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Links between Gendered Leisure Time in Childhood and Adolescence and Gendered Occupational Aspirations

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Abstract

The world of work remains gender-segregated, and research is needed to identify factors that may give rise to women's and men's vocational choices. This study explored bidirectional relations between youth's gendered career aspirations and the proportions of youth's leisure time spent in stereotypically gendered activities and gendered social contexts. Participants were 203 youth (52% girls) from predominantly white, working and middle class families living in the US, who reported on their occupational aspirations and gendered interests in home interviews and on their daily activities in a series of 7 nightly phone interviews on two occasions, in middle childhood ($M_{\text{age}} = 10.9$) and in adolescence ($M_{\text{age}} = 17.3$). Path models revealed that aspirations predicted youth's time use more so than the reverse. Time in gendered social contexts, specifically time in female-only contexts, but not time in gender-typed activities, predicted career aspirations. Implications of these findings and suggestions for future research are discussed.

Keywords

adolescence; leisure time use; longitudinal; middle childhood; occupational aspirations; gender

Why the world of work is gender-segregated remains an unanswered question. One way to address this question is to examine how youth's occupational aspirations develop during childhood and adolescence. Occupational aspirations—"an individual's desired goals given ideal circumstances" (Rojewski, 2007, p. 88)—play an important role in career development, including directing individuals to engage in behaviors that help them achieve their goals. Aspiring to a gender-typical occupation, therefore, may lead individuals to spend time in more gender-typical activities and contexts—which, in turn, provide socialization opportunities (Larson & Verma, 1999). In this way, youth's time spent in gender-typical activities and contexts can further shape their occupational aspirations. From an ecological perspective, however, youth's daily activities are a consequence as well as a cause of

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development: activities reflect youth's dispositions and competencies, and they also serve as a forum for learning and practicing skills as well as exposure to role models and sources of reinforcement (Bronfenbrenner, 1979). Indeed, developmental researchers, including those focused on career development (Vondracek, Lerner, & Schulenberg, 1986), have highlighted the role of such bidirectional processes linking person and context. The present study is grounded in this line of thought and is aimed at illuminating the interplay between gendered occupational aspirations and gendered time use from middle childhood to adolescence toward identifying early and potentially malleable precursors of gender segregation in the workplace.

Gendered Occupational Aspirations

Occupational aspirations can be conceptualized as individuals' desired occupation under ideal circumstances (Rojewski, 2007). These begin to develop early in life, and are evident in the preschool years (Trice & King, 1991). Although relatively stable (Rojewski, 2007; Trice & King, 1991), occupational aspirations may change over time, especially during adolescence when youth develop a clearer sense of self and experience more autonomy to learn about the many occupations available in the world of work that are compatible with their self-concepts (Gottfredson, 2004; Porfeli & Lee, 2012). The unique opportunities of adolescence led to our focus on this developmental period in the current study.

One factor that plays a critical role in the development of occupational aspirations is gender. In her Theory of Circumscription and Compromise (TCC), Gottfredson (2004) proposed that individuals' aspirations develop through a process of eliminating career options and modifying preferred options primarily as a function of gender-type and social class. Gottfredson argued that, when individuals perceive an occupation as inaccessible due to its "distance" in terms of gender-type or social class, they look for options that seem more accessible and compatible with their self-concepts. Grounded in this perspective, scholars have attended increasingly to the role of gender in the development of occupational aspirations, and findings that children as young as age 4 aspire to gender-typical occupations (Trice & Rush, 1995) support the contention that gender plays a significant role in career development beginning early in life.

One line of study is aimed at identifying predictors of gender-typed occupational aspirations. For our purposes here, the gender-typing of a given occupation refers to the degree to which it is held by members of one sex but not the other. In the US, for example, 32.2% of physicians/surgeons were female (US Census Bureau, 2010), making it a male-typed occupation; in contrast, 67.2% of physician assistants were female, making this profession relatively more female-typed.

Research on psychological sources of gendered occupational aspirations and choices reveals that, along with self-esteem (Hughes, Martinek, & Fitzgerald, 1985), biological sex, gender-typed skills, and gender role attitudes are related to gender-typical occupation aspirations (Helwig, 2008; Trice & Rush, 1995; author citation). Other studies emphasize the social context and focus on the role of parents. For example, parents' occupational expectations for their children (Fulcher, 2011; Jacobs, Chhin, & Bleeker, 2006), parents' gender-role

attitudes (Fiebig & Beauregard, 2011), and parents' time with their children (Lawson, Crouter, & McHale, 2015) are related to youth's endorsement of gender-typical occupational aspirations (i.e., aspirations that are consistent with the representation of one's gender) in adolescence and choices in young adulthood. Such findings are not surprising given that youth describe parents as a primary source of their aspirations (Archer, DeWitt, & Wong, 2014).

Grounded in the TCC and prior studies on the role of the contextual influences on youth's occupational aspirations, the present study focused on youth's time spent in *gendered leisure activities*, including the *kinds of activities* youth engaged in (e.g., the arts, sports) and the *social contexts* of their activities (i.e., with only female and only male companions). Specifically, we examined the longitudinal links between these two dimensions of leisure time use and gendered career aspirations in childhood and adolescence, and we tested whether youth (biological) sex moderated these associations.

Gendered Leisure Time Use and Gendered Occupational Aspirations

Our focus on the links between gendered leisure and occupational aspirations is grounded in the argument that the domains of work and play are connected, if not indistinguishable, especially in childhood and adolescence (Bordin, 1979; Hartung, 2002): What youth consider play or leisure can serve as opportunities for development, learning and skill-building, including learning teamwork and content knowledge and building physical strength and coordination. Indeed, what were once hobbies become jobs for some individuals (McDaniels, 1984). For others, daily work activities may engender pleasure in the same way as play and leisure activities. Although leisure time may be linked to career development in these several ways, we know almost nothing about such associations. This study was designed to address this knowledge gap.

Although not focused on leisure *time use*, studies of youth's *expressed leisure preferences and interests* are suggestive of links between actual leisure activity involvement and career development. For example, one cross-sectional study reported that junior and senior high school students' activity *preferences* in vocational and leisure domains were highly correlated (Vondracek & Skorikov, 1997). Other studies documented significant relations between leisure and vocational interests, especially in the Realistic (working with hands, working outdoors), Artistic (working on self-expressive creations), and Social (working with people) domains (Armstrong & Rounds, 2008; Gaudron & Vautier, 2007; Leuty, Hansen, & Speaks, 2016). An 18-year longitudinal study that included global reports of activity involvement showed that about 35% of the sample ended up in occupational domains that fit their adolescent leisure activities; further, adults in occupations that matched their earlier leisure activity reports felt more accomplished at work (Hong, Milgram, & Whiston, 1993).

We built on this small body of research to measure the time youth spend in gendered leisure activities using a daily diary data approach. Our approach adds to the current literature in two ways. First, we highlight the distinction between *expressed interests*, which are most often measured using global, self-rating scales versus active participation, namely *manifest interests*, which are far less frequently assessed in career development research (Crites,

1999). Second, we also highlight the distinction between global self-reports of active participation and cued recall measurement of daily time use. This distinction is important because, unlike global self-reports that can reflect aspirations or imagined experience, daily time use is subject to proximal opportunities and constraints in everyday life, ranging from community resources to family and school schedules. To address such distinctions, we control for expressed interests, and then examine whether time spent in gendered leisure activities is linked with gendered career aspirations. In addition, using longitudinal data across about six years, we also seek to advance understanding of the links between gendered leisure time use by addressing not only the typically asked question of whether gendered leisure time explains career aspirations, but, drawing on our developmental perspective, whether there are *bidirectional linkages* between gendered leisure and gendered career aspirations across development (Bronfenbrenner, 1979; Vondracek, Lerner, & Schulenberg, 1986).

Prior research documents gender differences across development in both leisure and work participation. In childhood, for example, girls and boys prefer playing with gender-stereotypical toys (Cherney & London, 2006; Martin, Eisenbud, & Rose, 1995). In adolescence, girls tend to work in service-oriented jobs and boys in manual labor (Steinberg & Cauffman, 1995); further, boys spend more time on physical activities than girls (Cherney & London, 2006). And, studies of leisure time use among adults show that women continue to be less active than men in their leisure time use (Azevedo et al., 2007). Whether these gender differences in activities are driven by youth's gendered goals or whether they serve as socialization contexts for youth to develop goals that are more or less gendered are questions we explored in the current study. We focused on middle childhood and adolescence given the significance of leisure activities in daily life during these developmental periods (Larson & Varma, 1999) and also because of the changes that occur across these years as youth acquire greater autonomy to choose their free time activities, crystallize their identities, and increasingly plan for the future (Steinberg, 2011).

We also took the innovative step of testing potential bidirectional relations between gendered leisure time use and gendered occupational aspirations from middle childhood to adolescence. As elaborated below, we focused on two dimensions of gendered time use: (a) the extent to which youth spent their time in feminine-typed (e.g., arts) versus masculine-typed (e.g., sports) leisure activities, and (b) the social contexts of leisure time—or the extent to which youth spent time with same-sex companions versus with companions of the other sex.

Gendered activities and gendered occupational aspirations

Gendered occupational aspirations may be linked to the kinds of leisure activities in which youth are engaged. First, occupational aspirations can be seen as personal goals that direct behavior (Ford, 1992). The guiding role of aspirations in career development is evidenced, for example, by findings that occupational aspirations predict occupational attainment even after controlling for family background and educational attainment (Schoon & Parsons, 2002). To the extent that aspirations can function as goals, adolescents who desire to achieve a particular career may be attracted to activities that share characteristics with their career

goals (Lent, Brown, & Hackett, 2002). For example, a boy who aspires to a job in construction (a male-typical occupation) may do so because of the kinds of activities required in the job. As noted, boys tend to be more interested in such hands-on activities with “things”—like tools and machines—as compared to girls, who gravitate toward activities that require engagement with “people” (Su et al., 2009). Occupational aspirations may reflect interests and direct youth toward activities that further develop those interests and related skills. The types of activities in which youth engage, however, may also lead to the development of their occupational aspirations. This direction of effect is supported by research showing that leisure time can function as a context for youth development (Caldwell & Faulk, 2013). In addition to providing opportunities for learning and practicing skills (Bronfenbrenner, 1979), leisure activity engagement can generate the experience of flow (Csikszentmihalyi, 1990) and provoke positive attitudes toward ongoing activities. Such ideas led us to test the bidirectional links between youth’s time spent in gender-typed activities and the gender-typing of their occupational aspirations from middle childhood to adolescence. Based on theory and prior research, we expected that youth who spent more time in gendered activities would aspire to more gender-typed occupations and youth who aspired to more gender-typed occupations would spend more time in gendered activities. Our hypotheses were as follows.

Hypothesis 1a: Youth who spent more time in masculine activities in childhood would aspire to more male-typed occupations in adolescence;

Hypothesis 1b: Youth who spent more time in feminine activities in childhood would aspire to more female-typed occupations in adolescence.

Hypothesis 2a: Youth who aspired to more male-typed occupations in childhood would spend more time on masculine activities in adolescence;

Hypothesis 2b: Youth who aspired to more female-typed occupations would spend more time on feminine activities in adolescence.

Gendered social contexts of leisure time and gendered occupational aspirations

Another line of study has documented the role of companions and social contexts in gendered occupational aspirations. For example, Hardie (2015) found that young men with more female friends were more likely to aspire to a female-dominant occupation. In interpreting this pattern, Hardie suggested that: (a) men may have been introduced by their female friends to traditionally feminine occupations that they otherwise would not have been exposed to, and (b) having more female friends might protect men against social forces that would otherwise drive them away from female-dominant occupations. Along these lines, but focusing on the potential implications of gendered parent-child shared time and using longitudinal data, Lawson et al., (2015) reported that daughters who spent more time with their fathers in childhood attained less gender stereotypical occupations in young adulthood, whereas sons who spent more time with fathers attained more gender-typical occupations (Lawson et al., 2015).

Conversely, gendered aspirations also may have implications for youth’s choices of companions. For example, a girl who aspires to become a nurse may spend more time with

other females at least in part because the characteristics related to her aspiration, such as helping others, may be more characteristic of females—who tend to be more oriented to “people” than “things” (Su, Rounds, & Armstrong, 2009). As youth become more autonomous in adolescence (Zimmer-Gembeck & Collins, 2003), including increasingly choosing their social contexts, they may spend more time with others whose biological sex aligns with the gender-typing of their occupational aspirations. To test these ideas, we examined the bidirectional linkages between the gender-typing of youth’s occupational aspirations and the amounts of time they spent in activities with males and females during middle childhood and adolescence. Our hypotheses were as follows.

Hypothesis 3a: Youth who spent more time in male-only contexts in childhood would aspire to more male-typed occupations;

Hypothesis 3b: Youth who spent more time in female-only contexts in childhood would aspire to more female-typed occupations in adolescence.

Hypothesis 4a: Youth who aspired to more male-typed occupations in childhood would spend more time on male-only contexts in adolescence;

Hypothesis 4b: Youth who aspired to more female-typed occupations would spend more time in female-only contexts in adolescence.

In addressing our research questions, we also examined whether youth’s biological sex moderated the longitudinal patterns. Given that social sanctions for violating gendered behavior tend to be stronger for boys than for girls (Ruble, Martin, & Berenbaum, 2006), and that masculine-typed occupations tend to be higher in status and better paid (Hegewisch, Liepmann, Hayes, & Hartmann, 2010), we expected that boys would experience more constraints in their activities and aspirations and thus that these linkages would be stronger for them than for girls.

Hypothesis 5: The longitudinal links between gendered leisure time and aspirations would be stronger for boys than for girls.

The Present Study

In sum, our study had two goals. First, we assessed the bidirectional links between the gender-typing of youth’s leisure activities and their gendered occupational aspirations from middle childhood to adolescence, and second, we examined the bidirectional relations between the gendered social contexts of youth’s leisure time and their gendered occupational aspirations. As conveyed in our hypotheses, prior research and theory led us to expect that both directions of effect would be operative. We also tested whether these longitudinal links were moderated by youth’s biological sex.

Method

Participants

Data were drawn from a larger longitudinal study based in the US exploring family relationships and youth development. Participants for the present study were 203 first-born youth (52% girls) from two-parent families. Data from two phases were included, when the

measures of interest were collected: when participants were in middle childhood (Time 1; $M_{\text{age}} = 10.9$, $SD = 0.5$) and again about 7 years later in adolescence (Time 2; $M_{\text{age}} = 17.3$, $SD = 0.8$). Time 1 data were collected in 1995–1996, such that participants were young adults negotiating changing gender roles in the work force at the time of this writing. To recruit the sample, 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 child in the fourth or fifth grade with at least one sibling. The number of families that fulfilled our recruitment criteria but failed to respond was not known, but over 90% of families that returned postcards and were eligible agreed to participate (total $N = 203$ families). Retention rate of the adolescents at Time 2 was 94% ($n = 191$).

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, the average education level was 14.58 years ($SD = 2.15$, range = 12–20) for mothers and 14.67 years ($SD = 2.43$, range = 10–20) for fathers (where a score of 12 signified a high school graduate), and the median family income at Time 1 was \$55,000 ($SD = 28,473$, range = 21,000–207,000). Parental education and family income were variable, however, with families ranging from working to upper middle-class.

Procedure

Data were collected using two procedures. First, in home interviews, mothers, fathers, and youth were interviewed separately about their personal characteristics and family relationships. These interviews began with informed consent and assent procedures and families received \$100 (Time 1) and \$200 (Time 2) for their participation. Second, in 2–3 weeks following the home interviews, youth completed seven (5 weekdays, 2 weekend days) nightly phone interviews. Trained interviewers guided youth through a list of 70 activities and probed for the duration (in minutes) and social contexts (i.e., with whom the youth engaged in the activities) of any completed activities. From these phone interview data, we calculated the amounts of time (number of minutes) youth spent in stereotypically feminine and masculine leisure and time in activities with only females (e.g., peers, parents, siblings, other family members etc.) and time with only males (e.g., peers, parents, siblings, other family members etc.) present.

Measures

Gendered occupational aspirations—In the home interviews at Times 1 and 2, youth were asked: “*When you think ahead to the time when you are an adult, what kind of job do you think you would like to have?*” Following prior research (Hardie, 2015; Weisgram et al., 2011), their answer—that is, their occupational aspiration—was coded for its gender typicality based on the percent of women in that occupation using data from the US Census

Bureau (2000). We used the US Census Data from 2000 because it is closest to the time points when our data were collected, thus reflecting the larger social context of youth's gendered occupational socialization. Higher scores signified more female-typical occupations for both boys and girls, and these scores were used in the models examining female-typed activities. In the models focused on male-typed activities, we reverse-coded the aspiration scores such that higher values indicated more male-typical occupation aspirations for both boys and girls.

Gendered activity interests—Using a measure adapted from Huston, McHale, and Crouter (1985), parents and youth rated their interest in 24 activities during the home interviews at Time 1 on a 4-point scale (1 = *not at all interested*, 4 = *very interested*). Activities included leisure-time activities (e.g., read, play sports, computer games) and academic activities (e.g. math, science). Gender varies across time and place (Ruble & Martin, 1998), and for this reason we used mothers' and fathers' ratings of their activity interests to classify them as stereotypically masculine or feminine (author citation). Using parents' information allowed us to capture the socially constructed nature of gender because classifications are based on youth's immediate social context (e.g., social class, geographic region, etc.). Activities that were rated as significantly more interesting by fathers than by mothers were coded as masculine (sports, build, hunt/fish, watch TV, social studies, math, and science) activities that were rated as significantly more interesting by mothers than fathers were coded as feminine (dance, handicrafts, music, read, write, gymnastics, art, garden, play card/board games, hike/go for walk, activities with pets or animals, water activities, religious activities, and language arts) and the remaining activities (computer games, bike/skating, and collecting things) were coded as gender neutral.

Time in gender-typed activities—The total amounts of time youth spent in masculine and feminine activities were computed by first summing youth's reports of the time they spent (in minutes) in each of the masculine-typed activities and in each of the feminine-typed activities each day and then summing the daily totals across the seven phone calls. Because the resulting scores were skewed and to correct for individual differences in youth's overall activity involvement, we divided these totals by the total amount of time spent on masculine plus feminine plus gender neutral leisure activities to create scores that captured the proportion, or centrality, of masculine activities and feminine activities, respectively. For example, if a child spent 100, 120, and 200 minutes on masculine, feminine, and gender-neutral activities, respectively across the seven days of phone calls, that child would receive centrality scores of .24 and .29 for masculine and feminine activities, respectively.

Time in gendered social contexts—We created an index of time spent with females by first summing the amount of time (in minutes) that youth spent in activities with only females present, and an index of time spent with males by summing the amounts of time youth spent in activities with only males present across all activities and all seven calls. We again created scores to reflect the proportion, or centrality of youth's gendered time by dividing total time with females and total time with males by the total amount of time youth reported spending in all activities (i.e., time spent with male, female, mixed-gender groups, and time spent alone) across all seven calls.

Control variables—Prior research shows that youth's activity interests are correlated with their actual participation in activities (Fitzgerald, Joseph, Hayes, & Regan, 1995), and thus, to isolate the effects of their time use, we controlled for youth's gendered activity interests (described above). Given the links between youth's leisure time use and socioeconomic status (SES; Lareau, 2003), we controlled for family SES, as indexed by the average of mothers' and fathers' education and family income (log-transformed before entering in the model). Given some variability across the sample, we also controlled for youth age at Time 1.

Analytic Plan

Because theory and research suggested bidirectional effects, path models that imposed bidirectional relations between youth's gendered time use and their gendered occupational aspirations were applied to the data, and the utility of the model was determined by several fit indices (Hu & Bentler, 1999). Models linking occupational aspirations and time use were estimated separately for male-typed and female-typed time use (Given our sample size, a model that included all time use variables would include too many parameters to estimate, which could result in overfitting the model.). In all the models, we also included auto-regression paths (stability coefficients) for each construct to better isolate the effects of the predictor variables. We then tested whether the relations between gendered time use and occupational aspirations varied by youth's (biological) sex via a multi-group path analysis. Here, a model that allowed parameters for boys and girls to vary freely was compared to one that restricted all parameters to be equal across boys and girls. A nonsignificant chi-squared difference between the two models indicate that the path coefficients do not differ by youth sex (Kline, 2015). When a significant chi-squared difference between the two models emerged, we started from a fully constrained model and freed one path after another to isolate the youth sex difference effects. In all models, maximum likelihood estimate was applied to handle missing data (Schafer & Graham, 2002). We used SPSS Amos 21 to conduct these path analyses.

Results

Descriptive Analyses

Means and standard deviations for centrality of gendered activities and social contexts are presented in Table 1. Boys spent more time than girls on masculine-typed activities and girls spent more time than boys on feminine-typed activities in middle childhood; no sex differences in gendered activities were evident in adolescence, however. Further, girls did not differ in the proportions of time spent on masculine and feminine leisure activities in middle childhood, but in adolescence, they spent more time on masculine activities than on feminine activities. In contrast, boys spent a larger share of their leisure time on masculine activities than on feminine activities in both middle childhood and adolescence. In terms of the gendered social contexts of leisure, boys spent more time than girls in male-only contexts, and girls spent more time than boys in female-only contexts both in middle childhood and adolescence. In addition, both girls and boys spent more time in same-sex than in other-sex social contexts in middle childhood and adolescence. With respect to occupational aspirations, girls aspired to more female-typical jobs than did boys, but the

means indicated that boys reported more sex-typed aspirations than did girls. That is, boys on average, aspired to jobs wherein about 30% of the workforce were women and 70% were men, whereas girls aspired to jobs wherein the workforce was about evenly split between women and men.

The stability coefficients for gendered time use ranged from $r = .26$ to $.39$ and that for occupational aspirations was $r = .45$ (all significant at $p < .05$) indicating moderate levels of stability from middle childhood to adolescence (Table 2). Gendered social contexts and gendered activities at a given time point were not strongly correlated except in the case of male-typed activities and time with males at T1. These generally nonsignificant correlations suggested that the two time use constructs were distinct, and thus we included measures of both in the same models. Masculine interests were generally positively correlated with time in male-typed activities and in male-only contexts ($r = .17-.28$, all significant at $p < .05$), and feminine interests were generally positively correlated with time in female-typed activities and female-only contexts ($r = .13-.23$, all significant at $p < .05$ except for the correlation between feminine interests at T1 and female-typed activities at T2). These correlations between time use and interests were smaller than $r = .29$, suggesting that expressed interests (i.e., self-reported preferences) and manifest interests (i.e., activity participation) are related but distinct constructs. As noted, we controlled for expressed interests to determine whether time spent in gendered activities independently predicted gendered occupational aspirations.

Male-typed Leisure Time and Occupational Aspirations

Controlling for gendered interests and gendered activity time in childhood, there were no significant relations between male-typed aspirations and time spent in stereotypically masculine activities (H1a and H2a not supported), however more stereotypically masculine aspirations in childhood predicted youth spending a higher proportion of time in male-only social contexts in adolescence (Figure 1, top; H3a supported). Spending proportionately more time in male-only contexts in childhood, however did not significantly predict male-typed occupational aspirations in adolescence (H4a not supported). In terms of control variables, masculine activity interest was positively related to masculine occupational aspirations and male-typed time use in middle childhood and with masculine occupational aspirations in adolescence, and parental education was negatively related to masculine activities in middle childhood and adolescence. Note that the path coefficients in Figure 1 account for these covariates.

Results from the multi-group analysis showed that fixing path coefficients to be equivalent across groups (i.e., boys vs. girls) did not significantly change the fit of the models wherein path coefficients were allowed to vary across groups, $Ddf = 16$, $Dx^2 = 18.92$, $p = .27$, indicating no sex differences (H5 not supported).

Female-typed Leisure Time and Occupational Aspirations

Similar to results from the male-type model, aspiring to female-typed occupations in middle childhood did not significantly predict time spent in feminine activities in adolescence; nor did time spent on feminine activities in childhood predict adolescents' female-typed occupational aspirations (H1b and H2b not supported). However, more stereotypically

feminine aspirations predicted spending proportionately more time in female-only social contexts (Figure 1, bottom; H3b supported). Conversely, spending more time in female-only contexts in childhood predicted more female stereotypical aspirations in adolescence (H4b supported). Again, these effects emerged after controlling for feminine interests, youth age and parental education level. In terms of the effects of control variables, feminine activity interest was positively related to time in female-only contexts in middle childhood and adolescence; feminine interest was also related to time in feminine activities and feminine aspirations in middle childhood. Parental education was positively related to spending more time in feminine activities in middle childhood. The test of moderation as a function of youth sex via a multi-group analysis revealed no evidence that these relations differed for girls versus boys, $Ddf = 16$, $Dx^2 = 19.40$, $p = .25$ (H5 not supported).

Discussion

Why occupational choices are divided by gender is a question that researchers have been tackling for decades. One approach to this question is to examine how occupational aspirations develop. The current study aimed to contribute to the literature on youth career development by examining the relations between youth's career aspirations and leisure time. Our study was grounded in the idea that work and play are interconnected (Hartung, 2002) and that development involves bidirectional linkages between individuals and their contexts (Bronfenbrenner 1979; Vondracek, & Lerner, Schulenberg, 1986). In this study, we explored whether youth's gendered time use predicted the development of gendered career aspirations and conversely, whether gendered career goals may lead youth to spend time in a way that aligns with their goals. In this way, we aimed to illuminate potential bidirectional relations between gendered leisure time use and occupational aspirations from middle childhood to adolescence.

Our study contributed to the literature in three important ways. First, we examined both the gendered *social contexts* and gendered types of leisure *activities* to identify which aspects of youth's gendered time use were linked to the development of occupational aspirations. Further, as we examined the links, we controlled for expressed interests in our analyses to focus specifically on gendered time use. Second, we tested bidirectional linkages between occupational aspirations and leisure time using longitudinal data. Although several studies have linked work and leisure, prior data were predominantly cross-sectional, and direction of effect had not yet been addressed (Vondracek & Skorikov, 1997; see Hong et al., 1993 for an exception). Third, departing from prior research focusing on vocational interest domains such as art and science (Hong et al., 1993), our study focused on *gender-typing* in both work and leisure. In this way, our study was aimed at advancing understanding of how these two domains may be linked and in so doing, illuminating developmental precursors of gender segregation in the workforce.

Gendered Activities and Occupational Aspirations

Contrary to our expectations, engaging in gendered activities in middle childhood did not predict occupational aspirations in adolescence. Our hypothesis, however, was grounded in prior research that focused on youth's gendered *interests* and *preferences* and their links with

occupational aspirations. Not only may school and family routines limit youth's time for actual engagement in their preferred activities, but opportunities in the larger environment—ranging from the weather to availability of facilities that allow, for example, for playing a favorite sport, may also constrain youth's time use.

Neither did occupational aspirations predict the type of activities that youth engaged in, possibly for some of these same reasons. Additionally, it may be that youth do not see clear connections between gendered occupations and gendered leisure activities. Teacher was a commonly chosen (feminine-typed) occupation, for example, but science and math were coded as masculine activities, and feminine-typed activities such as dance, hiking, and religious activities may not bear an obvious relation to becoming a teacher. Aspiring to a specific occupation may lead youth to spend time on particular activities that are directly related to that occupation, but not necessarily in the array of activities that are gender-typical.

Gendered Contexts of Leisure Time Use and Occupational Aspirations

In contrast to the types of activities in which youth engaged, results focused on the gendered social contexts of activities revealed significant links with their gendered occupational preferences. First, results revealed that aspiring to gendered occupations in middle childhood predicted spending a larger proportion of leisure time in same-sex social contexts. Such findings support the contention that occupational aspirations function as goals for youth (Rojewski, 2007; Ford, 1992), and that having a goal in mind may lead to youth to spend time in contexts that align with that goal. In this study, gendered occupations were defined in terms of the percentage of women in the occupation, meaning that, in stereotypically feminine occupations co-workers are most likely to be women, and in stereotypically masculine occupations, co-workers are most likely to be men. Thus, it may be that gendered occupational aspirations reflect, in part, a preferred social environment, and that the autonomy of adolescence allows youth with such orientations to spend increasingly more time in that gendered social context. Most prior research on career development has focused on types of work tasks, and thus our findings may provide further impetus for policies and practices aimed at expanding the percentages of women in traditionally male occupations, and men in traditionally female occupations, in efforts to expand the scope of occupational opportunities for the next generation of the labor force. Importantly, although mean-level sex differences were evident in both gendered aspirations and leisure time, the strength of their associations did not differ between boys and girls. This pattern provides support for efforts to move beyond biological sex in efforts to understand career development.

Although we found evidence that gendered aspirations led to spending more time in gendered contexts, the reverse direction of effect was only evident in the female-type model. That is, when children spent a greater proportion of their time exclusively with females, they aspired to more female-typical occupational aspirations in adolescence. Importantly we found no evidence of biological sex moderation in our models, indicating it was time with females, not the fit between biological sex and social context that drove this pattern. In other words, for both boys *and* girls and controlling for childhood aspirations, spending a greater proportion of their leisure time with females—with no males present—predicted relative

increases in aspirations for female-typical occupations by middle adolescence. These findings align with results from a young adult sample showing that men with more female friends aspired to more stereotypically female occupations than did those with fewer female friends (Hardie, 2015), but expanded on these findings using a different measure of social context. Time spent with women and girls may facilitate youth's comfort with social contexts populated by women, and given the relationship-orientations of females' social exchanges (Ruble et al., 2006), it may also promote an orientation to the "people" focused tasks that predominate in stereotypically female occupations (Su et al, 2009).

In this way, gendered social contexts may serve as both cause and consequence of youth's occupational aspirations across childhood and adolescence. There is much more to explore, however, before we understand how these bidirectional processes unfold. Future studies, for example, should aim to disentangle the micro-processes that may occur in gendered contexts to develop a better understanding of the role of those gendered contexts in youth's career development. Social support and social learning processes such as observational learning and reinforcement may be involved, but other processes, such as communication styles, also may have an impact. Further examination of the role of occupational aspirations in youth's time in gendered social contexts also is warranted. Our inclusion of control variables, ranging from youth's prior time use and gendered interests to family demographics to rule out alternative explanations, gives further weight to the hypothesis that youth's ideas about their future selves are powerful motivators in their gendered time use and, at least in the case of girls, may ultimately reinforce gender segregation in the workplace.

As noted, in the face of predictive effects of time with females, time with males did not predict career aspirations. Boys' aspirations were strongly gendered, and girls' were in what might be thought of as less gendered, in that, on average, the workforce was about 50% female in girls' chosen occupations. Given the higher status of male jobs and the stronger sanctions against violating male norms for boys, in general (Hegewisch et al., 2010; Ruble et al., 2006), youth may be oriented toward more masculine-typed careers and away from feminine-typed ones. Time with females may provide an impetus for youth to move in the direction opposite to this tendency, but time with males may be insufficient to promote further movement toward high status, stereotypically masculine careers.

The relative significance of gendered social contexts and gendered activities for gendered occupational aspirations is in itself an important finding. Career development theories have traditionally considered work environments as critical in both making a career decision and adjusting to work (Holland, 1997; Dawis & Lofquist, 1984). However, work environments have generally been described in terms of the characteristics of the tasks or jobs carried out in a given career (e.g., Does the work require independence?) or the personality types of the workers in a given career (e.g., Do salespersons share similar personality types?). We know much less about the role of the sex composition of the workforce in particular occupations in the process of making a career choice. One experimental study (Weisgram, Bigler, & Liben, 2010), however, alerts us to its potential significance. In this experiment youth were asked to rate their interests in novel occupations (i.e., occupations that do not actually exist). Findings revealed that both children and adolescents exhibited greater interest in occupations that were described as being held by workers whose biological sex matched their own. Such

findings are consistent with the results of our study in suggesting that the gender composition of the workforce in a given occupation is a factor in occupational aspirations—and ultimately, may reinforce its gender segregation.

Limitations and Future Directions

Limitations of our study suggest directions for future research. First, our sample was restricted to a geographic region in the US and included youth from predominantly white, two-parent families. Future research should test the links between leisure and career aspirations among youth who come from different cultural and familial backgrounds where opportunities for gendered activities as well as the meanings of gender may be different. Second, we used a variable-oriented approach to examine the bidirectional relations between leisure time and career development. Although a variable-oriented approach is useful in capturing the correlates of individual differences and moderation tests are possible (Bergman, Magnusson, & El-Khoury, 2003) it is grounded in an assumption that processes are generally universal and fails to capture the multi-dimensionality of youth's experiences. For instance, patterns of youth time use that include leisure and work time and time spent in differing social groups, including same, other, and mixed sex groups may better account for occupational aspirations than do individual indices of time use. Future investigations that apply a person-oriented approach could complement our findings and provide a fuller picture of the role of youth's time use in their career development. Third, age, time, and birth cohort are entangled in developmental research (Schmidt & Teti, 2005). Findings from our study were based on a cohort of youth who graduated from high school in the midst of the Great Recession and during a time of changing gendered norms and work and education opportunities—all of which may have influenced their aspirations. A different pattern may emerge for youth growing up in the second decade of the new millennium. We also collected data late in middle childhood and late in adolescence, and thus our findings may be unique to links between these two developmental periods. Fourth, we focused on the centrality of male-only and female-only social contexts and masculine and feminine-typed activities, and next steps may be to conduct finer-grained analyses of gendered activities (e.g., time with same-sex parent, time in STEM activities, or the implications of time spent in gender-neutral activities and mixed-gender contexts). Fifth, our time use measures did not capture youth's motivation to engage in particular activities. In middle childhood, youth may have less say in how these spend their time, one reason why aspirations in childhood were a more consistent predictor of time use in adolescence than the reverse. A direction for future research is to learn whether youth engage in gendered activities on their own initiative (i.e., self-selection) versus due to pressures, such as from parents or peers, as well as their subjective evaluations of their activities (e.g., engagement, positive or negative mood). Finally, our study was limited to two occasions of measurement in childhood and adolescence. A next step is to learn whether and how gendered leisure time is linked to career development in young adulthood. Given their powerful role as predictors of adolescent time use, it also will be important to extend study of career aspirations to younger ages to learn more about how these goals are formed and motivate gendered career development.

Taken together, our findings were generally consistent with an ecological perspective, which highlights the role of daily activities in youth development and with corresponding tenets

from models of career development that stress the bidirectional relations between individuals and their contexts (Bronfenbrenner, 1979; Vondracek et al., 1986). Our results suggested that children's occupational aspirations may have implications for their gendered leisure time contexts in adolescence, and that time in female-only contexts may play a role in the development of occupational aspirations. In this way, our findings support the idea that the domains of work and play are interconnected (Hartung, 2002). Importantly, we found that occupational aspirations predict youth leisure time more so than the reverse. Such findings provide significance to early life goals and self-conceptions that may have long-term implications for occupational opportunities and choices, which ultimately leads to a gender-segregated world of work.

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Figure 1.

(Top) Relations between male-typed occupational aspirations and time use. Fit indices were $\chi^2(2) = 0.69$, $p = .71$; RMSEA = .00; CFI = 1.00; NFI = .99. (Bottom) Relations between female-typed occupational aspirations and time use. Fit indices were $\chi^2(2) = 0.82$, $p = .67$; RMSEA = .00; CFI = 1.00; NFI = .99. Standardized coefficients are shown. Dotted lines indicate non-significant paths. For simplicity, regression lines from control variables are not depicted. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 1Descriptive Statistics for Occupational Aspirations[/] and Gendered Time Use of Girls and Boys

Measures	All <i>M (SD)</i>	Girls <i>M (SD)</i>	Boys <i>M (SD)</i>	Gender difference <i>t-value</i>
a. Male-typed activities T1	.47 (.17)	.43 (.15)	.52 (.19)	-3.81 ***
b. Female-typed activities T1	.43 (.17)	.48 (.15)	.39 (.17)	4.14 ***
a-b difference	$F(1, 202) = 2.30$	$F(1, 104) = 3.67$	$F(1, 96) = 13.51$	***
c. Male context T1	.20 (.15)	.12 (.11)	.28 (.16)	-9.07 ***
d. Female context T1	.21 (.17)	.28 (.17)	.13 (.11)	7.68 ***
c-d difference	$F(1, 202) = 0.18$	$F(1, 104) = 41.28$	$F(1, 96) = 45.62$	***
e. Male-typed activities T2	.56 (.21)	.54 (.20)	.58 (.22)	-1.48
f. Female-typed activities T2	.36 (.21)	.38 (.20)	.33 (.21)	1.55
e-f difference	$F(1, 177) = 43.90$	$F(1, 93) = 16.09$	$F(1, 83) = 28.66$	***
g. Male context T2	.16 (.15)	.10 (.09)	.24 (.17)	-6.42 ***
h. Female context T2	.14 (.10)	.18 (.11)	.08 (.07)	7.34 ***
g-h difference	$F(1, 168) = 2.87$	$F(1, 90) = 23.84$	$F(1, 77) = 45.87$	***
q. Occupational aspiration T1 [/]	42.4 (23.9)	53.6 (22.8)	29.9 (18.3)	8.06 ***
r. Occupational aspiration T2	39.1 (22.1)	49.1 (21.7)	28.6 (17.1)	6.88 ***
Cross-time comparisons	All <i>F-value</i>	Girls <i>F-value</i>	Boys <i>F-value</i>	Gender x Time <i>F-value</i>
Male-typed activities (a vs. e)	29.42 ***	26.48 ***	7.32 **	1.10
Female-typed activities (b vs. f)	18.94 ***	15.81 ***	4.73 *	1.09
Male context (c vs. g)	5.44 *	1.32	4.28 *	1.17
Female context (d vs. h)	34.70 ***	29.57 ***	6.97 *	7.10 **
Occupational aspirations (q vs. r)	2.32	1.39	0.92	0.06

[/] Higher score indicates a more female-typical occupational aspiration.

$p < .001$.

 $p < .01$.
**
 $p < .05$.
*
Note. T1: $N = 203$ (girls $n = 91$); T2: $N = 105$ (girls $n = 69$)

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Table 2

Correlations between Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Male-typed activities T1														
2. Female-typed activities T1	-.88**													
3. Male context T1	.25**	-.27**												
4. Female context T1	-.08	.10	-.71**											
5. Male-typed activities T2	.33 **	-.32**	.11	.03										
6. Female-typed activities T2	-.26*	.26 **	-.18*	.06	-.85**									
7. Male context T2	.08	-.09	.37 **	-.23*	.12	-.11								
8. Female context T2	-.03	.08	-.48**	.39 **	.003	.07	-.44**							
9. Occupational aspiration T1 <i>I</i>	-.11	.14	-.24*	.25*	-.04	.03	-.28**	.28**						
10. Occupational aspiration T2	-.09	.09	-.24*	.26**	-.03	.05	-.21*	.26*	.45 **					
11. Masculine interests T1	.24 **	-.25**	.28 **	-.22*	.17*	-.13	.25*	-.16*	-.34**	-.31**				
12. Feminine interests T1	-.11	.15*	-.24*	.17*	-.12	.13	-.28**	.23*	.25**	.05	-.19*			
13. Youth age	.01	-.01	.08	-.11	.001	.06	.10	-.10	-.002	-.09	.06	-.09		
14. Parental education	-.18*	.19*	-.05	-.13	-.19*	.16*	-.21*	.08	.05	.04	-.20*	-.08	-.07	
15. Family income (logged)	-.14	.12	.07	-.18*	-.17*	.11	-.01	.02	.01	-.004	-.07	-.08	-.07	.59 **

I Higher score indicates a more female-typical occupational aspiration.

Note. Bolded values indicate stability coefficients.

* $p < .05$,

** $p < .001$.