many researchers have conceptualized the quality of the parent-child relationship as a potential moderator of the associations between parent attributes (e.g., attitudes and behavior) and children’s occupational aspirations (e.g., Jodl, Michael, Malanchuk, Eccles, & Sameroff, 2001). Because observational learning theory asserts that imitation is more common when the model is seen as both nurturing and similar to the observer (Mischel, 1966), parents’ behaviors and attitudes are most likely to be modeled by children if there is a warm, supportive, close parent-child relationship (Jodl et al., 2001). In fact, past research has found that a parent’s attributes and values (e.g., work values) were more likely to be associated with a child’s attributes and values if the parent and child had a close relationship (e.g., Mortimer, 1975). For the current study, I tested the prediction that the association between parents’ attitudes and behaviors and children’s occupational aspirations would be stronger for parents and children with close relationships.

**Present Study**

The present study examined the associations between early socialization experiences and young adults’ actual occupations. More specifically, parents’ attitudes toward women’s roles and work/home behaviors (hours worked per week, the gender typicality of occupations, time spent
on female-typed household labor, time spent with children) when their children were in late childhood were examined as predictors of the gender typicality of children’s initial occupational choices in young adulthood. This study addresses gaps in past research by using a longitudinal dataset and by using a sample composed of working and middle class families – past research often uses cross-sectional data and focuses on families from higher socioeconomic status backgrounds. We predicted that more gendered attitudes and behaviors of parents would be associated with children acquiring more sex-typed occupations in young adulthood. In addition, we predicted that these associations would be strongest for same-sex dyads (i.e., mother-daughter and father-son) and those with close parent-child relationships.

Method

Participants/Procedures

Data from a longitudinal study of family socialization processes were used to address the research goals. The sample included mothers, fathers, first-born, and second-born siblings from 203 families residing in a Northeastern state. Families were recruited via letters sent home from schools in 16 districts. Families who met criteria (first-born child in the fourth or fifth grade, second-born child approximately one to three years younger, two always married parents, both parents employed) and were interested in participating in the study returned a postcard to the project office. Over 90% of the eligible families who returned postcards and met criteria agreed to participate in the study. The first phase of data collection began in 1995-1996. Data were collected almost every year using home/phone interviews for 11 phases.

In addition, daily telephone surveys were used to collect information about family members’ daily activities during phases 1, 2, 3, 6, and 7. Children completed seven evening telephone interviews (five during the week, two during the weekend) and parents completed four
evening telephone interviews (three during the week, one during the weekend) approximately 3-4 weeks after the home interview. At each call, family members reported on their daily activities (e.g., time spent with other family members, time spent in certain activities). Calls were conducted during the evening so that a majority of the day’s activities could be reported.

For the current study, data collected from mothers, fathers, and first-born siblings during phases 1, 2, and 11 were analyzed. During phases 1 and 2, parents reported their attitudes, behaviors, and relationship quality. During phase 11, first-born siblings (who were now young adults) were asked to report their current occupation. Second-born siblings were not included in the analyses due to the small sample size – many second-born siblings were still in school and/or were not employed during phase 11.

A total of 203 first-born siblings completed phase 1 assessments and 157 completed phase 11 assessments. Family demographic information for each of the phases can be seen in Table 6. Independent samples t-tests and chi-square analyses were conducted to determine whether the attritors at phase 11 were significantly different from non-attritors on basic demographic variables (i.e., children’s age, gender, parents’ education, income, family size, and employment status). Analyses indicated that the attritors at phase 11 had significantly younger mothers and fathers at baseline, mothers: \( t(199) = -3.29, p < .01; \) attriter mean = 34.99, SD = 3.49; non-attriter mean = 37.14, SD = 3.92; fathers: \( t(199) = -2.70, p < .01; \) attriter mean = 37.15, SD = 3.75; non-attriter mean = 39.42, SD = 5.20. In addition, mothers and fathers of attriters reported significantly lower education levels at baseline, compared to non-attriters, mothers: \( t(199) = -2.74, p < .01; \) attriter mean = 13.80, SD = 2.22; non-attriter mean = 14.78, SD = 2.09; fathers: \( t(199) = -2.53, p < .01; \) attriter mean = 13.86, SD = 2.37; non-attriter mean = 14.90, SD = 2.41.
Measures

Gender Typicality of Children’s Occupations. During the Phase 11 assessment, first-born siblings reported their current occupation and schooling. Occupations were coded if the participant was not currently in school or if the schooling was related to the current occupation (e.g., an elementary teacher earning his/her Master’s degree in education). If a participant was in school and also currently working in an occupation that did not appear to be a “long-term” occupation or related to current schooling, the occupation was coded as missing (e.g., a student majoring in Media Studies who was working as a bartender). Two independent coders agreed 76.8% of the time on whether the occupation should be considered “long-term” and coded. The coders discussed all disagreements to make the final decisions. Out of the total 157 individuals who completed the phase 11 assessment, 123 occupations (65 females, 58 males) were coded (14 females and 9 males were still in school, 5 females and 3 males were unemployed, and 1 female and 1 male did not give enough information about the occupation to be coded). Gender typicality was coded based on the percent of females in each occupation using data from the U.S. Census Bureau in 2000 (U.S. Census Bureau, 2000). To assess the reliability of the coding, a second individual coded 10% of the occupations. Reliability was satisfactory (84.6%).

Parent Characteristics. Mother and fathers’ attitudes toward women were assessed using Spence and Helmreich's (1978) scale. During phase 1, mothers and fathers reported their agreement with 15 statements regarding the roles of men and women in society using a 4-point numerical rating scale (1 = Strongly Agree, 4 = Strongly Disagree; example item: “If both husband and wife are working outside the home, they should share equally in routine household chores, such as washing dishes and doing laundry”). Items were summed so that higher scores
reflected more traditional attitudes toward women’s roles (Cronbach’s alpha ranged from .74 to .82).

Work hours per week and the gender typicality of parents’ occupations (assessed during phase 1) were used to reflect parents’ work behaviors. Work hours per week was calculated by summing the total hours reported working at the job and hours spent at home on work-related activities in a typical week. The gender typicality of mothers and fathers’ occupations was coded based on the percent of females in their reported occupations using the male/female data provided by the U.S. Census Bureau in 2000 (U.S. Census Bureau, 2000). To assess the reliability of the coding, a second individual coded 10% of parents’ occupations (70.7% agreement between coders). A total of 15 mothers reported that they were homemakers. Because the U.S. Census Bureau only contains information about paid employment, we were not able to code homemakers using this database. Instead, we used information from the first wave of the National Survey of Midlife Development in the United States (MIDUS) collected from 1995 to 1996. This dataset contains a nationally representative sample of participants (Brim, Ryff, & Kessler, 2004), and thus gave us an approximation for the gender typicality of homemakers (97.6% of homemakers were female). This estimate was used as the gender typicality score for all 15 homemakers.

Time spent on female-typed household tasks and time spent with children (collected during the daily phone interviews at phase 1) were used to assess parents’ home behaviors. Mothers’ and fathers’ reported time spent doing female-typed household tasks (e.g., dishes, prepare a meal, clean, laundry). Children reported time spent with each parent throughout the day while engaging in different activities (e.g., eating a meal at home, doing homework). A variable indicating the total time spent with each parent (i.e., other people could be present along
with the parent and child) was created. Past research using this sample found support for inter-rater agreement between mothers and fathers’ reports of joint activities \((r = .77)\) and between children and parents’ reports of joint activities \((r = .52\) to \(.65;\) McHale et al., 1999).

Parent-child intimacy was used to assess the quality of the parent-child relationship. Children completed 8 items from Blyth, Hill, and Thiel's (1982) measure at phase 2 using a 5-point numerical rating scale \((1 = Not\ at\ All, \ 5 = Very\ Much;\) example item: “How much do you go to your mother/father for advice/support?”). Item responses were summed so that higher scores reflected more intimate relationships (Cronbach’s alpha ranged from .77 to .80).

**Covariates** included parents’ education, children’s male-typed and female-typed interests at phase 1, and child gender. Parents’ socioeconomic status has been found to be a significant predictor of occupational attainment (e.g., Blau & Duncan, 1967). Both mothers and fathers reported on their highest level of education \((12 = High\ school\ graduate, \ 14 = Associates\ degree, \ 16 = College\ Degree, \ 20 = PhD)\). These scores were highly correlated, \(r(199) = .58, \ p < .001,\) and thus were averaged together to reflect parental education. In addition, children’s male- and female-typed interests at phase 1 were added as covariates to ensure that parents’ attitudes and behaviors were not associated with the gender typicality of children’s occupations due to the fact that parents adjusted their attitudes or behaviors based on their children’s early interests. Interests were measured using an adapted version of a scale created by Huston, McHale, and Crouter (1985). At phase 1, children used a 4-point numerical rating scale to report the degree to which they were interested in 7 male-typed (e.g., building) and 11 female-typed (e.g., dancing) activities. Items were categorized as male- and female-typed using data from parents, who also completed the items in the interest scale at phase 1. If mothers expressed significantly more interest in an activity, the item was coded as female-typed. If fathers expressed significantly
more interest in an activity, the item was coded as male-typed. Items were averaged together to create male- and female-typed interests scores.

**Analyses**

Separate regression models were conducted for mothers and fathers. Prior to the analyses, the males’ gender typicality scores were recoded so that higher scores reflected more sex-typed occupations for both males and females. For example, if a young man reported working in an occupation in which 10% of employees were female, the man’s score was recoded to 90%, which indicates that 90% of the employees were male (and thus, higher scores reflected more sex-typed occupations for both males and females). Child gender and parent-child relationship variables were added as moderators in separate models due to sample size constraints and concerns about statistical power.

**Results**

**Descriptive Statistics**

Descriptive data for the parental variables at phase 1 or 2 (depending on when the data were collected) can be seen in Table 7. Compared to fathers, mothers reported less traditional attitudes, \( t(122) = -3.47, p < .001 \), working fewer hours outside the home, \( t(122) = -10.54, p < .001 \), more female-typed occupations, \( t(119) = 15.10, p < .001 \), and spending more time on female-typed household tasks, \( t(122) = 3.02, p < .01 \). Children reported more intimate relationships with mothers, \( t(122) = 3.02, p < .01 \), and spending more time with mothers, \( t(122) = 3.32, p < .01 \), relative to fathers. In addition, correlations were examined between the covariates (parental education and children’s male- and female-typed interests) and the gender typicality scores of initial occupational choices in young adulthood. For girls, more female-typed interests were associated with more female-typed occupations, \( r(63) = .29, p < .05 \). Daughters’
male-typed interests and parents’ education at phase 1 were not associated with the gender typicality of initial occupational choices in young adulthood. For boys, parental education was positively associated with more female-typed occupations in young adulthood, $r(56) = .28, p < .05$. However, sons’ male-typed and female-typed interests at phase 1 were not associated with the gender typicality of sons’ initial occupational choices.

Correlations between the parental variables during late childhood and the gender typicality of young adults’ occupational choices can be seen in Table 8. For females, father variables (but not mother variables) were associated with the gender typicality of initial occupational choices. Having a father with less traditional attitudes toward women’s roles and time spent with father were associated with daughters acquiring less sex-typed occupations. For males, more traditional parental attitudes toward women’s roles, fathers’ spending less time on female-typed household tasks, and time with both their fathers and mothers were associated with young men acquiring more sex-typed occupations.

**Mothers’ Models**

Results of the regression models examining mothers’ attitudes and behaviors as predictors of the gender typicality of young adults’ initial occupational choices can be seen in Table 9. There were no significant main effects of mothers’ attitudes or behaviors on the gender typicality of young adults’ occupations. Gender, however, was a significant moderator of attitudes, $\beta = .29, p < .05$, and time spent with children, $\beta = .27, p < .05$. For sons but not daughters, having a mother with more traditional attitudes towards women’s roles, $\beta = .32, p < .05$, and, at trend level, spending more time with their mothers, $\beta = .20, p < .10$, predicted sons attainment of more sex-typed occupations. In contrast, for daughters, having a mother with more traditional attitudes toward women’s roles, $\beta = -.12, p > .05$, and spending more time with
mothers during childhood, $\beta = -.14$, $p > .05$, were not associated with the gender traditionality of daughters’ initial occupational choices. At the trend level, child gender also moderated the association between the gender typicality of mothers’ and children’s occupations, $\beta = -.25$, $p < .10$. For daughters’ only, having a mother with a more female-typed occupation was associated, at trend level, with obtaining a more sex-typed occupation in young adulthood, daughters: $\beta = .23$, $p < .10$; sons: $\beta = -.09$, $p > .05$. Mother-child intimacy did not moderate any of the associations between mothers’ attitudes and behaviors with the gender typicality of young adults’ initial occupational choices.

**Fathers’ Models**

Results of the models examining fathers’ attitudes and behaviors as predictors of the gender typicality of young adults’ initial occupational choices can be seen in Table 10. The main effects model indicated that, at trend level, fathers time in female-typed household tasks during their offspring’s childhood was associated with children acquiring less sex-typed occupations in young adulthood, $\beta = -.17$, $p < .10$. Child gender was a significant moderator of the association between fathers’ time with children and the gender typicality of young adults’ occupational choices, $\beta = .50$, $p < .001$. For daughters, spending more time with fathers during childhood was associated with obtaining less sex-typed occupations, $\beta = -.36$, $p < .01$. In contrast, sons who reported spending more time with their fathers as children obtained more sex-typed occupations as young adults, $\beta = .29$, $p < .05$. In other words, both sons and daughters obtained more male-typed occupations in young adulthood when fathers spent more time with them in late childhood. At the trend level, children’s gender moderated the association between fathers’ work hours and the gender typicality of initial occupational choices in young adulthood, $\beta = .23$, $p < .10$. For
sons only, fathers’ work hours were positively associated with more sex-typed occupations in young adulthood, sons: $\beta = .31$, $p = .05$; daughters: $\beta = -.03$, $p > .10$.

Father-child intimacy did not moderate the associations between fathers’ attitudes and behaviors with the gender typicality of young adults’ initial occupational choices. At the trend level, father-child intimacy moderated the association between fathers’ time spent with children and gender typicality scores. However, follow-up analyses indicated that there was not a significant association between time spent with children and gender typicality scores for individuals with more or less intimate father-child relationships.

**Discussion**

Scholars, educators, business leaders, and government officials have called for a better understanding of why individuals limit their career choices based on gender – particularly why women are not choosing to work in the science, technology, engineering, and mathematics (STEM) fields. The present study provides evidence that family socialization experiences in childhood may play a role in gendered segregation of the labor market over a decade later. More specifically, we found that men whose mothers had reported more traditional attitudes and who spent more time with their mothers and fathers during the elementary school years had more sex-typed jobs in their mid-20s. Young women who spent more time with fathers in late childhood, in contrast, had less sex-typed occupations in their mid-20s.

As previously noted, there is little research available to compare to these results, given that a majority of research has failed to examine longitudinal associations between childhood socialization experiences and the gender typicality of actual occupations acquired later in life. The significant findings, however, are consistent with past research examining the associations between family socialization experiences and children’s occupational aspirations. This body of
literature has found evidence that more traditional parental attitudes and home behaviors are associated with children desiring more sex-typed occupations (Fiebig & Beauregard, 2011; Turner & Gervai, 1995). Previous literature, however, has mainly focused on same-sex parent-child dyads, with the assumption that intergenerational transmission is strongest for same-sex dyads (Aldous & Hill, 1965). More recent research has acknowledged that fathers may play a role in their daughters desiring and acquiring less sex-typed occupations (Whiston & Keller, 2004), but little research has focused on the mother-son dyad. Our results suggest that mothers may be particularly important in regards to the gender typicality of sons’ occupational attainment.

Unexpectedly, there was little evidence that parents’ work behaviors and parents’ female-typed household tasks were associated with the gender typicality of children’s occupational choices in young adulthood. In fact, associations were only found at the trend level: daughters with mothers who had more female-typed occupations obtained more sex-typed occupations, and sons with fathers who worked longer hours obtained more sex-typed occupations. The lack of findings is inconsistent with past literature on occupational aspirations, which indicates that parental work behaviors and the gendered division of household tasks are associated with occupational aspirations (Whiston & Keller, 2004). There are several explanations for null findings from this study. First, the small sample size may have limited statistical power, and thus the ability to find significant associations. Second, parents reported their work behaviors and the time they spent on female-typed household tasks. It is possible that children did not observe parents engaging in these behaviors – children may not realize that a majority of people in their mothers/fathers’ occupation are of the same sex, they may not realize how many hours their parents work, or they may not be around when their parents are engaging in female-typed
household tasks. Third, occupational aspirations and initial occupational choices differ tremendously. The type of occupation that a person attains is influenced by a myriad of external factors, such as family responsibilities, family resources, and the nature of the economy at the time the young adult is seeking a job (Duffy & Dik, 2009). In contrast, aspirations are not constrained by these external factors – but based largely on an individual’s disposition. Therefore, occupational aspirations may be more strongly associated with socialization experiences than actual attainment given that aspirations may be less influenced by other outside factors, but rather are dependent on an individual’s desires.

**Parent-Child Relationship Quality**

It was predicted that the associations between parental characteristics and children’s occupational attainment would be strongest for those with more intimate parent-child relationships because research indicates that imitation is more likely to occur when the model is nurturing (Mischel, 1966). Our results did not support this prediction. Parent-child relationship quality did not moderate any of the associations between parents’ attitudes and behaviors and the gender traditionality of their children’s initial occupational choices. It is possible that parent-child relationship quality may be a significant moderator for different types of dyads: mother-son, father-son, mother-daughter, and father-daughter. Unfortunately, because of the small sample size, we were unable to empirically examine this prediction which would have required three-way interactions. Future research should examine both parent-child gender composition and parent-child relationship as moderators of the intergenerational transmission of gendered behaviors.
Strengths and Limitations

The present study has several strengths. First, because it utilized longitudinal data, there was a 15-year gap between the reporting of parents’ attitudes/behaviors and young adults’ occupations. A majority of past research on the topic either used retrospective reports or started data collection when the children were in late adolescence. Second, multiple reporters were used, decreasing the possibility of mono-reporter bias. Third, the results remained significant even after controlling for early sex-typed interests. For example, if children have more male-typed interests, fathers may choose to spend more time with them. Thus, by including male- and female-typed interests as covariates, we controlled for the possibility that children’s interests were potential confounds that resulted in an overestimation of the role of parents in their children’s initial occupational choices during young adulthood. Fourth, we used a more objective measure of the gender typicality of occupations – data from the U.S. Census Bureau that represented the number of women and men currently working in an occupation.

Despite the strengths of the study, there were also several limitations. First, the sample size for the current study was small, in part due to attrition and the fact that several children were still in school during phase 11 data collection. Attrition – a common problem in longitudinal studies – reduces the power to detect significant effects and potentially leaves the sample less representative of the original families at the first phase of data collection. In addition, the individuals still in school may have been obtaining more advanced degrees, which are often required for more prestigious, male-typed occupations (e.g., lawyers). Second, the attitudes and behaviors of parents were treated as static, yet past research indicates that this is incorrect (Hynes & Clarkberg, 2005). Future studies should examine patterns of attitudes and behaviors across childhood and adolescence using techniques such as latent profile analysis in order to better
understand how changes in parental attitudes and behaviors may be associated with the children’s subsequent occupational attainment. Third, the sample consisted of mainly White individuals from working or middle-class, two-parent families. Future research is needed with more diverse samples to ensure that the results can be generalized outside of this population.

Conclusions

The results of the present study suggest that childhood socialization experiences within families may be contributors to the gendered segregation of the labor market. By using a unique longitudinal dataset containing information from multiple reporters (mother, father, and eldest child), we found that mothers’ attitudes and parents’ time spent with their children predicted the gender typicality of their children’s initial occupational choices 15 years later. The findings suggest that, as a society, if we want to desegregate the labor market in order to remain competitive in the global economy, we may need to intervene at early stages in the socialization process. Interventionists seeking to encourage boys and girls to consider less sex-typed occupations should include parents – both mothers and fathers – in the intervention, given that the results of the present study suggest that both parents’ attitudes and behaviors are connected to their children’s initial occupational choices.
### Table 6

*Child, Parent, and Family Demographics during Late Childhood and Young Adulthood: Mean (SD) or N (%)*

<table>
<thead>
<tr>
<th></th>
<th>Late Childhood (Phase 1)</th>
<th>Young Adulthood (Phase 11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children Completed Survey</td>
<td>203</td>
<td>157</td>
</tr>
<tr>
<td><strong>Child Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>10.87 (.54)</td>
<td>26.26 (.80)</td>
</tr>
<tr>
<td>Gender (% Female)</td>
<td>105 (51.72%)</td>
<td>85 (54.14%)</td>
</tr>
<tr>
<td>Initial Occupational Choice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N (%) Student Only</td>
<td>N/A</td>
<td>12 (7.69%)</td>
</tr>
<tr>
<td>N (%) Unemployed</td>
<td>N/A</td>
<td>8 (5.13%)</td>
</tr>
<tr>
<td>N (%) Student &amp; Working</td>
<td>N/A</td>
<td>24 (15.38%)</td>
</tr>
<tr>
<td>N (%) Only Working</td>
<td>N/A</td>
<td>112 (71.94%)</td>
</tr>
<tr>
<td><strong>Mother Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>36.65 (3.94)</td>
<td>52.62 (3.86)</td>
</tr>
<tr>
<td>Education</td>
<td>14.58 (2.15)</td>
<td>15.13 (2.19)</td>
</tr>
<tr>
<td>Employment (% Employed)</td>
<td>186 (91.63%)</td>
<td>133 (86.36%)</td>
</tr>
<tr>
<td><strong>Father Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>38.88 (5.00)</td>
<td>54.88 (5.23)</td>
</tr>
<tr>
<td>Education</td>
<td>14.67 (2.43)</td>
<td>15.29 (2.30)</td>
</tr>
<tr>
<td>Employment (% Employed)</td>
<td>203 (100%)</td>
<td>134 (94.37%)</td>
</tr>
<tr>
<td><strong>Family Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity (% White)</td>
<td>202 (99.51%)</td>
<td>156 (99.36%)</td>
</tr>
<tr>
<td>Family Income</td>
<td>60,233 (28,473)</td>
<td>115,993 (90,375)</td>
</tr>
</tbody>
</table>
Table 7

Descriptive Data for Parent Attitudes, Work Behaviors, Home Behaviors, and Parent-Child Relationship Qualities during Late Childhood

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attitudes toward Women</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother (Phase 1)</td>
<td>25.79 (6.72)</td>
<td>123</td>
<td>15.00</td>
<td>57.00</td>
</tr>
<tr>
<td>Father (Phase 1)</td>
<td>28.01 (5.71)</td>
<td>123</td>
<td>15.00</td>
<td>46.00</td>
</tr>
<tr>
<td><strong>Work Behaviors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mothers’ Work Hours (Phase 1)</td>
<td>27.29 (16.21)</td>
<td>123</td>
<td>0.00</td>
<td>70.00</td>
</tr>
<tr>
<td>Fathers’ Work Hours (Phase 1)</td>
<td>46.78 (10.60)</td>
<td>123</td>
<td>12.00</td>
<td>93.00</td>
</tr>
<tr>
<td>Mothers’ Occupation Gender Typicality (Phase 1)</td>
<td>75.49 (23.99)</td>
<td>120</td>
<td>5.90</td>
<td>97.70</td>
</tr>
<tr>
<td>Fathers’ Occupation Gender Typicality (Phase 1)</td>
<td>30.21 (22.03)</td>
<td>123</td>
<td>1.80</td>
<td>89.40</td>
</tr>
<tr>
<td><strong>Home Behaviors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mothers’ Time Spent on Female-Typed Household Labor (Phase 1)</td>
<td>459.13 (245.96)</td>
<td>123</td>
<td>100.00</td>
<td>1420.00</td>
</tr>
<tr>
<td>Fathers’ Time Spent on Female-Typed Household Labor (Phase 1)</td>
<td>118.17 (103.90)</td>
<td>123</td>
<td>0.00</td>
<td>520.00</td>
</tr>
<tr>
<td>Mother Time with Child (Phase 1)</td>
<td>677.07 (309.48)</td>
<td>123</td>
<td>0.00</td>
<td>1841.00</td>
</tr>
<tr>
<td>Father Time with Child (Phase 1)</td>
<td>598.24 (283.15)</td>
<td>123</td>
<td>0.00</td>
<td>1733.00</td>
</tr>
<tr>
<td><strong>Parent-Child Relationship</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother-Child Intimacy (Phase 2)</td>
<td>31.33 (4.18)</td>
<td>123</td>
<td>20.00</td>
<td>39.00</td>
</tr>
<tr>
<td>Father-Child Intimacy (Phase 2)</td>
<td>29.94 (4.50)</td>
<td>123</td>
<td>16.00</td>
<td>40.00</td>
</tr>
</tbody>
</table>

*Note. The sample means only include families with a firstborn sibling who reported his/her occupation in young adulthood (N = 123). Paired t-tests indicated that mothers’ and fathers’ significantly differed in attitudes, work behaviors, home behaviors, and parent-child relationship quality.*
<table>
<thead>
<tr>
<th></th>
<th>Total Sample (N = 123)</th>
<th>Girls (N = 65)</th>
<th>Boys (N = 58)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attitudes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mothers’ Attitudes toward Women</td>
<td>.13</td>
<td>-.10</td>
<td>.42**</td>
</tr>
<tr>
<td>Fathers’ Attitudes toward Women</td>
<td>.25**</td>
<td>.21*</td>
<td>.29*</td>
</tr>
<tr>
<td><strong>Work Behaviors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mothers’ Work Hours</td>
<td>-.06</td>
<td>.03</td>
<td>-.17</td>
</tr>
<tr>
<td>Fathers’ Work Hours</td>
<td>.08</td>
<td>-.02</td>
<td>-.20</td>
</tr>
<tr>
<td>Mothers’ Occupation Gender Typicality</td>
<td>.01</td>
<td>.19</td>
<td>-.11</td>
</tr>
<tr>
<td>Fathers’ Occupation Gender Typicality</td>
<td>-.07</td>
<td>-.08</td>
<td>-.05</td>
</tr>
<tr>
<td><strong>Home Behaviors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mothers’ Time Spent on Female-Typed Household Tasks</td>
<td>-.001</td>
<td>-.16</td>
<td>.14</td>
</tr>
<tr>
<td>Fathers’ Time Spent on Female-Typed Household Tasks</td>
<td>-.27**</td>
<td>-.19</td>
<td>-.34**</td>
</tr>
<tr>
<td>Mothers’ Time with Child</td>
<td>.04</td>
<td>-.14</td>
<td>.23*</td>
</tr>
<tr>
<td>Fathers’ Time with Child</td>
<td>-.02</td>
<td>-.36**</td>
<td>.23*</td>
</tr>
</tbody>
</table>

*Note: The gender typicality score was coded as the percent of women in an occupation. Boys’ scores were reverse-coded so that higher scores reflected more sex-typed occupations for both boys and girls.

*Note: The gender typicality score was coded as the percent of women in an occupation. Boys’ scores were reverse-coded so that higher scores reflected more sex-typed occupations for both boys and girls.

*Note: The gender typicality score was coded as the percent of women in an occupation. Boys’ scores were reverse-coded so that higher scores reflected more sex-typed occupations for both boys and girls.  

\[ ^* < .10, ^* * < .05, ^* * * < .01, ^* * * * < .001. \]
Results of Regression Analyses Examining Mothers’ Attitudes, Work Behaviors, and Home Behaviors during Late Childhood as Predictors of the Gender Typicality of Initial Occupational Choices in Young Adulthood

<table>
<thead>
<tr>
<th></th>
<th>Main Effects</th>
<th>Gender Moderation</th>
<th>Intimacy Moderation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covariates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender of Child</td>
<td>.09</td>
<td>.10</td>
<td>.03</td>
</tr>
<tr>
<td>Parent Education</td>
<td>-.24*</td>
<td>-.19*</td>
<td>-.24*</td>
</tr>
<tr>
<td>Male-Typed Interests</td>
<td>-.002</td>
<td>.02</td>
<td>.02</td>
</tr>
<tr>
<td>Female-Typed Interests</td>
<td>.04</td>
<td>.07</td>
<td>-.04</td>
</tr>
<tr>
<td>Main Effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes Toward Women</td>
<td>.07</td>
<td>-.12</td>
<td>.11</td>
</tr>
<tr>
<td>Work Hours</td>
<td>-.03</td>
<td>.02</td>
<td>-.04</td>
</tr>
<tr>
<td>Gender Typicality of Occupation</td>
<td>.01</td>
<td>.24*</td>
<td>.003</td>
</tr>
<tr>
<td>Time Spent on Female-Typed Household Tasks</td>
<td>-.09</td>
<td>-.19</td>
<td>-.17</td>
</tr>
<tr>
<td>Time with Child</td>
<td>.04</td>
<td>-.15</td>
<td>.02</td>
</tr>
<tr>
<td>Mother-Child Intimacy</td>
<td>-</td>
<td>-</td>
<td>.15</td>
</tr>
<tr>
<td>Interactions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes toward Women* Moderator</td>
<td>-</td>
<td>.29*</td>
<td>.05</td>
</tr>
<tr>
<td>Work Hours* Moderator</td>
<td>-</td>
<td>-.02</td>
<td>-.12</td>
</tr>
<tr>
<td>Gender Typicality of Occupation* Moderator</td>
<td>-</td>
<td>-.25*</td>
<td>.09</td>
</tr>
<tr>
<td>Time Spent on Female-Typed Household Tasks* Moderator</td>
<td>-</td>
<td>.13</td>
<td>.05</td>
</tr>
<tr>
<td>Time with Child* Moderator</td>
<td>-</td>
<td>.27*</td>
<td>.12</td>
</tr>
</tbody>
</table>

Note. Standardized betas are reported. The gender typicality score was coded as the percent of women in an occupation. Boys’ scores were reverse-coded so that higher scores reflected more sex-typed occupations for both boys and girls.

* p < .05, ** p < .01, *** p < .001.
Table 10

Results of Regression Analyses Examining Fathers’ Attitudes, Work Behaviors, and Home Behaviors during Late Childhood as Predictors of the Gender Typicality of Initial Occupational Choices in Young Adulthood

<table>
<thead>
<tr>
<th></th>
<th>Main Effects</th>
<th>Gender Moderation</th>
<th>Intimacy Moderation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Covariates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender of Child</td>
<td>.12</td>
<td>.10</td>
<td>.16</td>
</tr>
<tr>
<td>Parent Education</td>
<td>-.17&lt;.10</td>
<td>-.12</td>
<td>-.17</td>
</tr>
<tr>
<td>Male-Typed Interests</td>
<td>-.001</td>
<td>.09</td>
<td>-.01</td>
</tr>
<tr>
<td>Female-Typed Interests</td>
<td>.06</td>
<td>.07</td>
<td>.09</td>
</tr>
<tr>
<td><strong>Main Effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes Toward Women</td>
<td>.15</td>
<td>.10</td>
<td>.17&lt;.10</td>
</tr>
<tr>
<td>Work Hours</td>
<td>.06</td>
<td>-.03</td>
<td>.08</td>
</tr>
<tr>
<td>Gender Typicality of Occupation</td>
<td>.01</td>
<td>-.04</td>
<td>.05</td>
</tr>
<tr>
<td>Time Spent on Female-Typed Household Tasks</td>
<td>-.17&lt;.10</td>
<td>-.07</td>
<td>-.10</td>
</tr>
<tr>
<td>Time with Child</td>
<td>-.03</td>
<td>-.38**</td>
<td>-.05</td>
</tr>
<tr>
<td>Father-Child Intimacy</td>
<td>-</td>
<td>-</td>
<td>.02</td>
</tr>
<tr>
<td><strong>Interactions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes toward Women*Moderator</td>
<td>-</td>
<td>.16</td>
<td>.12</td>
</tr>
<tr>
<td>Work Hours*Moderator</td>
<td>-</td>
<td>.23&lt;.10</td>
<td>.16</td>
</tr>
<tr>
<td>Gender Typicality of Occupation* Moderator</td>
<td>-</td>
<td>.11</td>
<td>-.05</td>
</tr>
<tr>
<td>Time Spent on Female-Typed Household Tasks* Moderator</td>
<td>-</td>
<td>-.0003</td>
<td>.01</td>
</tr>
<tr>
<td>Time with Child* Moderator</td>
<td>-</td>
<td>.50***</td>
<td>.17&lt;.10</td>
</tr>
</tbody>
</table>

Note. Standardized betas are reported. The gender typicality score was coded as the percent of women in an occupation. Boys’ scores were reverse-coded so that higher scores reflected more sex-typed occupations for both boys and girls.

<.10, *p < .05, **p < .01, ***p < .001.
CHAPTER 4

Parent and Child Occupational Consistency

The parental workplace has a significant impact on the vocational development of children (Vondracek et al., 1986). In fact, research has found that parents’ occupations are often associated with their children’s occupational aspirations, expectations, and choices – sometimes referred to as the “intergenerational transmission” of occupations (D’Addio, 2007, p. 12). Little emphasis, however, has been placed on mechanisms underlying this phenomenon. Researchers using the term “intergenerational transmission” are implicitly making assumptions about mechanisms – assuming that parents are the agents that teach, provide resources, and shape their children’s vocational development. This fails to acknowledge that children are active agents constructing their own ideas, interests, skills, and values associated with future occupations. Therefore, the term “parent and child career consistency” will be used throughout the paper, as opposed to intergenerational transmission. The present paper has three goals: to discuss job dimensions used in past research examining parent and child career consistency; propose a model of mechanisms underlying parent and child career consistency; and recommend future research directions.

Section I: Measuring Parent and Child Career Consistency

There are numerous job dimensions that researchers can use to assess parent and child career consistency. The choice of job dimension is especially important because it has implications for research findings and conclusions. For example, if a parent owns and manages a hardware store and his/her child desires to work as a professor, a researcher could conclude that there is not parent and child career consistency if the focus is on type of work. However, if the researcher focuses on a job characteristic such as job autonomy, the researcher may conclude
that there is career consistency because both occupations have some degree of schedule control and freedom in the choice of methods used to accomplish job tasks. Therefore, job dimensions are an extremely important component of research on parent and child career consistency.

Since the 1980s, researchers have studied four main parental job dimensions: socioeconomic (SES) job indicators, maternal employment, type of occupation, and characteristics/demands of occupations. It is important to note the complexity behind the term “SES job indicators.” Although variables such as income and job prestige provide information about the type of occupation in which an individual is employed, these variables are often treated as contextual variables in research. In other words, researchers treat variables like income or job prestige as being indicative of the context in which parents raise their children, making the assumption that parents who earn more money raise their children in a different environment than parents who earn less money. Relative to parents’ job dimensions, a much wider range of children’s job dimensions has been examined in past research. Children’s desired, expected, and actual job dimensions explored in past research include work commitment and orientation, type of work, labor force participation, job prestige, and gender typicality (see Table 11 for a list of examples of job dimensions used in past research examining parent and child career consistency from 1980-2014).

While conducting the literature search, it was unclear what constituted parent and child occupational consistency. There are several past studies that clearly demonstrate parent-child occupational consistency by examining the same parent and child job dimension. For example, several researchers have examined the association between the gender typicality of parents’ occupations and the gender typicality of their children’s desired and actual occupations (Barak et al., 1991; Corcoran & Courant, 1987; Schuette et al., 2012; Zuckerman, 1981). However, when
researchers use different parent and child job dimensions, it is less clear if the researcher is still examining parent and child career consistency. For example, researchers have examined the association between maternal employment and children’s desired work orientation (Matsui, Tsuzuki, & Onglatco, 1999; Thorn & Gilbert, 1998; Tsuzuki & Matsui, 1997) and children’s career maturity (Rosenthal & Hansen, 1981). For purposes of this manuscript, we argue that parent and child occupational consistency occurs when a parent’s job dimension is associated with a related job dimension of his/her child. Therefore, the association between maternal employment and children’s expected work orientation (i.e., are children expecting to be employed and committed to work in the future) would be considered parent and child occupational consistency because it is assumed that many mothers may choose to work if they are committed to their careers. In contrast, research on the association between maternal employment and career maturity would not be considered parent and child occupational consistency because the two job dimensions are not conceptually related.

**Section II: Mechanisms Underlying Parent and Child Career Consistency**

Although past research provides evidence of parent and child career consistency, often the mechanisms underlying this consistency are neglected. Kenny, Kashy, and Cook (2006) state that nonindependence occurs when two scores from two members of a dyad “are more similar to (or different from) one another than are two scores from two people who are not members of the same dyad” (p. 4). Kenny and colleagues propose three broad processes that may lead to nonindependent scores between parent and child occupational choices. A partner effect occurs when the characteristics or behaviors of the parent (child) influence the child’s (parent’s) occupational choice. Mutual influence occurs when parent and child outcome variables influence
one another. Common fate occurs when both the parent and the child are exposed to the same factors that lead to nonindependence in occupational choices.

The present paper utilized Kenny and colleagues’ (2006) broad processes to identify six specific mechanisms that may underlie parent and child career consistency. Three specific mechanisms commonly proposed by researchers are elaborations of the partner effects process proposed by Kenny and colleagues. In addition, three mechanisms that have rarely or never been proposed in past research will also be discussed. This includes two mechanisms that take into account the common fate process and one mechanism that focuses on the role of parent or child cognitions. Finally, a new model is proposed that simultaneously considers partner effects, common fate, and mutual influence by incorporating all six mechanisms and by considering overall weaknesses present in the individual mechanisms.

**Most Referenced Mechanisms Proposed in Past Research**

A majority of past research and theory attributes parent and child career consistency to partner effects – i.e., parent behaviors and attributes are conceptualized as influencing children’s occupational choices. The following section examines (and critiques) the three most referenced mechanisms: resources, socialization, and modeling.

**Resources.** According to the resources argument, which is based on Blau and Duncan's (1967) model of inheritance, socioeconomic status is transmitted from parents to children through the differentiated availability of resources (i.e., cultural capital), including finances, knowledge, social networks, and skills. Figure 2a illustrates an example of the resources argument. If a parent works in a male-typed occupation, this parent will be able to provide his or her child with more social resources, such as exposure to male-typed occupations, internships in
male-typed occupations, and connections to other employees in male-typed occupations. In turn, the child may be more likely to aspire to work in a similar male-typed occupation.

The resources argument is commonly used when discussing parent and child career consistency in SES-type variables, such as income. Financial, social, and emotional resources from parents of higher SES backgrounds may allow children to obtain better work experiences as high school students, better internships in college, and more job interviews for prestigious jobs as an adult. Therefore, according to this model, children from a higher SES background may be at a distinct advantage to obtain higher SES jobs, while children from a lower SES background may be disadvantaged, thus resulting in parent and child career consistency in terms of income and job status.

There are several limitations to the resources argument. First, even though researchers may credit resources as a mediating variable between parents and children’s occupational choices, rarely do researchers actually empirically test resources as a mediator – this mechanism is just assumed. Second, it fails to consider individual parent and child attributes, such as personality, attitudes, and values. If, for example, the parent and child have very different personalities, the child may not desire to work in an occupation similar to the parent’s occupation. Third, the resources model fails to take into account the perceptions of the parent and child about the parent’s work. If either the parent or child has negative perceptions about the job, then the parent may encourage – or the child may pursue – a different type of job or a job with different characteristics and demands. Fourth, the resources model fails to consider family processes. Based on parent attributes such as characteristics and attitudes, the parent may engage in very different childrearing practices, which have the potential to influence the child’s
attitudes, values, and, in turn, occupational choice. Thus, although resources may be one mechanism underlying parent and child career consistency, it is likely not the sole mechanism.

**Socialization.** In contrast to the resources model, socialization theory posits that parent and child career consistency is a result of family processes (Kalil, Levine, & Ziol-Guest, 2005). For example, the occupational linkage hypothesis states that characteristics of parents’ work and work demands influence children’s psychological attributes and values through parents’ personality, values, and parenting practices (Ryu & Mortimer, 1996). Because many vocational theories argue that occupational choice is often a function of an individual’s personality and values (Duffy & Dik, 2009), it is not surprising that researchers have extended this theory to include children’s occupational choices as the final outcome (see Figure 1; e.g., Ryu & Mortimer, 1996). Although literature on the occupational linkage hypothesis does not provide clear definitions of parenting practices, it can be assumed that this would include a number of behaviors, such as reward and discipline strategies and the structuring of the child’s environment.

Figure 2b illustrates socialization as a possible mechanism contributing to parent and child career consistency in regard to the gender typicality of their occupations. For example, if a parent works in a stereotypically male-typed environment (e.g., lawyer in a large urban law firm), this may cause the parent to become more instrumental, a stereotypically male-typed set of qualities that includes self-reliant, forceful, and independent. In turn, if this parent comes to believe that instrumental characteristics are necessary to be successful, he/she may then encourage his/her child to become more instrumental through certain childrearing practices (e.g., reinforce the child when he/she engages in instrumental behaviors) and choose environments for the child that may lead to the development of instrumental traits (e.g., sign the child up for
competitive sports). Due to these parenting behaviors, the child may develop instrumental traits over time, ultimately leading the child to desire to work in a male-typed job.

Socialization is the most commonly cited mechanism mentioned in the literature review sections of empirical research papers examining parent and child career consistency (e.g., Porfeli, Wang, & Hartung, 2008), and it is commonly referred to in books and chapters on the intergenerational transmission of occupations (e.g., Ryu & Mortimer, 1996). However, researchers rarely examine all components of this model empirically (Kalil et al., 2005). As can be seen in Figure 3, researchers in different fields are likely to be interested in different portions of the model. For example, whereas family researchers may be interested in how parenting practices are associated with children’s psychological attributes, vocational psychologists are more interested in whether children’s attributes are associated with career choices. In addition, it is not uncommon for researchers to omit components of the model, making assumptions about the mechanisms that fall in between their predictor and dependent variables. For example, many researchers during the 1990s examined the association between characteristics of parents’ work and children’s psychological attributes, such as reading scores and children’s sense of mastery and control. Although this research is informative, it is problematic in that it makes assumptions about the mechanisms in between these variables: parents’ individual attributes and parenting practices (Perry-Jenkins, Repetti, & Crouter, 2000).

It would be difficult to implement a study investigating all of the components of the socialization model because it would require knowledge about many different areas (e.g., work, personality, parent-child interactions), a time-intensive study requiring participants to complete numerous survey items, both the parent and child participation in the study, and multiple time points in order to assess the temporal ordering of influence processes. Although it is easy to see
why most research only investigates specific components of the model, unfortunately it leaves researchers to piece together separate studies focusing on different aspects of the model to make assumptions about the process of parent and child career consistency.

In addition to gaps in the empirical literature, there are also conceptual weaknesses to the socialization model. The main weakness is that it views the child as a passive recipient – it is assumed that the child does not influence the parent or the socialization process. Any parent with a particularly headstrong child would likely argue that children influence parents’ behaviors, including childrearing strategies (Crourter & Booth, 2003). This weakness will be discussed in further detail in the section describing the proposed model, given that this limitation is not unique to the socialization mechanism.

**Modeling.** In the early part of the 20th century, many researchers believed that children’s development was a product of the reinforcement and discipline strategies of parents. However, in the 1960s, research by Bandura demonstrated that children often learned from parents without reinforcement or punishment, a process referred to as modeling or imitative learning (Maccoby, 1992). For example, Figure 2c illustrates one path in which modeling may contribute to parent and child career consistency. If a parent works in a male-typed occupation, he/she may become more instrumental over time (which may be expressed in the parent’s behaviors). After observing the parent, the child may start to model the parent’s behaviors and internalize the parent’s attributes, leading the child to become more instrumental. Finally, as a result of these characteristics, the child may also desire to work in a male-typed occupation.

In the literature on parent and child career consistency, socialization and modeling mechanisms are often discussed together, even though the two mechanisms differ. This is likely due in part to the fact that, from an empirical standpoint, it may be hard to assess whether a child
developed similar characteristics as a parent due to modeling or parenting practices. Likely, it is not exclusively socialization or modeling that accounts for parent and child career consistency, but rather a combination of the two mechanisms.

**Less Referenced and Newly Proposed Mechanisms**

Past research and theory has failed to adequately address both common fate and mutual influence as contributors to parent and child career consistency. While mutual influence is addressed in a later section describing the proposed model, common fate is addressed in the following section as I propose two mechanisms contributing to parent and child career consistency: genetics and culture. In addition, I propose a cognitive mechanism due to the fact that past research and theory has failed to adequately address the role of parent and child perceptions in behaviors and occupational choices.

**Genetics.** In 2007, Aldrich and Kim proposed that genetics may play a role in the occupational inheritance of self-employment. Five years later, using a unique dataset that contained information about adopted children’s biological and adoptive parents, Lindquist, Sol, and van Praag (2012) found that both biological and adoptive parents’ self-employment status was associated with children choosing to be self-employed. These results support the idea that genetics may play a role in parent and child career consistency, yet research on job dimensions other than self-employment have failed to acknowledge its role.

Genetics likely play a role in parent and child career consistency due to the common fate process described by Kenny, Kashy, and Cook (2006). Figure 4a illustrates one example of how genetics may play a role in parent and child career consistency. In the model, parents and children share similar attributes – instrumental and expressive traits – due to shared genes. In fact, research has found that genes influence personal attributes such as personality (e.g., Heath,
Neale, Kessler, Eaves, & Kendler, 1992). In turn, many vocational theories assert that individuals choose their occupations based on variables such as personality (Duffy & Dik, 2009). Thus, genetics may indirectly influence parent and child career consistency through shared individual attributes.

Although genetics are likely to play a role, the genetic explanation for career consistency is incomplete for two main reasons. First, a parent and a child only share half of their genes, meaning that there still may be a lot of dissimilarity in genetic makeup. Even if parents and children shared the exact same genetic makeup, however, the parent and child would still not have the exact same attributes. Research using identical twins as participants has indicated that there is still significant variation in the personalities of twins (Johnson, Turkheimer, Gottesman, & Bouchard, 2009), likely due in part to the influence of the environment on genetic expression (Gottlieb, 1996).

Second, genetics are proposed to indirectly influence occupational choices by influencing an individual’s attributes and behaviors. Even though many career development theories assert that an individual chooses an occupation based on personal attributes (e.g., Duffy & Dik, 2009), more recent career development literature has emphasized the need to incorporate the role of external influences on vocational choice (Fouad, 2007). For example, a 19-year old single mother with two children will likely not be able to choose her occupation based solely on the fit between her traits and interests with the occupation. Rather, she will likely need to work in whatever job is available at the moment that will accommodate her demands as a single mother in order to support her family. In other words, her life circumstances may limit the role of genetics on parent and child career consistency. External factors do not solely affect individuals from less-affluent backgrounds, but rather have the potential to influence the occupational
choices of individuals from all backgrounds. For example, during the economic recession that occurred between 2007 and 2009, the U.S. experienced a 44% decrease in job openings (U.S. Bureau of Labor Statistics, 2012). This recession likely deterred many individuals from obtaining their desired occupation.

**Culture.** Santrock (2013) defines culture as “the behavior patterns, beliefs, and all other products of a group that are passed on from generation to generation” (p. 10). Culture can be conceptualized at various levels of generality, ranging from large (e.g., Western v. Eastern cultures) to small (e.g., inner-city Detroit v. suburban Detroit). Culture has the potential to influence an individual’s attributes, behaviors, and even the types of jobs that are available and needed in a given context. Therefore, culture may play a role in parent and child career consistency in numerous ways due to the common fate process proposed by Kenny and colleagues (2006). For example, as can be seen in Figure 4b, culture may lead parents and children to adopt gender traditional attributes. In the U.S., women may develop more expressive attributes, whereas men may develop more instrumental attributes. In turn, both parents and children may aspire to and acquire more sex-typed occupations. Although it is evident that culture is not the sole contributor to parent and child career consistency due to the fact that there is great variation in career choices within cultures, it likely still plays a role.

**Cognitions.** I was unable to find research or theory explicitly stating that children and parents’ cognitions about parents’ work may be an important mechanism underlying parent-child career consistency. There is, however, theory discussing the role of cognitions in an individual’s career development. For example, some vocational development theories assert that perceptions about an occupation and perceptions about an individual’s ability to perform successfully in the occupation play a role in an individual’s decision about whether or not to pursue that occupation.
(e.g., Duffy & Dik, 2009). In addition, research based on Wigfield and Eccles' (2000) expectancy-value theory found that a socializer’s beliefs and behaviors influenced children’s perceptions of the socializer’s beliefs, children’s own goals and self-schemas, expectations about success, and achievement-related choices. Past research has also examined the role of children’s perceptions of their parents’ work on future orientations. For example, adolescents’ perceptions of their parents’ jobs may be associated with children’s behaviors and attributes such as their work ethic and general positive and negative attitude about the future (Neblett & Cortina, 2006).

Given the influence of the cognitive revolution of the 1950s and 1960s on psychological and developmental research (Maccoby, 1992), one would think that more attention would be given to the role of cognitions in parent and child career consistency. A cognitive mechanism addressing parent and child career consistency could focus on how either parents or children’s perceptions of parents’ work may play a role in parents and children’s behaviors and occupational choices. Because most children do not view parents at their workplace, most of their perceptions likely stem from pre- and post-work behaviors (e.g., mood, fatigue), discussions that parents may have with their children about their work, getting to know their parents’ work-related friends, and possibly visiting parents’ work (Piotrkowski & Stark, 1987). For example, as Figure 4c illustrates, if a parent consistently comes home from work stressed and fatigued and the parent rarely discusses positive aspects of his/her work with his/her child, the child may form negative perceptions about the parent’s work and choose a completely different type of career. However, parents will likely show a range of pre- and post-work behaviors and discuss both positive and negative aspects about their work, leaving children to think more critically to develop their own perceptions about their parents’ work.
Including children’s perceptions may be a particularly promising avenue for research on parent and child career consistency. The biggest strength of this mechanism is that it accounts for the fact that children are not passive recipients that are molded by adults. Rather, they are active participants in their career choices, which most of the other mechanisms fail to acknowledge. This may also be particularly helpful in explaining parent and child career dissimilarity, an area receiving very little empirical attention. In addition, although there is a vast amount of research on the effects of negative and positive work-family spillover on both parent and child outcomes (e.g., parent and child negative affect), I am unaware of research that examines how parents’ negative and positive spillover may be related to children’s occupational choices. This line of research has the potential to help bridge the gap between researchers who study work and family in midlife and researchers who examine the family or origin influences on children’s career development.

Proposed Model of Mechanisms Underlying Parent and Child Career Consistency

Previously, I discussed weaknesses specific to each mechanism. There are also two overall weaknesses present in all (or a majority of) the mechanisms. First, each individual mechanism cannot fully explain parent and child career consistency. Second, a majority of the mechanisms do not view the child as an active agent in his/her career choice, but rather as a passive recipient of knowledge, interests, characteristics, or opportunities. In the following sections, I propose a model that incorporates all of the six mechanisms (resources, socialization, modeling, genetics, culture, and cognitions) and explain how this model accounts for the weaknesses in the previous models. By doing so, I account for the three broad processes proposed by Kenny and colleagues (2006) as contributors to parent and child career consistency: partner effects, common fate, and mutual influence.
**Proposed Model.** Figure 5 shows the proposed model that combines all of the six specific mechanisms and takes into account their weaknesses. In order to capture all six mechanisms, the model includes three categories of parent and child variables: work, individual attributes, and behaviors. The occupational linkage hypothesis was used as the basis for this model (Ryu & Mortimer, 1996), but several parts of the model were added in order to incorporate all six mechanisms and account for the overall weaknesses in the mechanisms discussed in the “Strengths of the Proposed Model” section: bidirectional arrows connecting every box and boxes for child behaviors, genes, and culture. Although the list of variables is not exhaustive, several attributes (e.g., physical and mental health, parent and child perceptions about work) and parent behaviors (e.g., pre- and post-work behaviors) were added to the model in order to illuminate the broad range of possible paths leading to parent and child career consistency.

At the bottom of the figure, example paths are given to illustrate each mechanism. For example, the resources mechanism can be explained in the following sequence: parents’ work may lead to parents’ behavior (financial, emotional, and networking support), which in turn may lead to children’s behaviors (e.g., choice to pursue higher education, major in college). Finally, school choices will likely influence children’s work outcomes.

**Strengths of the Proposed Model.** In the literature, the mechanisms underlying parent and child career consistency were described as originating from the parents’ work and transferring to the children, without consideration of how children influence parents. One of the biggest strengths of the model is that it no longer views the child as a passive recipient of knowledge, interests, and values. The model asserts that children are active agents in their own development in several ways. First, the model includes bidirectional arrows connecting parent
and child work, attributes, and behaviors, which indicates that children may influence parents’ characteristics (e.g., mental health), parenting behaviors (e.g., childrearing practices), and work (e.g., the number of hours worked per week). In other words, the model incorporates the idea of mutual influence described by Kenny and colleagues (2006). Second, the model includes the role of child behaviors in career choice. Developmental literature asserts that individuals play an active role in shaping their own context (Bornstein, Mortimer, Lutfey, & Bradley, 2011; Magnusson & Cairns, 1996; Vondracek et al., 1986). For example, if a parent employed as a scientist decides that his/her child would benefit from going to science camp during the summer, this will likely only influence the child’s characteristics, values, cognitions, and career choices if the child responds in a positive manner to science camp. If the child pouts, refuses to participate in activities, or resists in other ways, the environment the parent chose for the child will likely not have the positive attributes expected by the parent and will likely not have the same influence on career choice as the child who actively participates in science camp.

Another strength of this model is that it includes specific mechanisms that illustrate all three broad processes that Kenny and colleagues (2006) described as contributors to nonindependence in dyad members’ variables: partner effects, common fate, and mutual influence. In addition, by including all six mechanisms, it illustrates how biology, psychology, social, and cultural components may influence both parents and children’s career development. The bio-psycho-social-cultural approach is necessary in order to fully understand development (e.g., Magnusson & Cairns, 1996).

**Moderators in the Proposed Model.** The proposed model (see Figure 5) focuses on parent and child attributes and behaviors as mediators of parent and child career consistency (i.e., the boxes in the figure). There are also several variables that may moderate the associations
between these variables, and these moderators may operate at the individual, dyadic, family, or cultural levels. In other words, the proposed model allows for the examination of the interaction of individual level variables (parent and child attributes, behavior, and work) with individual, dyadic, family, and cultural level variables. This component of the model fits with other models of development that stress the importance of considering interactions across multiple levels to understand development (e.g., Bronfenbrenner, 1979; Fouad & Kantamneni, 2008; Vondracek et al., 1986).

Individual level attributes that were proposed as mediators of parent and child career consistency may also serve as moderators of other paths in the model. The cognitive portions of the model, such as parents and children’s perceptions about parents’ work, may be the constructs most likely to also serve as moderators. For example, a child may form negative views about his/her parent’s work as a biological researcher if the child consistently views the parent in a negative mood after work (i.e., the cognitive model previously discussed). In addition, this negative perception may also moderate the association between parents’ structuring of the environment and children’s individual attributes (i.e., the path between boxes C and E). If the biology researcher structures the environment for the child to learn and become interested in biology (e.g., discusses biology topics at the dinner table, takes the child to biology-related museums and activities, watches TV shows on biology, sends the child to biology camps), this may not lead to the child becoming more interested in biology if the child has negative perceptions of the parent’s work. The child’s perceptions may also moderate the association between parenting behaviors and children’s behaviors (i.e., the path between boxes C and D). While a child with positive views of the parent’s work may respond positively to the parent’s structuring of the environment and also choose similar environments for him/herself, a child with
negative views of the parent’s work may engage in behaviors that actively resist the parent’s behaviors (e.g., refusing to talk about biology topics at dinner).

Second, relational characteristics between the parent and child (i.e., at the dyad level) may also serve as moderators of parent and child career consistency. For example, past research indicates that son’s work values are more likely to align with the rewards of father’s work in the context of an intimate father-son relationship (Mortimer, 1975). Therefore, the quality of the parent-child relationship may moderate parent and child career consistency. If there is a weak parent and child relationship, then the strength of the relation between parenting behaviors and child attributes (i.e., the path between boxes C and E) may be weakened because the child does not identify with the parent.

Family level variables may also serve as moderators of parent and child career consistency. One specific family level factor that may have strong potential to serve as a moderator is family structure (e.g., single v. two-parent families). One limitation of the model is the fact that it only accounts for one parent. What happens if there are two parents in a household who have very different types of jobs? This is actually a very common situation, given the gendered distribution of the labor market (Anker, 1998). Very little research has devoted attention to the role of family structure in parent and child career consistency, despite the fact that “non-traditional” families have become much more common over the past 30 years (Marks, 2006). It is possible that for children living in single-parent families, parent work, attributes, and behavior may be more strongly associated with children’s work, attributes, and behavior because there is only one parent influencing the child. In contrast, children from two-parent families may be exposed to parents with different work, attributes, and behaviors, thus leading to the possibility that children may choose careers more like the “other” parent (i.e., the parent we are
not studying) or may look for jobs that include some attributes from their mother’s job and some from their father’s job.

Culture may influence parent and child career consistently by directly influencing parents and children’s work, attributes, and behaviors (i.e., the variables proposed as mediators within the boxes in Figure 5), or it may moderate the association between these variables. More specifically, SES may directly influence the mediators proposed in the model and the relation between these variables. Past research indicates that SES influences attributes and behaviors (Lareau, 2011), and that children often obtain occupations in the same SES-level as their parents (Causa & Johansson, 2010). SES levels may influence job dimensions in a number of ways. Financial constraints may require individuals to work longer hours than planned, work in less than ideal environments, and limit the possibility for furthering education or training experiences that could allow individuals to have more choice in their occupations. In addition, SES may moderate the relationship between attributes, behavior, and work. For example, both a parent and child from a higher SES context may have the personality, skills, interests, values, and cognitions that would lead both the parent and child to desire to work as a lawyer. Because both the parent and child have the cultural capital to reach this goal, there may be consistency between the parent and child’s occupations. However, parents and children from a lower SES context may not have the cultural capital available to support the goal of becoming a lawyer, and thus may be more likely to be forced to consider alternative occupations – leading to less parent and child occupational consistency.

**Limitations of the Proposed Model.** Every model has its limitations, including this proposed model of mechanisms underlying parent and child career consistency. First, this model omits other microsystems (e.g., peers, school) that may influence career development for both
parents and children. Likely, other microsystems that have the potential to influence both the parent and child (e.g., other family members) in similar ways may contribute to parent and child career consistency due to common fate (Kenny et al., 2006). Other microsystems that may influence only one member of the dyad (e.g., peers) may lead to less consistency between parent and child careers.

Second, the model fails to consider how other immediate family members (e.g., the second parent, siblings) may play a role in parent and child career consistency. This aspect of the model is in direct contrast to the assumptions of family systems theory, which states that researchers should move beyond only studying dyads within the families (Cox & Paley, 1997). This limitation of the model is actually consistent with limitations of research on parent and child career consistency in general. To date, little research has investigated how both parents’ occupations may simultaneously influence children’s occupational choice or the role of siblings in occupational choices.

Third, the model emphasizes the idea that people choose occupations based on personal attributes and downplays the role of external factors in limiting occupational choices. For example, family needs and life circumstances, such as caring for a young child, physical injuries, or inheriting a large sum of money are likely to influence individuals’ occupational choices. This limitation of the present model is also common in many theories on career development in general (Duffy & Dik, 2009; Fouad, 2007), although in the past 20 years more consideration has been given to the role of external factors in shaping career choices. External factors affecting only one member of the dyad will likely lead to less parent and child career consistency.
Section III: Future Recommendations

The body of literature examining parent-child occupational consistency has several limitations and gaps that need to be addressed in future research. The main limitation is that past research views the child as a passive recipient. Future research needs to acknowledge that children are actively learning about different career paths. For example, research that examines the role of children’s perceptions about their parents’ work and responses to parents’ work socialization processes would acknowledge that children are active agents in career development.

In addition, past research has failed to consider a wide range of moderators of the association between parent and child job dimensions – including moderators at the individual, dyadic, family, and cultural level. Research questions addressing the role of, for example, family structure and SES may allow us to better understand the context in which parent and child occupational consistency occurs.

In addition to theoretical limitations, there are also methodological limitations of past research. As can be seen in Table 11, a majority of past research on parent and child occupational consistency treats work as a static dimension, likely because many researchers do not collect longitudinal data. This is problematic because past research indicates that work – including type of work, time spent at work, demands at work – is constantly changing throughout the adult lifespan (Y. Baruch, 2004) and that children often change occupational aspirations (Gottfredson, 1981). For example, research investigating the associations between maternal employment and children’s job dimensions often asks children if their mother is currently working – which fails to take into account the dynamic nature of work. Past research shows that maternal employment status often changes as children grow older – with more women choosing to stay at home when children are young (Hynes & Clarkberg, 2005). Therefore, the association
found between maternal employment and children’s occupations using data collected at one time point is not an accurate representation of the “true” association because it is dependent on the timing of the assessment (does the mother happen to be working at the moment) and fails to take into account the amount of time that the child has been exposed to a mother working outside the home.

Past research also has mainly focused on finding an association between parents and children’s occupational choices using one job dimension. In addition, there is a lack of research on the inconsistency between parents and children’s career choices. In fact, the only research that I was able to find investigating inconsistency dealt with social mobility (i.e., are adolescents or young adults moving out of their parents’ social class; Johnson & Mortimer, 2002; Mayer & Lopoo, 2005). It is not hard to imagine children choosing occupations completely different from their parents’ occupations because, as mentioned before, they may be aware of the negative work-family spillover and conflict experienced by the parent. It is important to understand contexts in which children choose similar and dissimilar occupations from their parents because it will allow us to better understand the mechanisms underlying parent and child occupational consistency.

Researchers may focus on parent and child occupational consistency using one job dimension collected at one time point due in part to the limitations inherent in the statistical analyses conducted. A majority of the research investigating parent and child career consistency utilized a variable-centered approach, which focuses on the relations among variables. In contrast, a person-centered approach focuses on relations among individuals (Muthén & Muthén, 2000). The goal of a person-centered approach is to group individuals into categories based on similarities. This approach is useful when dealing with data that contain multiple variables (i.e.,
multiple assessments of the same variable across time or multiple job dimensions at one time point; Henry, Tolan, & Gorman-Smith, 2005) and heterogeneous groups of individuals (e.g., children who choose careers similar to their parents' careers and children who do not; Muthén & Muthén, 2000). Because of the benefits of person-centered approaches, these methods may be particularly useful for researchers interested in studying families (Henry et al., 2005). Thus, future research using a person-centered approach would be able to account for the limitations of past research.

Research on parent and child work value transmission (e.g., Mannheim & Seger, 1993) may be informative for determining other important job dimensions that should be considered in research on parent and child occupational consistency. Work values are “objectives or conditions that one finds important” in work (Leuty, 2010, p. 2). These values are often categorized into broad groups, such as extrinsic rewards (e.g., valuing social status, salary, promotional opportunities), intrinsic rewards (e.g., valuing the ability to help others, creativity, intellectual stimulation) and work-life balance (e.g., valuing leisure time, accommodation to family life). Past research has already considered some of the variables used to assess extrinsic work values as job dimensions. In other words, the research assessed whether parents and children were choosing occupations with similar extrinsic rewards, not whether they valued similar extrinsic rewards in an occupation. For example, Hoffman et al. (1992) examined children’s expected salary, and Schuette et al. (2012) coded children’s desired occupations based on job status. Researchers have yet to examine some of the items used to assess intrinsic and work-life values as job dimensions of occupational aspirations, expectations, and current occupations. For example, in order to assess parent and child career consistency in terms of the intrinsic rewards offered by occupations, researchers could code parents and children’s occupations based on
intrinsic rewards of the job, such as the opportunity to help others, creativity, and intellectual stimulation.

Children’s desire to have a job like their parents in terms of work-life balance may be a particularly promising avenue to pursue. Research indicates that younger generations place more importance on work-life balance than older generations (Mainiero & Sullivan, 2005). In addition, many theorists are frustrated with the segmented fields of work and family (MacDermid, Roy, & Zvonkovic, 2005) and argue that new models of career development need to incorporate both work and non-work issues (Powell & Mainiero, 1992). Therefore, it may be useful for researchers to ask adolescents and young adults how much they are interested in having a job like their mothers and fathers in terms of (for example) accommodations to family life, vacation time, and work schedule.

Section IV: Conclusion

Past research has examined parent and child occupational consistency using a wide range of job dimensions. Although many researchers identify different mechanisms that account for parent and child career consistency, most of these mechanisms have focused on how parents influence children and downplay the role of children in their own career development. The present paper provides a model that incorporates how partner effects, common fate, and mutual influence may play a role in parent and child occupational consistency. Past research on parent and child occupational consistency has treated occupational attainment and aspirations as static, focused on one job dimension at a time, neglected parent and child career inconsistency, and neglected job dimensions relating to intrinsic and work-life dimensions. Future research can address these limitations using person-centered methods.
### Examples of Parent and Child Job Dimensions Examined in Research from 1980-2014

<table>
<thead>
<tr>
<th>Parent Variable</th>
<th>Child Variable</th>
<th>Child Variable Type</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SES Job Indicators</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income/Parent's Education</td>
<td>Income</td>
<td>Actual</td>
<td>Causa &amp; Johansson (2010)</td>
</tr>
<tr>
<td>Income</td>
<td>Income</td>
<td>Actual</td>
<td>D’Addio (2007)</td>
</tr>
<tr>
<td><strong>Maternal Employment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age at First Full Job</td>
<td>Expected</td>
<td>Riggs &amp; Desrochers (2006)</td>
</tr>
<tr>
<td></td>
<td>Age of Retirement</td>
<td>Expected</td>
<td>Riggs &amp; Desrochers (2006)</td>
</tr>
<tr>
<td></td>
<td>Combining Work and Family</td>
<td>Expected</td>
<td>Stephan &amp; Corder (1985)</td>
</tr>
<tr>
<td></td>
<td>Gender Typicality</td>
<td>Desired &amp; Expected</td>
<td>Davey &amp; Stoppard (1993)</td>
</tr>
<tr>
<td></td>
<td>Gender Typicality</td>
<td>Desired</td>
<td>O’Connell, Betz, &amp; Kurth (1989)</td>
</tr>
<tr>
<td></td>
<td>Gender Typicality</td>
<td>Desired</td>
<td>Sandberg et al. (1987)</td>
</tr>
<tr>
<td></td>
<td>Gender Typicality</td>
<td>Desired</td>
<td>Zuckerman (1981)</td>
</tr>
<tr>
<td><strong>Employed Full-Time, Part-Time v. Homemaker</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Work Orientation</td>
<td>Desired</td>
<td>Matsui, Tsuzuki, &amp; Onglatco (1999)</td>
</tr>
<tr>
<td></td>
<td>Career Commitment</td>
<td>Desired</td>
<td>Tsuzuki and Matsui (1997)</td>
</tr>
<tr>
<td></td>
<td>Labor Force Participation</td>
<td>Expected</td>
<td>Wiese &amp; Freund (2011)</td>
</tr>
<tr>
<td><strong>Work Patterns</strong></td>
<td>Female Lifestyle Choices</td>
<td>Expected</td>
<td>Bosco &amp; Bianco (2005)</td>
</tr>
<tr>
<td><strong>Number of Years Employed</strong></td>
<td>Work after Childbirth</td>
<td>Desired</td>
<td>Bridges &amp; Etaugh (1996)</td>
</tr>
<tr>
<td><strong>Type of Occupation</strong></td>
<td>Gender Typicality</td>
<td>Desired</td>
<td>Barak, Feldman, &amp; Noy (1991)</td>
</tr>
<tr>
<td></td>
<td>Gender Typicality</td>
<td>Actual</td>
<td>Corcoran &amp; Courant (1987)</td>
</tr>
<tr>
<td></td>
<td>Gender Typicality</td>
<td>Desired</td>
<td>Schuette et al. (2012)</td>
</tr>
<tr>
<td></td>
<td>Gender Typicality</td>
<td>Desired</td>
<td>Zuckerman (1981)</td>
</tr>
<tr>
<td><strong>Professional, Un(Skilled)</strong></td>
<td>Holland’s Types</td>
<td>Desired</td>
<td>Mullis et al. (1998)</td>
</tr>
<tr>
<td><strong>Holland’s Types</strong></td>
<td>Holland’s Types</td>
<td>Desired</td>
<td>Schuette et al. (2012)</td>
</tr>
<tr>
<td></td>
<td>Holland’s Types</td>
<td>Desired</td>
<td>Trice (1991)</td>
</tr>
<tr>
<td></td>
<td>Holland’s Types</td>
<td>Desired</td>
<td>Trice et al. (1995)</td>
</tr>
<tr>
<td><strong>Self-Employed</strong></td>
<td>Self-Employed</td>
<td>Actual</td>
<td>Aldrich &amp; Kim (2007)</td>
</tr>
<tr>
<td><strong>Occupational Characteristics/Demands</strong></td>
<td>Work Hours</td>
<td>Expected</td>
<td>Hoffman et al. (1992)</td>
</tr>
<tr>
<td></td>
<td>How interested are you in having a job like your mother/father?</td>
<td>Desired</td>
<td>Kalli et al. (2005)</td>
</tr>
<tr>
<td></td>
<td>How interested are you in having a job like your mother/father?</td>
<td>Desired</td>
<td>Kalli et al. (2005)</td>
</tr>
</tbody>
</table>

*Note.* aConsiders multiple time points. bReview paper on studies examining parent and child consistency.
A. Resources

Gender Typicality of Parent’s Work → Parent Behaviors
• Social Support → Child Behaviors
• Choice of College Major → Gender Typicality of Child’s Work Aspirations

B. Socialization

Gender Typicality of Parent’s Work → Parent Attribute
• Instrumental Traits → Parent Behaviors
• Childrearing Practices → Child Attribute
• Instrumental Traits → Gender Typicality of Child’s Work Aspirations

C. Modeling

Parent Attribute
• Instrumental Traits → Parent Behavior
• Instrumental Behaviors → Child Attribute
• Instrumental Traits → Gender Typicality of Child’s Work Aspirations

Child Behaviors
• Observe Parent
• Model Parent

Gender Typicality of Parent’s Work

Figure 2. Most referenced mechanisms proposed in past research underlying parent and child career consistency.
Figure 3. Components of Research on the Occupational Linkage Hypothesis
Figure 4. Less referenced and newly proposed mechanisms underlying parent and child career consistency.
Figure 5. Proposed model of mechanisms underlying parent and child occupational consistency.
References


Katie Lawson’s Vitae

**Education**
2007  B.A., Psychology, College of Notre Dame of Maryland
2009  M.A., Experimental Psychology, Radford University

**Selected Research Experience**
2009-2010  Study Coordinator, *Prescription Opiate Use: Stress and Cues*, Medical University of South Carolina

**Selected Teaching Experience**
Spring 2010  Instructor, *Research Methods*, College of Charleston
Summer 2009  Instructor, *Psychology of Personality*, Radford University
2008-2009  Instructor, *Introduction to Psychology*, Radford University

**Awards**
2010-2011  Pennsylvania State University Graduate Student Fellowship
2010  NIDA Women & Sex/Gender Junior Investigator Travel Award
2009  Radford University Best Research Thesis Award

**Peer-Reviewed Publications**


