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**MATERNAL AND PATERNAL RESOURCES ACROSS CHILDHOOD AND
ADOLESCENCE AS PREDICTORS OF YOUNG ADULT ACHIEVEMENT**

A Thesis in
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by
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ABSTRACT

Family experiences have been linked to youth's achievements in childhood and adolescence, but we know less about their long term implications for educational and occupational achievements in young adulthood. Grounded in social capital theory and ecological frameworks, this study tested whether mothers' and fathers' education and occupation attainments, as well as the mean level and cross-time consistency of parental warmth during childhood and adolescence, predicted educational and occupational achievements in young adulthood. We also tested interactions between parental achievement and warmth in predicting these young adult outcomes. Data were collected from mothers, fathers, and two siblings in 164 families at up to 11 time points. Predictors came from the first nine annual points (youth age $M = 10.52$ at Time 1) and outcomes from when young adults averaged 26 years old (firstborns at Time 10, secondborns at Time 11). Results from multilevel models revealed that both mothers' and fathers' educational attainment and warmth consistency from childhood through adolescence predicted young adults' educational attainment. Fathers' occupational prestige predicted sons', but not daughters', prestige. An interaction between mothers' warmth consistency, occupational prestige, and youth gender revealed that, for sons whose mothers' prestige was low, warmth consistency positively predicted their prestige, but this association was nonsignificant when mothers' prestige was high. Conversely, for daughters with mothers high in prestige, warmth consistency was a trend level, positive predictor of daughters' prestige, but was nonsignificant when mothers' prestige was low. Thus, maternal resources appeared to have a cumulative impact on daughters, but the process for sons was compensatory. Discussion focuses on the role of family resources in the gender gap in young adult achievement.

Keywords: parental warmth, educational achievement, occupational achievement, childhood, adolescence, young adulthood

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Preface

This thesis is a multiple-authored work. Xiaoran Sun is the first author who conceived of this study, performed the statistical analysis and drafted the manuscript. Susan M. McHale, Sun's adviser, developed the larger research project on which this study was based, guided the design of this study, participated in the interpretation of the data and helped to draft the manuscript. Kimberly A. Updegraff, the third author, developed the larger research project on which this study based and helped to draft the manuscript. All authors read and approved the final manuscript.

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INTRODUCTION

Educational and occupational achievements in young adulthood lay critical foundations for well-being across adulthood (IOM & NRC, 2015). Also, from a developmental continuity perspective (Lerner, Leonard, Fay, & Issac, 2011), young adults' achievements can be traced back to their earlier experiences in childhood and adolescence. Indeed, extant literature suggests that the family of origin provides important resources that impact young adults' achievements in education (Gordon & Cui, 2012; Melby, Conger, Fang, Wickrama, & Conger, 2008) and occupation (Gordon & Cui, 2015). Consistent with social capital theory, among these family resources, parent-youth relationships and parents' own levels of achievement are two forms of family capital that have been linked to children's and adolescents' academic achievement and career development (Bryant, Zvonkovic, & Reynolds, 2006; Coleman, 1988; Parcel, Dufur, & Zito, 2010). Much less is known, however, about the implications of these family resources over the longer term for women's and men's educational and occupational achievements in young adulthood. Accordingly, the first goal of this study was to test the main effects of these two forms of family capital on young adults' educational and occupational achievements.

Parent-youth relationship and socioeconomic resources traditionally have been studied separately as predictors of achievement (Gordon & Cui, 2012/2015; Hoffman, 2003), and an important step is to examine their potential interactive effects (Conger, Conger, & Martin, 2011). A focus on such interaction effects is consistent with social capital theory (Parcel et al., 2010) as well as an ecological perspective, which directs attention to the interactive effects of family process and context as fuel for youth development (Bronfenbrenner & Morris, 2006). To advance understanding of *how* forms of family capital operate together in youth achievement, our second study goal was to test the interaction effects of parental warmth and achievement: parental warmth

across childhood and adolescence, a family process resource, and parents' education and occupation attainments as markers of family socioeconomic context.

Recent research on young adults' education and occupation highlights secular changes in patterns of young women's and men's achievements: In 1982, a reversal of a gender gap in U.S. college graduation rates emerged, such that women began to outperform men in attainment of bachelor's degrees (Buchmann, DiPrete, & McDaniel, 2008). From 1972 to 2009, occupational gender segregation for young adults (ages 25 to 34) declined substantially (Hegewisch, Liepmann, Hayes, & Hartmann, 2010), as did the gender wage gap that has favored men (U.S. Bureau of Labor Statistics, 2015). Such changes in gender inequalities can be shaped, at least in part, by family experiences and socialization (Buchmann et al., 2008; Lawson, Crouter, & McHale, 2015). To address this possibility, in this study we tested the role of youth gender in the links between family resources and young adult achievement. Specifically, consistent with an ecological perspective, which directs attention to the role of Person \times Process \times Context interactions in youth development (Bronfenbrenner & Morris, 2006), our third goal was to test whether gender moderated the effects of mothers' and fathers' education and occupation attainments and their relational warmth on education and occupational achievement in young adulthood.

The Role of Parent-Youth Relationships in Youth Education and Career Development

According to the social capital perspective, positive parent-youth relationships are a form of social capital provided by the family that can affect youth's academic achievement (Coleman, 1988; Parcel et al., 2010). From an ecological perspective as well, these relationships constitute family processes that affect the development of youth competencies (Bronfenbrenner & Morris, 2006). Indeed, extant literature has shown that parent-youth relationships, as reflected in processes such as parenting style, parental warmth/acceptance, and parental support, are clearly linked with

youth's academic achievement across childhood and adolescence. For example, authoritative parenting style, characterized by high levels of warmth, behavioral supervision, and autonomy granting, were linked with children's and adolescents' academic performance (Spera, 2005; Steinberg, Lamborn, Dornbusch, & Darling, 1992). As in much of the research on youth achievement, in these studies, the parental behaviors of mothers and fathers were not distinguished, and thus it was unclear whether relationships with mothers and fathers were linked in similar or distinct ways to youth achievement.

Beyond research on children and adolescents, researchers have begun to examine the concurrent associations between parenting and academic performance in young adulthood, the developmental period from 18 to late 20s that has garnered increasing research attention (Arnett, 2000; IOM & NRC, 2015). For example, authoritative parenting was positively associated with grade point average (GPA) among college students (Turner, Chandler, & Heffer, 2009), but parental warmth emerged as the sole predictor of college students' academic motivation, a correlate of GPA (Fulton & Turner, 2008). Longitudinal research on the role of early parent-youth relationships in young adults' educational achievement is relatively rare, but, based on a nationally representative sample, one study found that parental processes reported by youth in grades 7 to 12, including school-specific parenting, general parental support, and parental expectations predicted educational attainment 13 years later (Gordon & Cui, 2012). As in studies of youth, in this research, relationships with mothers and fathers were not distinguished, and whether these were similarly linked to achievement in young women and young men remains unknown. This research, however, provided the foundation for a central hypothesis of the current study: that mother- and father-youth warmth in middle childhood and adolescence would predict *educational achievement* in young adulthood. We focused on warmth to reflect the emotional climate of the parent-youth relationship

and because it is a fundamental dimension of parenting that reflects positive parental processes such as parental support and involvement (Steinberg, 2001).

Parent-youth relationships also have been linked to career development and occupational achievement in young adulthood. For example, parental support in adolescence is linked to youth's career exploration (Dietrich & Kracke, 2009), career self-efficacy (Turner & Lapan, 2002), and career aspirations (Wall, Covell, & MacIntyre, 1999). Among college students, attachment to parents was associated with their career exploration and career decision-making (Felsman & Blustein, 1999; Ketterson & Blustein, 1997), and family emotional climate was associated with their career decision-making self-efficacy (Hargrove, Creagh, & Burgess, 2002).

In this area of study, longitudinal research is also rare, but one study documented positive links between daughters' secure attachment to parents and their occupational outcomes five years later, at about age 22 years (O'Brien, Friedman, Tipton, & Linn, 2000). Using a nationally representative sample, Gordon and Cui (2015) found that positive parenting in adolescence, including parental involvement with school-related activities, support, and achievement expectations in grades 7-12, predicted young adults' (age range= 24 to 32 years) career satisfaction, career autonomy, and career commitment. Importantly, these associations remained significant when family demographic characteristics (i.e., age, gender, ethnicity, parents' education, and family structure) and young adults' own educational attainment were controlled. These findings provided the basis for our hypothesis that mother- and father-youth warmth in middle childhood and adolescence would predict *occupational achievement* in young adulthood.

Prior research has focused exclusively on the *level* of parent-youth relationship characteristics, and building on this work, we also examined the *cross-time consistency* in warmth, from middle childhood through adolescence, as a possible factor in young adult achievement

outcomes. Adolescence is often described as a period of dramatic change, marked by perturbations in parent-youth warmth and conflicts as parents and youth adjust, for example, to youth's increasing autonomy (Collins & Laursen, 2004; Steinberg & Silk, 2002). Although longitudinal studies indicate that relationship difficulties tend to stabilize or decline as youth approach adulthood (Loeber et al., 2000; Shanahan, McHale, Crouter, & Osgood, 2007; Steinberg & Silk, 2002), we could find no studies that examined whether ups and downs in parent-youth relationships across adolescence have long-term implications for outcomes in young adulthood. Extant literature, however, has targeted parental consistency within more proximal time scales as a component of an authoritative parenting style, and shown that consistency in domains such as parental control, discipline, and expectations, as well as consistent family routines, are linked to adolescent adjustment and achievement (Roche & Ghazarian, 2011; Steinberg, 2001): Predictable parental behavior can promote a sense of control, providing youth with an *arena of comfort* (Roche & Ghazarian, 2011) that benefits their achievement. Along these lines, rooted in attachment theory (Ainsworth, 1989), Bryant and colleagues (2006) argued that safe and secure relationships with parents are marked by their predictability and serve as a foundation for youth's career exploration. Building on this research and taking the innovative step of examining parent-youth relationship consistency over a span of up to 9 years, we tested the hypothesis that cross-time consistency in parent-youth warmth, above and beyond its mean level, would predict young adults' educational and occupational achievements.

The Role of Parents' Education and Occupation Attainments in Youth's Educational and Occupational Achievements

According to the social capital theory, parents' education is a form of human capital that has positive implications for youth achievement, and parents with higher levels of education also

have more material resources to devote to promoting their children's achievement (Coleman, 1988; Parcel et al., 2010; Sirin, 2005). Parents' occupation attainment, usually indicated by occupational prestige, has been variously regarded as reflecting social capital in that it incorporates parents' social networks, which include others of similar status (Conger & Donnellan, 2007), and human capital in its incorporation of parental knowledge and expertise, which also can impact youth career development (Bryant et al., 2006). Parents' occupations also can serve as models for youth (Bryant et al., 2006; Whiston & Keller, 2004). Further, parents' education and occupational prestige are foundations of the family's socioeconomic status (SES), such that those with higher SES have more resources to devote to their children's academic and career development. SES also reflects the larger social and community context of youth competence development (Bronfenbrenner & Morris, 2006). In line with these ideas, previous research documents a positive association between adults' and their parents' achievements in education and occupation (Ashby & Schoon, 2010; Gordon & Cui, 2012; Melby et al., 2008). Based on this research, we tested the hypothesis that parents' education and occupational prestige would predict young adults' educational and occupational achievements, beyond the effects of parent-youth warmth.

Interactions Between Parent-Youth Relationships and Parental Attainments and Their Links With Youth's Educational and Occupational Achievements

Both social capital theory and the ecological model suggest interactive effects between sources of influence on youth achievement. In this study we focused on the interactive effects of parent-youth relationship processes, as reflected in warmth and cross-time consistency in warmth, and larger family context characteristics, as reflected in parents' own achievements in education and occupation. First, social capital theorists have argued that different types of capital work together to provide a foundation for youth development. Coleman (1988) held that the strength of

parent-child relationships, as a form of social capital, enables parents' human capital, such as educational attainment, to impact child achievements. The family investment model (Conger & Donnellan, 2007) further expanded Coleman's argument, holding that parents' education and occupation attainments impact youth outcomes through parental investments in children-- including positive parenting strategies. In combination, Coleman's perspective and the family investment model suggest that parent-youth relationships interact with parents' achievements to predict youth achievements. This model has been tested: For example, Melby and colleagues (2008) found that supportive parenting in adolescence partially mediated the positive association between parents' education and young adults' educational attainment at age 26.

Parcel and colleagues (2010) likewise argued that effects of different forms of capital are not simply additive; instead, effects can be *compensating*, such that a shortage in one form of capital can be overcome by an abundance in another form, or *boosting*, in that an abundance in one form of capital can magnify the positive effects of another. In such ways, parental education and occupation attainments represent the socioeconomic strata within which relationships with parents exert their influence (Bryant et al., 2006; Sirin, 2005), with potential compensating or boosting effects on young adults' educational and occupational achievements. Along these lines, recent research showed that parental involvement in school-related activities was especially beneficial for students from families of low SES, whereas parents' academic advice and expectations were more likely to boost academic outcomes of students from families of high SES (Benner, Boyle, & Sadler, 2016). From this perspective, family capital effects can best be captured by an interaction model wherein parental education and occupation attainments--characteristics of the family context-- moderate the effects of parent-youth relationships on young adult achievements. Such interaction effects are consistent with the Process \times Context interaction effects that are

highlighted in the ecological model (Bronfenbrenner & Morris, 2006). Although both social capital theory and the ecological model suggest such interactive effects, previous research has tended to treat these two sources of influence independently, for instance, by controlling for one to isolate the unique effects of the other (Gordon & Cui, 2012; Hoffman, 2003). Accordingly to expand on the literature, in this study we tested whether mothers' and fathers' education and/or occupational prestige moderated the association between parent-youth warmth and young adult achievement in education and/or occupation. Specifically, we expected that high levels of one resource would compensate for low levels of the other or magnify the positive effects of high levels of the other in predicting young adult achievement.

The Role of Gender in Parent-Youth Relationship and Parental Achievement Effects on Young Adults' Educational and Occupational Achievements

Gender differences have long been evident in both educational and occupational achievements among young adults in the U.S. As noted, these patterns have reversed over time, formerly favoring men but increasingly favoring women (Buchmann et al., 2008; Hegewisch et al., 2010). Family resources and processes are among the factors that may explain gender inequalities in education and occupation (Buchmann et al., 2008; Lawson et al., 2015). For example, youth gender differences are evident in their reactions to family resources, such that parents' economic hardships are more influential for adolescent boys' than girls' achievement orientations (Mortimer, Zhang, Hussemann, & Wu, 2014). Beyond family resources, family processes can also differentially impact young women's and men's achievements. Studying college students, Waterman and Lefkowitz (2016) found that the association between the quality of father-youth relationships and academic attitudes was stronger for men than for women. Also studying college students, Kenny (1990) reported that parents' emotional support was significantly associated with

career-planning maturity for men, but not for women. These findings indicate that sons may be more reactive to family capital than daughters and that family capital is more important for men's than women's achievements. Further, mothers' and fathers' achievements may have differential socialization effects on daughters and sons, with daughters more likely to model their mothers, and sons, their fathers, consistent with social learning principles (Buchmann et al., 2008).

Further examination of whether sons' and daughters' achievements are differentially associated with the capital provided by their mothers and fathers may provide insights into the bases of gender inequalities in achievement. Indeed, from an ecological perspective, person characteristics like gender interact with both social processes and context characteristics in shaping individual development. Thus, in this study, we tested whether Person (gender) \times Process (parent-youth warmth) \times Context (parents' achievement status) interactions predicted young adults' educational and occupational achievements. We hypothesized that the interactive effects between family process and context would be more evident in young men's achievements, based on findings suggesting the family capital is more important for sons than daughters. Social learning principles likewise suggest that young men's achievements may be more closely tied to their fathers than to their mothers' social and human capital, and thus such interaction effects may be strongest in the case of father-son linkages.

The Present Study

In sum, using longitudinal data, this study aimed to examine how youth's family experiences from middle childhood through adolescence, specifically warmth from their mothers and fathers and each parent's education and occupation attainment, predicted their educational and occupational achievements in young adulthood. First, we tested the main effects of both the cross-time mean level and cross-time consistency of parent-youth warmth from middle childhood

through adolescence, as well as parents' own achievement status. Grounded in social capital theory (Coleman, 1988; Parcel et al., 2010), we expected that (Hypothesis 1a): the mean level of parent-youth warmth across middle childhood and adolescence would predict young adults' educational and occupational achievements, and (Hypothesis 1b) parents' education and occupation attainments would predict young adults' educational and occupational achievements, respectively. This pattern of results would replicate extant findings (Ashby & Schoon, 2010; Gordon & Cui, 2012/2015; Melby et al., 2008), but build on these to test the effects of both mothers' and fathers' resources. As an additional extension of the current literature, based on the importance of parenting consistency for adolescent well-being and achievements (Bryant et al., 2006; Roche & Ghazarian, 2011), we expected that (Hypothesis 1c): cross-time consistency in parent-youth warmth would positively predict young adults' achievements in both education and occupation.

Second, this study tested interactions between both the mean level and consistency of parent-youth warmth and parents' education and occupation attainments as predictors of young adults' educational and occupational achievements. Both social capital theorists' arguments about interactions between different forms of capital (Parcel et al., 2010) and the ecological tenet of Process× Context interactions (Bronfenbrenner & Morris, 2006) suggest that such interactions would explain variation in young adult outcomes. Based also on recent conceptual and empirical work about the interactions between family SES and both parental involvement and achievement expectations (Benner et al., 2016), we tested two hypotheses about the directions of the interactions: Hypothesis 2a predicted that parental resources would be compensating, such that limitations of one would be overcome by strength of the other; Hypothesis 2b predicted that one

resource would boost the effects of the other such that youth who experienced both high parental warmth and attainment would be advantaged relative to other young adults.

Finally, we tested whether youth gender moderated the links between parent-youth relationships and parents' achievement in predicting young adult achievement-- a Person× Process× Context interaction effect consistent with the ecological model (Bronfenbrenner & Morris, 2006). Based on findings showing that sons are more reactive to family capital than daughters (Kenny, 1990; Mortimer et al., 2014; Waterman & Lefkowitz, 2016), we expected that (Hypothesis 3a): Process× Context effects would be more salient in young men's than young women's achievements. Further, grounded in the social learning principles that young men tend to model their fathers (Buchmann et al., 2008), we predicted that (Hypothesis 3b): Interaction effects would be strongest in the case of father-son linkages.

METHOD

Participants

The data were drawn from the 2nd to 10th and the 16th, and 18th years (referred to as Times 1 through 11 hereafter) of a longitudinal study exploring family relationships and youth development, when the measures of interest were collected. At the beginning of this study, recruitment letters were sent to families in 16 school districts of a northeastern state, and families that were interested and eligible for participation returned postcards to the project office. Families were eligible if mothers and fathers were always-married and employed and if they included a firstborn in the fourth or fifth grade and a secondborn 1 - 4 years younger than the firstborn. The number of families that fulfilled the recruitment criteria but failed to respond was unknown, but over 90% of families that returned postcards and were eligible agreed to participate (total $N = 203$ families). Data were collected in annual home interviews from Times 1

to 9 (until the year after firstborns graduated from high school), and using phone interviews at Times 10 and 11.

This study included families ($N = 164$) that completed interviews conducted in at least two phases during Times 1 through 9 so that we could estimate warmth consistency, as well as surveys in Times 10 and/or 11. *T*-tests and chi-squared analyses revealed that families included in this study did not differ from those not included on demographic characteristics (youth gender, family income, family size, secondborn age) except for firstborn age and parent age and education. At baseline, compared to participating families, in nonparticipating families, firstborns were significantly older, $M = 11.04$ ($SD = 1.08$) v. $M = 10.83$ ($SD = 0.90$), $t(201) = 2.18$, $p = .03$; and parents were significantly younger, $M = 34.85$ ($SD = 3.52$) v. $M = 37.08$ ($SD = 3.93$), $t(201) = -3.27$, $p = .01$ and $M = 36.83$ ($SD = 3.93$) v. $M = 39.37$ ($SD = 5.11$), $t(201) = -2.90$, $p = .01$, for mothers and fathers, respectively; and less educated $M = 13.85$ ($SD = 2.32$) v. $M = 14.75$ ($SD = 2.08$), $t(201) = -2.38$, $p = .02$ and $M = 13.87$ ($SD = 2.38$) v. $M = 14.85$ ($SD = 2.41$), $t(201) = -2.30$, $p = .02$, for mothers and fathers, respectively, using a scale wherein 12 = *high school graduate*, 16 = *bachelor's degree*, and 20 = *Ph.D.*

Reflecting the ethnic background of families of the state where the study was conducted (85% European American; US Census Bureau, 2000), the sample included almost exclusively European American families living in small cities, towns, and rural communities. Moreover, reflecting the educational (> 80% of adults completed high school) and financial (median income = \$55,714, for married-couple families) backgrounds of the targeted population (US Census Bureau, 2000), at Time 1 (1996), the average education level was 14.83 (some post high school training or college; $SD = 2.04$, range = 12 - 20) for mothers and 14.91 years ($SD = 2.39$, range = 10 - 20) for fathers, and the median family income at Time 1 was \$58,500 ($SD = \$31,094$, range

= \$16,000 - \$208,000). Although parental education and family income were variable, most families were working to middle-class.

A total of 317 youth (52% female) were included in the analyses: 157 firstborns (54% female) who reported their education level and/or their job title at Time 10, and 160 secondborns (50% female) who reported their education level and/or their job title at Time 11. Firstborns' average age was 11.80 ($SD = 0.56$) at Time 1 and 26.26 ($SD = 0.80$) at Time 10. Secondborns' average age was 9.22 ($SD = 0.89$) at Time 1 and 26.07 ($SD = 1.10$) at Time 11.

Procedure

Data were collected from mothers, fathers, and the two siblings via two methods. At Times 1 through 9, trained interviewers conducted home interviews to obtain parents' reports of their education and jobs, and youth's reports of relationship experiences with mothers and fathers. The interviews began with informed consent/assent procedures, and families were given an honorarium that ranged from \$100 to \$200 depending on the study year. Family members were then interviewed separately. At Times 10 and 11, young adults were interviewed by phone, and reported on their education and occupation. Consent was audio-recorded, and young adults received \$100.

Measures

Parent-youth warmth. At separate points in the home interviews at Times 1 to 9, youth reported on their relationships with their mothers and fathers. Using an 8-item, 5-point scale (Blyth & Foster-Clark, 1987) ranging from 1 (*not at all*) to 5 (*very much*), youth responded to items such as, "How much do you go to your mother/father for advice/support?" and "How much does your father/mother understand what you're really like?" Item scores were averaged to create a mean score, with higher scores reflecting higher warmth, and Cronbach's alphas range

from .71 to .88 across the nine time points. Further, correlations between youth's reports of their warmth with mothers and fathers at the same point in time ranged from $r = .37$, $p = .01$, to $r = .62$, $p < .001$, across Times 1 to 9. We calculated two indices of mother and father warmth for the analyses: cross-time *mean level* and cross-time *consistency*. The mean level was the average of youth reports of warmth across Times 1 to 9. Consistency was calculated as the within-individual standard deviation of the warmth scores across Times 1 to 9, which captured within-individual variability (Ram & Gerstorf, 2009). We converted these scores into negative numbers so that higher scores signify greater consistency.

Educational attainment. At Times 1, 2, 5, 6, 7, 8, and 9, mothers and fathers reported their educational attainment on scale where 12 = high school graduate, 13 = high school graduate plus vocational/technical/job training, 14 = some college but no degree, 15 = associate's degree, 16 = bachelor's degree, 17 = some education after undergraduate degree but no advanced degree, 18 = master's degree, 19 = professional degree (e.g., Law, Medicine), 20 = Ph.D. At Times 10 and 11, young adults were asked the same question. As predictors in the analyses, we used mothers' and fathers' mean levels of educational attainment across Times 1 to 9 to reflect youth's most common experiences of family resources. For young adult educational achievement, we used firstborns' educational attainment by Time 10, and secondborns' by Time 11, when both siblings were around 26 years old and the majority had completed education and were in relatively stable jobs. Among the 316 young adults who reported their educational attainment, 56 were still engaged in education programs (3 were in vocational/technical/job training, 2 were pursuing associate's degrees, 12 were pursuing bachelor's degrees, 20 were pursuing master's degrees, 10 were pursuing professional degrees (e.g., in law, medicine), and 9 were pursuing PhDs). We found that the results of analyses did not differ depending on whether or not we

included these 56 young adults in the models for educational achievement, so we retained them in the sample by using the highest degrees that they had completed.

Occupational prestige. We used parents' and young adults' occupational prestige to index occupational achievement. In the Time 1 to 9 interviews, mothers and fathers reported on their employment, including the title of their current job (e.g., English teacher, sales manager). At Times 10 and 11, young adults were asked the title of their current job. The jobs that parents and young adults reported were coded using the Occupational Prestige Ratings from the 1989 General Social Survey (ICPSR 9593; Davis, Smith, Hodge, Nakao, & Treas, 1991). Mothers' occupational prestige scores ranged from 22.05 (e.g., hand packers) to 73.51 (e.g., post-secondary teachers), and fathers' ranged from 22.30 (e.g., messengers) to 74.77 (e.g., lawyers). In the analyses, we used mothers' and fathers' occupational prestige scores, each averaged across Times 1 to 9, as predictors. For young adult occupational achievement, paralleling the indices of their educational attainment, we used firstborns' occupational prestige scores at Time 10, and secondborns' scores at Time 11. In total, 254 young adults reported job titles and were coded with occupational prestige scores, but we excluded 18 who reported a part-time job while they were at school when the job title they reported was unrelated to their major (e.g., a psychology undergraduate student reporting a job as a bartender), as has been done in previous research with the same sample (Lawson et al., 2015).

Covariates included parents' age at Time 1, firstborns' age at Time 10, and secondborns' age at Time 11.

Analysis Plan

Given the clustered nature of the data (i.e., siblings within families), we used multilevel modeling (Raudenbush & Bryk, 2002). A series of two-level models was estimated using PROC

MIXED in SAS Version 9.3 (SAS Institute Inc., Cary, NC). Given the large number of predictors of interest, separate models were tested to examine the roles of mothers and fathers in young adults' educational and occupational achievement, a total of four sets of models. For each set of models, at level 1 (within-family, between-individual), we included the mother/father-youth warmth cross-time mean level and consistency scores that were centered around their grand means, as well as youth gender. Individual-level covariate (i.e., youth's age) was included at level 1 as well. At level 2 (between-family), we included mothers'/fathers' educational attainment or occupational prestige, each centered around their grand means. The family level covariates (i.e., mothers'/ fathers' age) were included at level 2 as well. By including the two- and three-way cross-level interactions between youth gender and the mother/father-youth warmth cross-time mean/consistency scores as well as the mother/father educational attainment/occupational prestige cross time mean scores, we were able to test whether youth gender moderated the links between combinations of family resources and young adults' achievement outcomes.

As noted, the effects of (1) mothers' and (2) fathers' warmth and attainments on young adults' (1) educational and (2) occupational achievement were tested in (four) separate sets of analyses. For each set of analyses, Model A tested main effects of the mother/father warmth cross-time mean and educational attainment/occupational prestige cross-time mean, as well as the covariates. In Model B, two-way and three-way interaction terms were estimated to test both mothers'/fathers' educational attainment/occupational prestige and youth gender as moderators of the effects of mother/father-youth mean warmth on young adults' achievements. Model C included the mother/father-youth warmth cross-time consistency term to test its main effect. In Model D, two-way and three-way interaction terms were estimated to test both mothers'/fathers'

educational attainment/ occupational prestige and youth gender as moderators of the effects of mother/father-youth warmth consistency on young adults' achievement. Nonsignificant interactions were removed from the final models (Aiken & West, 1991).

RESULTS

Preliminary Analyses

Descriptive data are shown in Table 1. At the bivariate level, positive correlations for the mean levels of mother- and father-youth warmth and young adult educational and occupational achievement reached trend level or higher. As Table 1 also shows, the correlations between consistency in mother- and father-youth warmth and young adult educational and occupational achievement also reached trend level or higher. Thus, these preliminary findings regarding parent-youth warmth and young adult achievement replicated and extended findings from previous literature.

We also conducted paired *t*-tests comparing daughters' and sons' educational attainment and occupational prestige to those of their mothers and fathers and comparing mothers' vs. fathers' achievement. As shown in Table 2, daughters' educational attainment was significantly higher than both their mothers', $t(163) = 5.89, p < .001$, Cohen's $d = .53$, and fathers', $t(163) = 4.62, p < .001$, Cohen's $d = .44$, whereas sons' was only higher than that of their mothers, $t(151) = 1.99, p = .05$, Cohen's $d = .20$. As for occupational prestige, daughters' occupational prestige was significantly higher than their fathers', $t(125) = 2.61, p = .01$, Cohen's $d = .33$, but no other comparisons proved significant. There were no differences between mothers' and fathers' cross-time mean levels of education or prestige scores. In addition, we conducted two independent sample *t*-tests comparing the educational attainment and occupational prestige of young women vs. men. Young women outperformed young men in educational attainment, $t(314)$

= 2.59, $p = 0.01$, Cohen's $d = .29$, but young women and men did not differ in occupational prestige, $t(234) = 1.63$, $p = .10$.

Parent-Youth Warmth and Parents' Educational Attainment as Predictors of Young Adults' Educational Achievement

The results of the multilevel analyses used to test the hypotheses predicting young adults' educational achievement are shown in Tables 3 and 4, for mothers' and fathers' predictors, respectively. In preliminary tests, none of the covariates except for parents' age were significant predictors of young adults' educational achievement, so the educational achievement models included mothers' and fathers' ages at Time 1 as covariates. Tests of Model A revealed that, with parent education and youth gender included, the mean level of mother-youth warmth was not a significant predictor of educational attainment in young adulthood (Table 3), which is contrary to Hypothesis 1a, though the mean level of father-youth warmth reached trend level (Table 4). By contrast, consistent with Hypothesis 1b, both mothers' and fathers' educational attainment were significant predictors of young adults' educational attainment. We next tested for moderation effects, specifically the two-way interactions between mother/father-youth warmth mean and mothers'/fathers' educational attainment, by adding these terms in Model B, but none of these effects proved significant. Additional analyses also added three-way interactions between youth gender, mother/father-youth warmth mean, and mothers'/fathers' educational attainment into the models. None of the two-way or three-way interactions involving mean levels of parent-youth warmth were significant and so were omitted from the final models.

The cross-time consistency in mother/father-youth warmth was then entered in Model C. The analyses revealed that, consistent with Hypothesis 1c, above and beyond their mean levels, consistency in both mother-youth and father-youth warmth positively predicted educational

attainment in young adulthood. (The interactions between mother/father-youth warmth cross-time mean and consistency scores were not significant in predicting young adults' educational attainment or occupational prestige and are not considered here.) In Model D, we next tested for moderation effects, specifically the two-way interactions between consistency in mother/father-youth warmth and mothers'/fathers' educational attainment, as well as three-way interactions. None of the two-way or three-way interactions involving consistency in parent-youth warmth were significant and so these interactions were omitted from the final models.

Parent-Youth Warmth and Parents' Occupational Prestige as Predictors of Young Adults' Occupational Achievement

The results of the multilevel analyses predicting young adults' occupational achievement are shown in Tables 5 and 6 for mothers' and fathers' predictors, respectively. In preliminary tests, none of the covariates were significant, so they were dropped from the models. Tests of Model A revealed that, with mothers'/fathers' occupational prestige and youth gender included in the models, the mother-youth warmth cross-time mean was not a significant predictor of occupational prestige in young adulthood (Table 5), which is contrary to Hypothesis 1a, though the mean level of father-youth warmth reached trend level (Table 6). Furthermore, inconsistent with Hypothesis 1b, neither mothers' nor fathers' occupational prestige scores were significant predictors of young adults' occupational prestige. We next tested for moderation effects, specifically the two-way interactions between mother/father-youth warmth mean and mothers'/fathers' occupational prestige by adding them into Model B. Additional analyses also added three-way interactions into the models. None of the two-way or three-way interactions with the parent-youth warmth mean were significant except for the Youth gender \times Fathers'

occupational prestige effect. Simple slope follow-up tests of this interaction showed a positive link between fathers' and young men's occupational prestige, simple slope: $\gamma = .26$, $SE = .11$, $p = .02$, whereas there was no association between fathers' and young women's prestige, simple slope: $\gamma = -.08$, $SE = .11$, $p = .50$. This interaction pattern indicated that fathers' occupational prestige had implications for sons' but not daughters' occupation achievement, which supports Hypothesis 3b.

When the measures of consistency in mother-youth and father-youth warmth were entered as predictors in Models C, results revealed that, beyond mean level warmth, consistency for mothers positively predicted occupational prestige in young adulthood, whereas consistency for fathers was not significant. Two-way and three-way interactions between consistency in mother/father-youth warmth, mothers'/fathers' occupational prestige, and youth gender were added in Models D. As seen in Table 5, Model D results revealed that the three-way interaction between consistency in maternal warmth, mothers' occupational prestige, and youth gender was significant in predicting occupational prestige in young adulthood. As illustrated in Figure 1, simple slope follow-up tests of this interaction showed that for sons (see panel A in Figure 1), when mothers' occupational prestige was *low*, consistency was positively related to occupational prestige in young adulthood, simple slope: $\gamma = 31.85$, $SE = 9.86$, $p = .01$, whereas there was no such association when mothers' occupational prestige was high, simple slope: $\gamma = 3.25$, $SE = 10.45$, $p = .76$. Conversely, for daughters (see panel B in Figure 1), when mothers' occupational prestige was *high*, the positive link between consistency and occupational prestige in young adulthood reached trend level, simple slope: $\gamma = 17.62$, $SE = 9.00$, $p = .051$, whereas there was no such association when mothers' occupational prestige was low, simple slope: $\gamma = 6.77$, $SE = 8.96$, $p = .45$. Thus, the interactive effect between maternal warmth consistency and mothers'

occupational prestige suggested a compensating pattern for sons but a “boosting” (Parcel et al., 2010) pattern for daughters. In other words, sons were *disadvantaged* when both maternal warmth consistency and prestige were low whereas daughters were *advantaged* when both resources were high. For the model with fathers, however, these interactions were nonsignificant.

DISCUSSION

Scholars and policy makers have called for attention to young adults’ educational and occupational achievements given the importance of both to the well-being of individuals across the lifespan as well as to the larger society (IOM & NRC, 2015). The present study, which was grounded in social capital theory and in the ecological model (Bronfenbrenner & Morris, 2006; Coleman, 1988), found evidence that experiences with mothers and fathers across middle childhood and adolescence, including relationship warmth and parents’ own attainments, help to account for young adults’ educational and occupational achievements.

Family Resources Across Childhood and Adolescence and Young Adults’ Educational and Occupational Achievements

This study contributes a valuable longitudinal perspective to research on the role of child and adolescent family resources in young adults’ academic achievement and career development. Most prior research focuses on concurrent associations between family experiences and achievement during childhood and adolescence, and to a lesser extent, young adulthood (Fulton & Turner, 2008; Sirin, 2005; Steinberg et al., 1992; Whiston & Keller, 2004; but see Gordon & Cui, 2012/2015; Melby et al., 2008 for exceptions). Although preliminary analyses revealed significant bivariate links between cross-time mean levels of mother- and father-youth warmth and young adults’ achievements in education and occupation replicating prior research (Gordon & Cui, 2012/2015; Melby et al., 2008), in this study, mean levels of warmth across childhood

and adolescence failed to predict young adults' educational or occupational achievement with other factors in the model. In contrast, *cross-time consistency* in parental warmth across middle childhood and adolescence proved to be a significant predictor: Controlling for mean levels of maternal and paternal warmth, consistency in both maternal and paternal warmth predicted young adults' educational attainment, and consistency in maternal warmth predicted young adults' occupational prestige. Beyond their contribution to the achievement literature, these findings extend prior research on parental consistency, which has tended to rely on global ratings rather than directly measuring consistency over time and to focus on parenting of young children (Steinberg, 2001). As we suggested, consistency in parent-youth relationships may provide youth with an *arena of comfort* (Roche & Ghazarian, 2011)—which may be especially important to youth's academic achievement and career exploration across adolescence and the transition to young adulthood, a time of dramatic change in multiple developmental domains and increased vulnerability to risk (Steinberg, 2005). On a practical level, these findings may have implications for parenting programs: In the face of the many transitions and perturbations of adolescence, maintaining consistency in parents' level of warmth toward their children may help promote youth achievement. It remains to be learned whether consistency in warmth has implications for other domains of young adult outcomes—a direction for future study.

This study also advanced understanding of how family resources account for young adult achievement by examining both mothers' and fathers' roles. In line with our predictions, the results revealed that the education levels and warmth consistency of both mothers and fathers positively predicted young adults' educational attainment. In the case of young adults' occupational outcomes, however, only maternal warmth consistency emerged as a significant predictor. Extant literature documents that adolescents rely more on mothers than fathers for

career planning (Otto, 2000; Tucker, Barber, & Eccles, 2001), and thus it may be that their ongoing relationships with their mothers provide a forum needed for support and encouragement of their achievements.

Another contribution of this study was to extend prior work by examining how two sources of family influence---parent-youth relationships *and* parents' attainments, which have been studied separately in prior research (Hoffman, 2003), interact with each other and with youth gender in ways that have implications for young adult achievements. The findings on occupational prestige were consistent with the ecological model's focus on Person \times Process \times Context interactions in development (Bronfenbrenner & Morris, 2006). First, fathers' occupational prestige predicted sons', but not daughters' occupational prestige. This finding is consistent with the tenets of social learning theory, which holds that similarity to a model increases the chances of observational learning (Bandura, 1977; Buchmann et al., 2008). Further, patterns of consistency in maternal warmth and maternal occupational prestige were differentially linked to the occupational prestige of daughters versus sons. The pattern for sons suggested a compensating process (Parcel et al., 2010), wherein maternal warmth protected sons from the negative effects of low maternal job prestige. In contrast, the pattern for daughters was suggestive of the boosting (Parcel et al., 2010), or cumulative benefit of mothers' resources in the domains of warmth and occupational achievement. On the one hand, this pattern of findings is consistent with previous results showing that sons' achievements are more vulnerable to limitations in family resources than are those of daughters (Kenny, 1990; Mortimer et al., 2014; Waterman & Lefkowitz, 2016). On the other hand, the findings extend prior work by suggesting that daughters are better able to profit from the availability of family resources. Taken together, these patterns imply that when growing up in families with similar resources, young women will

outperform young men in occupational achievement. The gender wage gap favoring men has decreased in recent decades (U.S. Bureau of Labor Statistics, 2015), and family resources that support the achievement of daughters may be responsible, in part, for these changes. At the most general level, our findings underscore the significance of family gender dynamics in young adult achievement.

These findings also have practical implications for targeted parenting intervention programs for boys -- that is, those whose mothers have lower occupational status and who may be especially vulnerable to changing economic opportunities in the U.S. In contrast to results pertaining to mothers' occupational achievements, interactive effects of family resources were not evident in the analyses of educational achievement. It may be that educational attainment is better explained in terms of interactive effects of resources derived from different contexts, particularly family and school (Parcel et al., 2010). Further research is needed to illuminate how different types of family resources operate in the context of the larger social ecology to have implications across multiple domains of young adult achievement outcomes.

Limitations and Directions for Future Research

In the face of its strengths, limitations of this study provide directions for future research. First, given the study's correlational design, conclusions about causality cannot be drawn. Intervention studies aimed at promoting consistency in parental warmth, for example, in the context of parent education programs, may illuminate its causal role in youth achievement. Second, the sample was almost exclusively White, two-parent families, limiting the generalizability of findings. Future research is needed with samples from a range of racial/ethnic groups and diverse family structures, characterized by different kinds of family resources. In addition, the young adults averaged about 26 years of age. Longer term follow-up

may detect additional implications of parental resources as young adults continue their educations and advance in their occupational roles. Third, this study tested the roles of maternal and paternal resources in separate models, and although some differences in patterns of association emerged, the analyses were not designed to address whether those differences were statistically significant. Future research is needed to explore how combinations of maternal and paternal resources, such as identified via a person-oriented approach (Magnusson & Cairns, 1996), may have implications for young adult achievement.

Nonetheless, as noted, this study added to the literature on the long-term implications of family experiences for young adult achievement. Our findings showed that two forms of family capital, parent-youth relationships *and* parents' education and occupation attainments, work together and contribute to young women's and young men's achievements. In their discussion of the significance of resources in youth achievement, Parcel and colleagues (2010) highlighted how different forms of capital may combine. Applying the lens of an ecological model, this study expanded the discussion by targeting how different forms of capital within the same family context can have interactive effects on achievement and occupational attainment, highlighting the role of youth's own characteristics in these patterns.

Table 1

Means (M), Standard Deviations (SD) and Correlations for Study Variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Mother-youth warmth mean	-													
2. Father-youth warmth mean	.57***	-												
3. Mother-youth warmth consistency	.53***	.38***	-											
4. Father-youth warmth consistency	.19***	.46***	.50***	-										
5. Mother educational attainment mean	.08	.04	-.06	.06	-									
6. Father educational attainment mean	.03	.09 [†]	.01	.11 [†]	.52***	-								
7. Young adult educational attainment	.12*	.13*	.12 [†]	.20***	.29***	.25***	-							
8. Mother occupational prestige mean	.11 [†]	.14**	-.01	.03	.69***	.29***	.30***	-						
9. Father occupational prestige mean	-.04	.05	.02	.05	.32***	.71***	.22***	.22***	-					
10. Young adult occupational prestige	.15*	.12 [†]	.21**	.12 [†]	.05	.10	.50***	.11	.07	-				
11. Youth gender ^a	-.13*	.13*	.06	.00	.02	.03	-.14**	-.01	.05	-.11	-			
12. Mother age (Time 1)	.12*	.06	.07	.12*	.38***	.51***	.20***	.17**	.32***	.08	.05	-		
13. Father age (Time 1)	.04	.04	-.01	.04	.30***	.33***	.20***	.15**	.17**	.11 [†]	.01	.68***	-	
14. Young adult age ^b	-.02	-.01	-.07	-.02	.06	-.07	.05	.08	-.02	.04	.11 [†]	-.06	-.00	-
	<i>M</i> 3.66	3.45	-.45	-.46	14.83	14.92	15.50	50.04	50.20	51.16	-	38.05	40.33	26.17
	<i>SD</i> .47	.51	.20	.22	2.06	2.41	1.69	12.53	11.91	13.18	-	3.93	5.11	.96

^a Female: 0; Male: 1^b Firstborns' age at Time 10 and secondborns' age at Time 11[†] $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Table 2

Comparing Young Women's and Young Men's Educational Attainment and Occupational Prestige to Those of Mothers and Fathers

	Mother ¹ <i>M (SD)</i>	Father ¹ <i>M (SD)</i>	Young adult <i>M (SD)</i>
Educational Attainment			
Young women	14.77 (2.03) ^b	14.83 (2.41) ^b	15.74 (1.63) ^a
Young men	14.87 (2.08) ^b	14.98 (2.38) ^{ab}	15.25 (1.71) ^a
Occupational prestige			
Young women	50.10 (12.38) ^{ab}	48.54 (10.77) ^b	52.46 (12.61) ^a
Young men	49.70 (12.71) ^a	50.23 (11.92) ^a	49.66 (13.71) ^a

¹Mothers' and fathers' scores were averaged across Times 1 to 9. Also, scores were stacked given the clustered nature of the data.

^{ab} Within each row, means with different superscripts are significantly different, $p < .05$

Table 3

Results of Multilevel Models Predicting Young Adult Educational Attainment From Cross-Time Mean Warmth With Mothers (M Warmth Mean), Cross-Time Consistency in Warmth With Mothers (M Warmth Consistency) and Mothers' Educational Attainment (M Education)^a

	Model A	Model B	Model C	Model D
	γ (SE)	γ (SE)	γ (SE)	γ (SE)
Fixed effects				
Intercept	13.92 (1.05) ***	13.92 (1.05) ***	14.01 (1.05) ***	14.01 (1.05) ***
Youth gender ^b	-.51 (.17) **	-.51 (.17) **	-.56 (.17) **	-.56 (.17) **
M age (Time 1)	.05 (.03) †	.05 (.03) †	.05 (.03)	.05 (.03)
M warmth mean	-.15 (.20)	-.15 (.20)	-.15 (.23)	-.15 (.23)
M education	.22 (.05) ***	.22 (.05) ***	.22 (.05) ***	.22 (.05) ***
Youth gender×M warmth mean		-	-	-
Youth gender×M education		-	-	-
M warmth mean×M education		-	-	-
Youth gender×M warmth mean ×M education		-	-	-
M warmth consistency			1.23 (.52) *	1.23 (.52) *
Youth gender×M warmth consistency				-
M warmth consistency×M education				-
Youth gender×M warmth consistency×M education				-
Variance components				
Intercept	.61 (.21) **	.61 (.21) **	.62 (.21) **	.62 (.21) **
Residual	1.92 (.22) ***	1.92 (.22) ***	1.87 (.22) ***	1.87 (.22) ***

Note. $N = 316$. Unstandardized coefficients (γ) with standard error (SE) are shown. Non-significant interaction effects were omitted from models.

^aMothers' educational attainment was averaged across Times 1 to 9.

^bYouth gender was coded 0 = female, 1 = male.

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Table 4

Results of Multilevel Models Predicting Young Adult Educational Attainment From Cross-Time Mean Warmth With Fathers (F Warmth Mean), Cross-Time Consistency in Warmth With Fathers (F Warmth Consistency) and Fathers' Education Attainment (F Education)^a

	Model A	Model B	Model C	Model D
	γ (SE)	γ (SE)	γ (SE)	γ (SE)
Fixed effects				
Intercept	13.95 (.84)***	13.95 (.84)***	13.94 (.83)***	13.94 (.83)***
Youth gender ^b	-.56 (.18)**	-.56 (.18)**	-.52 (.17)**	-.52 (.17)**
F age (Time 1)	.05 (.02)*	.05 (.02)*	.04 (.02)*	.04 (.02)*
F warmth mean	.34 (.19) [†]	.34 (.19) [†]	.10 (.20)	.10 (.20)
F education	.14 (.04)**	.14 (.04)**	.13 (.04)**	.13 (.04)**
Youth gender×F warmth mean		-	-	-
Youth gender×F education		-	-	-
F warmth mean×F education		-	-	-
Youth gender×F warmth mean×F education		-	-	-
F warmth consistency			1.22 (.46)**	1.22 (.46)**
Youth gender×F warmth consistency				-
F warmth consistency×F education				-
Youth gender×F warmth consistency×F education				-
Variance components				
Intercept	.62 (.21)**	.62 (.21)**	.62 (.21)**	.62 (.21)**
Residual	1.93 (.22)***	1.93 (.22)***	1.89 (.22)***	1.89 (.22)***

Note. $N = 284$. Unstandardized coefficients (γ) with standard error (SE) are shown. Non-significant interaction effects were omitted from models.

^aFathers' educational attainment was averaged across Times 1 to 9.

^bYouth gender was coded 0 = female, 1 = male.

[†] $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Table 5

Results of Multilevel Models Predicting Young Adult Occupational Prestige From Cross-Time Mean Warmth With Mothers (M Warmth Mean), Cross-Time Consistency in Warmth With Mothers (M Warmth Consistency) and Mothers' Occupational Prestige (M Prestige)^a

	Model A	Model B	Model C	Model D
	γ (SE)	γ (SE)	γ (SE)	γ (SE)
Fixed effects				
Intercept	52.36 (1.22) ^{***}	52.36 (1.22) ^{***}	52.54 (1.21) ^{***}	52.56 (1.20) ^{***}
Youth gender ^b	-2.39 (1.72)	-2.39 (1.72)	-2.74 (1.70) [†]	-2.88 (1.70) [†]
M warmth mean	2.84 (1.90)	2.84 (1.90)	-.68 (2.24)	-.91 (2.26)
M prestige	.10 (.07)	.10 (.07)	.12 (.07) [†]	.12 (.10)
Youth gender×M warmth mean		-	-	-
Youth gender×M prestige		-	-	-.01 (.13)
M warmth mean×M prestige		-	-	-
Youth gender×M warmth mean×M prestige		-	-	-
M warmth consistency			14.82 (5.22) ^{**}	12.20 (6.64) [†]
Youth gender×M warmth consistency				5.36 (8.74)
M warmth consistency×M prestige				.43 (.48)
Youth gender×M warmth consistency×M prestige				-1.57 (.75) [*]
Variance components				
Intercept	30.74 (19.61) [†]	30.74 (19.61) [†]	32.32 (19.19) [*]	29.84 (19.15) [†]
Residual	139.91 (21.15) ^{***}	139.91 (21.15) ^{***}	133.61 (20.34) ^{***}	134.82 (20.67) ^{***}

Note. $N = 233$. Unstandardized coefficients (γ) with standard error (SE) are shown. Non-significant interaction effects were omitted from models.

^aMothers' occupational prestige was averaged across Times 1 to 9.

^bYouth gender was coded 0 = female, 1 = male.

[†] $p < .10$; ^{*} $p < .05$; ^{**} $p < .01$; ^{***} $p < .001$

Table 6

Results of Multilevel Models Predicting Young Adult Occupational Prestige From Cross-Time Mean Warmth With Fathers (F Warmth Mean), Cross-Time Consistency in Warmth With Fathers (F Warmth Consistency) and Fathers' Occupational Prestige (F Prestige)^a

	Model A	Model B	Model C	Model D
	γ (SE)	γ (SE)	γ (SE)	γ (SE)
Fixed effects				
Intercept	52.98 (1.21) ^{***}	52.70 (1.21) ^{***}	52.65 (1.21) ^{***}	52.65 (1.21) ^{***}
Youth gender ^b	-3.51 (1.70) [*]	-3.20 (1.69) [†]	-3.11 (1.70) [†]	-3.11 (1.70) [†]
F warmth mean	3.16 (1.75) [†]	3.57 (1.75) [*]	3.05 (1.99)	3.05 (1.99)
F prestige	.10 (.08)	-.08 (.11)	-.07 (.11)	-.07 (.11)
Youth gender×F warmth mean		-	-	-
Youth gender×F prestige		.33 (.15) [*]	.31 (.15) [*]	.31 (.15) [*]
F warmth mean×F prestige		-	-	-
Youth gender×F warmth mean×F prestige		-	-	-
F warmth consistency			2.68 (4.77)	2.68 (4.77)
Youth gender×F warmth consistency				-
F warmth consistency×F prestige				-
Youth gender×F warmth consistency×F prestige				-
Variance components				
Intercept	31.92 (19.29) [*]	31.92 (19.29) [*]	34.37 (19.11) [*]	34.37(19.11) [*]
Residual	138.47(20.70) ^{***}	138.47 (20.70) ^{***}	134.19 (20.16) ^{***}	134.19 (20.16) ^{***}

Note. $N = 236$. Unstandardized coefficients (γ) with standard error (SE) are shown. Non-significant interaction effects were omitted from models.

^aFathers' occupational prestige was averaged across Times 1 to 9.

^bYouth gender was coded 0 = female, 1 = male.

[†] $p < .10$; ^{*} $p < .05$; ^{**} $p < .01$; ^{***} $p < .001$

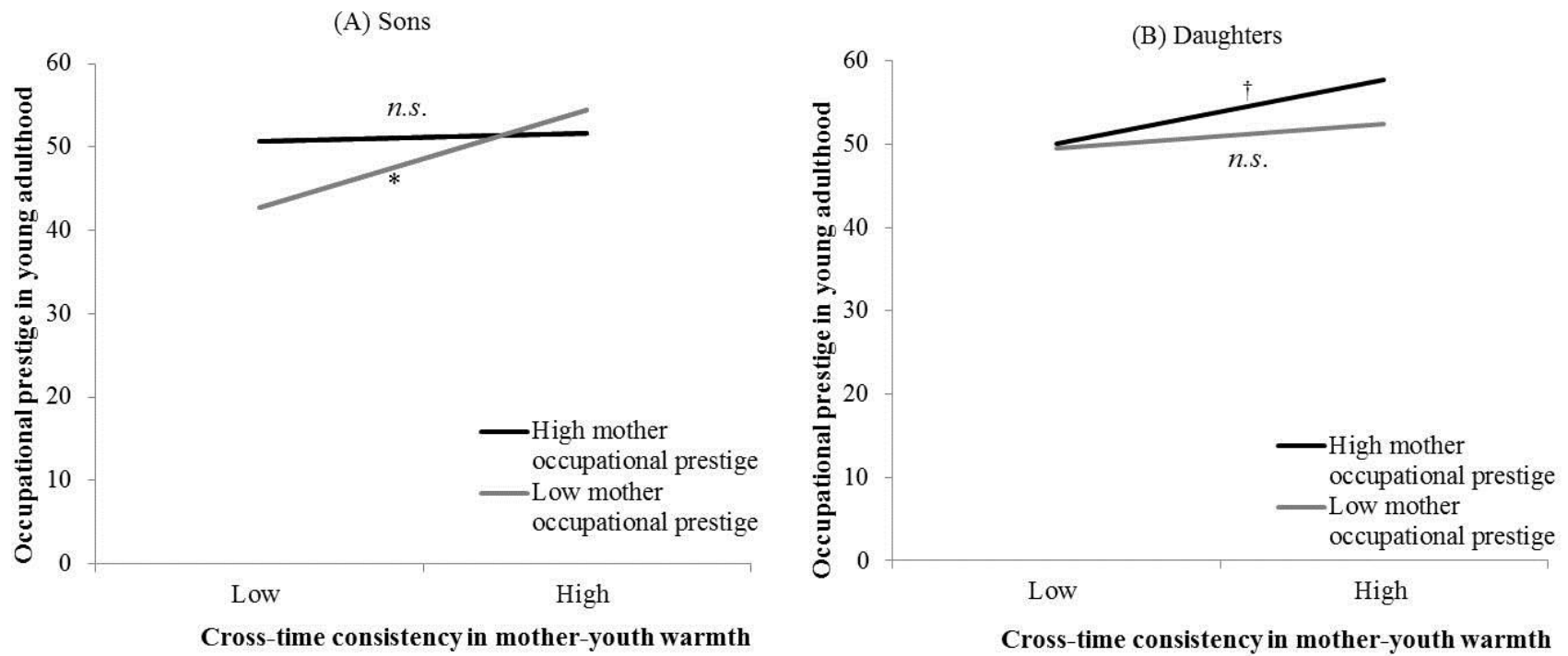


Figure 1. Interaction effects of consistency in mother-youth warmth, mothers' occupational prestige, and youth gender on occupational prestige

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