LONGITUDINAL PREDICTORS OF GENDER ATTITUDES AND RELATIONSHIPS AMONG GENDER ATTITUDES, GENDER IDENTITY AND EDUCATIONAL CHOICES OF BLACK AND WHITE YOUTH

Olivenne D. Skinner

A dissertation submitted to the faculty at the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Psychology (Developmental).

Chapel Hill
2014

Approved by:

Beth Kurtz-Costes

Jean-Louis Gariepy

Deborah Jones

B. Keith Payne

Lilly Shanahan

ABSTRACT

Olivenne D. Skinner: Longitudinal Predictors of Gender Attitudes and Relationships Among Gender Attitudes, Gender Identity and Educational Choices of Black and White Youth
(Under the direction of Beth Kurtz-Costes)

This study focuses on two domains of gender development: Gender attitudes and gender identity. Based on Bronfenbrenner's bioecological model (Bronfenbrenner & Morris, 1997), and Eccles et al.'s (Eccles, 1987, 1994) model of achievement related choices, I hypothesized that individual characteristics and contextual factors are related to the development of youth's gender attitudes (Study 1), and that gender attitudes and gender identity are related to educational attainment expectations in Grade 11, traditionality of college major, and educational attainment three years post high school. Race and gender were examined as moderators of these relationships (Study 2). Data were drawn from the Maryland Adolescent Development in Contexts Study (MADICS; Eccles, 1997). Study 1 used four waves of longitudinal data across 7 years (N=1343). Study 2 data (N = 796) were from Grade 11 and three years post high school graduation.

Results from Study 1 showed that youth endorsed more traditional gender attitudes over time, while still maintaining non-traditional beliefs. In Grade 8, boys endorsed more traditional gender attitudes than girls, and mothers' gender attitudes predicted their children's gender attitudes. Family contextual factors were unrelated to youth's gender attitudes. Gender attitudes and gender identity were stable across time, but there was no evidence that gender identity influenced gender attitudes. Limited support was found for the hypothesis that gender attitude

influence gender identity.

In Study 2, endorsement of more traditional gender attitudes was negatively related to educational attainment expectations among boy and girls, but traditional gender attitudes predicted lower educational attainment among boys. Educational attainment expectations mediated the relationship between gender attitudes and educational attainment. Gender identity was also important in youth's achievement related choices. Boys who reported higher self-perceptions of femininity reported lower educational expectations, and youth of both genders who reported higher self-perceptions of femininity attained less education. Among boys, higher levels of masculine gender identity positively predicted educational attainment expectations and years of education. Girls' self-perceptions of masculinity were unrelated to educational expectations and attainment. Gender attitudes were unrelated to the traditionality of youth's college major; however, adolescent boys who reported higher self-perceptions of femininity reported less traditional college majors. Results did not vary by race.

With a thankful heart to my Lord and Savior Jesus Christ and the wonderful people He placed in my life during this process: My advisor Dr. Beth Kurtz-Costes, my mentor and friend Dr. Dana Wood, and my family away from home— the Nundas and the Antoines.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

GENERAL INTRODUCTION

It is undeniable that the work and family roles of men and women in American society have changed over time. At the turn of the 20th century both women and men contributed to the financial well-being of the family unit because much of the work was done in the home. However during the mid 20th century it was believed that the roles of women were to nurture children and be the emotional bedrock of the family unit while husbands worked outside the home. Today, more than 85% of mothers are in the work force, but they encounter challenges in the form of the gender wage gap, lack of subsidized childcare, and other gender discriminatory practices because of society's subtle belief that the "place" of women is in the home. Such gender cognitions that define distinct roles for men and women based on perceived differences about their abilities and nature are evident in local and national policies as well as in individuals' personal choices. Given the importance of these cognitions for individuals' and society's well-being, research is needed to understand how these cognitions develop and their consequences for adolescents' achievement-related beliefs and behaviors. The goal of this project is to increase our understanding of youth's gender attitude development and to examine the relationships among gender attitudes, gender identity, and youth's educational attainment expectations and educational choices. The unique changes that occur during adolescence (e.g., physical maturation which heightens the salience of gender, changes in family and peer relationships, increased cognitive development, and identity exploration) make this an important developmental period in which to explore these questions.

The processes of interest will be investigated in two studies using data from the Maryland Adolescents in Context Study (MADICS; Eccles, 1997). In Study 1, I examine if individual characteristics (sex, gender identity), experiences (attending college) and family contextual factors (social class and mothers' gender attitudes, employment, and marital status), are related to the construction of youth's gender attitudes. In Study 2, I examine if gender attitudes and gender identity predict youth's educational attainment expectations, educational attainment, and college major during early adulthood. In the following sections, I discuss the two gender constructs that are the focal point of both studies: Gender attitudes and gender identity.

Gender Attitudes

A variety of gender attitudes have been studied during adolescence and early adulthood, ranging from work-family gender ideology (Davis & Pearce, 2007) to beliefs about girls' and boys' abilities in gender-typed academic domains (e.g., Kurtz-Costes, Rowley, Harris-Britt & Woods, 2008). In the present study, I use gender attitudes to refer to beliefs about the ways that roles should (or should not) differ based on gender, or are more or less suitable for men and women (e.g., It is usually better for everyone involved if the man is the "breadwinner" outside the home and the woman takes care of the home and family). Gender attitudes represent an important dimension of gender development because they are theoretically related to the life choices individuals make (Eccles, 1994), and empirical evidence shows that they are directly related to expectations about the age of transitions into adult roles (Crockett & Beale, 2012), educational attainment expectations (Davis & Pearce, 2007), educational attainment and family formation (Cunningham, Beutel, Barber, & Thornton, 2005). Although gender attitudes become more flexible through childhood and early adolescence, there may not be a universal developmental course in their expression across adolescence (Galambos, et al., 2009).

We know much about the gender attitude development of White, middle class youth; however, relatively little attention has been devoted to understanding the gender attitude development of Black youth. It has been suggested that Black adolescents might have more egalitarian gender attitudes than their White peers because they are raised by gender egalitarian parents, but results from one longitudinal study using a national dataset did not show race differences in gender attitudes among Black and White adolescents (Davis, 2007). The few studies in which the gender attitudes of Black youth have been examined suggest that, similar to African American adults, they endorse both traditional and egalitarian gender roles depending on the domain. For example, in one study although the majority of low-income African American adolescents and young adults did not endorse traditional roles for women such as "raising children should be the role of the woman," most agreed that a man's role includes protecting women (West & Rose, 2000). African American girls have reported that women should be caretakers, emotionally strong, and financially independent, whereas their male counterparts reported that men should be financially independent, tough, and sexually skilled (Kerrigan et al., 2007). Using the Attitudes Towards Women Scale (Galambos, Petersen, Richards, & Gitelson, 1985), a measure that focuses on beliefs about the roles and appropriate behaviors of men and women, Ward, Hansbrough, and Walker (2005) found that, on average, African American high school students did not strongly endorse traditional gender attitudes. Overall, the variety of measures used, the lack of longitudinal studies, and diversity in socioeconomic status of the participants in prior research prevents conclusive statements regarding the gender attitudes of African American youth.

Gender Identity

Gender identity in its most basic sense, knowing that one is a boy or girl, emerges between two and three years of age (Fagot & Leinbach, 1989). However, many other definitions and measures of gender identity have been used in the literature with the intent to capture a person's sense of self as male or female (Zucker & Bradley, 1995) including feelings about biological sex and self-presentation as male or female (Berenbaum et al., 2006). The definition of gender identity I use in this project is related to Spence's (1993) definition: an individual's basic psychological sense of belongingness to his or her biological sex, but more specifically, the degree to which an individual sees him- or herself as masculine and feminine.

Rather than being polar ends of a continuum, masculinity and femininity are two independent dimensions (Bem, 1981). In most western societies it is generally considered appropriate for men to display masculine characteristics such as dominance, competiveness, assertiveness, and other instrumental traits, whereas women are expected to be warm, relationship oriented, passive, cooperative, and to show other expressive characteristics (Stets & Burke, 2000). Unlike biological sex, femininity and masculinity are socially constructed. It is possible for a man to perceive himself as highly feminine or a woman to perceive herself as highly masculine, or for members of both genders to endorse high levels of masculinity and femininity.

Few studies have been conducted examining adolescents' masculine and feminine self-perceptions during adolescence. Using a definition of masculinity and femininity based on early adolescents' sex typed preferences for occupations, traits, and activities for themselves, Liben and colleagues (2002) found little change in boys' gender identity between Grades 6 and 7. In contrast, they found that girls self-endorsed fewer feminine items over time. Individuals use their own criteria to determine what is masculine and what is feminine based on cultural

expectations about personality traits, abilities, behaviors and preferences (Spence, 1993). Similarly, children and adolescents use different factors to arrive at a general sense of how typical they are as members of their gender category, or their *gender typicality* (Egan & Perry, 2001; Skinner et al., 2014).

Although some researchers continue to use the traits *instrumentality* and *expressivity* to infer masculine and feminine gender identity, it is misleading to infer one's overall level of masculinity or femininity based on gender typing in one area because gender is multidimensional and multifactorial (Perry & Pauletti, 2011; Spence, 1994). Using Egan and Perry's (2001) multidimensional conceptualization of gender identity many interesting findings have emerged. For example, among children and adolescents gender typicality is related to psychological adjustment and to men's choice of non-traditional college majors (e.g., Corby & Hodges, 2007; Egan & Perry, 2001; Leaper & Van, 2008). Examining gender identity in terms of overall feelings of masculinity and femininity may inform our understanding of other developmental outcomes such as the achievement related choices adolescents make. A goal of Study 2 is therefore to examine if adolescents' self-perceptions of masculinity and femininity are related to their educational expectations, educational attainment, and traditionality of their college major.

Theoretical Foundations of Study 1 and Study 2

Gender attitudes and masculine and feminine gender identity are influenced by cognitive, social, and biological factors, and it is recognized that these factors work together (Berenbaum et al., 2006). Bronfenbrenner's bioecological model (Bronfenbrenner & Morris, 1997) provides a useful framework for understanding these developmental outcomes. The model directs attention to the role of the social context and personal characteristics in shaping developmental outcomes. Consistent with this model, in Study 1 I examine social-contextual factors and personal factors

that shape the development of youth's gender attitudes. More specifically, I examine if adolescents' personal characteristics (sex, masculine gender identity, feminine gender identity), and experience (attending college) are related to their endorsement of traditional gender roles during the summer prior to high school, and if these factors are related to the longitudinal trajectories of their gender attitudes. In addition, I examine the ways in which adolescents' gender and race interact with features of their family context (mothers' gender attitudes, household income, and mothers' marital and employment status) to shape their gender attitudes.

In Study 2, I draw on Eccles et al.'s (Eccles 1987,1994) model of achievement related choices. In this model, individuals' educational, vocational, and other achievement-related choices are shaped by their expectations for success and the value they place on the options that are available. These achievement-related beliefs and values are further linked to several factors, including gender role beliefs. For example, Eccles (1994) suggests that the images individuals develop of themselves or who they want to become include their beliefs about the proper roles of men and women. Eccles et al.'s model underscores the complexity of the educational, occupational and recreational choices that individuals make, and has been used by many researchers to understand adolescents' achievement-related choices. Although I do not propose to explicitly test Eccles et al.'s model of achievement-related choices, consistent with the model I test relationships among adolescents' gender attitudes, masculine and feminine gender identity, educational expectations, educational attainment and choice of college major.

STUDY 1: PREDICTORS OF GENDER ATTITUDES FROM ADOLESCENCE THROUGH YOUNG ADULTHOOD

Because gender attitudes have implications for individuals' personal and professional lives (Corrigall & Konrad, 2007; Crockett & Beale, 2012; Cunningham et al., 2005; Davis & Greenstein, 2009), it is important to examine factors that influence their development. Although much is known about factors that are related to the gender attitudes of adults, less is known about gender attitude development across adolescence and young adulthood. The overarching goal of Study 1 is to examine individual and contextual factors that are associated with the gender attitudes of Black and White youth.

Katz and Ksansnak (1994) outlined four possible trajectories of gender development outcomes from middle childhood through late adolescence. Aligning with socialization theories, the first trajectory is that, as they learn the values and cultural assumptions of their own societies, youth express increasingly traditional gender typed traits, behaviors, and attitudes from childhood through late adolescence. Corresponding to cognitive theories of gender development, the second possible trajectory is that youth become more flexible about gender because of increased cognitive development. The final two trajectories show a curvilinear pattern. In the third trajectory, youth are initially more flexible in attitudes, behaviors and preferences during adolescence than in childhood, but increase in traditionality during later adolescence, perhaps because of courtship and societal occupational expectations. In the final trajectory, there is a decline in traditionality during childhood followed by a period where traditionality flattens out or increases in early adolescence (perhaps indicating a temporary period of gender intensification)

and declines again during later adolescence (Crouter et al., 2007). Evidence has been found in support of each of these trajectories, as well as others, suggesting that there may not be a universal pattern in gender development, and that the trajectories may depend on personal and contextual factors (Crouter et al., 2007; Katz & Ksansnak, 1994). For example, Crouter and colleagues (2007) found that the developmental course of children's gender attitudes varied depending on the child's own characteristics and his or her family environment. Results of the current study, which focused on the personal and contextual factors that shape gender attitudes from adolescence into early adulthood, might inform the theoretical possibilities outlined by Katz and Ksansnak (1994).

Personal Characteristics and Experience: Gender, Gender Identity, Race, and College Enrollment

Gender. Across age groups, women have been found to hold more egalitarian gender beliefs than men (Anderson & Johnson, 2003; Crouter, Whiteman, McHale, & Osgood, 2007; Davis, 2007; Fan & Marini, 2000). There is also some evidence that the longitudinal trajectories of gender attitudes also vary by gender. For example, Davis (2007) found that boys became more egalitarian over time, such that the differences between boys' and girls' gender attitudes decreased with age. In contrast, other studies show that girls become more egalitarian over time, whereas boys increase in traditionality (Galambos, Almeida, & Petersen, 1990). Sex also interacts with features of the family context such as parents' gender attitudes and the presence of a brother or sister, to predict the longitudinal trajectories of gender attitudes from middle childhood through early adolescence (Crouter et al., 2007). For example, girls with more traditional parents maintained traditional attitudes in comparison to girls whose parents held less traditional gender attitudes, whereas results for boys showed a different pattern: Although boys with more and less traditional parents differed from each other in gender attitudes during

childhood and early adolescence, by late adolescence both groups of boys endorsed traditional gender attitudes (Crouter et al., 2007).

Despite girls' more egalitarian attitudes, similar personal and contextual factors shape the gender attitudes of both sexes during adolescence and young adulthood (Cunningham et al., 2005; Davis, 2007). Drawing from previous research and theoretical explanations that suggest that men are more likely than women to benefit from gender inequalities (Ferree, 1990), I expect that gender will predict gender attitudes in middle adolescence. Specifically, I hypothesize that boys will report more traditional attitudes than girls in early adolescence, but overall both groups will endorse increasingly egalitarian gender attitudes from middle adolescence through early adulthood. I expect attitudes to become less traditional with age because of increased cognitive flexibility and increased exposure to instances that challenge traditional notions of gender roles in society. I also expect differences in the ways that youth's personal characteristics, such as masculine and feminine gender identity (discussed below) and family contextual factors are related to the development of youth's gender attitudes.

Gender Identity. Researchers typically focus on the relationship between biological sex and gender attitudes; however, gender cognitions that vary both across and within genders such as masculine and feminine gender identity may influence individuals' gender attitudes. Although gender attitudes and self-perceptions are distinct domains, they are sometimes correlated. For example, Spence (1993) found that men who endorsed more traditional gender attitudes rated themselves as more masculine and less feminine compared to other men, and that women who endorsed more traditional gender attitudes than other women rated themselves as being more feminine and less masculine. However, Spence (1993) did not examine the temporal ordering of this relationship.

Unlike attitudinal pathway models, which suggest that attitudes about others (i.e. gender attitudes) shape individuals' behaviors and self-views (e.g., Bussey and Bandura, 1999), in the personal pathway model proposed by Liben et al., (2002), individuals' own gendered qualities are hypothesized to shape their gender attitudes. Evidence was found for this causal pathway among boys in a short-term longitudinal study: Boys who self-endorsed a greater number of feminine traits early in Grade 6 endorsed more egalitarian attitudes by the end of Grade 7 (Liben et al., 2002). Some researchers have suggested that egalitarian gender attitudes may be protective for men when their perceived gender typicality is low because it can help them justify and accept their non-conformity (Leaper & Van, 2008). It is likely, however, that the relationship between gender attitudes and gender identity is bi-directional, such that, for example, high levels of masculine gender identity (for girls) and feminine gender identity (for boys) are related to more egalitarian gender attitudes across time, and that attitudes, in turn, shape gender identity. One of the goals of this study is to examine the relationship between masculine and feminine gender identity and gender attitudes across adolescence into early adulthood.

Race. Scholars have long been interested in race and ethnic differences in gender attitudes in part because of the recognition that many gendered experiences (e.g. marriage, child bearing) vary across racial groups (Kane, 2000). A review of the literature based primarily on studies that used probability samples and a few convenience samples of college students found no consistent patterns of race differences in gender role attitudes (i.e., normative preferences for men's and women's roles in home and family, public sphere of employment and politics) (Kane, 2000). More recent studies also show no race differences in the gender attitudes of African American and European American college students (Berkel, 2004). These recent findings may reflect cohort differences as Kane (2000) argues that the gender attitudes of Black and White

adults have converged over time as Whites have become increasingly egalitarian. Similar to results with adult samples, Davis (2007) found that African American and European American youth did not differ in initial levels of gender egalitarianism or their trajectories of gender attitudes from adolescence through early adulthood.

Although Black and White youth may have similar beliefs about the work and family roles of men and women, different factors may shape their gender attitudes. This idea is supported by research showing that education, income and employment outside the home better predict the gender attitudes of Whites adults than Black adults (Blee & Tickamyer, 1995; Kane, 2000; Ransford & Miller, 1983). Experiences such as parenting and employment may have different meanings for Blacks in comparison to Whites and thus may differentially impact their gender attitudes (Kane, 2000). For example, because Black women have a longer history of labor force participation in the United States and are more likely to be the primary caregivers in their families than White women, women's employment outside the home may be more normative for Blacks than Whites. As a result, mothers' employment outside the home may have a different impact on the gender attitudes of Black as compared to White youth. To my knowledge, race differences in the factors that are related to adolescents' gender attitudes have not been explored. In this study, I examine if family contextual factors (e.g., mothers' gender attitudes, mothers' employment status, income, mothers' marital status), and personal factors and experience (e.g. attending college) that may be related to youth's gender attitude construction vary by race.

College enrollment. Attending college is one of the most influential experiences in the lives of adolescents and young adults. Researchers have found a positive relationship between education and egalitarian gender attitudes (Bolzendahl & Myers, 2004; Cunningham et al., 2005;

Davis, 2007). The college context provides experiences besides classroom instruction, such as connection with career-minded individuals who may influence youth's attitudes about the roles of men and women (Cunningham et al., 2005). This idea is consistent with socialization theories, in particular exposure-based explanations, which suggest that individuals develop or change their understanding of women's place in society when they encounter ideas and situations that pertain to egalitarian ideas (Bolzendahl & Myers, 2004).

Attending college has been thought to influence adolescents' attitudes and values so that they become more liberal with respect to women's roles both inside and outside of the home (Pascarella & Terenzin, 2005). Data from a national survey with two generations of family (adult children and their parents) showed that adult men and women's experiences during young adulthood such as attending college greatly increased the odds that they would become forerunners in gender ideologies (i.e., endorsing less traditional gender attitudes than their own generation and their parents' generation) (Myers & Booth, 2000). Anderson (2005) also found that after four years of college male and female students became more egalitarian about the home and family activities of married women. The effect of college attendance, however, may vary for Black and White students. Because it is normative for African American women to work outside the home and have leadership positions in the community, African American adolescents' gender attitudes, compared to those of Whites, may reflect more egalitarian attitudes about men's and women's roles before attending college. In other words, experiences in college may not produce great changes in their gender attitudes. Thus, overall, I expect that college enrollment will have a greater impact on the gender attitudes of White students than Black students.

Family Context: Social Class, Mothers' Gender Attitudes and Mothers' Employment Status

Family income. Income is related to adults' gender attitudes, such that individuals with

higher income tend to have more egalitarian gender attitudes (Harris & Firestone, 1998; Wilkie, 1993), perhaps because of higher levels of education and experiences that challenge traditional gender roles. McHale and colleagues (2003) outlined several reasons why family income may be related to adolescents' gender attitudes. First, in families where few resources are available, parents may treat their children in more sex-typed ways, such as providing more academic resources for boys or depending more on girls for help around the house. In addition, economic factors may constrain or enable parents' ability to enact their gender attitudes in parenting and the behaviors they model in terms of their household responsibilities and leisure activities (McHale et al., 2003).

Economic constraints can also affect the meanings attributed to family activities and roles (McHale et al., 2003). For example, a teenage son who is responsible for babysitting his siblings and preparing dinner because his single mother has to work and cannot afford to hire a babysitter may not necessarily internalize the importance of egalitarian gender roles because of the context in which these behaviors are performed. In contrast, if these same responsibilities are a regular part of this boy's duties in a middle class family where he has sisters, he may endorse more egalitarian attitudes.

Because of differences in parenting and the meanings that may be attributed to activities and roles in the family based on socioeconomic status, I hypothesize that middle-income youth will endorse more egalitarian attitudes in comparison to low-income youth. Although higher income is thought to produce more egalitarian gender attitudes, some scholars have suggested that this relationship might be different for African Americans. Hill (2000) theorized that middle class Blacks embrace traditional gender roles as a way of distancing themselves from the negative stereotypes about low-income Blacks. This hypothesis has not been tested empirically,

but this study provides an opportunity to test if income is related to the gender attitudes of African American and European American youth in the same manner.

Mothers' gender attitudes. From a social learning perspective, parents play an important role in shaping their children's gender development through the behaviors they model and in their roles as instructors and opportunity providers (e.g. what parents communicate about gendered roles; organization, management and provision of resources to support development) (McHale, et al., 2003). Parents' gender attitudes are modestly related to their children's gender attitudes during childhood and adolescence (Cunningham, 2001; Fulcher & Sutfin, 1998; Tennenbaum & Leaper, 2002; Updegraff et al., 2014). Crouter and her colleagues (2007) found that parents' gender attitudes were related to the longitudinal trajectories of their children's gender attitudes from middle childhood through late adolescence, such that parents who were more egalitarian had children who endorsed increasingly egalitarian gender attitudes across time. As previously discussed, the longitudinal relationship between parents' gender attitudes and children's gender attitudes also varied according to the child's sex.

In contrast to these results, Davis (2007) found that although parents' gender attitudes and employment status (as well as educational attainment) were related to their children's gender attitudes during adolescence, these factors were unrelated to the longitudinal trajectories of gender attitudes into young adulthood. It is important to note however, that Davis' (2007) measure of gender attitudes focused on gender attitudes about family and work roles, whereas Crouter and her colleagues (2007) used the Attitudes Towards Women Scale, which addresses a variety of roles and behaviors of women and men. In addition, Crouter et al.'s (2007) participants were White middle class youth from two-parent homes residing in one geographical location, whereas Davis (2007) used a sample of youth from various racial backgrounds.

Additional research is needed to understand the extent to which mothers' gender attitudes are related to changes in their children's gender attitudes as they enter young adulthood and whether adolescents' race, gender or experiences from other contexts such as attending college play a more important role in the formation of their beliefs than their parents' attitudes.

Mothers' employment status and marital status. Mothers' full-time employment status is associated with less traditional gender attitudes in their adolescent and adult children, but is unrelated to changes in children's gender attitudes from adolescence into young adulthood (Davis, 2007; Myers & Booth, 2002). The impact of mothers' work status on their children's gender attitudes, however, may depend on the mothers' marital status. Single mothers who are primary caregivers are likely to be employed regardless of their gender attitudes in order to provide for their families. As a result, their employment status may not reflect their gender attitudes. The experience of working could also influence mothers to adopt more egalitarian gender attitudes (Cunningham et al., 2005) because of exposure to other working women and egalitarian ideas or simply to prevent dissonance between their behaviors and attitudes. It is likely that mothers' employment status will be most strongly related to their children's gender attitudes when mothers are married. Mothers who are married and employed not only model wage-earning behaviors, but may also structure and manage their family responsibilities in more egalitarian ways in comparison to married mothers who are not employed. Full time employment may also allow mothers to have financial independence or to be more equal to their spouses in their financial and work contributions in the home (Cunningham et al., 2005). I hypothesize that adolescents whose mothers are employed full time and are married will have less traditional gender attitudes in comparison to youth whose mothers are not in the labor force or those who are employed part-time. I will also examine if this relationship is related to the

longitudinal trajectory of youth's gender attitudes and examine variations by racial group.

Overview of Hypotheses

The overall goal of Study 1 is to examine the factors that are related to the gender attitudes development of African American and European American adolescents. Using data collected over four time periods, I examine if adolescents' personal characteristics including gender, and family contextual factors such as family income, mothers' gender attitudes, mothers' marital status, and mothers' employment status (reported when youth were in Grade 7) are related to youth's gender attitudes during Grade 8 and their gender attitude trajectory from adolescence into early adulthood. I also explore the relationship between gender identity (measured in Grades 8, 11, one year post high school, and three years post high school) and gender attitudes over time and test the effect of attending college on youth's gender attitude.

Hypothesis 1 concerns the average trajectory of youth's gender attitudes and Hypotheses 2A-2D concern group differences (gender, family income, etc.) in gender attitudes during Grade 8 (intercept of growth trajectory) and the trajectory of gender attitudes (slope of growth trajectory). Hypothesis 2E concerns the effect of college attendance on the trajectory of youth's gender attitudes and Hypothesis 3A focuses on changes gender attitudes from 1 year post high school to three years post high school. The final hypothesis examines the relationship between gender attitudes and gender identity over time.

Hypothesis 1: Youth's gender attitudes will show a linear decline (indicating less traditional attitudes) between Grade 8 and three years post high school.

Hypothesis 2A: Boys will endorse more traditional gender attitudes than girls in Grade 8. I will examine if gender predicts patterns of change in gender attitudes from Grade 8 to three years post high school.

Hypothesis 2B: Adolescents whose mothers endorse more traditional gender attitudes when they are in early adolescence will report more traditional gender attitudes in Grade 8 than adolescents whose mothers endorse less traditional gender attitudes. I will test if this relationship varies for Black and White youth and if patterns of change in gender attitudes vary according to mothers' gender attitudes and youth's race.

Hypothesis 2C: Family income will be related to youth's gender attitudes, such that youth from lower income families will report more traditional gender attitudes than youth from middle income families during Grade 8. I will test if this relationship varies for both Black and White youth and if patterns of change in gender attitudes vary according to family income and race.

Hypothesis 2D: Adolescents whose mothers work full-time and are married will endorse less traditional gender attitudes in Grade 8 in comparison to youth whose mothers work part-time or are unemployed. Mothers' employment status will be unrelated to children's gender attitudes if they are unmarried regardless of their gender attitudes. I will test if this relationship varies for Black and White youth and if patterns of change vary according to mothers' employment status and marital status. Thus, support for this hypothesis would come from a significant marital status x maternal employment x race interaction predicting the intercept and slope of the growth trajectory.

Hypothesis 2E: Full time college attendance one year and three years post high school graduation will have the effect of decreasing traditional gender attitudes one year post high school and three years post high school respectively. This effect will be stronger for White students than Black students.

Hypothesis 3: Full-time college attendance one year post high school will predict *decreases* in youth's traditional gender attitudes from one year post high school to three years

post high school graduation. This relationship will be stronger for White students than Black students.

Hypothesis 4: Gender identity (i.e., masculine gender identity and feminine gender identity) and gender attitudes will influence each other over time. For example, I expect that boys with high levels of feminine gender identity and girls with high levels of masculine gender identity will endorse increasingly less traditional gender attitudes across high school into young adulthood. Gender attitudes will also influence girls' and boys' masculine and feminine gender identities, with more traditional attitudes predicting increased sex-typing (i.e., higher levels of masculine identity and lower levels of feminine identity among boys across time, and the reverse among girls).

Study 1 Method

Data Source and Sample

The study is based on longitudinal data collected at four time points between 1991 and 2000 as part of MADICS (Eccles, 1997). The purpose of MADICS was to understand the influence of social context on behavioral choices and developmental trajectories during adolescence. To recruit participants, a letter was sent to families with children from selected public seventh and eighth grade junior high schools in Prince George's County. The sample is unique in that both White and Black families were fully represented across the different levels of socioeconomic status. In addition, although White families had a higher pretax income than Black families, the racial gap in income was much lower than the national average (Wong, Eccles & Sameroff, 2003). A total of 1,482 families from low-income, rural, and middle class suburban neighborhoods within the county participated during the first wave of the study when youth were entering Grade 7. Youth were contacted again for five additional waves of data.

During Waves 1, 3 and 4 adolescents and their primary caregivers completed a 50-minute face-to-face interview and a 30-minute self-administered questionnaire. During the final two waves of data collection the self-administered questionnaires were mailed to participants' homes.

Analyses for the present study utilize data collected from adolescents during the years in which the gender attitudes questions appeared on the questionnaire: Wave 3 (summer following Grade 8), Wave 4 (Grade 11), Wave 5 (one year post high school graduation), and Wave 6 (three years post high school graduation). During Wave 3, there were 1,343 adolescent participants (66% Black youth; 51% boys). During the first wave of the study when youth were in Grade 7, 1,244 female primary caregivers (e.g., mothers, aunts, grandmothers) participated and they reported a mean age of 39 years (*SD* = 6.3).

Measures

Items for all study measures are presented in Appendix 1. Youth completed measures of gender attitudes, gender identity and college attendance. Mothers completed measures of their own gender attitudes, employment status, marital status and household income. Participants' self reported their race and gender.

Youth's gender attitudes. Beliefs about gender roles were measured during Grades 8, 11, one year post high school, and three years post high school. Participants rated four items on a 1 (*strongly disagree*) to 4 (*strongly agree*) scale during Grades 8 and 11, and on a 1 (*strongly agree*) to 5 (*strongly disagree*) scale during the last two time points. Data collected during the two final time points were reverse coded so that higher numbers represented more traditional attitudes. In addition, these data were recoded to a 1-4 scale by changing ratings of 3 (*neutral*) to 2.5. The four items were averaged to create a measure of gender attitudes, with higher scores

representing more traditional gender attitudes. Cronbach's alphas for the four time points ranged from .59 to .67 for Black youth and .58 to .73 for White youth.

Mothers' gender attitudes. Primary caregivers reported their beliefs about traditional gender roles in the family context when youth were in Grade 7. Only ratings provided by female caregivers were used. Four items were rated on a 1 (*strongly agree*) to 4 (*strongly disagree*) scale. Items were reverse-coded so that higher scores represented more traditional gender attitudes; the questions were averaged to create a measure of gender attitudes, Cronbach's alpha = .72.

Masculine gender identity. At each of the four time points youth responded to two questions about how masculine they felt and how masculine they looked. Ratings were based on a 1 (*not masculine*) to 7 (*very masculine*) scale. The two questions were averaged to form an overall rating of masculine gender identity. The two items were highly correlated *r*s = .69 and .77 for girls and boys respectively.

Feminine gender identity. At each of the four time points youth responded to two questions about how feminine they felt and how feminine they looked. Ratings were based on a 1 (*not at all feminine*) to 7 (*very feminine*) scale and were averaged across the two items. The two items were highly correlated *r*s =. 73 and .69 for boys and girls respectively.

Family income. When youth were in Grade 7, primary caregivers were asked to report their total family income before taxes during the preceding tax year. Responses were recorded using a scale from 1 (*less than $5,000*) to 16 (*more than $75,000*). Families reported an average income of approximately $45,000-49,000 per year (*SD* = 15,000- 20,000).

College attendance. College enrollment status one year and three years post high school graduation was assessed with a single item asking youth to report whether or not they were

enrolled in college. Responses were recoded such that a score of 1 indicated that the youth was a college student and zero represented all other categories.

Mothers' employment status. During Waves 1 and 3 mothers reported their employment status and the number of hours they worked each week. This information was recoded as a dichotomous variable indicating whether or not a mother worked full-time at any point when the participating child was in early adolescence (Grade 7, Grade 8). Mothers were considered full-time employed if they worked 35 or more hours per week during one of the waves in which employment status was collected. Mothers who worked full time during at least one of the waves received a code of 1, and mothers who were unemployed or employed part-time at both time periods assessed received a score of zero. Using this coding system, approximately 85% of mothers worked full-time.

Mothers' marital status. Mothers' marital status was collected when youth were in Grade 7 and Grade 8. Five response options were given: Married, widowed, separated, divorced, and never married. Responses were recoded so that marital status was a dichotomous variable indicating whether mothers were married at any point (married = 1; unmarried = 0) when youth were in Grade 7 or Grade 8.

Study 1 Results

Hypotheses for Study 1 were tested using MPLUS Version 5.1 (Muthén & Muthén, 2007). MPLUS uses full information maximum likelihood (FIML) to estimate model parameters and is suitable for analyses with some missing data (See Table 1.1 for percentage of missing data for each focal variable). FIML uses an iterative procedure to estimate the population parameters most likely to have produced the available sample data, thus allowing all available data to be included in the analyses. The model parameters produced with this method are less biased than

those that have been traditionally used such as list wise deletion or mean imputation (Schafer & Graham, 2002).

Preliminary analyses. Means, standard deviations, and bivariate correlations for key variables are presented in Tables 1.1 and 1.2. Several preliminary analyses were conducted before examining the growth trajectory of youth's gender attitudes. First, an examination of the distribution of the gender attitudes ratings showed that it was approximately normally distributed. Youth's gender attitudes ratings were weakly to moderately correlated across time, *r*s = .16 to .54, *p*s < .05 for boys and *r*s = .30 to .49 for girls, *p*s < .01. The means of youth's gender role attitudes from Wave 1 (Grade 8) through Wave 6 (three years post high school graduation) increased consistently, suggesting that the growth trajectory was linear. In spite of increases in traditional gender attitudes across time, most average scores were close to 2, indicating that on average youth tended to disagree with traditional family and work roles for men and women. Plots for the means of gender attitudes are displayed in Figure 1.1.

An unconditional latent growth curve model was used to test if the growth trajectory and variances of gender attitudes differed for Black and White youth. A linear trajectory model was adequate for both groups (TLI = .99, CFI = .99, RMSEA= .02, SMR = .03). A multi group growth model with invariant intercepts and slopes, invariant variance of the random intercept, random slopes and error variances, which were added in a systematic manner as recommended by Bollen and Curran (2006), did not significantly alter the model fit indices. In addition, chi-square difference tests used to test for race differences in these parameters were not significant. These results revealed that it was appropriate to include Black and White youth in the same growth curve model (Bollen & Curran, 2006).

In the final set of preliminary analyses, one-way ANOVAs and chi-square tests were used

to test for race differences in family background variables and college attendance. On average, Black youth lived in households with lower family incomes (M = \$40, 000- 45,000) than White youth (M = \$50,000 - 54,999), $F(1, 1247) = 48.56$, $p < .001$. African American youth (92%) were more likely than White youth (69%) to reside with a female primary caregiver who was employed fulltime outside the home, $\chi 2 = 88.54$ (1, N = 1041), $p < .001$) and was unmarried (41% parents of Black youth; 16.3% parents of White youth), $\chi 2 = 74.08$ (1, N = 1139), $p <$ .001). One year post high school graduation, White youth (67%) were only marginally significantly more likely to be enrolled in college in comparison to their Black peers (60%), $\chi 2 = 3.50$ (1, N = 786), $p = .06$). Race difference in rates of college enrollment, $\chi 2 = 2.45$ (1, N = 802), $p > .10$) were not present three years post high school.

Change across Time in Gender Attitudes

To examine the growth trajectory of youth's gender role attitudes, a multi-group unconditional growth curve model (without covariates) was estimated for male and female participants (Hypothesis 1). Time was coded as 0, 1, 2 and 3, which had the effect of defining the intercept at Grade 8. The hypothesized latent growth curve model is depicted in Figure 1.2. Chi-square difference tests were used to determine if the parameters of the models were significantly different for male and female participants. In the chi-square difference test of measurement invariance, the chi-square value and degrees of freedom of the less restrictive model are subtracted from the chi-square value and degrees of freedom of the more restricted model. A significant chi-square difference value indicates that constraining the parameters of the more restricted model significantly worsens the fit of the model—indicating measurement non-invariance. If the chi-square difference value is not significant, this indicates that constraining the parameters of the more restricted model did not significantly worsen the fit of the model,

indicating measurement invariance of the parameters that have been constrained to be equal (Muthén & Muthén, 2012).

Results of the unconditional growth curve trajectory are shown in Table 1.3. Goodness-of-fit statistics indicated that a linear trajectory model was a good fit to the data (RMSEA = .03, SMR = .04, CFI = .98, TLI = .98). Girls' and boys' gender attitudes were defined by an intercept of 1.75 and 2.07 respectively, and there was significant variability in the intercepts for boys (B = .13 $SE\ B$ = .02, p < .01) and girls (B = .10, $SE\ B$ = .01, p < .01). The trajectory of youth's gender attitudes was defined by a slope of .08 ($SE\ B$ = .01) for girls and .06 ($SE\ B$ = .01) for boys, ps < .01. The significant positive slopes indicated that the model-implied initial values of gender attitudes increased by .08 and .06 units per grade for boys and girls respectively, thus contrary to Hypothesis 1, youth endorsed *more* traditional gender attitudes over time.

There was significant variability in the slope for boys' gender attitudes (B = .02 $SE\ B$ = .00, p < .01). In contrast, the residual variance for girls was negative and nonsignificant (B = -.00 $SE\ B$ = .00, p > .05), indicating no significant variability in the rate of change of their gender attitudes. This path was therefore constrained to zero and model parameters involving girls' slope were not calculated. The covariance between the intercepts and slopes for boys was negative and significant (B = -.03 $SE\ B$ = .01, p < .01), indicating that boys who endorsed more traditional gender attitudes during Grade 8 experienced slower rates of change in their attitudes across time than boys who endorsed less traditional gender attitudes.

Prediction of Gender Attitudes in Grade 8 and of Change Across Time

Chi-square difference tests were used to examine gender differences in gender attitudes during Grade 8 and changes in gender attitudes across time (Hypothesis 2A). When the intercepts for both genders were constrained to be equal the chi square difference test was

significant, $\chi 2$ (1) = 90.70, $p < .01$, indicating that the intercepts for boys' and girls' gender attitudes were significantly different from each other. As hypothesized, girls reported more egalitarian gender attitudes in comparison to boys at the end of Grade 8. When the slopes for boys and girls were constrained to be equal the chi square difference test was not significant, $\chi 2$ (1) = 2.95, $p = .23$. This result indicated that youth of both genders experienced similar increases in their gender attitudes across time. In sum, although girls were more egalitarian than boys in Grade 8, gender did not predict the growth trajectory of youth's gender attitudes (Hypothesis 2A).

An important goal of Study 1 was to examine if youth's gender attitudes varied according to their own personal characteristics and family circumstances. To address this goal, mothers' gender attitudes, mothers' employment status, family income, mothers' marital status, mothers' marital status x mothers' employment status and the interaction of these variables with youth's race were regressed on the slope and the intercept (i.e. gender attitudes during Grade 8) of youth's gender attitudes (Hypotheses 2B-2D). College attendance one year and three years post high school graduation (time varying covariates) and the interaction of these variables with race were regressed on gender attitudes one year and three years post high school respectively (Hypothesis 2E).

Goodness-of-fit statistics for the multi-group growth curve model with covariates indicated less than perfect fit: CFI = .94, TLI= .90, RMSEA= .02, SRMR= .03. In the model predicting girls' gender attitudes, race, mothers' employment status x race, and mothers' marital status x race were significant and were qualified by a significant three way interaction: mothers' marital status x race x mothers' employment status ($B = .66$, $SE\ B = .27$, $p = .01$). Mothers' gender attitudes also predicted their daughters' gender attitudes ($B = .20$, $SE\ B = .06$, $p < .01$). In

the conditional model for boys, mothers' gender attitudes was qualified by a marginally significant mothers' gender attitudes x race interaction term (B = -.16, $SE\ B$ = .08, p = .05). None of the hypothesized predictors were significantly related to the slope and therefore to patterns of change in youth's gender attitudes. Neither the main effects of college attendance nor the college attendance x race interaction terms were significant for girls or boys, ps >.05, *one year* post high school. Neither the effects of college attendance nor the college x race interaction were significant for girls or boys, ps >.05 *three years* post high school graduation.

Chi-square difference tests indicated that the effect of mothers' marital status x race x employment status, and mothers' gender attitudes x race on youth's gender attitudes was the same for boys and girls, $\chi 2$ (10) = 17.33, p = .07 and $\chi 2$ (14) = 18.77, p = .17, respectively. As a result, equality constraints were placed on these terms and the model was retested.

Table 1.4 provides coefficients for the growth curve model with equality constraints. The previously significant two- and three-way interaction terms became nonsignificant with the addition of the equality constraints. The influence of mothers' gender attitudes on youth's gender attitudes remained significant for girls (B = .14, $SE\ B$ = .04) and boys (B = .17, $SE\ B$ = .04), ps < .01. Therefore, in partial support of Hypothesis 2B, in Grade 8, adolescents whose mothers endorsed more traditional gender attitudes also endorsed more traditional gender attitudes in comparison to their peers whose mothers endorsed less traditional gender attitudes. However, mothers' gender attitudes did not predict patterns of change in youth's gender attitudes. All other covariates were nonsignificant.

In sum, neither family income (Hypothesis 2C) nor mothers' marital status x employment status (Hypothesis 2D) nor their interactions with race predicted youth's gender attitudes in Grade 8 or patterns of changes in gender attitudes. In addition, college attendance did not

significantly alter youth's gender attitudes above and beyond the latent growth trajectory that was modeled. Moreover, there were no significant differences among Black and White youth in the factors that were related to their gender attitudes in Grade 8. Goodness-of-fit statistics for this final model showed some improvement over the previous model, but the TLI remained low (CFI = .94, TLI= .91 RMSEA= .02, SRMR= .03). The results from this model should therefore be interpreted with caution.

College Attendance and Changes in Gender Attitudes

According to Hypothesis 3, full time college attendance one year post high school graduation was expected to predict *changes* in youth's gender attitudes from one year post high school to three years post high school. Hypotheses were tested using multiple regression and variables were entered in the model in a stepwise fashion so that the change in R^2 could be observed. Gender attitudes three years post high school was the dependent variable. Race, gender, college attendance one year post high school graduation and gender attitudes one year post high school graduation were entered in the first step, followed by the college attendance x gender, and college attendance x race interaction terms.

Results of multiple regression analyses are shown in Table 1.5. College attendance one year post high school was marginally significantly related to changes in youth's gender attitudes, (B = -.08, SE = .04, p = .06), and accounted for 1% of the variance in the dependent variable. Youth who were enrolled in college one year after they graduated from high school experienced marginally significant declines in traditional gender attitudes three years post high school graduation in comparison to youth who did not attend college. The college attendance x race and college attendance x gender interaction terms were not significant.

Relationships Across Time Between Gender Attitudes and Gender Identity

Two multiple group cross-lagged path models were used to examine the strength of the temporal relationships between gender attitudes and masculine gender identity, and between gender attitudes and and feminine gender identity (Hypothesis 4). In these models the relationships between each of the variables at subsequent time points are examined. By comparing the cross-lagged relationships, one is able to determine which variable is a stronger temporal predictor of the other, which can be considered evidence that one variable is a more likely cause of the other (Martens & Haase, 2006). In cross-lagged models there are two main paths that are of interest- the paths within each variable and the paths between variables. The paths that link the variables with the same variable measured earlier provide information about the relative stability of the construct (e.g., relationship between gender attitudes from Grade 8 to Grade 11). Higher values indicate greater stability. The paths measured across variables provide information about the degree to which one variable is a stronger temporal predictor of the other (e.g., relationship between gender attitudes in Grade 11 and masculine gender identity one year post high school graduation). The cross-lagged path models included the following controls: Race, mothers' gender attitudes, mothers' marital status, mothers' employment status, and income.

Tables 1.6 through 1.9 show the results for Hypothesis 4, which stated that gender attitudes and gender identity would influence each other over time. Overall, there was little evidence for the hypothesized cross-lagged associations between feminine gender identity and gender attitudes for either sex. The only significant hypothesis-relevant path was from Wave 3 gender attitudes to Wave 4 feminine gender identity for girls ($B = -.28$ $SE = .10$, $p < .01$) (Table 1.6). Girls who endorsed higher levels of traditional gender attitudes during the transition to high

school rated themselves as less feminine one year later in high school. The chi-square difference test in which this significant path was constrained for both sexes was significant $\chi 2$ (2) = 28.91, p < .01, suggesting that this relationship was significantly different for boys and girls. The model for boys provided no evidence for longitudinal relations between feminine gender identity and gender attitudes, *ps* >.10 (Table 1.7). In addition, there was no evidence among girls that feminine gender identity influenced gender attitudes, *p*s > .05.

Modest support emerged for the hypothesized cross-lagged associations between masculine gender identity and gender attitudes. In the model for girls, Wave 4 gender attitudes predicted Wave 5 masculine gender identity (B = -.23, SE = .10, p = .03) (Table 1.8). Girls who endorsed more traditional gender attitudes in Grade 11 rated themselves as less masculine one year post high school graduation. The chi square difference test in which this significant path was constrained to be equal for boys and girls was significant $\chi 2$ (2) = 24.09, p < .01, indicating that gender moderated the relationship between gender attitudes and masculine gender identity. For boys, gender attitudes one year post high school predicted masculine gender identity three years post high school (B = .37, SE = .14, p = .01) (Table 1.9). As hypothesized, young men who endorsed more traditional attitudes one year post high school rated themselves as more masculine two years later in comparison to men with less traditional gender attitudes. There was no evidence that gender identity influenced gender attitudes for either sex.

In summary, results of the cross-lagged path analyses provided stronger evidence that attitudes influence subsequent identity than the reverse. Although only three of the 12 paths from attitudes to identity were significant, two of those paths were in the direction anticipated. Higher levels of traditional gender attitudes predicted higher levels of masculine gender identity for boys and lower levels of masculine gender identity for girls. The finding that girls with higher levels

of traditional gender attitudes reported lower levels of subsequent feminine gender identity was contrary to expectations. There was no support for the hypothesis that feminine or masculine gender identity influenced subsequent gender attitudes.

Summary of Results

Results from the growth curve model showed that on average, youth disagreed with traditional gender roles for men and women, but there was significant variability in levels of endorsement. Contrary to hypotheses, youth endorsed more traditional attitudes regarding the work and family roles of men and women as they entered young adulthood, although changes were low in magnitude. As hypothesized, girls were more egalitarian than boys at the end of Grade 8, but developmental changes in gender attitudes did not vary by gender, and girls remained more egalitarian than boys at all four time points. Overall, there was little evidence that family background factors other than mothers' gender attitudes were related to youth's gender attitudes in Grade 8, and none of the hypothesized predictors were related to changes in gender attitudes.

Results from the growth curve model also showed that young adults who attended college one year post high school graduation and three years post high school graduation did not have a different gender attitude trajectory than young adults who did not attend college. However, results from the regression analyses suggested that college attendance one year post high school graduation resulted in marginally significant decreases in traditional gender attitudes from one year post high school to three years post high school graduation.

Black and White youth differed in family characteristics: White youth resided in households with higher incomes, and had primary caregivers who were more likely to be married and less likely to be employed outside the home in comparison to their Black peers. Despite

these differences, Black and White youth did not differ in ways in which gender and family characteristics influenced their gender attitudes. In addition, the effect of college attendance on changes in gender attitudes did not vary for Black and White youth.

The cross-lagged path models provided limited support for the hypothesis that gender attitudes influenced gender identity. In Grade 8, girls who endorsed more traditional gender attitudes perceived themselves as less feminine in Grade 11. In high school, during Grade 11, girls who endorsed more traditional gender attitudes later perceived themselves as less masculine, and young men who endorsed more traditional gender attitudes one year post high school graduation later perceived themselves as more masculine. Paths from earlier identity to later attitudes were not significant.

Study 1 Discussion

Much of the research on gender attitude development has been conducted with middle income European American youth, and we know very little about the gender attitude development of youth from diverse race and socioeconomic classes. Using a sample of Black and White youth from various socioeconomic classes, in this study I examined the personal and family contextual factors that are associated with the development of traditional gender attitudes about the work and family roles of men and women as youth proceed from middle adolescence into young adulthood. On average, youth's gender attitudes fell on the non-traditional side, but their attitudes became slightly more traditional as they entered young adulthood. In Grade 8, girls were more egalitarian than boys, and youth's gender attitudes were positively predicted by their mothers' gender attitudes. However, neither gender nor mothers' gender attitudes predicted the trajectories of subsequent change in gender attitudes. Other characteristics of the family environment such as family income, mothers' employment status, and mothers' marriage status

were unrelated to youth's gender attitudes in Grade 8 and their gender role attitude trajectories. Some support was found for the hypothesis that attending college resulted in decreases in traditional gender attitudes. There was limited support for the role of gender attitudes in the construction of masculine gender identity. Below I discuss some of the findings from the study, implications of these results and suggested topics for future research.

The Development of Youth's Gender Attitudes

During the 1990s, similar to today, it was normative for mothers to be actively employed outside the home, Therefore, the fact that on average, youth disagreed with traditional work and family roles was not surprising. The trajectory of linear increase in traditional gender attitudes from adolescence into young adulthood was contrary to hypothesis, but is consistent with the first trajectory of gender development outcomes described by Katz and Ksansnak (1994). Because of youth's increased ability to interpret complex information and increased reasoning abilities, it was expected that they would become more flexible in their thinking about gender roles as they moved through adolescence into early adulthood. In addition, because of increased autonomy during adolescence it was expected that youth would have the opportunity to observe diverse family arrangements and deviations from traditional gender roles, which could encourage more egalitarian gender attitudes.

The pattern of increases in traditional gender attitudes may be related to the developmental period captured in this study and the historical context in which the study took place. First, during adolescence and young adulthood youth are likely to be dating and making decisions that are important for their future family and work roles. During these periods when adult roles are particularly salient, adolescents may experience pressure from their peers and family members to adopt more traditional gender attitudes. This explanation is consistent with

Katz and Ksansnak's (1994) theorizing that increases in traditional gender roles reflect societal expectations regarding courtship and occupational expectations.

Second, it is important to consider the context in which the study took place. During the 1990s, a wave of men rallies took place across the U.S. in which leaders called for men to take responsibility for their households as fathers and husbands. The Million Man March organized by the Nation of Islam leader, Louis Farrakhan, and the Promise Keepers rally organized by conservative Christian leaders may have been particularly salient for the youth in this study because they took place at the National Mall in DC (close proximity to the county where study participants resided). These events, which drew hundred of thousands of men (Goodman, 1995) were highly publicized, so high school students would have been aware of the events even if they did not participate. In an era when men were being called to take back their positions as leaders in their families and communities, it is not surprising that, on average, participants in the study reported more traditional gender attitudes as they entered young adulthood. Although I did not explore the relationship between youth's attendance/awareness of these events and their gender attitudes, these ideas are consistent with ecological theory (Bronfenbrenner & Morris, 1998), which highlights the role of the social context in shaping development. It should be noted, however, that total change was quite small across the seven years, and it is likely that some factors may have pushed youth toward more egalitarian attitudes, whereas others encouraged more traditional attitudes.

Although the growth trajectory showed significant changes in youth's gender attitudes, none of the personal and contextual factors included in the study predicted changes. Although this was unexpected, the total slope variance from the unconditional model was relatively small which could explain these nonsignificant findings.

Factors Related to Youth's Gender Attitudes

Only gender and mothers' gender attitudes emerged as significant predictors of youth's gender attitudes at the end of Grade 8. The gender difference in gender attitudes is consistent with a large body of research showing that girls have more egalitarian gender attitudes than their male peers (e.g., Crouter et al., 2007; Davis, 2007; Udpegraff, et al., 2014). Traditional gender attitudes afford men power and respect and releases them from equal distribution of domestic responsibilities, thus endorsement of traditional gender attitudes has benefits for men. Nonetheless, gender differences in gender attitudes may have consequences for youth's romantic relationships given that when husbands report more traditional gender attitudes than their wives, they report lower marriage quality (Stanik & Bryant, 2012).

The positive relationship between mothers' gender attitudes and youth's gender attitudes is also consistent with the research literature (Crouter et al., 2007; Tenenbaum & Leaper, 2002; Udpegraff et al., 2014). This study, however, further highlights the importance of mothers' gender attitudes in that neither race nor gender moderated the relationship between mothers' gender attitudes and youth's gender attitudes. Other family contextual factors including mothers' employment status were unrelated to youth's gender attitudes. These results suggest that involvement in the paid labor force is not a marker for mothers' gender attitudes, and employment is not one of the mechanisms whereby mothers' gender attitudes are transmitted to their children, at least in this sample. The result is not surprising given that 85% of mothers in the sample were employed full time during the child's early adolescent years. Although I did not test the relationships between mothers' labor force participation and mothers' gender attitudes, bivariate correlations showed weak but significant relationships. Examining the traditionality of mothers' employment rather than their work status may provide further information about the

role of mothers' employment in the transmission of their gender attitudes to their children.

Contrary to my hypothesis, the relationship between mothers' employment status and youth's gender attitudes did not differ according to marital status of the mother. I had anticipated that the relationship between maternal employment and youth's gender attitudes would be significant in families where mothers were married, but data did not support the hypothesis. Going beyond the "social addresses" of marriage and employment status to examine processes within the marital relationship (e.g., division of household labor, caring for elderly parents) between partners who are both employed may provide support for the role of family contextual factors in the construction of youth's gender attitudes and other gender development outcomes (McHale et al., 2003). In support of this idea, it was found that adolescent girls and boys spent more time in gender typed chores when their parents had a more traditional division of housework (Crouter, Manke, & McHale, 1995). However, in a Swedish sample, mothers' and fathers' division of labor in the home was not related to their adolescent children's attitudes about equality in the home (Evertsson, 2006). More research is needed to further examine how working mothers' division of responsibilities with their partners is related to their children's gender attitude development.

College Attendance and Youth's Gender Attitudes

College attendance one year post high school graduation and three years post high school graduation did not have an effect on youth's gender attitude trajectory. However, the patterns of results from the regression analysis suggested that college attendance one year post high school graduation predicted decreases in traditional gender attitudes from one year post high school to three years post high school. A more detailed examination of youth's college experiences may have provided clearer results about the role of college enrollment in youth's gender attitude

development. For example, Bryant (2003) found that after four years of college, students became more liberal in their views about married women. Factors such as taking women's studies classes, residing in a dorm and majoring in the humanities were negatively associated with traditional attitudes.

The Relationship between Gender Attitudes and Gender Identity Across Time

Results from the cross-lagged path models used to examine the relationship between gender attitudes and gender identity over time did not provide any evidence that gender identity plays a role in the construction of youth's gender attitudes. The results did offer some limited support for the attitudinal pathway model (Bussey & Bandura, 1999), which suggests that attitudes influence self-perceptions. Three significant paths emerged: At the end of Grade 8, girls who endorsed more traditional gender attitudes rated themselves as less feminine in Grade 11; in Grade 11, girls who endorsed more traditional gender attitudes later rated themselves as lower in masculinity; one year post high school graduation, young men who endorsed more traditional gender attitudes rated themselves as higher in masculine gender identity. The relationship between gender attitudes and feminine gender identity from Grades 8 to 11 was not in the direction anticipated for girls; however, the expected patterns emerged later in development for both girls and boys. Perhaps a greater understanding of the meaning of traditional gender roles and society's perception of masculinity allowed youth to synthesize these two domains of gender development as they became older. In addition, these results suggest that young adults associate traditional gender attitudes with masculinity. Given the power and status that is associated with masculinity in American culture, the association of traditional gender roles with masculinity may cause some men to be discontented if they are not the achiever or primary breadwinner in their families; these men may also react negatively to women in leadership

positions. The association of traditional gender attitudes with lower self-perceptions of masculinity among girls may be one pathway that perpetuates gender inequalities such as the continuing objectification of women and the wage gap. Women who endorse traditional attitudes of men as wage-earners and women as relegated to the home later perceived themselves as less masculine—perceptions that might cause them to doubt their autonomy. Women with traditional gender attitudes may avoid traditionally masculine activities such as majoring in certain STEM fields, or pursuing leadership positions—pursuits that would enhance their well-being as well as that of their families.

Although there was no evidence from this study that gender identity influences gender attitudes, it is important to investigate how other characteristics of the youth themselves may contribute to the development of their gender attitudes. Adolescents' pubertal status or religious identification are two personal characteristics of the youth themselves that may play a role in the development of their views about the work and family roles of men and women (Crouter et al., 2007).

Race and the Construction of Youth's Gender Attitudes.

Although I did not expect race differences in youth's endorsement of traditional gender attitudes, I examined if the family contextual factors examined would be related to the attitude construction of White and Black adolescents in the same manner. Some researchers have suggested that factors such as education and maternal employment may have different meanings for Black and White families (Kane, 2000). In addition, drawing from Hill's (2000) argument, it was expected that the relationship between family income and gender attitudes would vary across race group. However, race did not interact with any of the family contextual factors to predict youth's gender attitudes or changes in their gender attitudes. It is important to keep in

mind however, that the African American families in MADICS are not representative of African Americans in the US. For example, the median income of African American families in MADICS was $40,000-$44,999. During the 1990's, the median family income of a Black family in the US was approximately $29,712 (U.S Census Bureau, 2012). Race differences in the construction of youth's gender attitudes might have emerged with a lower income sample of Black families and their White peers.

Macrosystem factors such as racial discrimination that Blacks are more likely to experience in comparison to their White peers may be one important factor that is related to the construction of Black youth's gender attitudes. This idea is consistent with research showing that African American parents' experiences of racial discrimination are related to amounts of preparation for gender bias they give their children (Shearer, 2007). In addition, some recent research shows that African American mothers' discrimination experiences are negatively related to their children's gender attitudes (Lam, Stanik & McHale, 2014). Although Lam et al., (2014) did not examine the process by which mothers' discrimination experiences are related to their children's gender attitudes, it is possible that discrimination experiences heighten individuals' awareness and criticism of inequalities and in turn encourage more egalitarian gender roles.

Missing from the literature is the relationship between youth's own experiences of racial discrimination and the development of their gender attitudes. Youth's discrimination experiences, particularly in adolescence and young adulthood, may influence them to adopt less traditional gender attitudes. This idea is consistent with research showing that men who experience blocked opportunities in the work force adopt more egalitarian gender attitudes (Gerson, 1996 as cited in Davis & Greenstein, 2009). Young men who experience discrimination at school or at work may re-evaluate their ability to maintain a traditional

household (e.g., having a stay-at-home wife) in the future and embrace more egalitarian gender attitudes.

In sum, although there were no race differences in youth's gender role attitudes, and family contextual factors such as mothers' gender attitudes, income and mothers' work status did not have a differential impact on the gender attitudes of Black and White youth, it is important to examine experiences that are unique to each racial group. Some research suggests that African Americans' racial discrimination experiences may heighten their awareness of gender inequalities and thus produce more egalitarian gender attitudes.

Suggestions for Future Research

This study leaves important questions unanswered regarding the construction of youth's gender attitudes as they enter young adulthood. Although mothers' gender attitudes were related to their adolescent children's gender attitudes, mothers' attitudes did not predict the trajectory of youth's attitudes across adolescence. Thus, children of more and less traditional mothers did not differ in their gender attitude trajectories. It is important to know what experiences in young adulthood are significant enough to change individuals' gender attitude trajectories. Results from this study suggest that attending college may produce more egalitarian gender attitudes, but may not change its developmental course. Experiences in romantic relationships or having children may also be factors that are powerful enough to have an impact on youth's gender attitudes trajectories (Davis, 2007).

Future research should examine the mechanisms whereby mothers' gender attitudes influence their children's gender attitudes. Social cognitive theory (Bussey & Bandura, 1999) suggests that mothers may communicate to their children direct instructions about gender roles, structure children's environments based on gender, and reward or sanction gender-typed

behaviors. Examining other family contextual factors that may play a role in the development of youth's gender attitudes such as birth order may also provide insight about the role of the family context in the development of gender attitudes. Perhaps family contextual features such as mothers' employment status may play a larger role in the construction of the gender attitudes of first born children, and other factors such as peers and the media might have a larger effect on later born children.

Finally, because attitudes about the work and family roles of men and women are related to important outcomes for adolescents, it is important for researchers to understand the development of other attitudes that are closely tied to gender. Attitudes about dating relationships, women in leadership roles and stereotypes about men and women's abilities in gender typed domains may be promising areas for future research. An important question that has not been examined is whether different forms of gender attitudes follow the same developmental pattern and are influenced by the same personal and contextual factors.

Table 1.1
Bivariate Correlations Between Key Study 1 Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Race	-	.02	.03	-.03	-.03	-.24**	-.14*	-.09	.36**	-.07	-.28**	-.07	.08	.07	-.10*	.26**	-.20**	.38**	-.32**
2. Gender Att (W3)	.03	-	.36**	.16*	.12	-.15**	-.08	-.12	-.05	.19**	-.08	-.04	.20**	.01	.03	-.04	-.05	.04	.04
3. Gender Att (W4)	-.04	.30**	-	.29**	.35**	-.14**	-.14*	-.11	.04	.17**	-.14**	-.10	.13*	-.08	.15**	.02	.10	.02	-.05
4. Gender Att (W5)	-.08	.44**	.38**	-	.54**	-.04	-.07	-.17*	.04	.12	-.05	.08	.03	-.05	.10	-.01	.02	.16	-.09
5. Gender Att (W6)	-.06	.36**	.47**	.49**	-	-.01	-.12	-.11	.04	.10	.00	.05	.01	.10	-.08	.14	-.10	.12	-.16*
6. Income	-.15**	-.14**	.06	.01	-.09	-	.34**	.35**	-.02	-.10*	.54**	.17**	-.18**	.10*	-.07	-.07	.06	-.22**	.22**
7. College Att. (W5)	-.01	-.17**	-.01	-.12*	-.13	.30**	-	.70**	-.11	.00	.23**	.17**	-.19**	.09	-.09	.03	.11	-.05	.14
8. College Att. (W6)	-.03	-.13*	.07	-.08	-.07	.23**	.72**	-	-.04	-.06	.29**	.17**	-.21**	.18**	-.06	.01	.10	-.08	.13
9. Mthrs' work status	.23**	-.02	-.07	-.14**	-.06	.09	-.07	-.06	-	-.14**	-.11**	-.10*	.04	-.02	-.04	.11	-.06	.24**	-.18
10. Mthrs' gender Att.	-.05	.21**	.11*	.15**	.27**	-.20**	-.11*	-.10*	-.15**	-	.07	.06	.04	-.03	.01	.05	-.07	.02	-.13
11. Mother's Marital status	-.21**	.00	.06	.08	-.01	.52**	.11*	.12*	-.14**	.05	-	.16**	-.09	.06	-.03	.05	-.03	-.07	.04
12. Mas GI(W3)	.05	.17**	.04	.10	.01	-.12**	-.17**	-.18**	.02	.09	-.05	-	-.46**	.12**	-.19**	.31**	-.04	.23**	-.03
13.Fem GI (W3)	.15**	-.14**	03	-.04	.04	.01	.08	.02	.05	-.03	-.04	-.27**	-	-.29**	.21**	-.14*	.10	-.13	.04
14. Mas GI (W4)	-.10	.10	.15**	.02	.08	.03	-.10	-.12*	-.04	.03	.08	.39**	-.30**	-	-.44**	.39**	-.26**	.37**	-.27**
15. Fem GI (W4)	.19**	-.11*	-.07	-.09	-.09	-.08	-.06	-.09	.03	.02	-.06	-.14**	.41**	-.32**	-	-.24**	.41**	-.29**	.25**
16. Mas GI (W5)	-.16**	-.07	-.11	-.06	-.10	.07	.07	.08	-.06	-.07	.10*	.23**	-.21**	.34**	-.32**	-	-.40**	.61**	-.45**
17. Fem GI (W5)	.28**	.00	.00	-.04	-.08	-.12*	-.09	-.14**	.02	.07	-.11*	-.05	.35**	-.16**	.48**	-.54**	-	-.51**	.40**
18.Mas GI (W6)	-.20**	.07	-.02	-.01	.02	.04	.09	.10	-.18**	-.03	.02	.08	-.27**	.41**	-.42**	.53**	-.41**	-	-.65**
19.Fem GI (W6)	.28**	-.02	.02	-.08	-.04	-.10	-.04	-.09	.04	-.07	-.1	-.05	.35**	-.24**	.51**	-.38**	.67**	-.34**	-
Percentage of Missing (girls)	0	30.9	32.1	34.9	60.5	4.9	29.5	29.5	20.9	7	5.4	30.6	28.6	30.9	29.4	25.8	34.3	48.3	47.4
Percentage of missing (boys)	0	31.6	36.4	47.9	75.2	6.1	52.8	50.5	23.9	12.3	9.4	28.7	33.1	34.3	34.8	60.7	61.1	74.6	74.9

Note: Correlations for girls are below the diagonal and correlations for boys are above the diagonal

Table 1.2
Means and Standard Deviations of Study 1Variables

Variable	Boys' Mean (SD) *N=687*	Girls' Mean (SD) *N=653*	Total Mean (SD) N= 1343
Gender Attitudes (W3)	2.08 (.57)	1.78 (.53)	1.93 (.57)
Gender Attitudes (W4)	2.12 (.49)	1.80 (.53)	1.97 (.53)
Gender Attitudes (W5)	2.27 (.40)	2.01 (.44)	2.14 (.44)
Gender Attitudes (W6)	2.32 (.42)	2.03 (.49)	2.14 (.48)
Mothers' Gender Attitudes (W1)	2.06 (.64)	2.06 (.66)	2.06 (.65)
Masculine GI (W3)	5.59 (1.39)	2.58 (1.54)	4.12 (2.10)
Masculine GI (W4)	5.82 (1.31)	2.09 (1.37)	4.00 (2.30)
Masculine GI (W5)	6.11 (1.14)	1.72 (.96)	3.96 (2.41)
Masculine GI (W6)	6.25 (.90)	1.83 (1.02)	4.09 (2.41)
Feminine GI (W3)	2.13 (1.49)	5.62 (1.30)	3.82 (2.24)
Feminine GI (W4)	1.87 (1.31)	5.95 (1.17)	3.86 (2.39)
Feminine GI (W5)	1.57 (1.01)	6.17 (.98)	3.83 (2.48)
Feminine GI (W6)	1.69 (.97)	6.21 (.93)	3.89 (2.45)

Gender attitude scores range from 1 (*strongly disagree*) to 4 (*strongly agree)*. GI = Gender Identity. Masculine gender identity and feminine gender identity range from 1 (*not at all masculine/feminine*) to 7 (*very masculine/feminine*). W3 = Wave 3 (i.e., summer after Grade 8); W4 = Wave 4 (i.e., Grade 11); W5 = Wave 5 (i.e., one year after high school); W6 = Wave 6 (i.e., three years after high school).

Table 1.3
Unconditional Latent Growth Models for Girls' and Boys' Gender Attitudes

Variable	Model 1-Girls	Model 2-Boys
	Coefficient (SE)	Coefficient (SE)
Grade 8 intercept	1.75 (.02)**	2.06 (.02)**
Gender attitudes Slope	.08 (.01)**	.06 (.01)
Slope with Grade 8 Intercept	[a]	-.03 (.01)**
Slope Variance	[a]	.02 (.00)**
Grade 8 intercept variance	.10 (.01)**	.13 (.02)**
Model Fit Indices		
$\chi 2$ (df)	16.24 (11)	
RMSEA	.03	
CFI/TLI	99/98	

Note. **$p < .01$; [a] path constrained to zero.

Table 1.4
Conditional Latent Growth Models Predicting Girls' and Boys' Gender Attitudes with Equality Constraints

Variable	Model 1 – Girls	Model 1 – Boys
	Coefficient (SE)	Coefficient (SE)
Grade 8 intercept	1.75 (.04)**	2.07 (.08)**
Gender attitudes slope	.13 (.02)**	.10 (.03)**
Slope with Grade 8 intercept	[a]	.04 (.06)
Slope variance	[a]	.01 (.02)
Grade 8 intercept variance	.09 (.01)**	.05 (.19)
Intercept on race	.02 (.05)	.01 (.05)
Intercept on mothers' employment status	-.01 (.01)	-.01 (.01)
Intercept on mothers' marital status	-.01 (.01)	-.01 (.01)
Intercept on mothers' gender attitudes	.14 (.04)**	.16 (.04)**
Intercept on family income	.00 (.01)	.00 (.01)
Intercept on mothers' employment status x race	.00 (.01)	.00 (.01)
Intercept on mothers' marital status x race	.00 (.01)	.00 (.01)
Intercept on mothers' gender att. x race	-.01 (.01)	-.01 (.01)
Intercept on family income x race	-.01 (.01)	-.00 (.01)
Intercept on mothers' marital status x mothers' employment status	.00 (.01)	.00 (.01)
Intercept on mothers' marital status x employment status x race	.01 (.01)	.00 (.01)
Wave 5 college attendance	-.06 (.06)	-.11 (.07)
Wave 5 college attendance x race	-.01 (.07)	.14 (.09)
Wave 6 college attendance	-.03 (.06)	-.12 (.08)

Wave 6 college attendance x race	.04 (.08)	.14 (.10)
Slope on race	-.04 (.03)	-.04 (.03)
Slope on mothers' employment status	-.01 (.01)	-.01 (.01)
Slope on mothers' marital status	-.01 (.01)	-.01 (.01)
Slope on mothers' gender attitudes	-.00 (.01)	-.02 (.01)
Slope on family income	-.00 (.00)	.00 (.00)
Slope on mothers' employment status x race	.00 (.01)	.00 (.01)
Slope on mothers' marital status x race	.00 (.01)	.00 (.01)
Slope on mothers' gender Att. x race	-.01 (.01)	-.01(.01)
Slope on family income x race	.01 (.00)	.01(.00)
Slope on mothers' marital status x Mothers' employment status	.00 (.01)	.00(.01)
Slope on mothers' marital status x employment status x race	.00 (.01)	.00(.01)
Model Fit Indices		
$\chi 2$ (df)	127.75(98)	
RMSEA	.02	
CFI/TLI	94/91	

Note. $^{**}p < .01$; $^{*}p < .05$ $^{\dagger}p = .06$ ^{a} path constrained to zero.

Table 1.5
Coefficients and R^2 Values for Stepwise Regression Models Predicting Gender Attitudes Three Years Post High School.

Gh2	Step 1			Step 2			Step 3		
	B (SE B)	β	R^2	B (SE B)	β	R^2	B (SE B)	β	R^2
Step 1: Control variables									
Race	.01 (.04)	.01		.00 (.04)	.00		-.01 (.07)	-.01	
Gender	.09 (.04)**	.10		.10 (.04)**	.10		.06 (.08)	.07	
Gender attitudes one year post HS	.53 (.04) **	.49	.28**	.52 (.04)**	.48		.52 (.04)**	.48	
Step 2: Focal variable									
College attendance				-.08 (.04)+	-.08	.29**	-.11 (.07)	-.10	
Step 3: Interaction terms									
College attendance x race							.02 (.09)	.02	
College attendance x gender							.05 (.09)	.04	.29

Table 1.6

Regression Models Testing Auto-regressive and Cross-Lagged Relations Between Gender Attitudes and feminine Gender Identity for Girls

Variable	Gender Attitudes Wave 4 *B (SE)*	Fem. Gender Identity Wave 4 *B (SE)*	Gender Attitudes Wave 5 B (SE)	Fem. Gender Identity Wave 5 *B (SE)*	Gender Attitudes Wave 6 *B (SE)*	Fem. Gender Identity Wave 6 *B (SE)*
Mothers' employment status	-.08 (.07)	.03 (.16)	-.09 (.06)	-.06 (.12)	.04 (.07)	-.09 (.11)
Mothers' marital status	-.06 (.06)	.03 (.13)	.02 (.05)	.10 (.11)	-.07 (.06)	-.01 (.10)
Family income	.02 (.01)	.02 (.01)	-.04 (.10)	.00 (.01)	.00 (.01)	-.01 (.01)
Mothers' gender attitudes	.06 (.04)	.08 (.08)	.01 (.03)	.14 (.06)**	.12 (.04) **	-.16 (.06)
Race	-.02 (.05)	.32 (.11)**	-.06 (.04)	.39 (.09)**	.01 (.05)	.21 (.08)*
Gender attitudes wave 3	.29 (.05)**	.28 (.10)**	.31 (.04)	-.05 (.09)	.07 (.06)	.25 (.12)
Fem. gender identity wave 3	.05 (.05)	.35 (.04)**	-.01 (.02)	.15 (.04)**	.05 (.02)*	.09 (.08)
Gender attitudes wave 4	-	-	.21 (.04)**	.05 (.09)*	.27 (.05)**	.09 (.08)
Fem. gender identity wave 4	-	-	.00 (.04)	.32 (.09)**	-.05 (.03)*	-.09 (.05)
Gender attitudes wave 5	-	-	-	-	.36 (.06)**	.09 (.10)
Fem. gender identity wave 5	-	-	-	-	-.03 (.06)	.57 (.05)**
R^2	.10 **	.21 **	.28 **	.32**	.39**	.52*

$^{*}p < .05$, $^{**}p < .01$, $^{+}p < .10$

Table 1.7

Regression Models Testing Auto-regressive and Cross-Lagged Relations Between Gender Attitudes and Feminine Gender Identity for Boys

Variable	Gender Attitudes Wave 4 *B (SE)*	Fem. Gender Identity Wave 4 *B (SE)*	Gender Attitudes Wave 5 B (SE)	Fem. Gender Identity Wave 5 *B (SE)*	Gender Attitudes Wave 6 *B (SE)*	Fem. Gender Identity Wave 6 *B (SE)*
Mothers' employment status	.06 (.07)	.00 (.16)	.04 (.07)	.00 (.17)	.01 (.09)	-.06 (.22)
Mothers' marital status	-.11 (.06)	-.01 (.16)	-.05 (.07)	-.35 (.17)*	.03 (.09)	-.32 (.20)
Family income	.00 (.01)	-.02 (.02)	.00 (.01)	.03 (.02)$^{+}$	.00 (.01)	.05 (.02)*
Mothers' gender attitudes	.08 (.04)*	- .07 (.11)	.05 (.04)	-.01 (.10)	.02 (.05)	-.21 (.12)+
Race	-.03 (.05)	-.35 (.15)*	-.03 (.06)	-.40 (.13)	.01 (.08)	-.50 (.17)**
Gender attitudes wave 3	.27 (.04)**	.01 (.12)	.04 (.05)	-.17 (.14)	-.04 (.07)	.22 (.14)
Fem. gender identity wave 3	.01 (.02)	.21 (.05)**	.-01 (.02)	.10 (.05)$^{+}$	.00 (.02)	-.04 (.05)*
Gender attitudes wave 4	-	-	.18 (.06)**	-.08 (.14)	.19 (.07)**	-.12 (.16)
Fem. gender identity wave 4	-	-	.01 (.02)	.28 (.04)**	-.02 (.03)	.10 (.06)
Gender attitudes wave 5	-	-		-	.46 (.08)**	.17 (.18)
Fem. gender identity wave 5	-	-		-	-.02 (.04)	.25 (.08)**
R^2	.16**	.07**	.08**	.23**	.28**	.29**

$^{*}p < .05$, $^{**}p < .01$, $^{+}p < .10$

Table 1.8

Regression Models Testing Auto-Regressive and Cross-Lagged Relationships Between Gender Attitudes and Masculine Gender Identity for Girls.

Variable	Gender Attitudes Wave 4 *B (SE)*	Mas. Gender Identity Wave 4 *B (SE)*	Gender Attitudes Wave 5 B (SE)	Mas. Gender Identity Wave 5 *B(SE)*	Gender Attitudes Wave 6 *B (SE)*	Mas. Gender Identity Wave 6 *B (SE)*
Mothers' employment status	-.08 (.07)	-.13 (.18)	-.08 (.06)	-.16 (.13)	.05 (.07)	-.28 (.13)*
Mothers' marital status	-.06 (.06)	.17 (.16)	.02 (.05)	.13 (.12)	-.08 (.06)	-.17 (.13)
Family income	.02 (.01)	.01 (.02)	.00 (.01)	.00 (.01)	-.00 (.01)	.01 (.01)
Mothers' gender attitudes	.06 (.04)	-.06 (.10)	.02 (.03)	-.16 (.07)*	.12 (.04) **	.02 (.07)
Race	-.02 (.05)	-.23 (.13)$^{+}$	-.06 (.03)	-.12 (.09)*	.01 (.05)	-.15 (.10)
Gender attitudes wave 3	.29 (.05)**	.14 (.13)	.31 (.04)	-.07 (.10)	.08 (.06)	.25 (.12)
Mas. gender identity wave 3	.00 (.02)	.36 (.04)	.00 (.02)	.08 (.04)*	-.03 (.02)	-.11 (.04)*
Gender attitudes wave 4	-	-	.22 (.04)**	-.23 (.10)*	.27 (.05)**	-.05 (.11)
Mas. gender identity wave 4	-	-	-.02 (.02)	.22 (.04)	.04 (.02)$^{+}$	.20 (.05)**
Gender attitudes wave 5	-	-		-	.35 (.06)**	-.18 (.13)
Mas. gender identity wave 5	-	-		-	-.01 (.03)	.50 (.06)**
R^2	.10 **	.19 **	.28**	.20**	.37**	.40**

$^{*}p < .05$, $^{**}p < .01$, $^{+}p < .10$

Table 1.9

Regression Models Testing Auto-Regressive and Cross-Lagged Relationships Between Gender Attitudes and Masculine Gender Identity for Boys.

Variable	Gender Attitudes Wave 4 *B (SE)*	Mas. Gender Identity Wave 4 *B(SE)*	Gender Attitudes Wave 5 *B(SE)*	Mas. Gender Identity Wave 5 *B (SE)*	Gender Attitudes Wave 6 *B (SE)*	Mas. Gender Identity Wave 6 *B (SE)*
Mothers' employment status	.05 (.07)	-.09 (.11)	.05 (.07)	.20 (.18)	-.03 (.09)	-.02 (.18)
Mothers' marital status	-.11 (.06)	.03 (.16)	-.04 (.07)	.39 (.18)*	-.00 (.09)	.19 (.16)
Family income	-.00 (.01)	.02 (.02)	-.00 (.01)	-.04 (.02)$^{+}$	.00 (.01)	-.03 (.02)$^{+}$
Mothers' gender attitudes	.09 (.04)*	-.09 (.10)	.04 (.04)	.05 (.10)	.03 (.05)	.06 (.09)
Race	-.03 (.05)	.31 (.14)*	-.03 (.06)	.59 (.14)**	-.02 (.08)	.39 (.14)*
Gender attitudes wave 3	.28 (.04)	.08 (.11)	.04 (.05)	-.18 (.14)	-.05 (.06)	.01 (.12)
Mas. gender identity wave 3	-.03 (.02)*	.39 (.04)**	.03 (.02)	.17 (.05)*	. 01 (.03)	.08 (.05)$^{+}$
Gender attitudes wave 4	-	-	.19 (.05)**	.23 (.14)	.18 (.07)*	-.04 (.13)
Mas. gender identity wave 4	-	-	-.02 (.02)	.25 (.06)**	.02 (.04)	.07 (.06)
Gender attitudes wave 5	-	-	-	-	.46 (.08)	.37 (.14)*
Mas. gender identity wave 5	-	-	-	-	.06 (.04)	.39 (.07)**
R^2	.16**	.19**	.09 *	.27**	.31**	.49**

$^{*}p < .05$, $^{**}p < .01$, $^{+}p < .10$

Figure 1.1

Changes in Gender Attitudes From Grade 8 to Three Years Post High School Graduation

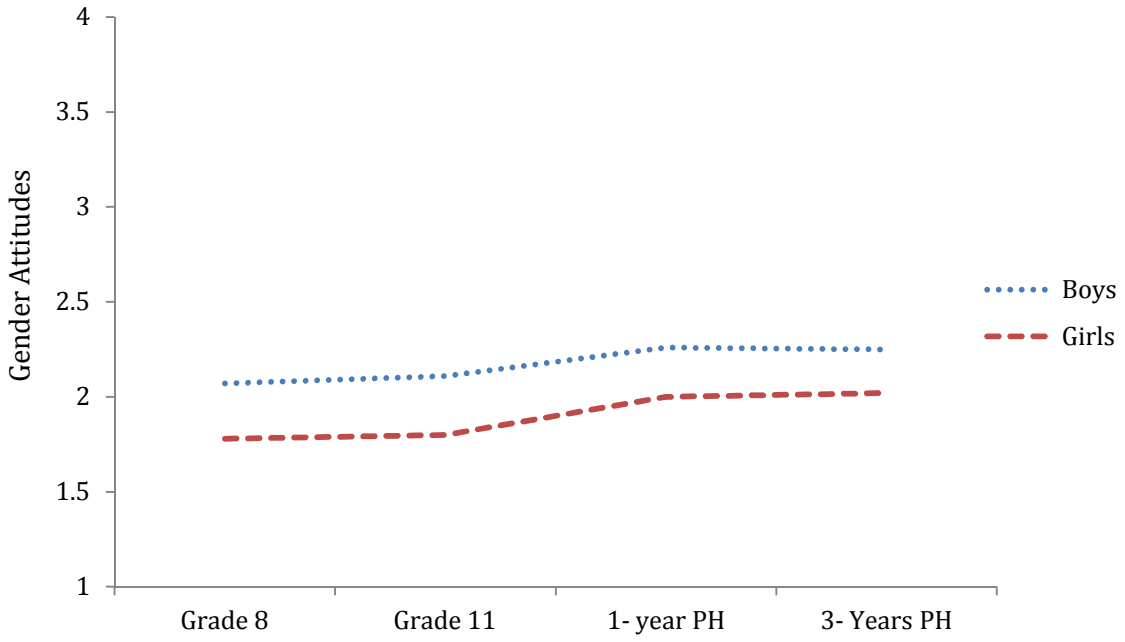
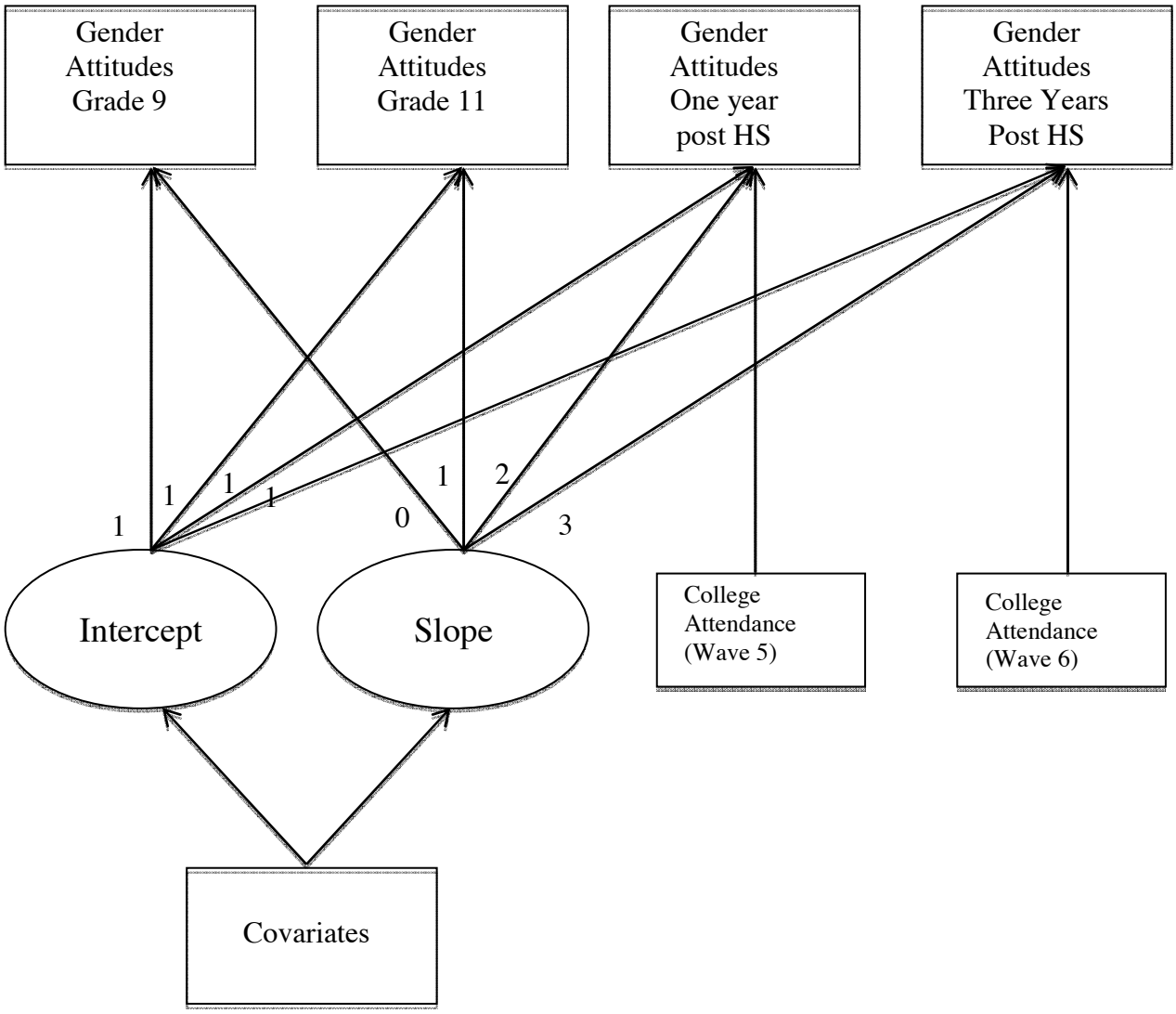


Figure 1.2

Hypothesized Latent Growth Curve Model for Gender Attitudes. Models were Tested for Boys and Girls



STUDY TWO: GENDER ATTITUDES, GENDER IDENTITY AND ADOLESCENTS' EDUCATIONAL CHOICES

In spite of increased parity in the roles of men and women in American society, gender differences still exist in educational attainment, occupations and college majors. For example, across races and levels women are more likely to earn a degree than men (NCES, 2012), and young men are more likely to choose STEM or doctoral track medicine majors, whereas young women are more likely to choose non-doctoral track clinical, health/science and "other" majors (Morgan, Gelbgiser, & Weeden, 2013). Eccles et al.'s (1987, 1994) model of achievement related choice highlights the role of societal gender beliefs on shaping individuals' occupational and educational choices. Consistent with this model, endorsement of stereotypes about the abilities of boys and girls in traditionally sex-typed domains such as math and science are related to adolescents' self-concept in those domains (e.g., Frome & Eccles, 1998; Kurtz-Costes, Rowley, Harris-Britt & Woods, 2008). Self-perception, in turn, is related to adolescents' education-related decisions such as girls' intentions to pursue a math major or career (Copping, 2011). Although the findings are not always consistent, stereotype endorsement is also directly related to individuals' educational choices such as women's intentions to attend graduate school in a math related field (Schmader, Johns, & Barquissau, 2004).

Beyond gender stereotypes, however, other dimensions of gender ideologies such as beliefs about the work and family roles of men and women as well as gender self-schemata may be related to adolescents' educational choices. The overarching goal of Study 2 is to examine the relationships between adolescents' gender cognitions (i.e., gender attitudes and gender identity)

and their education-related beliefs and behaviors (i.e., educational attainment expectations, educational attainment and the traditionality of their college academic major). I also examine if race and gender moderate the relationships between these gender cognitions and academic outcomes. Adolescence is an important period to explore the relationship between gender cognitions and educational choices because youth are likely to be thinking about their futures beyond high school and making decisions that can influence their future options.

Gender Attitudes, Education Attainment Expectations and Educational Attainment

Consistent with Eccles et al.'s theory of achievement related choices, several researchers have asserted that ideologies regarding men and women's work and family roles should influence educational attainment expectations because individuals often make career choices with family roles in mind, and educational achievement and career achievement are linked (Davis & Pearce, 2007; Weisgram, Dinella & Fulcher, 2011). Empirical support has also been found for a relationship between youth's gender attitudes and their achievement-related beliefs and behaviors. In one study using a large sample of adolescents in Grades 9 and 10 it was found that egalitarian family gender role ideology (defined as the belief that women should have the same kinds of opportunities as men to have a career, and men should share equally in housework and child care) was positively related to youth's educational attainment expectations (Davis & Pearce, 2007). More specifically, adolescents with more egalitarian work-family gender ideology were more likely to expect to attend college than just high school, and were more likely to expect to attend graduate or professional school than just college compared to those with less egalitarian gender attitudes. Similarly, Mexican American girls' beliefs about the rights, roles and privileges women should have in relation to men are related to how much education they plan to complete (McWhirter, Hackett & Bandalos, 1998). Consistent with these results, Crockett and

Beal (2012) found that adolescents who held more egalitarian gender attitudes expected to complete school and begin working at later ages than youth with more traditional gender attitudes. These expectations may have indicated plans for higher education because egalitarian family work ideology and educational expectations were positively correlated.

In sum, studies show that gender attitudes regarding family and work roles are related to youth's educational expectations. Thus, in Study 2 I seek to replicate these findings with a racially diverse sample of youth. Given that educational attainment expectations robustly predict youth's educational attainment (Wood, Kurtz-Costes, & Copping, 2011), gender attitudes should also be related to actual educational attainment. Some support has been found for this hypothesis: Egalitarian gender attitudes in late adolescence about women and men's work and family roles were related to the amount of time European American young adults spent in school over five years and their attainment of a bachelors degree (Cunningham et al., 2005). Consistent with previous research, I expect that youth's endorsement of traditional gender attitudes in adolescence will predict their educational attainment three years post high school graduation. I will also test if educational attainment expectations mediate this relationship.

Gender Identity, Education Attainment Expectations and Educational Attainment

Scholars have long been interested in the relationship between gender identity and academic behaviors. Some of the characteristics associated with the traditional feminine gender role (e.g., nurturing, submissiveness etc.) may be seen as incompatible with high achievement; therefore some girls may shy away from academic success (Renolds, 2001a). On the other hand, academic achievement can also be problematic for boys if studiousness and academic achievement are viewed as conflicting with conventional masculinity (Farrell, 1994; Renolds, 2001b). Some male students may also learn to equate academics with femininity because of the

behaviors that are encouraged (e.g., raising hands, sitting quietly) and punished (e.g., play fighting) in the classroom. However, it can be argued that masculinity may be related to academic achievement because higher education is necessary to obtain many of the benefits that are associated with traditional masculinity (i.e., power, high status) in American society. To my knowledge, the relationship between masculine and feminine gender identities and educational attainment expectations or educational attainment has not been examined. These are important relationships to explore given that girls are outperforming their male peers in rates of post-secondary degree attainment (NCES, 2012). Because of the conflicting theoretical predictions regarding relationships between masculine gender identity and educational outcomes my tests of these relationships are exploratory with no specific hypotheses. However, I expect that feminine gender identity will be negatively related to educational outcomes for girls.

Gender Cognitions and Selection of College Majors

Gender differences in adolescents' choice of college majors often correspond to a "people" versus "things" value/orientation (Perry & Pauletti, 2011). Boys are more interested in careers and college majors dealing with science and technology, whereas girls are more interested in people-oriented careers and majors such as psychology, education, and law (Miller, Blessing & Schwartz, 2006; Schulenberg, Goldstein & Vondracek, 1991). Recent research also suggests that girls may be more likely to choose non-STEM careers because they have high scores in both math and verbal domains compared to boys, who on average are likely to be in the highest quartile in math but not verbal skills (Wang, Eccles & Kenny, 2013).

Although gender beliefs are related to youth's choice of traditional and non-traditional college majors (Leaper & Van, 2008; Tokar & Jome, 1998) the relationship still remains unclear. For example, undergraduate men who report high levels of covert sexist attitudes are

significantly less likely to choose non-traditional majors than those who reported low levels of covert sexist attitudes (Leaper & Van, 2008). In contrast to these results, a direct relationship was not found between career aspirations and gender role attitudes in a sample of Latino and African American high school students. Instead, career decision self-efficacy mediated the relationship between their gender role attitudes and the gender traditionality of their career aspirations (Gushue & Whitson, 2006). These conflicting findings may be due to the measure of gender-related beliefs used in the studies (gender attitudes about the roles of men and women versus covert sexism). Alternatively, the results may reflect differences between the samples such as race and gender of the participants, and the focus on traditional and non/traditional academic majors versus career aspirations. The current study will provide a clearer understanding of the relationship between gender attitudes about the work and family roles of men and women and the traditionality of youth's selected college major.

Gender identity is also related to young adults' career-related decisions. Using the personality traits of expressivity and instrumentality to represent feminine and masculine gender identity respectively, Weisgram and colleagues (2011) found that self-perceptions of masculinity and femininity are related to the traditionality of college women's expected occupation, with masculinity being negatively related and femininity being positively related to selecting traditionally feminine occupations. Other aspects of gender identity that are not based solely on personality traits may also be related to the traditionality of individuals' achievement-related choices such as their college majors. Consistent with this idea, men who rate themselves lower on gender typicality are more likely to choose non-traditional majors than men who perceive themselves as more gender-typical (Leaper & Van, 2008).

Additional research is needed to understand the relationships among gender attitudes,

masculine gender identity, feminine gender identity, and adolescents' choice of college majors. Based on theory (Eccles, 1987, 1994,) and previous research, I hypothesize that adolescents who endorse traditional gender attitudes will select college majors that are more consistent with traditional gender norms. In addition, I hypothesize that boys with higher levels of masculine gender identity and girls with higher levels of feminine gender identity will select more traditional gender-typed majors. I also hypothesize that girls with higher levels of masculine gender identity and boys with higher levels of feminine gender identity will select less traditional gender-typed majors.

Race and Gender Differences in the Relationships Between Gender Cognitions and Educational Outcomes

In addition to examining the relationship among gender attitudes, gender identity and educational choices, I will also explore if gender and race moderate these relationships. Although I expect that for all youth egalitarian gender attitudes will be related to higher education attainment expectations and education attainment, gender attitudes regarding work and family roles may be more related to girls' educational choices than boys' because adolescent girls are more likely to be thinking about their family roles and are more likely to favor family life goals over work goals in comparison to adolescent boys (Jozefowicz, Barber & Eccles, 1993; Morgan et al., 2013). In addition, women who hold egalitarian gender attitudes may be less likely to spend time during early adulthood in activities that are related to family formation and more likely to engage in activities related to their professional development (Cunningham et al., 2005). The relationship between gender attitudes and men's educational choices might be weaker or nonsignificant. On one hand, adolescent boys who endorse traditional gender attitudes might pursue higher education, including a traditional, male-oriented college major in order to secure a well-paying job to maintain a traditional household (e.g. stay-at-home wife). However,

men with egalitarian gender attitudes may also seek higher education or a more lucrative college major because of the flexibility and resources that they provide. These benefits would allow men to participate in all aspects of their family life or hire help to accomplish domestic and child care duties (Davis & Pearce, 2007). Moreover, despite changes in the roles of men and women in American society, men are still expected to be the primary breadwinners, thereby fulfilling their family and work roles simultaneously. Several research studies support these ideas. For example, Davis and Pearce (2007) found that the relationship between gender attitudes and educational attainment expectations is stronger for girls than boys and the relationship between egalitarian gender attitudes and anticipated age of job entry is stronger for girls than boys (Crocket & Beal, 2012). Crocket and Beal (2012) suggest that egalitarian gender attitudes may be particularly important for girls because "they broaden the scope of possible futures and spur consideration of higher levels of adult attainment beyond the traditional roles of wife and mother" (p. 1736).

The relationship between gender attitudes and educational choices may also vary according to youth's racial background. The ability to put gender attitudes into practice and realize educational goals depends on available opportunities. In the US, African Americans continue to have limited access to adequate employment and higher education because of discrimination, poverty, and reduced access to high-quality schools (Kurtz-Costes, Swinton, & Skinner, 2014; Seaton, Caldwell, Sellers, & Jackson, 2008). Because of these limitations, the relationship between African American youth's gender-related beliefs and achievement-related behaviors may be weaker in comparison to those of their White peers. African Americans who have an ideological belief in traditional gender roles may recognize that because of reduced access to education and other resources they may not be able to live a gender traditional lifestyle.

As a result, African American adolescents, regardless of their gender attitudes, may strive for higher education and college majors that will result in high status careers so that they will be able to provide for their families. Gender identity may also play a lesser role in the educational choices of African Americans than European Americans because factors such as racial identity or experiences related to race (e.g., experiences of racial discrimination) might be more salient and important to their academic choices than gender identity.

Covariates. A variety of family background and personal factors are related to both gender attitudes and educational expectations. These factors, briefly described here, will be controlled in all analyses to examine the effect of gender attitudes and gender identity on educational attainment expectations and educational attainment. Cross sectional and longitudinal research has shown that *socioeconomic status* is positively related to educational expectations (e.g., Mello, 2009). High income is also related to egalitarian gender attitudes among adults (Harris & Firestone, 1998; Wilkie, 1993). Youth with higher *self-esteem* report more egalitarian gender attitudes and higher educational expectations than youth with lower self-esteem (Davis & Pearce, 2007; Wigfield & Eccles, 1994). *Maternal education* is positively related to children's educational expectations and egalitarian gender attitudes (Davis & Pearce, 2007; Harris & Firestone, 1998).

Overview of Hypotheses

Data for Study 2 come from MADICS (Eccles, 1997). Youth's beliefs about traditional gender roles, and self ratings of masculine- and feminine gender identity collected in Grade 11 were used to predict their educational attainment expectations during Grade 11, and their educational attainment and college major three years post high school graduation.

Hypothesis 1A: Youth's endorsement of traditional gender attitudes in Grade 11 will be negatively related to their educational attainment expectations during Grade 11 such that youth who endorse less traditional gender attitudes will report higher educational expectations in high school than youth who endorse more traditional gender attitudes. This relationship will be stronger for girls than boys and stronger for White youth than Black youth.

Hypothesis 1B: Adolescents' gender identity in Grade 11 will be related to their educational attainment expectations in Grade 11. In particular, I expect that girls with high levels of feminine gender identity will have lower educational expectations in high school than girls with lower self-perceptions of femininity. I will explore if boys' feminine gender identity and both boys' and girls' masculine gender identities are related to their educational expectations, and if race moderates this relationship.

Hypothesis 2A: Adolescents who endorse less traditional attitudes in Grade 11 will report higher educational attainment three years post high school. This relationship will be stronger for girls than boys and stronger for White students than Black students.

Hypothesis 2B: Adolescents' gender identity in Grade 11 will be related to their educational attainment three years post high school graduation. I expect that girls with high levels of feminine gender identity will report lower educational attainment than girls with lower self-perceptions of femininity. I will also explore the relationship among masculine gender identity (for both boys and girls), feminine gender identity (for boys) and educational attainment, and explore if race moderates these relationships.

Hypothesis 3: Educational attainment expectations in Grade 11 will mediate the relationship between gender attitudes in Grade 11 and educational attainment three years post high school graduation.

Hypothesis 4A: Adolescents' gender attitudes in Grade 11 will be positively related to the traditionality of their college major three years post high school. Adolescents who endorse more traditional gender attitudes will select majors with a higher degree of traditionality. I will explore if this relationship varies according to youth's gender and race.

Hypothesis 4B: Adolescents' gender identity in Grade 11 will predict the traditionality of their college majors three years post high school. Boys who report high levels of masculine gender identity will select majors with a higher degree of traditionality; girls who report high levels of feminine gender identity will select college majors with a higher degree of traditionality. I will also explore the relationships between girls' masculine gender identity, boys' feminine gender identity, and the traditionality of their college major and if race moderates this relationship.

Study 2 Method

Data Source and Sample

Analyses for this study utilized data collected from adolescent participants in MADICS when they were in Grade 11 (Wave 4), and three years after they were expected to have graduated from high school (Wave 6). Family background information such as family income and mothers' education were collected from primary caregivers during the first wave of the study when youth were in Grade 7. Only youth who reported their educational attainment three years post high school were included in the first set of analysis, which consisted of 305 White adolescents (44% boys) and 491 Black adolescents (43% boys), examining the effect of youth's gender attitudes and gender identity on their educational attainment expectations and educational attainment. Youth who were lost to attrition and those who participated in the study three years post high school graduation (and therefore provided reports about their educational attainment)

were different on a variety of key variables. Youth who participated in the study three years post high school graduation reported lower levels of traditional gender attitudes $F(1, 921) = 18.67$, and lower levels of masculine gender identity $F(1, 943) = 18.59$, $ps < .05$, and higher levels of feminine gender identity $F(1, 926) = 19.03$, $ps < .05$ during Grade 8 than youth who did not participate. Youth who participated in the study three years post high school also came from families with higher income $F(1, 1247) = 13.21$, and education $F(1, 1326) = 30.35$, as compared to those who did not participate $ps < .01$. In addition, girls (77%) were more likely than boys (70%) to participate in the study, $\chi 2 = 56.04$ $(1, N = 1343)$, $p < .01$) and Black youth (55%) were less likely than White youth (68%) to participate in the study $\chi 2 = 22.29$ $(1, N = 1343)$, $p < .01$ three years post high school graduation.

Only youth who were full time college students were asked to report their college majors three years post high school *(N* = 402; 37.6 % boys; 58.7% Blacks). In comparison to youth who were not full time college students three years post high school graduation and thus were not included in the analyses predicting the traditionality of college majors, youth who were full time college students came from families with higher incomes $F(1, 1247) = 80.22$, and their primary caregiver reported higher levels of education $F(1, 1326) = 133.30$, $ps < .01$. Youth who were full time college students also reported lower levels of traditional gender attitudes $F(1, 921) = 26.51$, and lower levels of masculine gender identity $F(1, 943) = 18.53$, $ps < .05$, and higher levels of feminine gender identity $F(1, 926) = 5.70$, $ps < .05$, during Grade 8 than youth who were not full time college students. Three years post high school, girls (38%) were more likely than boys (22%) to be full time college students, $\chi 2 = 43.36$ $(1, N = 1343)$, $p < .01$) and Black youth (26 %) were less likely than White youth (37 %) to be full-time college students, $\chi 2 = 16.58$ $(1, N = 1343)$, $p < .01$.

Measures

Gender attitudes. Gender attitudes were assessed when youth were in Grade 11. This measure is similar to that used in Study 1 with one additional question (see Appendix). The items were averaged to create a measure of gender attitudes. Higher values represent endorsement of more traditional gender attitudes. Cronbach's alphas were .67 and .70 for Black and White youth respectively.

Masculine gender identity. Youth rated their masculine gender identity in Grade 11. This measure is the same as used in Study 1.

Feminine gender identity. Youth rated their feminine gender identity in Grade 11. This measure is the same as used in Study 1.

Educational attainment expectations. Educational attainment expectations were assessed in Grade 11 with the following question: *If you could do exactly what you wanted, how far do you think you will actually go in school?* Response options ranged from 1 (*11th grade or less) to* 8 (*get a law degree, a Ph. D., or a medical doctor's degree)*.

Educational Attainment. Educational attainment measured three years post high school was assessed with a single item asking youth to report the highest level of education they had completed. Response options were as follows: 1 = *less than high school*, 2 = *high school diploma/GED,* 3 = 1-2 *years post high school vocational training*, 4 = *1 year of college or less*, 5 = *two years college*, 6 = *two-year college graduate,* 7 = *three-four years college,* 8 = *four year college graduate or more*.

Traditional and non-traditional academic major. Three years post high school graduation, participants in MADICS who were full time college students were asked to indicate their college major if they had chosen one. Approximately 98% of this full time college sample

reported their major. Students' majors were given a traditionality rating based on participants' sex and the proportion of male and female students who obtained a Bachelors degree in that field during the 1999-2000 academic year as indicated by the National Center for Education Statistics. For example, a male participant who reported that he was majoring in psychology received a traditionality rating of 63 and a female received a traditionality rating of 37. This procedure is similar to procedures used by Weisgram et al. (2011) to measure traditionality of college students' expected occupation. An average traditionality score was computed if youth reported two majors.

Household income. When youth were in Grade 7 their primary caregivers reported family income before taxes. Options ranged from 1 (*less than $5000*) to 16 (*more than $75,000*).

Parent education. When youth were in Grade 7 their primary caregiver indicated the highest level of education he or she had completed. Response options were on a 1 (*8th grade or less*) to 9 (*MD, Law, PhD or other Doctoral degree*) scale.

Self-esteem. During Grade 11, youth responded to five questions based on Harter's (1982) notion of self-acceptance and self-worth. Responses ranged from 1 (*almost never*) to 5 (*almost always*). Responses were averaged to create a measure of self-esteem; higher values indicate higher self-esteem. Cronbach's alphas for Blacks and Whites were .80 and .90 respectively.

Study 2 Results

All study hypotheses were tested using Mplus Version 5.1 statistical software package (Muthén & Muthén, 1998-2014). Mplus estimates model parameters using full information maximum likelihood (FIML), which is appropriate for datasets with some missing data on the independent variables. (Percentage of data missing for each variable is shown in Table 2.1).

FIML permits all available data to be included in an analysis and generates parameter estimates that are less biased that those obtained using traditional missing data techniques (e.g., listwise deletion and pairwise deletion; Schafer & Graham, 2002).

Bivariate correlations and means for study variables are presented in Table 2.1 and Table 2.2 respectively. Using one-way ANOVAS I examined gender and race differences in youth's gender related cognitions, educational attainment expectations, educational attainment and traditionality of college major. Significant gender differences emerged in youth's gender cognitions, educational attainment expectations, educational attainment and traditionality of college majors. During Grade 11, girls reported higher levels of feminine gender identity than boys, $F(1, 624) = 1962.85, p < .01$, whereas boys reported higher levels of masculine gender identity $F(1, 619) = 1385.11, p < .01$, and more traditional gender attitudes in comparison to girls, $F(1, 605) = 63.09, p < .01$. Girls reported higher levels of educational attainment expectations in Grade 11, $F(1, 575) = 29.27, p < .01$ and higher levels of educational attainment three years post high school graduation in comparison to boys, $F(1, 794) = 16{,}43\ p < .01$. Three years post high school, the average educational attainment score corresponded roughly to one year of college or less for youth of both genders. Girls reported more traditional majors than boys, $F(1, 398) = 15.11, p < .01$. Traditionality ratings of college majors ranged from a rating of 12 for boys in social work to 96 in mechanics.

White youth and Black youth did not differ in their gender cognitions or the dependent variables in the study. More specifically, during Grade 11, there were no race differences in feminine gender identity, $F(1, 624) = 2.55, p = .11$, masculine gender identity $F(1, 619) = .20, p = .65$, or gender attitudes, $F(1, 605) = .22, p = .64$. In addition, there were no race differences in youth's Grade 11 educational attainment expectations, $F(1, 575) = .01, p = .15$, educational

attainment three years post high school graduation $F(1, 794) = 1.93, p = .16$ or traditionality of college majors $F(1, 398) = 2.38, p = .12$.

Multiple linear regression was used to examine if youth's Grade 11 gender cognitions (gender attitudes and gender identity) were related to their Grade 11 educational attainment expectations, educational attainment and college major three years post-high school. Youth's self-reported self-esteem, and parent reported education and household income were included as control variables in the regression models with educational attainment expectations and educational attainment. The independent variables gender attitudes, masculine gender identity and feminine gender identity were tested in separate models to reduce problems with multicollinearity. Variables were entered in the models in a stepwise fashion so that the change in R^2 associated with the focal variables could be observed All variables in the interaction terms were mean centered prior to analyses to reduce multicollinerality. Significant interactions were probed in the manner recommended by Aiken and West (1991) using an internet-based interactive calculator (Preacher, Curran & Bauer, 2006).

Gender Attitudes, Gender Identity and Youth's Educational Expectations

According to Hypothesis 1A, youth who endorsed more traditional gender attitudes in Grade 11 were expected to report lower educational expectations than youth who endorsed more egalitarian gender attitudes. This relationship was expected to be stronger for girls than boys and stronger for White students than Black youth.

Results of multiple regression analyses predicting youth's Grade 11 educational expectations are shown in Table 2.3. As hypothesized, traditional gender attitudes were negatively related to educational attainment expectations ($\beta = -.10, SE\ \beta = .04, p = .01$), and accounted for 10% of the variability in the dependent variable. The gender attitudes x gender,

and gender attitudes x race interaction terms were not significant. Overall, youth who endorsed more traditional gender attitudes expected to complete fewer years of education than youth who endorsed less traditional gender attitudes. Contrary to Hypothesis 1A, however, this relationship did not vary for girls and boys nor for Black and White youth.

According to Hypotheses 1B, girls with higher levels of feminine gender identity in Grade 11 were expected to report lower educational attainment expectations than their peers with lower levels of feminine gender identity. I also explored if boys' self-perceptions of femininity and boys' and girls' self-perceptions of masculinity were related to their educational attainment expectations and if race moderated the relationship between gender identity and educational attainment expectations.

Results of multiple regression analyses predicting youth's educational expectations from self-reports of feminine gender identity are shown in Table 2.4. The main effect of gender was qualified by a significant feminine gender identity x gender interaction term ($\beta = -.24, SE\ \beta = .09, p = .01$), and accounted for 1% of the variability in the dependent variable. The slope for the simple relation between feminine gender identity and educational attainment expectations for boys was -.29 ($SE = .07, p < .01$). For girls, this slope was -.02 ($SE = .08, p = .73$). Contrary to Hypothesis 1B, these results indicate that feminine gender identity was unrelated to girls' educational attainment expectations; however, higher levels of feminine gender identity was related to decreases in boys' educational attainment expectations.

Results of multiple regression analyses predicting youth's educational attainment expectations from self-reports of masculine gender identity are shown in Table 2.5. The masculine gender identity x gender interaction term was significant ($\beta = .22, SE\ \beta = .07, p < .01$). The slope for the simple relation between masculine gender identity and educational

attainment expectations for boys was .22 (SE = .08, p < .01). For girls, this slope was -.09 (SE = .06, p = .17). These results indicate that as masculine gender identity increases, boys' educational attainment expectations increases, whereas masculine identity is unrelated to girls' educational attainment expectations.

Gender Attitudes, Gender Identity and Youth's Educational Attainment

According to Hypothesis 2A, youth's Grade 11 gender attitudes were expected to predict their educational attainment three years post high school graduation. More specifically, youth who endorsed more traditional gender attitudes were expected to have lower educational attainment than youth who endorsed less traditional gender attitudes. This relationship was expected to be stronger for girls and White youth than boys and Black youth.

Results of multiple regression analyses predicting youth's educational attainment three years post high school are shown in Table 2.6. Gender attitudes was qualified by a marginally significant gender attitudes x gender interaction term, (β = -.08, $SE\ \beta$ = .04, p = .07), and accounted for 4% of the variability in the dependent variable. For boys, the simple slope for the relation between gender attitudes and gender was -.67 (SE = .27, p = .01). For girls, this slope was -.03 (SE = .21 p = .87). These results indicate that higher levels of traditional gender attitudes predicted lower educational attainment three years post high school for boys but was unrelated girls' educational attainment. Hypothesis 2A was partially supported. Boys who endorsed more traditional gender attitudes completed fewer years of education three years post high school graduation, but contrary to the hypothesis, the relationship between gender attitudes and educational attainment was not significant for girls.

According to Hypothesis 2B, girls with higher levels of feminine gender identity in Grade 11 were expected to have lower educational attainment three years post high school graduation

than girls with lower levels of feminine gender identity. I also explored if boys' self-perceptions of femininity and both boys' and girls' self-perceptions of masculinity predicted their educational attainment three years post high school. I also examined if race moderated the relationship between gender identity and educational attainment.

Results of multiple regression analyses predicting youth's educational attainment from self-reports of feminine gender identity are shown in Table 2.7. Feminine gender identity in Grade 11 (β = -.29, $SE\ \beta$ = .11, p = .01) was negatively related to educational attainment three years post high school graduation and accounted for 5% of the variability in the dependent variable. Therefore, youth who perceived themselves as more feminine in Grade 11 completed fewer years of education three years post high school graduation than youth with lower perceptions of femininity. This relationship did not vary according to youth's race or gender.

Results of multiple regression analyses predicting youth's educational attainment three years post high school from self-reports of masculine gender identity are shown in Table 2.8. Masculine gender identity was qualified by a significant masculine gender identity x gender interaction term (β = .21, $SE\ \beta$ = .06, p < .01), and accounted for 1% of the variability in the dependent variable. For boys, the simple slope for the relation between masculine gender identity and educational attainment was .35 (SE = .11, p < .01). For girls, this slope was -.05 (SE = .07, p = .43). These results indicate that boys who perceived themselves as more masculine in Grade 11 completed more years of education three years post high school than boys who perceived themselves as less masculine, but self-perceptions of masculinity was unrelated to girls' educational attainment.

Education Attainment Expectations as a Mediator of the Relationship between Gender Attitudes and Educational Attainment

According to Hypothesis 3, youth's Grade 11 education expectations were expected to

mediate the relationship between their Grade 11 gender attitudes and educational attainment three years post high school graduation. Bootstrap mediation analysis was used to test this hypothesis. In this model, gender attitudes was the independent variable and self-esteem, parents' education, race and family income were entered as control variables. The following paths were estimated: (a) total indirect effects (the combined effect of the pathway from gender attitudes to educational attainment through educational expectations), and (b) the specific indirect effect (the separate indirect effects of gender attitudes on educational attainment through educational expectations). One thousand bootstrap samples were used to calculate 95% bias-corrected confidence intervals for the indirect effects.

The total indirect effects of gender attitudes on educational attainment was significant, (B = -.16, SE = .07), p = .02 (95% CI of -.31 to -.02). The specific indirect effect was also significant, (B = -.16 SE = .07), p = .02 (95% CI of -.31 to -.02). As hypothesized, educational attainment expectations fully mediated the relationship between gender attitudes and youth's actual educational attainment three years post high school graduation.

Gender Attitudes, Gender Identity and Traditionality of Youth's College Majors

According to Hypothesis 4A, youth's Grade 11 gender attitudes were expected to predict the traditionality of their college majors three years post high school graduation. More specifically, youth with more traditional gender attitudes were expected to select majors that were more traditional for their sex. Race and gender was examined as a moderator of this relationship. No control variables were entered in the model predicting the traditionality of college major because it was not expected that family background factors or self-esteem would be related to this dependent variable.

Results of multiple regression analyses predicting traditionality of college major are shown in Table 2.9. Contrary to Hypothesis 4A, gender attitudes were not significantly related to the traditionality of youth's major ($\beta = .10, SE\ \beta = .09$), $p = .26$, and the gender attitudes x gender, and gender attitudes x race interaction terms were not significant.

Hypothesis 4B stated that girls with higher levels of feminine gender identity and boys with higher levels of masculine gender identity would select majors that were more traditional for their sex. I also explored if race moderated these relationships.

Results of multiple regression analyses with feminine gender identity as the independent variable are shown in Table 3.0. Feminine gender identity was qualified by a significant feminine gender identity x gender interaction ($\beta = -.30, SE\ \beta = .14, p = .03$), and accounted for 2% of the variability in the dependent variable. The slope for this relation was 1.04 ($SE = 1.23$), $p = .40$ for girls and -.3.19 ($SE = 1.45$), $p = .03$ for boys. These results indicate that boys who had higher self-perceptions of femininity in Grade 11 chose less traditional college majors, but self-perceptions of femininity were unrelated to girls' choice of college majors.

Results of multiple regression analyses with masculine gender identity as the independent variable are shown in Table 3.1. Masculine gender identity was not significantly related to the traditionality of youth's college major ($\beta = -.16, SE\ \beta = .15, p = .29$), and the masculinity x gender, and masculinity x race interaction terms were not significant. Overall, neither Hypothesis 4A nor 4B was supported, as neither gender identity or gender attitudes were significant predictors of the traditionality of youth's college major.

Summary of Results

Overall, results from Study 2 provide evidence that gender attitudes and gender identity are important in youth's achievement-related beliefs and behaviors. As hypothesized, many of

the relationships varied for boys and girls; however, race did not moderate any of the relationships tested.

First, as hypothesized, youth who endorsed more traditional gender attitudes reported lower educational expectations. Boy's self-perceptions of femininity and masculinity were also related to their educational expectations: Boys who reported higher levels of feminine gender identity reported *lower* educational attainment expectations, whereas boys who reported higher levels of masculine gender identity reported *higher* levels of educational attainment expectations. Contrary to hypotheses girls' self-perceptions of femininity, as well as self-perceptions of masculinity were unrelated to their educational attainment expectations.

In the second set of analyses, I tested relationships between youth's gender attitudes, gender identity and educational attainment three years post high school graduation. Boys who endorsed more traditional gender attitudes reported lower educational attainment; however, gender attitudes were unrelated to girls' educational attainment. Both boys and girls who reported higher levels of feminine gender identity in Grade 11 completed *fewer* years of education three years post high school. Boys who reported higher self-perceptions of masculinity completed more years of school than boys with lower self-perceptions of masculinity. Self-perceptions of masculinity were unrelated related to girls' educational attainment.

In the third set of analyses, support was found for the hypothesis that educational expectations mediate the relationship between youth's gender attitudes and educational attainment three years post high school graduation.

In the final analyses, I tested hypotheses that youth's gender attitudes and gender identity would predict the traditionality of their college majors three years post high school. Contrary to hypotheses, these gender related cognitions were unrelated to the traditionality of girls' college

majors; however, boys who reported higher feminine gender identity chose less traditional college majors than boys who were less feminine.

Study 2 Discussion

Past research has shown that endorsement of traditional gender stereotypes is related to youth's academic self-perceptions and choices (Parsons, Adler, & Kaczala, 1982; Kurtz-Costes et al., 2008); however, research is limited about other aspects of gender cognitions that are important in youth's educational choices. In Study 2, I focused on beliefs about the work and family roles of men and women, and gender identity. Based on Eccles (1987, 1994) model of achievement related choices, these gender related cognitions were expected to have implications for youth's educational attainment expectations, educational attainment, and the traditionality of their college majors. The use of two gender related cognitions-- gender attitudes and self-perceptions of masculine and feminine gender identity--is consistent with a multidimensional view of gender (Ruble, Martin, Berenbaum, 2006).

The longitudinal design of MADICS allowed for the exploration of relationships among gender cognitions, education attainment expectations and actual educational attainment, which to my knowledge have not been previously examined in one study. In addition, the diverse sample of participants in MADICS allowed me to examine if the relationships between gender cognitions and achievement-related beliefs and behaviors vary for Black and White youth. Race comparisons were important to examine because most research on gender development including gender values (e.g., beliefs about the work and family roles of men and women) have been conducted with White youth, and little research has examined the role of gender in the normative developmental processes of Black youth.

Gender Attitudes and Youth's Educational Attainment Expectations and, Educational Attainment

Although some findings from this study were consistent with the research literature and with theoretical predictions, others were not. First, consistent with previous research (e.g., Davis & Pearce, 2007) and theory, youth who endorsed more traditional gender attitudes reported lower educational expectations in Grade 11, and lower educational attainment three years post high school graduation in comparison to their peers who endorsed less traditional gender attitudes. Prior research (Davis & Pearce, 2007; McWhirter, Hackett & Bandalos, 1998) has shown that the relationship between gender attitudes and educational expectations are stronger for girls than boys. In this study, however, the relationship between gender attitudes and educational expectations did not differ according to youth's sex, and traditional gender attitudes only had a negative effect on boys' educational attainment. The negative effect of traditional gender attitudes on boys' educational attainment in comparison to girls, however, may be because girls in this sample had beliefs that were non-traditional on average.

Egalitarian gender attitudes regarding work and family roles of men and women appear to be beneficial for adolescents as they encourage higher educational expectations and higher educational attainment. Egalitarian gender attitudes may allow adolescent girls to envision their possible selves as successful career women, mothers, and wives if they desire to start a family. Egalitarian gender attitudes may encourage adolescent boys to pursue higher education so that they will have the flexibility and autonomy that may be necessary to fully participate in home and child rearing activities with their partners (flexibility in work schedule, increased income to hire help if needed). Given the results showing that traditional gender attitudes are negatively related to boys' educational attainment, qualitative studies are needed to provide a better understanding of adolescent boys' beliefs about traditional work and family roles and how these beliefs are related to their achievement-related choices. In addition, research is needed to

understand when youth begin to think about their future work and family roles, how these beliefs develop over time, and the mechanisms by which these beliefs play a role in youth's educational choices. Although the relationship between gender attitudes, educational expectations and educational attainment could be linked to social class, given that in all analyses family income was a covariate, there is strong evidence that attitudes are causally related to expectations and educational attainment.

Gender Identity and Youth's Educational Attainment Expectations and Educational Attainment

Results from the present study show that youth's self-perceptions of masculinity and femininity have implications for their achievement-related beliefs and behaviors. It appears, however, that gender identity plays a more consistent role in the educational beliefs and behaviors of boys than of girls. Both feminine gender identity and masculine gender identity were related to boys' educational attainment expectations and educational attainment, but in opposite ways. Feminine gender identity was associated with boys' lower educational attainment expectations during high school and educational attainment three years post high school, whereas masculine gender identity was associated with higher educational attainment expectations and higher levels of educational attainment three years post high school. In contrast, the only significant relationship between gender identity and educational outcomes for girls was that feminine gender identity was negatively related to educational attainment.

Higher self-perceptions of femininity were related to lower educational attainment three years post high school for all youth. This finding is consistent with traditional notions of the feminine gender role, which includes characteristics such as being submissive, nurturing and maintaining positive relationships (William & Best, 1990). These characteristics may not drive women or men to seek higher education, and the careers that these individuals are drawn to may

require fewer years of school than other careers. It is important, however, to examine the factors that mediate the relationship between feminine gender identity and educational attainment for both boys and girls, as the mechanism leading to lower educational attainment might vary. For example, results from this study suggest that educational attainment expectations may be one factor that mediates the relationship between feminine gender identity and educational attainment for boys given that boys' self-perception of femininity was also related to their educational attainment expectations.

No specific hypotheses were made regarding the role of masculine gender identity in youth's educational attainment expectations and educational attainment. However, higher self-perception of masculinity among boys was related to higher educational attainment expectations and predicted higher educational attainment three years post high school. Because masculinity is associated with high status and power, high self-perceptions of masculinity could possibly have led to higher educational expectations and attainment for boys because educational success is one way to achieve status and power in American society.

Although these findings suggest that self-perceptions of masculinity is beneficial for boys, and to a lesser degree self-perceptions of femininity may be harmful for girls, it would be unwise to generalize these findings to all youth. Instead, further research is needed to understand for whom these results may be true. For example, these results may not have emerged among a low-income sample of youth given that some low-income youth associate academic achievement with being nerdy and lacking masculinity (Farrell, 1994). These results support prior research which shows that feeling typical of ones gender is associated with positive psychological outcomes such as self-esteem (Egan & Perry, 2001; Skinner et al., 2014), but as in the case of girls (higher levels of self-perceptions of femininity was related to lower educational attainment

expectations) this relationship depends on the particular meanings that the individual or culture associates with that gender identity (Corby & Hodges, 2007). It is also noteworthy that the relationships found among gender identity, educational expectations and educational attainment emerged while controlling for self-esteem. This provides support for the unique role of gender identity beyond other beliefs about the self.

Relationships among Gender Attitudes, Gender Identity and Traditionality of College Majors

Gender attitudes were unrelated to the traditionality of young adults' college majors; however, boys who reported higher levels of feminine gender identity chose less traditional college majors than boys who were less feminine. Thus, only limited evidence emerged for the role of gender-related cognitions in young adults' choice of college majors. It is unclear why only feminine gender identity was related to youth's choice of college major in this study, but the finding is in the expected direction and is consistent with traditional gender role expectations.

Using the proportion of men and women in each major at the student's college as a measure of traditionality may have yielded more consistent findings about the role of gender attitudes, and gender identity in young adults' decisions about their college major. Unfortunately, these data were unavailable. In addition, focusing on gender-typed college majors may have also produced different results, as Leaper and his colleagues (2012) found that egalitarian gender attitudes are positively related to girls' math/science motivation. It is also important to note that in past studies gender identity was conceptualized differently (e.g., Weisgram and colleagues' (2011) used expressive and instrumental traits to represent feminine and masculine identity respectively; Leaper and Van (2008) used gender typicality as a measure of gender identity). In addition, previous research was cross sectional, whereas in this study youth's Grade 11 gender-related beliefs and self-perceptions of masculinity and femininity were used to predict the

traditionality of college majors three years post high school graduation. The longitudinal relationship between gender identity and decisions in college such as choice of college major deserves further exploration.

The Moderating Role of Race in The Relationship Between Gender Attitudes, Gender Identity and Youth's Educational Choices

Contrary to expectations, the relationships among gender identity, gender attitudes, and educational expectations and attainment were not significantly different for Black and White youth. It was expected that the relationship between gender attitudes and gender identity would be weaker for Black youth in comparison to White youth because Black youth encounter disproportionately more barriers to obtaining higher education (poor schools, teacher discrimination, higher school suspension rates etc.) than their White peers, potentially making it difficult to actualize their beliefs about the work and family roles of men and women. The significant relationships found between gender attitudes, gender identity and educational beliefs and outcomes for Black youth shows that gender is important in African American youth's developmental outcomes. Most research on African American youth's development have focused on race; however, both race and gender are important identities for Black youth and can influence their developmental outcomes. Other factors such as racial centrality, which captures the importance of being Black, or a measure of experiences of racial discrimination might moderate the relationship between gender attitudes and educational outcomes for Black youth. It is also important to keep in mind that the sample of Black participants in MADICS is not representative of the average African American family in the United States, as MADICS families reported higher incomes. Different relationships might be observed in a low-income African American sample.

Overall, gender identity and gender attitudes accounted for a small amount of variability in youth's educational expectations and educational attainment above and beyond their family characteristics and self-esteem. Although this variance is small, given the implications of youth's education attainment expectations for their actual educational attainment, and the importance of educational attainment for increased income and career opportunities, it is important for parents and school counselors to have discussions with adolescents about how they envision the division of work and family roles in their future families. Such conversations may provide counselors and parents with a better understanding of youth's educational choices and provide opportunities to help them envision other work/family options. Overall, these findings suggest that gender-related cognitions are particularly important in boys' educational beliefs and choices; thus, further research and theory are needed in this domain.

General Discussion

Contribution of Studies

The studies presented here make several contributions to the research literature on gender development. First, the longitudinal design of the studies and the use of latent growth curve modeling allowed me to identify an average trajectory of gender attitudes across two developmental periods in which individuals' beliefs about gender roles and gender identity can have important consequences. Second, research examining the gender attitudes of African American adolescents tends to use low-income samples and had not examined the implications of gender related self-perceptions and attitudes on achievement-related outcomes. In this study, using a middle class sample of African American youth, I found support for previous research that documented no race differences among Blacks and Whites in their gender attitudes (Davis,

2007; Kane, 2000). Additionally, the research presented here shows that gender attitudes and gender identity are significantly related to educational outcomes for Black and White youth.

Although many researchers use instrumental and expressive traits or measures from Egan and Perry's (2001) multidimensional scale (e.g., gender typicality, felt pressure) to represent gender identity, the findings from Study 2 suggest that self-perceptions of masculinity and femininity, similar to these measures, also have implications for youth's educational outcomes. Beyond self-perceptions of masculinity and femininity as measures of gender identity, assessing youth's beliefs about the importance of being masculine and feminine may also provide insight into their academic behaviors. In addition, although no hypotheses were tested regarding the stability of masculine gender identity and feminine gender identity over time, results from the cross-lagged path models in Study 1 showed that self-perceptions of masculinity and femininity were only weak to moderately stable across time. To my knowledge the stability of these constructs have not been tested in the research literature. It is possible that at different ages and with varying experiences youth may use different factors to determine their self-perceptions of masculinity and femininity.

Limitations and Future Directions

Despite the contributions of these studies to the gender development literature there are some limitations. First, although questions regarding race differences in gender attitude construction and in the relationship between gender attitudes and educational attainment expectations and educational choices are important, studying two racial groups prevented me from testing other important factors that could contribute to within-group differences among Black youth and White youth. Experiences such as race or gender discrimination (Lam et al.

2014) may alter youth's gender attitudes. Discrimination, for example, may change individuals' goals regarding traditional notions about the family.

Another limitation of this study is that the first wave of data was collected in the early 1990's. Using data from a more contemporary group of adolescents could provide insight about different factors that play a role in the construction of youth's gender attitudes. For example, among contemporary adolescents media use may play a role in their gender attitude development. Moreover, because adolescents today are growing up in a society where women are highly represented in the work force in comparison to previous decades, it is also important to examine the development of other gender attitudes such as beliefs about the abilities of girls and boys across academic domains, women in leadership roles and perhaps appropriate dating behaviors. Researchers should continue to explore multiple aspects of gender in their research. Analytic approaches such as latent class analyses (LCA) should be used to illuminate patterns of gender development outcomes. Creating profiles of gender attitudes, masculine gender identity and feminine gender identity may better capture how these variables co-occur in individuals. These patterns may better predict youth's educational and career choices than the mean-based approach used in this study.

Table 2.1
Bivariate Correlations Between Study 2 Variables

Variable	1	2	3	4	5	6	7	8	9	10
1. Masculine gender identity (W4)	-	-.46**	-.02	.18**	.19**	.01	.12+	.24**	-.05	.00
2. Feminine gender identity (W4)	-.36**	-	.09	-.26**	-.12+	-.16*	-.15*	-.15*	.04	-.01
3. Gender attitudes (W4)	.15**	-.04	-	-.22**	-.22**	-.01	-.09	.02	-.19**	-.11+
4. Educational attainment expectations (W4)	-12*	-.02	-.09	-	.53**	-.01	.0 2	.00	.38**	.28**
5. Educational attainment W6)	-.06	-.16**	-.02	.45**	-	.08	.14*	.06*	.37**	.39**
6. Traditionality of college major	-.06	.04	.05	.00	.04	-	.16+	-.07	.04	-.12
7.Self-esteem	-.05	.25**	-.19**	.13**	.04	.01	-	.11+	-.06	-.04
8. Race (0=White 1=Black)	-.15**	.28**	-.04	.09	-.04	-.09	.12**	-	-.19**	-.21**
9. Parent education	-.06	.12*	.04	.31**	.40**	.02	-.06	-.09	-	.44**
10. Ann. Hhd. Income	.01	-.10	.06	.19**	.28**	-.02	-.07	-.15**	.39**	-
11. Percentage of missing data	22%	21.4%	23.7%	27.5%	0%	0%	22.2%	0%	1%	4.9%

*$p < .05$, **$p < .01$, +$p < .10$

Note: correlations for boys are above the diagonal; correlations for girls are below the diagonal.

Table 2.2

Means and Standard Deviations of Key Study Variables

	Boys Mean (SD) N = 342	Girls Mean (SD) N=454
Masculine GI (Grade 11)	5.9 (1.1)	2.1 (1.4)
Feminine GI (Grade 11)	1.8 (1.2)	6.0 (1.1)
Gender attitudes (Grade 11)	2.2 (.4)	1.9 (.5)
Educational expectations (Grade 11)	5.6 (1.5)	6.3 (1.5)
Educational attainment (3 years post hs)	4.2 (2.1)	4.8 (2.1)
Traditionality of college Majors (3 years post hs)	53.7 (19.8)	61.1 (17.5)
Self-esteem (Grade 11)	4.0 (.7)	3.8 (.8)
Parent education (Grade 7)	14.2 (2.4)	13.9 (2.3)
House hold income (Grade 7)	10.5 (.7)	10.2 (4.0)

Table 2.3. *Coefficients and R^2 Values for Stepwise Regression Models Predicting Youth's Grade 11 Educational Attainment Expectations from Grade 11 Gender Attitudes*.

	Step 1			Step 2			Step 3		
	B (SE B)	β	R^2	B (SE B)	β	R^2	B (SE B)	β	R^2
Step 1: Control Variables									
Parent education	.18 (.03)**	.28		.19 (.03)**	.29		.19 (.03)**	.29	
Household income	.04 (.02)*	.11		.05 (.02)**	.14		.05 (.02)**	.14	
Self-esteem	.14 (.08)+	.07	.11**	.16 (.07)*	.08		.17 (.08)*	.08	
Step 2: Focal Predictors									
Gender (0 = girls 1=boys)				-.71 (.12)**	-.23		-.69 (.12)**	-.22	
Race (0=White 1=Black)				.37 (.12)**	.11		.37 (.12)**	.11	
Gender attitudes				-.32 (.13)*	-.10	.21**	-.25 (.21)	-.08	
Step 3: Interaction terms									
Gender attitudes x gender							-.35 (.27)	-.06	
Gender attitudes x race							.10 (.25)	.02	.21**

Table 2.4.
Coefficients and R^2 Values for Stepwise Regression Models Predicting Youth's Grade 11 Educational Attainment Expectations from Grade 11 Feminine Gender Identity.

	Step 1			Step 2			Step 3		
	B (SE B)	β	R^2	B (SE B)	β	R^2	B (SE B)	β	R^2
Step 1: Control Variables									
Parent education	.18(.03)**	.28		.19 (.03)**	.30		.20(.03)*	.31	
Household income	.04(.01)**	.11		.05 (.02)**	.13		.05(.02)**	.13	
Self-esteem	.14 (.08)+	.07	.11**	.20 (.08)*	.10		.17 (.08)*	.08	
Step 2: Focal Predictors									
Gender (0 = girls 1=boys)				-1.49 (.24)**	-.48		-1.55 (.14)**	-.49	
Race (0=White 1=Black)				.40 (.12)**	.12		.34 (.12)**	.11	
Fem. gender identity				-.17 (.05)**	-.25	.21**	-.07(.08)	-.11	
Step 3: Interaction terms									
Fem gen identity x gender							-.27 (.10)*	-.24	
Fem gen identity x race							.07(.05)	.08	.22**

Table 2.5.
Coefficients and R^2 Values for Stepwise Regression Models Predicting Youth's Grade 11 Educational Attainment Expectations from Grade 11 Masculine Gender Identity.

	Step 1			Step 2			Step 3		
	B (SE B)	β	R^2	B (SE B)	β	R^2	B (SE B)	β	R^2
Step 1: Control Variables									
Parent education	.18 (.03)**	.28		.20 (.03)**	.30		.20 (.03)**	.30	
Household income	.04 (.01)**	.11		.05 (.02)**	.14		.05 (.02)**	.13	
Self-esteem	.14 (.08)+	.07	.11**	.19 (.08)*	.09		.17 (.08)*	.08	
Step 2: Focal Predictors									
Gender (0 = girls 1=boys)				-.91 (.22)**	-.29		-1.00 (.22)**	-.32	
Race (0=White 1=Black)				.38 (.12)**	.12		.26 (.13)*	.08	
Mas. gender identity				.03 (.05)	.04	.20**	-.05 (.07)	-.07	
Step 3: Interaction terms									
Mas gen identity x gender							.31(.10)**	.22	
Mas gen identity x race							-.05 (.06)	-.06	.21**

Table 2.6.
Coefficients and R^2 Values for Stepwise Regression Models Predicting Youth's Grade Educational Attainment Three Years Post High School from Grade 11 Gender Attitudes.

	Step 1			Step 2			Step 3		
	B (SE B)	β	R^2	B (SE B)	β	R^2	B (SE B)	β	R^2
Step 1: Control Variables									
Parent education	.26 (.03)**	.29		.27 (.03)**	.30		.26 (.03)**	.30	
Household income	.10 (.02)**	.20		.11 (.02)**	.21		.11 (.02)**	.20	
Self-esteem	.21 (.10)*	.08	.18**	.24 (.10)*	.09		.25 (.10)*	.09	
Step 2: Focal Predictors									
Gender				-.71 (.15)**	-.17		-.68 (.15)	-.16	
(0 = girls 1=boys)									
Race (0=White 1=Black)				.06 (.14)	.02		.07 (.14)	.02	
Gender attitudes				-.28 (.17)+	-.06	.22**	-.04 (.28)	-.01	
Step 3: Interaction terms									
Gender Att. x gender							-.63 (.34)+	-.08	
Gender Att. x race							.01 (.32)	.00	22**

Table 2.7.
Coefficients and R^2 Values for Stepwise Regression Models Predicting Youth's Grade Educational Attainment Three Years Post High School from Grade 11 Feminine Gender Identity.

	Step 1			Step 2			Step 3		
	B (SE B)	β	R^2	B (SE B)	β	R^2	B (SE B)	β	R^2
Step 1: Control Variables									
Parent education	.26 (.03)**	.29		.27 (.03)**	.30		.27 (.03)**	.30	
Household income	.10 (.02)**	.20		.10 (.02)**	.20		.10 (.02)**	.20	
Self-esteem	.21(.10)*	.08	18**	.29 (.10)**	.11		.31 (.10)**	.11	
Step 2: Focal Predictors									
Gender				-1.76 (.30)	.-41		-1.69 (.30)**	-.39	
(0 = girls 1=boys)									
Race (0=White 1=Black)				.10 (.14)	.02		.12 (.14)	.03	
Fem gen identity				-.23 (.06)**	-.25	.23**	-.23 (.06)**	-.29	
Step 3: Interaction terms									
Fem. gen identity x gender							.09 (.13)	.06	
Fem. gen identity x race							.00 (.07)	-.29	.23**

Table 2.8.
Coefficients and R^2 Values for Stepwise Regression Models Predicting Youth's Grade Educational Attainment Three Years Post High School from Grade 11 Masculine Gender Identity.

	Step 1			Step 2			Step 3		
	B (SE B)	β	R^2	B (SE B)	β	R^2	B (SE B)	β	R^2
Step 1: Control Variables									
Parent education	.26 (.03)**	.29		.28 (.03)**	.03		.27 (.03)**	.31	
Household income	.10 (.02)**	.20		.11(.02)**	.21		.10 (.02)**	.20	
Self-esteem	.21(.10)*	.08	18**	.27 (.10)*	.10		.25 (.10)*	.09	
Step 2: Focal Predictors									
Gender				-1.14 (.26)**	.26		-1.27 (.26)	-.29	
(0 = girls 1= boys)									
Race				.07 (.14)	.02		-.02 (.15)	.00	
(0 = White 1=Black)									
Mas gender identity				.09 (.06)	.09	.21**	-.08 (.09)	-.08	
Step 3: Interaction terms									
Mas. gen identity x gender							.40 (.12)**	.21	
Mas. gen identity x race							.03 (.07)	.03	.22**

Table 2.9.
Coefficients Predicting the Traditionality of Youth's College Major Three Years Post High School from Grade 11 Gender Attitudes

Variable	Step 1			Step 2		
	B (SE B)	β	R^2	B (SE B)	β	R^2
Step 1: Focal Variables						
Race 0=White 1=Black	-3.18 (1.86) $^{+}$	-.08		-3.28 (1.86)$^{+}$	-.09	
Gender 0 = female 1= male	-7.72 (1.95)**	-.20		-7.64 (1.96)**	-.20	
Gender attitudes	1.02 (2.25)	.02	.04**	4.06 (3.63)	.10	
Step 2: Interaction terms						
Gender attitudes x gender				-1.88 (4.79)	-.02	
Gender attitudes x race				-4.09 (4.42)	-.07	.05**

Table 3.0.
Coefficients Predicting the Traditionality of Youth's College Major Three Years Post High School from Grade 11 Feminine Gender Identity

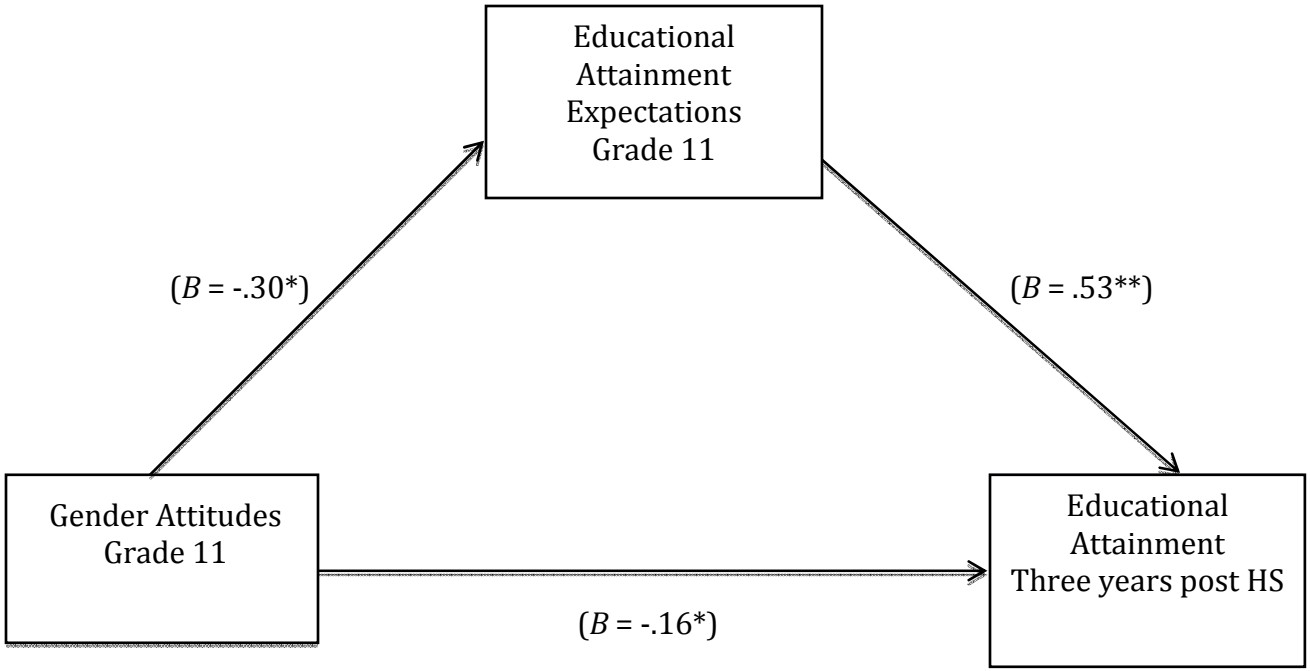
Variable	Step 1			Step 2		
	B (SE B)	β	R^2	B (SE B)	β	R^2
Step 1: Focal Variables						
Race 0=White 1=Black	-3.10 (1.86)	-. 08		-3.89 (1.88)*	-.10	
Gender 0 = female 1= male	-10.56 (4.32)**	-.27		-13.80 (4.53)**	-.36	
Fem gender identity	-73 (.93)	-.09	.04**	1.01 (1.39)	.12	
Step 2: Interaction terms						
Fem gender identity x gender				4.19 (1.92)**	-.30	
Fem gender identity x race				-0.07 (.90)	-.01	.06**

Table 3.1.
Coefficients Predicting the Traditionality of Youth's College Major Three Years Post High School from Grade 11 Masculine Gender Identity

Variable	Step 1			Step 2		
	B (SE B)	β	R^2	B (SE B)	β	R^2
Step 1: Focal Variables						
Race 0=White 1=Black	-3.17 (1.71) $^{+}$	-.08		-3.53 (2.04)$^{+}$	-.09	
Gender 0 = female 1= male	-5.04 (4.22)	-.14		-6.85 (4.53)**	-.17	
Mas. gender identity	-.57 (.09)	-.07	.05**	-1.31 (2.11)	-.16	
Step 2: Interaction terms						
Mas gender identity x gender				2.08 (2.11)	-.12	
Mas gender identity x race				.30 (.92)	.03	.05**

Figure 2.1

Youth's Grade 11 Educational Attainment Expectations as a Mediator of the Relationship Between Gender Attitudes and Educational Attainment Three Years Post High School.



APPENDIX 1: STUDY MEASURES

[1] Measure included in Study 1; [2] Measure included in Study 2

Feminine Gender Identity[1, 2]

Items	**Response Options**
I feel as though I am… I look as though I am…	Still thinking about yourself, circle one number for each question. Not Feminine at all (1) – Very Feminine (7)

Masculine Gender Identity[1, 2]

Items	**Response Options**
I feel as though I am… I look as though I am…	Still thinking about yourself, circle one number for each question. Not Masculine at all (1) – Very Masculine (7)

Mothers' Gender Attitudes[1]

Items	**Response Options**
1. It is usually better for everyone involved if the man is the "breadwinner" outside the home and the woman takes care of the home and family. 2. Babies and young children are likely to suffer if the mother works outside the home 3. A working mother can establish just as* warm and secure a relationship with her children as a mother who does not work 4. Women who aren't willing to take some time off from their careers probably shouldn't have children *Recoded	Gender role attitudes: Please circle your choice for each of the following statements: Scale: 1-strongly agree, 2-agree, 3-disagree, 4-strongly disagree

Adolescents' Gender Attitudes: End of Grade 8 and Grade 11[1, 2]

Items	Response Options
1. It is usually better for everyone involved if the man is the "breadwinner" outside the home and the woman takes care of the home and family.	For this set of questions, please use the following responses.
2. Babies and young children are likely to suffer if the mother works outside the home	Strongly disagree (1) disagree (2) agree (3) Strongly agree (4)
3. Having a career takes away from a woman's relationship with her husband.	
4. It bothers me to see a man being told what to do by a woman.	
*5. If a husband and wife both work full-time, the husband should do half of the housework and childcare	*during grade 11, an additional item was used to assess gender attitudes. All five questions were used to measure gender attitudes in Study 2; recoded

Adolescents' Gender Attitudes: One and 3 years post high school graduation[1]

Items	Response Options
1. It is usually better for everyone involved if the man is the "breadwinner" outside the home and the woman takes care of the home and family.	For this set of questions, please use the following responses. (Write a number on each line.)
2. Babies and young children are likely to suffer if the mother works outside the home	Strongly Agree (1) Agree (2) Neither Agree nor Disagree (3) Disagree (4) Strongly Disagree (5)
3. Having a career takes away from a woman's relationship with her husband.	
4. It bothers me to see a man being told what to do by a woman.	

Educational Attainment Expectations[2]

If you could do exactly what you wanted, how far do you think you will actually go in school?

(1) 11th grade or less
(2) graduate from high school
(3) post high school vocational or technical training
(4) some college
(5) graduate from a business college or a two year college with associates degree
(6) graduate from a 4 year college
(7) get a masters degree or a teaching credential
(8) get a law degree, a Ph. D., or a medical doctor's degree

Self-esteem[2]

Items	**Response Options**
*How often do you wish you were different than you are?	Almost never (1) Once in a while (2) Sometimes (3) Often (4) Almost always (5) *recoded
*How often would you like to change lots of things about you if you could?	
How often are you pretty sure about yourself?	
How happy are you with the kind of person you are?	Not at all happy (1) Not very happy (2) Happy (3) Very happy (4) Extremely happy (5)
How happy are you with the way you act?	

Family Income[1,2]

From all the resources of income you mentioned, tell me your total family income before taxes in 1990. (INTERVIEWER, IF R IS UNCERTAIN, ASK) What would be your best guess?

1. Less than $5,000
2. Between $5,000-9,999
3. Between $10,000-14,999
4. Between $15,000-19,999
5. Between $20,000-24,999

6. Between $25,000-29,999
7. Between $30,000-34,999
8. Between $35,000-39,999
9. Between $40,000-44,999
10. Between $45,000-49,999
11. Between $50,000-54,999
12. Between $55,000-59,999
13. Between $60,000-64,999
14. Between $65,000-69,999
15. Between $70,000-74,999
16. More than $75,000

College Major[2]

What is your college major? (If double major, please list both)

A._____ B._____

REFERENCES

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Anderson, S. J., & Johnson, J. T. (2003). The who and when of "Gender-blind" attitudes: Predictors of gender-role egalitarianism in two different domains. *Sex Roles, 49*(9), 527-532.

Baumeister, R.F., & Sommer, K.L. (1997). What do men want? Gender differences and two spheres of belongingness: Comment on Cross and Madson (1997). Psychological Bulletin, 122, 38–44.

Berkel, L. A. (2004). A psychometric evaluation of the sex-role egalitarianism scale with african americans. Sex Roles, 50(9), 737-742.Bem, S. L. (1981). Gender schema theory: A cognitive account of sex typing. *Psychological Review*, *88*(4), 354.

Blee, K., & Tickamyer, A. (1995). Racial differences in men's attitudes about women's gender roles. *Journal of Marriage and the family*, 57, 21-30.

Bollen, K. A. (2006). *Latent curve models□: a structural equation perspective*. Hoboken, N.J.: Wiley-Interscience.

Bronfenbrenner, U.,& Morris, P.A.(1998).The ecology of developmental processes. In R.M. Lerner (Ed.), Handbook of child psychology: Theoretical models of human development (5thed.,Vol.1,pp.993–1028). New York: Wiley.

Bolzendahl, C. I., & Myers, D. J. (2004). Feminist attitudes and support for gender equality: Opinion change in women and men, 1974-1998. *Social Forces, 83*(2), 759-789.

Bryant, A. N. (2003). Changes in attitudes toward women's roles: Predicting gender-role traditionalism among college students. *Sex Roles*, *48*(3-4), 131-142.

Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychological Review*, 106, 676 –713.

Cole, E. R., & Zucker, A. N. (2007). Black and white women's perspectives on femininity. *Cultural Diversity and Ethnic Minority Psychology*, *13*(1), 1-9.

Copping, K. E. (2012). High school students' career aspirations: Influences of gender stereotypes, parents, and the school environment (Unpublished doctoral dissertation) University of North Carolina at Chapel Hill, Chapel Hill, NC.

Corby, B. C., Hodges, E. V. E., & Perry, D. G. (2007). Gender identity and adjustment in black, Hispanic, and white preadolescents. Developmental Psychology, 43, 261 – 266.

Crockett, L. J., & Beal, S. J. (2012). The life course in the making: Gender and the development of adolescents' expected timing of adult role transitions. *Developmental Psychology, 48*(6),

1727-1738.

Crouter, A. C., Whiteman, S. D., McHale, S. M., & Osgood, D. W. (2007). Development of gender attitude traditionality across middle childhood and adolescence. *Child Development, 78*(3), 911-926.

Cunningham, M., Beutel, A. M., Barber, J. S., & Thornton, A. (2005). Reciprocal relationships between attitudes about gender and social contexts during young adulthood. *Social Science Research, 34*(4), 862-892.

Davis, S. N. (2007). Gender ideology construction from adolescence to young adulthood. *Social Science Research, 36*(3), 1021-1041.

Davis, S. N., & Greenstein, T. N. (2009). Gender ideology: Components, predictors, and consequences. *Annual Review of Sociology, 35*(1), 87-105.

Davis, S. N., & Pearce, L. D. (2007). Adolescents' work-family gender ideologies and educational expectations. *Sociological Perspectives, 50*(2), 249-271.

Eccles, J. S. (1987). Gender roles and women's achievement-related decisions. *Psychology of Women Quarterly, 11*(2), 135-171.

Eccles, J. S. (1994). Understanding women's educational and occupational choices. *Psychology of Women Quarterly, 18*(4), 585-609.

Eccles, J.S., 1997, "MADICS Study of Adolescent Development in Multiple Contexts, 1991-1998 ", http://hdl.handle.net/1902.1/01066 UNF:5:uuV+GIHq+xtra75iHCPSPw== Murray Research Archive [Distributor] V2 [Version]

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual review of psychology*, *53*(1), 109-132.

Egan, S. K., & Perry, D. G. (2001). Gender identity: A multidimensional analysis with implications for psychosocial adjustment. *Developmental Psychology, 37*(4), 451-463.

Fagot, B. I., & Leinbach, M. D. (1989). The young child's gender schema: Environmental input, internal organization. *Child Development, 60*(3), 663-672.

Fan, P., & Marini, M. M. (2000). Influences on gender-role attitudes during the transition to adulthood. *Social Science Research, 29*(2), 258-283.

Farrell, E. (1994). Self and school success: Voices and lore of inner city students. New York: State University of New York Press.

Ferree, M. M. (1990). Beyond separate spheres: Feminism and family research. Journal of Marriage and Family, 52(4), 866-884.

Fulcher, M., Sutfin, E. L., & Patterson, C. J. (2008). Individual differences in gender

development: Associations with parental sexual orientation, attitudes, and division of labor. *Sex Roles*, 58, 330-341.

Frome, P. M., & Eccles, J. S. (1998). Parents' influence on children's achievement-related perceptions. *Journal of personality and social psychology*, *74*(2), 435-452.

Galambos, N. L., Petersen, A. C., Richards, M., & Gitelson, I. B. (1985). The attitudes toward women scale for adolescents (AWSA): A study of reliability and validity. *Sex Roles, 13*(5-6), 343-356.

Galambos, N. L., Almeida, D. M., & Petersen, A. C. (1990). Masculinity, femininity, and sex role attitudes in early adolescence: Exploring gender intensification. *Child Development, 61*(6), 1905-1914.

Galambos, N. L., Berenbaum, S. A., & McHale, S. M. (2009). Gender development in adolescence. *Handbook of adolescent psychology*.

Gushue, G. V., & Whitson, M. L. (2006). The relationship of ethnic identity and gender role attitudes to the development of career choice goals among black and latina girls. *Journal of Counseling Psychology, 53*(3), 379-385.

Harris, R. J., & Firestone, J. M. (1998). Changes in predictors of gender role ideologies among women: A multivariate analysis. *Sex Roles, 38*(3), 239-252.

Hill, S. A. (2001). Class, race, and gender dimensions of child rearing in African American families. *Journal of Black Studies,* 31 (4), 494-508.

Jozefowicz, D. M., Barber, B. L., & Eccles, J. S. (1993). Adolescent work-related values and beliefs: Gender differences and relation to occupational aspirations. Paper presented at the the *biennial meeting of the Society for Research on Child Development*.

Kane, E. W. (2000). Racial and ethnic variations in gender-related attitudes. *Annual Review of Sociology, 26*(1), 419-439.

Katz, P. A., & Ksansnak, K. R. (1994). Developmental aspects of gender role flexibility and traditionality in middle childhood and adolescence. *Developmental Psychology, 30*(2), 272-282.

Kerrigan, D., Andrinopoulos, K., Johnson, R., Parham, P., Thomas, T., & Ellen, J. M. (2007). Staying strong: Gender ideologies among African-American adolescents and the implications for HIV/STI prevention. Journal of Sex Research, 44(2), 172-180.

Kurtz-Costes, B., Rowley, S. J., Harris-Britt, A., & Woods, T. A. (2008). Gender stereotypes about mathematics and science and self-perceptions of ability in late childhood and early adolescence. *Merrill-Palmer Quarterly*, *54*(3), 386-409.

Kurtz-Costes, B., Swinton, A., & Skinner, O.D**.** (2014). Racial and ethnic gaps in the school performance of Latino, African American, and White students. In F. T. L. Leong, L.

Comas-Diaz, G. N. Hall, V. C. McLoyd, & J. Trimble (Eds). *APA handbook of multicultural psychology,* Vol. 1: *Theory and research*. (pp. 231-246). Washington, DC, US: American Psychological Association.

Lam, I., Stanik, C, & McHale, S., (2014). The development and correlates of Gender Attitudes in African American Adolescents. Poster Presented at the Society for Research on Adolescence Biennial Meeting, Austin, Texas.

Leaper, C., Farkas, T., & Brown, C. S. (2012). Adolescent girls' experiences and gender-related beliefs in relation to their motivation in Math/Science and English. *Journal of Youth and Adolescence, 41*(3), 268-282.

Leaper, C., & Van, S. R. (2008). Masculinity ideology, covert sexism, and perceived gender typicality in relation to young men's academic motivation and choices in college. *Psychology of Men & Masculinity, 9*(3), 139-153.

Liben, L. S., Bigler, R. S., Ruble, D. N., Martin, C. L., & Powlishta, K. K. (2002). The developmental course of gender differentiation: Conceptualizing, measuring, and evaluating constructs and pathways. *Monographs of the Society for Research in Child Development, 67*(2), 1-183.

Martens, M. P., & Haase, R. F. (2006). Advanced applications of structural equation modeling in counseling psychology research. *The Counseling Psychologist*, *34*(6), 878-911.

McHale, S. M., Crouter, A. C., & Whiteman, S. D. (2003). The family contexts of gender development in childhood and adolescence. *Social Development, 12*(1), 125-148.

McWhirter, E. H., Hackett, G., & Bandalos, D. L. (1998). A causal model of the educational plans and career expectations of Mexican American high school girls. *Journal of Counseling Psychology*, *45*(2), 166.

Mello, Z. R. (2009). Racial/ethnic group and socioeconomic status variation in educational and occupational expectations from adolescence to adulthood. Journal of Applied Developmental Psychology, 30(4), 494-504.

Morgan, S. L., Gelbgiser, D., & Weeden, K. A. (2013). Feeding the pipeline: Gender, occupational plans, and college major selection. Social Science Research, 42(4), 989-1005.

Myers, S. M., & Booth, A. (2002). Forerunners of change in nontraditional gender ideology. *Social Psychology Quarterly, 65*(1), 18-37.

Muthén, L.K. and Muthén, B.O. (1998-2012). Mplus User's Guide. Seventh Edition. Los Angeles, CA: Muthén & Muthén

Perry, D. G., & Pauletti, R. E. (2011). Gender and adolescent development. *Journal of Research on Adolescence, 21*(1), 61-74.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and

comparing indirect effects in multiple mediator models. Behavior Research Methods, 40(3), 879-891.

Ransford, H. E., & Miller, J. (1983). Race, sex and feminist outlooks. *American Sociological Review*, *48*(1), 46-59.

Ruble, D. N., Martin, C. L., & Berenbaum, S. A. (2006). Gender Development. *Handbook of child psychology*.

Renold, E. (2001a). Learning the 'Hard' Way: boys, hegemonic masculinity and the negotiation of learner identities in the primary school. *British journal of Sociology of Education*, *22*(3), 369-385.

Renold, E. (2001b). 'Square□girls', Femininity and the Negotiation of Academic Success in the Primary School. *British Educational Research Journal*, *27*(5), 577-588.

Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, *7*(2), 147-177.

Schulenberg, J., Goldstein, A. E., & Vondracek, F. W. (1991). Gender differences in adolescents' career interests: Beyond main effects. *Journal of Research on Adolescence*.

Schmader, T., Johns, M., & Barquissau, M. (2004). The costs of accepting gender differences: The role of stereotype endorsement in women's experience in the math domain. *Sex Roles*, *50*(11-12), 835-850.

Seaton, E. K., Caldwell, C. H., Sellers, R. M., & Jackson, J. S. (2008). The prevalence of perceived discrimination among African American and Caribbean Black youth. *Developmental Psychology*, *44*(5), 1288.

Simpkins, S. D., Davis-Kean, P. E., & Eccles, J. S. (2006). Math and science motivation: A longitudinal examination of the links between choices and beliefs. Developmental Psychology, 42(1), 70-83.

Skinner, O.D., Kurtz-Costes, B., Wood, D., & Perkins, K., Copping K., & Rowley, S. (in preparation). *Gender identity in Black adolescents: predictors and outcomes*.

Slavkin, M., & Stright, A. D. (2000). Gender role differences in college students from one-and two-parent families. *Sex Roles*, *42*(1-2), 23-37.

Spence, J. T. (1993). Gender-related traits and gender ideology: Evidence for a multifactorial theory. *Journal of Personality and Social Psychology, 64*(4), 624-635.

Stanik, C. E., & Bryant, C. M. (2012). Marital quality of newlywed African American couples: Implications of egalitarian gender role dynamics. *Sex roles*, *66*(3-4), 256-267.

Stets, J. E., & Burke, P. J. (2001). femininity/masculinity. *Encyclopedia of Sociology* (2nd ed.

ed., pp. 997-1005). New York: Macmillan Reference USA.

Tenenbaum, H. R., & Leaper, C. (2002). Are parents' gender schemas related to their children's gender-related cognitions? A meta- analysis. *Developmental Psychology, 38*(4), 615-630.

Updegraff, K. A., McHale, S. M., Zeiders, K. H., Umaña-Taylor, A. J., Perez-Brena, N. J., Wheeler, L. A., & De Jesús, S. A. R. (2014). Mexican–American Adolescents' Gender Role Attitude Development: The Role of Adolescents' Gender and Nativity and Parents' Gender Role Attitudes. *Journal of youth and adolescence*, 1-13.

U.S. Census Bureau, *Income, Poverty and Health Insurance Coverage in the United States: 2009*, Current Population Reports, P60-238, and Detailed Tables—Table FINC-01, September 2010. See also <http://www.census.gov/hhes/www /cpstables/032010/faminc/new01_000.htm>

Weisgram, E. S., Dinella, L. M., & Fulcher, M. (2011). The role of masculinity/femininity, values, and occupational value affordances in shaping young men's and women's occupational choices. *Sex Roles, 65*(3), 243-258.

Wang, M., Eccles, J. S., & Kenny, S. (2013). Not lack of ability but more choice: Individual and gender differences in choice of careers in science, technology, engineering, and mathematics. Psychological Science, 24(5), 770-775.

Ward, L.M., Hansbrough, E., & Walker, E. (2005). Contributions of music video exposure to black adolescents' gender and sexual schemas. (2005). *Journal of Adolescent Research, 20*(2), 143-166.

West, C. M., & Rose, S. (2000). Dating aggression among low income African American youth an examination of gender differences and antagonistic beliefs. *Violence Against Women*, *6*(5), 470-494.

Wilkie, J. R. (1993). Changes in U.S. men's attitudes toward the family provider role, 1972-1989. *Gender and Society, 7*(2), 261-279.

Wigfield, A., & Eccles, J. S. (1994). Children's competence beliefs, achievement values, and general self-esteem change across elementary and middle school. *The Journal of Early Adolescence*, *14*(2), 107-138.

Wong, C. A., Eccles, J. S., & Sameroff, A. (2003). The influence of ethnic discrimination and ethnic identification on African American adolescents' school and socioemotional adjustment. *Journal of Personality*, *71*(6), 1197-1232.

Wood, D., Kaplan, R., & McLoyd, V. C. (2007). Gender differences in the educational expectations of urban, low-income African American youth: The role of parents and the school. Journal of Youth and Adolescence, 36(4), 417-427.

Wood, D., Kurtz-Costes, B., & Copping, K. E. (2011). Gender differences in motivational pathways to college for middle class African American youths. *Developmental*

Psychology, *47*(4), 961-968.

Wright, D. W., & Young, R. (1998). The effects of family structure and maternal employment on the development of gender-related attitudes among men and women. *Journal of Family Issues*, *19*(3), 300-314.

Zucker, K. J., & Bradley, S. J. (1995). *Gender identity disorder and psychosexual problems in children and adolescents*. Guilford Press.