

# Children's Gender Development: Associations With Parental Sexual Orientation, Division of Labor, and Gender Ideology

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This study examined children's gender development and its associations with parents' gender ideology and behavior among 172 parents (44 lesbian, 52 gay, 76 heterosexual) and their adopted children ( $M_{\text{age}} = 8$ ). Results revealed that parents' sexual orientation was associated with children's gender attitudes, but not with their sex-typing of self. Daughters of same-sex couples reported more flexible gender attitudes than daughters of heterosexual couples. No differences were found for sons in this regard. While both parents' attitudes and behaviors were associated with children's gender attitudes, parents' division of childcare labor was a significantly better predictor of children's attitudes than parents' gender ideologies. Moreover, these effects were moderated by family type. Thus, parents' behaviors may be more strongly linked with children's gender attitudes than children's gendered behaviors, and this association may be moderated by the gender composition of the parenting dyad (lesbian mothers, gay fathers, or heterosexual parents).

### **Public Significance Statement**

Children of lesbian and gay couples may have more liberal beliefs about gender compared with children of heterosexual couples, but less is known about what may cause these differences. In this study of children who were on average 8 years old, we investigated whether children's gender attitudes (i.e., attitudes regarding which jobs, activities, and personality traits men and women could have) was associated with parents' own attitudes or with how parents divided childcare responsibilities. We were also interested in whether parents were associated with which jobs, activities, and personality traits children saw in themselves. Regarding children's preferences for themselves, our study found that parents' sexual orientation, attitudes, and behaviors had almost no association with the types of jobs or activities children wanted to do (e.g., being a doctor or playing with dolls) or with their personalities (e.g., courageous, competitive, or loving). However, when it came to attitudes about others, we found that parents' sexual orientation, attitudes, and behaviors mattered. On average, children of lesbian and gay couples reported more liberal gender attitudes when their parents equally divided childcare and when parents themselves reported having more flexible gender attitudes. Also, parents' division of childcare, compared with parents' attitudes, was more strongly associated with children's gender attitudes. These results suggest that children of lesbian, gay, and heterosexual couples are relatively similar in their gender development. Differences among children may primarily occur, not in their self-expression, but in their beliefs regarding the scope of roles women and men can fill. Moreover, these differences may be caused by the types of examples parents set for their children, rather than the attitudes parents hold about gender.

**Keywords:** adoption, children's gender development, division of labor, sexual minority parents, sexual orientation

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Research suggests that children's gender development may vary between families headed by same-sex and other-sex parents. It has been found, for example, that children of same-sex couples may be less gender stereotyped in their play behavior (Goldberg, Kashy, & Smith, 2012), as well as report less traditional attitudes regarding gender (Sutfin, Fulcher, Bowles, & Patterson, 2008) than children of heterosexual couples. More research is needed, however, to understand the mechanisms through which differences emerge. One possibility is that differences result from variations in parent behavior: Same-sex parents may be more accepting of children's nonstereotypical gendered behaviors or may provide less gender-stereotyped environments than heterosexual parents (Sutfin et al., 2008). However, an alternative possibility is that the family structure itself moderates associations between parenting and children's gender development, that is, the same behaviors when replicated within the context of same-sex parenting may provide different messages than when modeled by heterosexual couples (Goldberg, 2013). The current study explored gender development among a sample of school-age adopted children and associations with parents' gender-linked behaviors and attitudes, and whether these associations varied as a function of family type (i.e., families headed by two mothers, two fathers, or one mother and one father).

### Social Approaches to Children's Gender Development

Social approaches to children's gender development have often highlighted the importance of family (Blakemore, Berenbaum, & Liben, 2009). For example, contemporary psychoanalytic theories suggest that children form their self-identity through interactions with primary caretakers and the process of gender development involves the differentiation and separation of one's identity from that of their caretakers (Chodorow, 1989). Similarly, social learning theories of gender development indicate that children's gendered behaviors and beliefs are products of social interactions involving the reinforcement, extinction, and punishment of gendered behaviors, as well as observation and imitation of gendered models, such as peers or parents (Bandura & Walters, 1977). Extending this approach, social-cognitive theory emphasizes both the environmental context, as well as the cognitive processes through which children interpret, internalize, and apply observational knowledge; gendered behaviors and attitudes are, therefore, a result of the external environment, as well as personal cognitions and perceptions (Bussey & Bandura, 1999). Bronfenbrenner's ecological systems theory (Bronfenbrenner, 1992) adds to these perspectives by further considering complexities of the environmental context as a set of nested systems starting with the microsystem, representing children's immediate social context (i.e., parents, siblings, peers, teachers), and ranging to the macrosystem, representing the cultural context in which children live and the chronosystem representing chronological changes in the child or environment, as well as sociohistorical circumstances.

The commonality among these perspectives is the centrality of the family system to children's gender development. Parents may act as models of gendered behavior, may control aspects of children's environments (i.e., choosing their extracurricular activities, decorating their bedrooms, and buying their toys), or may reinforce or reduce gendered behaviors through rewards, punishments, or direct instruction (Blakemore et al., 2009).

How researchers have operationalized and measured children's gender development, however, has varied, and such variations may explain why the evidence for parental factors in children's gender development has been mixed (Crouter, Whiteman, McHale, & Osgood, 2007). In a meta-analysis of 43 studies of children's gender cognitions and their associations with parents' gender schemas, the results as a whole supported a significant positive correlation between parents' gender schemas and offspring's gender cognitions, but was moderated by whether studies examined children's gender schemas about others, gender schemas about themselves, gender-related interests, or work-related attitudes (Tenenbaum & Leaper, 2002). Moreover, the correlations were stronger when studies examined children's gender attitudes about others (whether in general or regarding work-related attitudes) than when studies examined children's self-referential gender attitudes (in general or regarding gender-related interests). Likewise, other studies suggest that parents' gendered behaviors may be more strongly linked with children's gender development than with parents' gender attitudes (Halpern & Perry-Jenkins, 2016).

In this research, we studied sex-typing specifically in regards to the self: the extent to which an individual's identity, personal preferences, and behaviors conform to cultural gender stereotypes (Liben & Bigler, 2002). Gender attitudes were defined as an individual's level of support for gendered divisions of activities and behaviors such as work, family responsibilities, activities, and traits (Davis & Greenstein, 2009).

### Parents as Predictors of Children's Gender Development

In general, research has supported some association between parental characteristics (such as parents' gender-linked attitudes or division of labor) and aspects of children's gender development. For example, there is some support for an association between *parental behaviors* and children's gender role attitudes. In a longitudinal study of children ages six to seven years old, less egalitarian divisions of household labor were associated with less egalitarian gender role attitudes among children (Halpern & Perry-Jenkins, 2016). In another longitudinal study of children ages 4 to 13, researchers examined children's gender role attitudes and activity preferences. Similarly, results indicated that parents' division of household labor was associated with children's gender role attitudes, but not with activity preferences or occupational interests (Dawson, Pike, & Bird, 2016). Others have suggested, however, that some parental behaviors may not be reliable predictors of children's gender development. In a study of children's gender beliefs, researchers assessed associations among mothers' gender attitudes, comments about gender, and young children's gender-stereotyped beliefs in a sample of 74 children who were on average 5 years of age. Researchers found that mothers' gender-related speech did not predict children's gender stereotyping (Friedman, Leaper, & Bigler, 2007). Likewise, in a longitudinal, multiinformant study of younger ( $M_{\text{age}} = 5$ ) and older siblings' ( $M_{\text{age}} = 7$ ) gender development, Dawson et al. (2016) found no association between measures of children's gender development and parents' division of childcare labor.

Aside from parental behaviors, there is some research to suggest that *parents' gender ideologies* may also be associated with children's gender attitudes (Tenenbaum & Leaper, 2002). For exam-

ple, in a study examining the predictors of traditionality of occupational aspirations among a sample of children ages 7 to 12, researchers found that mothers who reported flexible attitudes had children with more nontraditional occupational aspirations (Fulcher, 2011). Another study of 3- to 5-year-old children, found associations between mothers' gender attitudes and children's gender stereotypes for younger children, but not older ones (Friedman et al., 2007).

Studies of heterosexual parents' gender attitudes also demonstrate that associations with children's gender attitudes may also vary by the combination of the parenting couples' ideologies. In studying the intergenerational transmission of gender attitudes, Davis and Wills (2010) found that fathers' attitudes were a significant moderator of associations between mothers and children; fathers with egalitarian gender ideologies were significantly more likely to have children with similar beliefs regardless of mothers' gender ideology. Some findings also suggest that children may be more similar to same-gender parents (i.e., daughters-mothers, fathers-sons) in their gender role attitudes (Hess, Ittel, & Sisler, 2014).

### Gender Development Among Children With Same-Sex Parents

Parental sexual orientation (e.g., whether families are headed by lesbian, gay, or heterosexual couples) may be another important moderator relevant to these associations. Results of research on differences in children's gender development as a function of parental sexual orientation are somewhat mixed. In one study, children of lesbian mothers who were 2 to 6 years old engaged in less gender-stereotypical play than peers with heterosexual parents (Goldberg & Garcia, 2016). Children of same-sex parents have also been found to report more flexible gender-related attitudes compared with children of heterosexual parents, and to be more tolerant of nonstereotypical gendered behaviors (Bos & Sandfort, 2010; Fulcher, Sutfin, & Patterson, 2008; Sutfin et al., 2008). In contrast, other studies that have used broader measures of gendered behavior have found no differences in this regard between children of same-sex and other-sex couples (e.g., Bos, Goldberg, Van Gelderen, & Gartrell, 2012).

One explanation for why these differences may exist focuses on variations in parenting practices or behaviors. Same-sex couples may be more likely than others to have egalitarian divisions of household and childcare labor (Farr & Patterson, 2013; Tornello, Sonnenberg, & Patterson, 2015) and may be more likely to divide paid labor equally (Jaspers & Verbakel, 2013). Same-sex couples may also place less pressure on their children to conform to gender stereotypes and may create less gendered environments for their children than do heterosexual couples (Bos & Sandfort, 2010; Sutfin et al., 2008). Finally, same-sex couples may also be more liberal in their own gender attitudes than heterosexual couples (Fulcher et al., 2008).

An alternative or complementary hypothesis may be that gendered behaviors, such as division of labor, have different interpretations when replicated by lesbian or gay versus heterosexual parental models (Goldberg, 2013). A social learning theory perspective suggests that children form their gender schemas through observing their parents (Blakemore et al., 2009). For example, egalitarian divisions of childcare labor among heterosexual cou-

ples may lead children to believe that childcare can be an equal responsibility of both men and women. However, research on the effect of parental modeling on children's gender development has primarily been conducted with heterosexual parent families. Although studies have suggested that children are resistant to imitating gender-atypical behaviors regardless of the sex of the model (Bauer, 1993; Bussey & Perry, 1982), fewer studies have investigated the implications of parental modeling to children's gender development outside of heterosexual parenting contexts (e.g., Fulcher et al., 2008).

### Summary and Hypotheses

This study was designed to explore whether children's gender development was associated with parents' gender-related attitudes and division of labor among lesbian, gay, and heterosexual adoptive parent families. We expected that lesbian and gay parents would report more flexible gender attitudes and less stereotypical gendered behavior than would heterosexual parents. In addition, we predicted that parents who reported more flexible gender attitudes would also be more egalitarian in their divisions of childcare labor. Based on social approaches to children's gender development, we predicted that parents' gender attitudes and behaviors would be associated with their children's gender attitudes and behaviors. In addition, in order to determine whether parental behaviors and attitudes were moderated by parents' sexual orientation and children's gender, analyses were also conducted to examine three-way interactions among parents' sexual orientation, children's gender, and parental behaviors or attitudes. Finally, we also expected parents' division of childcare labor to be a stronger predictor of children's gender development than parents' gender ideology.

### Method

#### Overview

Data for this study were collected as a part of a longitudinal study of adoptive parent families, which has followed parents and their domestically adopted children in lesbian, gay, and heterosexual parent families (see Farr, Forssell, & Patterson, 2010). Data were collected at two different time points, once when adopted children averaged 3 years old (Wave 1), and again when children averaged 8 years old (Wave 2). Eligible participants were contacted through letters, e-mails, and/or phone calls, depending on information available in agency files.

#### Participants

In Wave 1, 106 families were recruited through five cooperating adoption agencies in the United States, chosen on the basis of several criteria. Agencies had to be located in states where openly lesbian and gay couples could legally adopt, and agencies had to have previously placed infants with openly lesbian and gay couples in domestic adoptions. All agencies were private, domestic adoption agencies that worked with both birth and adoptive families in finding placements for children. All offered options for openness arrangements.

Families were considered eligible in Wave 1 if both parents were legally recognized as parents to their adopted children (who were between 1 and 5 years old) and were currently living with them. Families were initially contacted by letter or e-mail from the agency director, asking whether they would be interested in taking part in a study on “child development, parenting, and family relationships in adoptive families.” Those who expressed interest were later contacted by a researcher through follow-up phone calls and/or e-mails requesting participation. For additional demographic information at Wave 1, please see [Farr et al. \(2010\)](#) or [Farr and Patterson \(2013\)](#). After completing Wave 1, parents were debriefed, and all signed forms giving permission to recontact them for future opportunities to participate in the research. Approximately five years after the initial survey, families were recontacted for participation in Wave 2 data collection. Identical recruitment procedures were used for all families, regardless of parental sexual orientation, in both Wave 1 and Wave 2.

Of the 96 families who participated in Wave 2, 10 were excluded from the final analysis based on incomplete data. The final sample contained a total of 86 families consisting of 86 children and 172 parents (44 lesbian, 52 gay, 76 heterosexual) living in 12 different states. Most families lived on the East or West coasts, and some lived in the South. Families who did not participate often cited lack of time or family health challenges. As measures of interest were exclusively from Wave 2, only data from Wave 2 were analyzed here. In order to determine parents' sexual orientation, participants were asked to check one response to the statement “My sexual orientation is (check one).” Possible responses included “heterosexual/straight,” “gay/lesbian,” “bisexual,” “questioning/uncertain,” and “other (please specify).” All participants who are reported as members of same-sex couples in this study identified as “gay/lesbian.” All other parents identified as “heterosexual/straight.”

Demographic characteristics of participating adoptive families at Wave 2 are shown in [Table 1](#). These demographics are representative of the entire sample, before exclusions were made based on incomplete data. Parents' ages ranged from 35 to 64 years ( $M = 47.48$ ,  $SD = 5.55$ ). Eighty-one percent of parents identified as White/Caucasian, 16% identified as Black/African American, and

the remaining 3% identified as Latino/Hispanic, Asian American, or multiracial. Most parents worked full time (71%) and were well-educated (90% had received a college education or higher). Parents also reported household incomes well above the national average ( $M = \$194K$ ,  $SD = \$116K$ ). Among couples, 68% were married, 19% were cohabiting, and 13% had divorced or separated between Waves 1 and 2. For more information on separation rates in this sample, see ([Farr, 2017](#)). Overall, parents were predominantly White, well-educated, and relatively affluent.

Parents did not differ on race, education, or work status as a function of their sexual orientation, but several differences did emerge (see [Table 1](#)). Gay fathers reported significantly higher mean household incomes than did lesbian or heterosexual parents. Heterosexual and gay couples were more likely to report being married than were lesbian couples. Lastly, gay fathers were more likely to be in interracial relationships than lesbian or heterosexual parents. No significant demographic differences by family type were associated with our variables of interest.

Children in the sample had been placed as infants, at birth, or within the first few weeks of life and all parents were their legal adoptive parents. Children's ages at Wave 2 ranged from 5 to 12 years ( $M = 8.39$ ,  $SD = 1.65$ ). Parents reported that 40% of children were White/Caucasian, 33% Black/African American, 22% Multiracial/ethnic, and 5% other ethnicities. Children were considered transracially adopted when one or both parents in the couple identified as White/Caucasian and the child was identified as a member of a racial/ethnic minority (51%).

## Materials and Procedure

Data were collected to assess parental division of childcare labor, parents' and children's gender-related attitudes, and parents' and children's degree of sex-typing of self.

**Division of childcare labor.** Division of childcare labor was measured using the “Who Does What?” ([Cowan & Cowan, 1990](#)), designed to assess couples' perceptions of relative responsibility for household tasks, family decision-making, and childcare. Division of childcare was selected as the focus of the current study, as the majority of items (e.g., feeding, bathing, dressing, and choos-

Table 1  
Sample Demographic Information

Demographic	Lesbian mothers ( $n = 44$ )	Gay fathers ( $n = 52$ )	Heterosexual parents ( $n = 76$ )	ANOVA or $\chi^2$ test
Parents ( $n = 190$ )				$F(2, 175)$
Mean age (in years)	48.91 (5.18)	45.73 (5.16)	47.80 (5.75)	$F = 4.42^*$
Race (% White)	76%	86%	81%	$\chi^2 = 1.85$
Education (% college degree or higher)	97%	88%	88%	$\chi^2 = 2.91$
Work status (% full-time)	68%	77%	68%	$\chi^2 = 1.41$
Marital status (% married/cohabiting)	68%	93%	93%	$\chi^2 = 9.64^{**}$
Mean household income (\$K)	165 (92)	251 (153)	163 (70)	$F = 9.62^{***}$
Interracial relationship	12%	28%	12%	$\chi^2 = 6.88^*$
Transracial adoption	48%	66%	42%	$\chi^2 = 8.04^*$
Children ( $n = 94$ )	( $n = 25$ )	( $n = 29$ )	( $n = 40$ )	
Mean age (in years)	8.44 (1.69)	8.21 (1.47)	8.38 (1.79)	$F < 1$
Sex (% girls)	64%	38%	53%	$\chi^2 = 3.71$
Race (% White)	36%	31%	43%	$\chi^2 < 1$

Note. Standard deviations are given in parentheses. ANOVA = analyses of variance.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

ing toys) were stereotypically feminine, whereas household tasks and family decision-making contained a mix of stereotypically feminine, masculine, and neutral tasks. Several small wording adjustments were made to the original instrument for use with lesbian, gay, and heterosexual couples. For example, references to “she” or “he” were changed to “my partner/spouse.” Items were scored on a scale ranging from 1 (“My partner/spouse does it all”) to 5 (“I do it all”). Parents reported the current frequency with which they performed each of the 20 childcare tasks. Cronbach’s alphas were .89, .85, and .90 for lesbian, gay, and heterosexual parents, respectively.

One issue in using the Who Does What? with same-sex couples is that there is no simple way to distinguish between the two parents in the couple. With heterosexual couples, parent gender is used to distinguish between mothers and fathers. To address this issue, a continuous variable representing specialization was created (see Farr & Patterson, 2013). This variable represented the degree to which labor was specialized in couples and was calculated by taking the absolute value of the difference between each of the two parents’ “real” involvement scores for each of the 20 items, and then calculating the mean of those absolute differences for all childcare items. Prior to data analysis, parents in a couple who both reported doing all or none of the childcare labor were planned to be excluded from the analysis. However, no parents in our sample were excluded based on these criteria. Higher values represented greater specialization; lower values represented greater sharing.

**Gender attitudes and sex-typing of self.** Gender differentiation was assessed using the Occupations, Activities, and Trait-Short Form (OAT; Liben & Bigler, 2002), designed to assess gender attitudes toward others (attitude measure, or a.m.) and gender characterizations of oneself (i.e., sex-typing of oneself; personal measures or PM) regarding occupations, activities, and traits (OAT). Each of these domains were further subdivided into feminine, masculine, and neutral items (e.g., the occupations subscale contains items describing masculine and feminine occupations). Separate forms were provided for adults and for children, which include similar items and scaling. Participants were given the occupation scale first, followed by the activity scale, and then the trait scale. Feminine and masculine items appeared in a randomized order within subscales. Because of differences in how the a.m. and PM measures are scored (Liben & Bigler, 2002), different techniques were used to calculate overall scores for gender attitudes and sex-typing of oneself (see below).

**Children’s gender attitudes.** Data on children’s gender attitudes toward others were gathered using the COAT-a.m. (Liben & Bigler, 2002). Children rated 25 occupations, 25 activities, and 25 traits regarding the degree to which they were appropriate for women/girls or men/boys. Occupation and activity items were scored on a scale ranging from 1 to 3 (1 = *only men/boys*, 2 = *only women/girls*, 3 = *both men/boys and women/girls*). Trait items were scored on a scale ranging from 1 to 4 (1 = *only boys*, 2 = *only girls*, 3 = *both boys and girls*, 4 = *neither boys nor girls*). Example items included: “Who should be a nurse?” (occupations), “Who should build with tools?” (activities), and “Who should be loving?” (traits). To assess flexibility of gender attitudes, a composite score was calculated using the proportion of egalitarian responses (“both/neither men and/nor women”). The number of egalitarian responses was divided by the total number of items. As

such, this score represented the proportion of occupations, activities, and traits that children believed “both men and women” or “neither men nor women” could do or have. Higher scores indicated greater flexibility of gender attitudes. Cronbach’s alpha for the composite score was .98.

**Children’s sex-typing of oneself.** Data on children’s sex-typing of self were obtained through the COAT-PM (Liben & Bigler, 2002). Here, children were asked to rate the items presented in the COAT-a.m. in reference to themselves, rather than others (i.e., children rated their personal interest in occupations and activities, and the degree to which various traits described themselves). Occupational items (“How much would you like to be a(n) \_\_\_?”) were ranked on a scale ranging from 1 (*not at all*) to 4 (*very much*). Activity items (“How often do you \_\_\_?”) were ranked on a scale ranging from 1 (*never*) to 4 (*often or very often*). Trait items (“Is this like you?”) were ranked on a scale ranging from 1 (*not at all like me*) to 4 (*very much like me*). All items were also classified as masculine, feminine, or neutral. For example, masculine occupations included “plumber,” “architect,” and “dentist,” and feminine occupations included “librarian,” “baby-sitter,” and “nurse.” Average scores were calculated across occupation, activity, and trait items. Separate averages were calculated for masculine and feminine items (Liben & Bigler, 2002). These scores represented children’s self-reported average masculine and feminine sex-typing of self. Higher scores indicated greater masculine or feminine sex-typing of self. Cronbach’s alphas were .85 and .87 for the masculine and feminine items, respectively.

**Parents’ gender attitudes.** Parents’ gender attitudes toward others were assessed using the OAT-a.m. (Liben & Bigler, 2002). Parents rated 25 occupations, 25 activities, and 25 traits regarding the degree to which they were appropriate for women or men. Occupation and activity items were rated on a scale from 1 (*only men*) to 5 (*only women*). Trait items were rated on a scale from 1 to 6 (1 = *only men*, 2 = *only men, some women*, 3 = *both men and women*, 4 = *mostly women, some men*, 5 = *only women*, 6 = *neither men nor women*). Response options were nearly identical across the occupation, activity, and trait scales. An additional response option was added for rating traits (6 = *neither men nor women*), as it included several negative traits. Example items included “Who should be a dietician?” (occupations) and “Who should act as a leader?” (traits). Similar to the scoring for children’s gender attitudes, the number of egalitarian responses was divided by the total number of items. This score represented the proportion of occupations, activities, and traits that parents believed “both men and women” or “neither men nor women” could do or have. Higher scores indicated greater flexibility of gender attitudes. Cronbach’s alpha for the score was .78.

## Data Analytic Plan

Different statistical techniques were used to account for distributions of the variables of interest and for the nested structure of the data. One- and two-way analyses of variance (ANOVAs), were used to examine parents’ specialization of childcare labor and children’s sex-typing of oneself, as both of these were interval variables and represented one score per child or family. To examine differences in and associations with gender attitudes, we used generalized linear models (Skrondal & Rabe-Hesketh, 2004), as gender attitudes were scored as a proportion and thus could not be

analyzed using standard ANOVA techniques. The two parents in each family were not independent of one another in their individual reports of gender attitudes. Thus, linear mixed-effects models were used to account for the nested data structure (i.e., individual partners were nested within couples) by controlling sources of shared variance and data dependency within families (Skrondal & Rabe-Hesketh, 2004). Lastly, generalized linear mixed-effects models were used when the outcome measure was gender attitudes and data from both parents were used as predictors. This was also due to the nested structure, as well as gender attitudes having been scored as a proportion (Skrondal & Rabe-Hesketh, 2004).

All analyses were conducted using R (R Core Team, 2017). Generalized linear models were fit using the *glm()* function, linear mixed-effects models were fit using the *lmer()* function, and generalized linear mixed-effects models were fit using the *glmer()* function in the lme4 library of R (Bates, Maechler, Bolker, & Walker, 2015). As prior research has found that children's gender attitudes and sex-typing may also vary as a function of age (Liben & Bigler, 2002), age was included as a covariate in these analyses.

## Results

Results are presented in three main sections: (a) parents' reports of division of childcare labor and gender attitudes, (b) children's reports of gender attitudes and sex-typing of self, (c) and the associations between parents' gender attitudes and behaviors and children's gender development.

### Parents' Division of Labor and Gender Attitudes

**Childcare specialization.** A one-way ANOVA revealed that lesbian, gay, and heterosexual parents were not significantly different in their degree of childcare specialization (see Table 2),  $F(2, 70) = 1.53, p = .223$ . Notably, however, results were in the expected direction and similar to those found in past research (lesbian mothers reported the least specialization, heterosexual parents reported the most, and gay fathers were intermediate; Farr & Patterson, 2013; Fulcher et al., 2008).

**Parents' gender attitudes.** There were, however, significant differences in parents' gender attitudes (see Table 3) as a function of couple type and gender. We fit a generalized linear mixed-effects model with parents' couple type (opposite sex and same-sex) and gender (male and female) as between-subjects fixed effects, and a random effect of family accounting for nested scores within couples. The main effect of parents' couple type was significant, Wald chi-square(1) = 141.97,  $p < .001$ , as was the main effect of parents' gender, Wald chi-square(1) = 138.04,  $p < .001$ , and the interaction between couple type and gender, Wald

chi-square(1) = 24.03,  $p < .001$  (see Figure 1). To interpret this interaction, we conducted pairwise post hoc tests, reported on the logit scale, for linear hypotheses using the *lsmeans()* function in the lsmeans library of R (Lenth, 2016). Post hoc analyses compared lesbian mothers with heterosexual mothers and gay fathers with heterosexual fathers. In addition, using the *lsmeans()* function, confidence intervals were calculated around the means for each group to allow for comparisons across the four groups (lesbian mothers, gay fathers, heterosexual mothers, and heterosexual fathers). Results indicated that lesbian mothers were significantly more flexible in gender attitudes, 95% CI [4.43, 5.33], than were heterosexual mothers, 95% CI [2.54, 2.87],  $z = 8.86, p < .001$ . Likewise, gay fathers were significantly more flexible, 95% CI [2.53, 2.82], than were heterosexual fathers, 95% CI [1.68, 1.91],  $z = 9.36, p < .001$ .

In summary, post hoc tests conducted on the significant interaction between parents' sexual orientation and parents' gender (see above) revealed that lesbian mothers reported significantly more flexible gender attitudes than all other parents. Gay fathers and heterosexual mothers were not significantly different from one another in their gender attitudes, but both were significantly more flexible in gender attitudes than heterosexual fathers. In effect, lesbian mothers were the most flexible, and heterosexual fathers were the least—both significantly differed from all other parent groups. Lastly, though parents significantly differed in their gender attitudes as a function of gender and couple type, parents as a whole reported relatively flexible gender attitudes. For example, heterosexual fathers, on average, reported egalitarian responses to 86% ( $M = .86$ ) of items on the gender attitudes scale, while lesbian mothers, gay fathers, and heterosexual mothers reported egalitarian response to 99% ( $M = .99$ ), 94% ( $M = .94$ ), and 94% ( $M = .94$ ) of items, respectively (see Table 3 and Figure 1).

**Childcare specialization predicted by parents' gender attitudes.** To examine associations between parents' specialization of childcare labor and gender attitudes, we fit a linear mixed-effects model with parents' sexual orientation and gender attitudes as between-subjects fixed effects and a random effect of family accounting for the nested data structure. The main effect of gender attitudes was significant: Wald chi-square(1) = 10.18,  $p = .001$ , as was the interaction between parents' sexual orientation and gender attitudes: Wald chi-square(2) = 7.91,  $p = .019$ . The significant interaction between parents' sexual orientation and gender attitudes indicated that for heterosexual ( $\beta = -1.53$ ) and lesbian ( $\beta = -10.96$ ) parents, gender attitudes were negatively associated with childcare specialization; parents who reported more flexible gender attitudes were less likely to specialize. Gender

Table 2  
Means and Standard Deviations for Measures of Division of Labor and Gender Attitudes Among Parents in Sample

Measure	Lesbian couples ( $n = 22$ )	Gay couples ( $n = 26$ )	Heterosexual couples ( $n = 38$ )	ANOVA $F(2, 70)$
	$M(SD)$	$M(SD)$	$M(SD)$	
WDW specialization	.97 (.45)	1.16 (.49)	1.32 (.52)	$F = 1.53$

Note. ANOVA = analyses of variance; WDW = Who Does What.

Table 3  
Means, Standard Deviations, and Wald  $\chi^2$  for Measures of Gender Attitudes Among Lesbian, Gay, and Heterosexual Adoptive Parents

Measures	Same-sex couples (n = 95)		Other-sex couples (n = 80)		Wald $\chi^2$		
	Mothers (n = 43) M(SD)	Fathers (n = 52) M(SD)	Mothers (n = 41) M(SD)	Fathers (n = 39) M(SD)	Wald $\chi^2_{\text{coupleType}(1)}$	Wald $\chi^2_{\text{Sex}(1)}$	Wald $\chi^2_{\text{T} \times \text{S}(1)}$
Gender attitudes	.99 (.02) <sup>a</sup>	.94 (.13) <sup>b</sup>	.94 (.11) <sup>b</sup>	.86 (.18) <sup>c</sup>	141.97***	138.04***	24.03***

Note. Standard deviations are given in parentheses. Numbers with different letters are significantly different at  $p < .05$  with pairwise comparisons using the lsmeans library of R.

\*\*\*  $p < .001$ .

attitudes were not associated with specialization for gay fathers ( $\beta = 0.05$ ).

### Children’s Gender Attitudes and Sex-Typing of Self

**Children’s gender attitudes.** A generalized linear model was used to examine differences in children’s gender attitudes as a function of parents’ sexual orientation and child gender, while controlling for children’s age (see Table 4). We fit a model with parents’ sexual orientation (heterosexual, lesbian, gay) and children’s gender (male, female) as fixed effects. Analyses revealed significant main effects of parents’ sexual orientation: Wald chi-square = 60.16,  $p < .001$ , and children’s gender: Wald chi-square = 11.08,  $p < .001$ , as well as a significant interaction between parents’ sexual orientation and children’s gender: Wald chi-square = 52.10,  $p < .001$  (see Figure 2). To interpret this interaction, we conducted post hoc tests, using the *lsmeans()* function in the *lsmeans* library of R (Lenth, 2016). Post hoc analyses compared daughters across parents’ sexual orientation and sons across parents’ sexual orientation. Results are reported on the logit scale; 95% confidence intervals were calculated around the average flexibility of gender attitudes for each group. Post hoc tests revealed that daughters with lesbian mothers reported signif-

icantly more flexible gender attitudes, 95% CI [1.32, 1.68], than did daughters of gay fathers, 95% CI [0.82, 1.18],  $z = 3.88$ ,  $p < .001$ , or heterosexual parents, 95% CI [0.31, 0.55],  $z = 9.86$ ,  $p < .001$ . Also, daughters of gay fathers reported significantly more flexible gender attitudes than daughters of heterosexual parents,  $z = 5.22$ ,  $p < .001$ . In contrast, no significant differences in gender attitudes were found among sons as a function of parents’ sexual orientation.

**Children’s sex-typing of self.** To examine differences in children’s reported sex-typing of self (COAT-PM), we used  $3 \times 2$  analyses of covariance (ANCOVAs) with children’s age as a covariate and parents’ sexual orientation (heterosexual, lesbian, gay) and children’s gender (male, female) as independent variables. Analyses revealed few differences among groups in children’s self-reported sex-typing (see Table 4). All children reported relatively similar masculine sex-typing, with no differences as a function of parent’s sexual orientation,  $F(2, 83) = 1.08$ ,  $p = .346$ , = .016, or children’s gender,  $F(1, 83) < 1$ ,  $p = .335$ , = .017. In addition, there was no significant interaction between parents’ sexual orientation and gender  $F(2, 83) < 1$ ,  $p = .497$ , = .018. Analyses of feminine sex-typing, however, revealed a significant main effect of children’s gender,  $F(1, 83) = 23.34$ ,  $p < .001$ , =

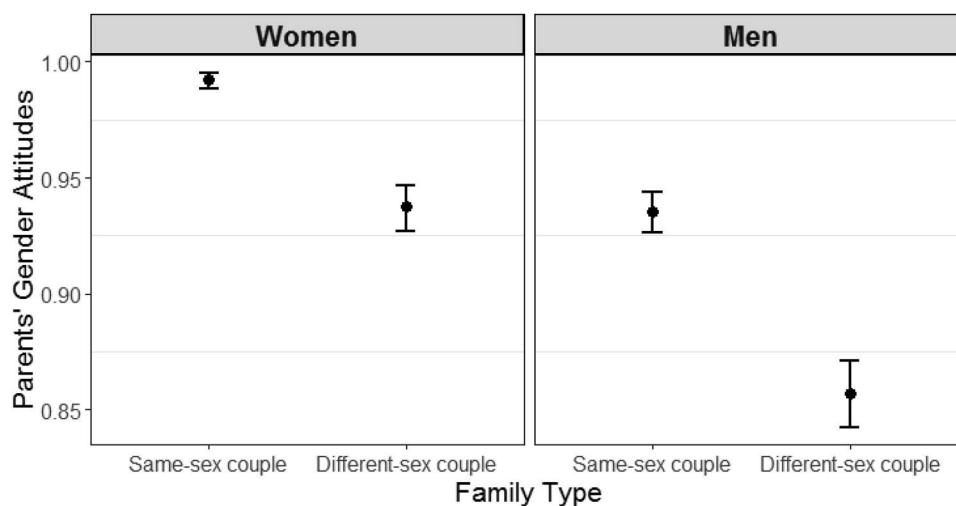


Figure 1. Parents’ gender attitudes by gender and couple type. Error bars represent standard errors.

Table 4  
Means and Standard Deviations for Measures of Gender Attitudes and Sex-Typing Among Children as a Function of Family Type

Measures	Children of lesbian couples (n = 22)		Children of gay couples (n = 26)		Children of heterosexual couples (n = 38)		Wald $\chi^2$		
	Female (n = 14)	Male (n = 8)	Female (n = 10)	Male (n = 16)	Female (n = 20)	Male (n = 18)	Wald $\chi^2_{Orient}(1)$	Wald $\chi^2_{Sex}(1)$	Wald $\chi^2_{OxS}(1)$
Gender attitudes	.82 (.28) <sup>a</sup>	.70 (.36) <sup>b</sup>	.67 (.39) <sup>b</sup>	.71 (.27) <sup>b</sup>	.58 (.31) <sup>c</sup>	.75 (.27) <sup>b</sup>	60.16 <sup>***</sup>	11.08 <sup>***</sup>	52.10 <sup>***</sup>
Sex-typing of self							ANOVA		
							$F_{Orient}(2, 83)$	$F_{Sex}(1, 83)$	$F_{OxS}(2, 83)$
Masculine	2.39 (.34)	2.47 (.32)	2.42 (.56)	2.72 (.38)	2.48 (.47)	2.46 (.61)	1.08	<1	<1
Feminine	2.61 (.41) <sup>a</sup>	2.35 (.31) <sup>b</sup>	2.65 (.64) <sup>a</sup>	2.28 (.28) <sup>b</sup>	2.68 (.48) <sup>a</sup>	2.15 (.42) <sup>b</sup>	<1	23.34 <sup>***</sup>	<1

Note. Standard deviations are given in parentheses. Numbers with different letters are significantly different at  $p < .05$  with pairwise comparisons using the lsmeans library of R.

\*\*\*  $p < .001$ .

.195, such that girls reported more feminine sex-typing of self than did boys. There was, however, no main effect of parents' sexual orientation for children's feminine sex-typing, nor was there a significant interaction between parents' sexual orientation and children's gender.

In sum, parents' sexual orientation was not associated with children's gendered behaviors (sex-typing). Likewise, regardless of gender, children reported relatively equal interest in masculine occupations, activities, and traits. Boys, however, endorsed significantly fewer feminine sex-typing items, on average, than did girls.

### Associations Between Children's Gender Development and Parents' Attitudes and Behaviors

Linear and generalized linear mixed-effects models were used to examine the associations among children's gender development and parents' division of labor and gender attitudes. Data from 12 couples who had separated between Waves 1 and 2 were excluded from the analysis of parents' division of labor and its association with children's gender development.

**Children's gender attitudes predicted by parents' childcare specialization.** To examine whether children's gender attitudes were associated with parents' childcare specialization, we fit a

generalized linear mixed-effects model with parents' sexual orientation (heterosexual, lesbian, gay), children's gender (male, female), and parents' childcare specialization as fixed-effects. To account for data dependency, models also included a random effect of family. In order to assess whether the effect of specialization on children's gender attitudes was moderated by parents' sexual orientation and children's gender, a three-way interaction was included between parents' sexual orientation, children's gender, and parents' childcare specialization, as well as the lower-order two-way interactions. The main effect of parents' sexual orientation was significant: Wald chi-square(2) = 38.96,  $p < .001$ , as was the main effect of children's gender: Wald chi-square(1) = 113.64,  $p < .001$ . Lastly, the three-way interaction between parents' childcare specialization, parents' sexual orientation, and children's gender was also significant: Wald chi-square(2) = 95.20,  $p < .001$ , as were all two-way interactions ( $p$  values  $< .001$ ).

To interpret the results of the significant three-way interaction between parents' childcare specialization, parents' sexual orientation, and children's gender, we followed the method of suggested by Le and Johnson (2008) and Houslay (2014) by graphically representing the separate trends across the levels of the continuous variable (see Figure 3). As expected, greater specialization among

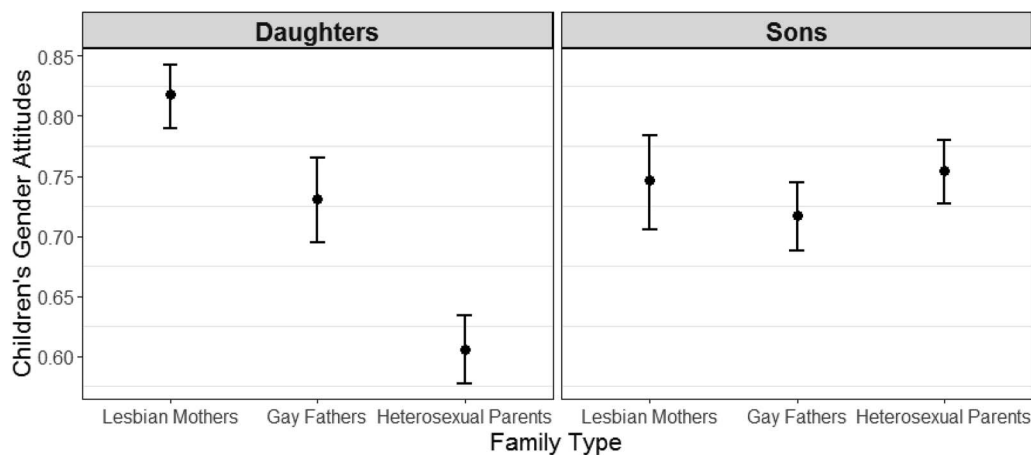


Figure 2. Children's gender attitudes by gender and parents' sexual orientation. Error bars represent standard errors.



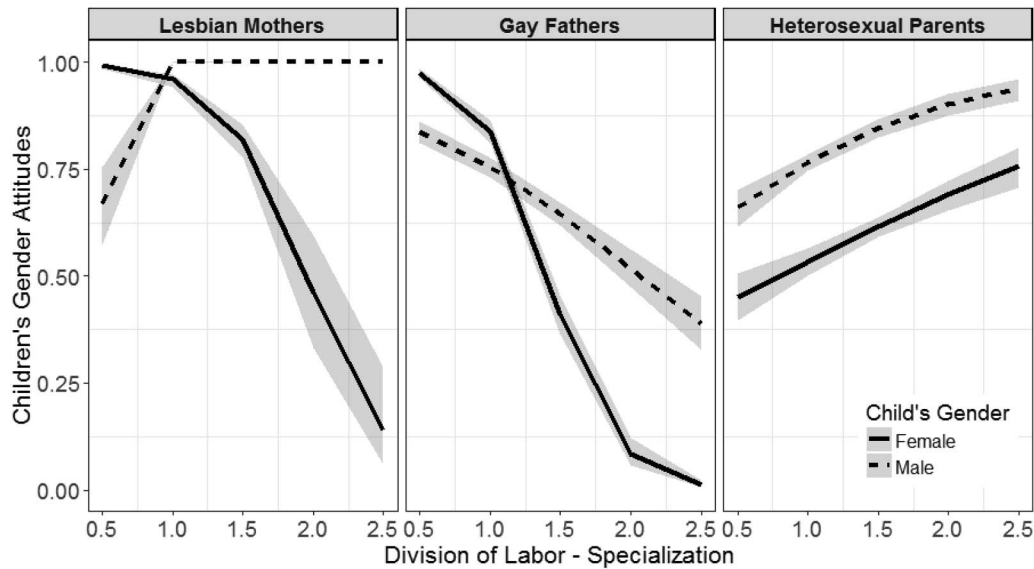


Figure 3. Children's gender attitudes predicted by the three-way interaction between parents' sexual orientation, children's gender, and parents' division of childcare labor. The shaded region represents standard error.

the lesbian and gay parents was associated with less flexible gender attitudes among their children (sons and daughters). Contrary to our hypotheses, when heterosexual parents were more specialized, their children (sons and daughters) reported more flexible gender attitudes. As there was low variability in the gender attitude scores for sons of lesbian mothers and low variability in lesbian mothers' specialization scores, we were unable to interpret these results for sons of lesbian mothers. Subsequently, data for the lesbian mothers were removed, and new analyses were conducted excluding this group. These models did not show any significantly different results.

**Children's gender attitudes predicted by parents' gender attitudes.** Similarly, to examine associations between children's gender attitudes and parents' gender attitudes, we fit a generalized linear mixed-effects model with parents' sexual orientation (heterosexual, lesbian, gay), children's gender (male, female), and parents' gender attitudes as fixed-effects and a random effect of family. In order to assess whether the effect of parents' gender attitudes on children's gender attitudes was moderated by parents' sexual orientation and children's gender, a three-way interaction was included between parents' sexual orientation, children's gender, and parents' gender attitudes, as well as the lower-order two-way interactions. There were significant main effects of parents' sexual orientation, Wald chi-square(2) = 118.66,  $p < .001$ , and children's gender, Wald chi-square(1) = 51.07,  $p < .001$ , and a significant three-way interaction between parents' gender attitudes, sexual orientation, and children's gender: Wald chi-square(1) = 3.92,  $p = .048$ . Moreover, all two-way interactions were significant ( $p$  values  $< .001$ ). As there was a ceiling effect among lesbian mothers' gender attitudes (i.e., almost all lesbian mothers had maximum proportion scores), only results for gay and heterosexual parents were interpreted. To interpret the results of the significant three-way interaction between parents' gender attitudes, parents' sexual orientation, and children's gender, we followed the method suggested by Le and Johnson (2008) and Hous-

lay (2014) by graphically representing the separate trends across the levels of the continuous variable (see Figure 4). Gay fathers who reported more flexible gender attitudes also had children who reported more flexible gender attitudes, although this effect appeared stronger for daughters than sons. In contrast, when heterosexual couples reported more flexible gender attitudes, their children (sons and daughters) reported less flexible gender attitudes.

**Model comparisons.** Next, to determine whether parents' gender attitudes or behaviors (division of labor) were better predictors of children's gender attitudes, we constructed nested models to compare the effects of each of predictor separately and then in combination, following the method outlined by Burnham and Anderson (2003). Only the models containing both main and interaction effects will be discussed here, as they had the best fit out of all the models tested. The first model examined the effect of parents' division of labor. The second model examined the effect of parents' gender attitudes. Lastly, the third model examined the effects of both parents' division of labor and parents' gender attitudes. Model comparisons were conducted using the *anova()* function in R (R Core Team, 2017). All models also included parents' sexual orientation, children's gender, and age.

As expected, model one containing parents' division of labor had a better fit, Resid. DF = 14, AIC = 3063.7, Resid. Dev. = 3035.7, than did model two containing parents' gender attitudes, Resid. DF = 13, AIC = 3730.9, Resid. Dev. = 3666.9, and had a significantly reduced residual sum of squares, chi-square(1) = 631.16,  $p < .001$ . Model three, however, containing both parents' division of labor and parents' gender attitudes, had a better model fit than models one and two, Resid. DF = 19, AIC = 3012.2, Resid. Dev. = 2974.2. Model 3 also had a significant reduction in the residual sum of squares as compared to Model 1, chi-square(5) = 61.49,  $p < .001$ .

These results suggest that the model containing parents' division of labor and gender attitudes best predict our measure of children's gender attitudes. However, the addition of parents' gender atti-

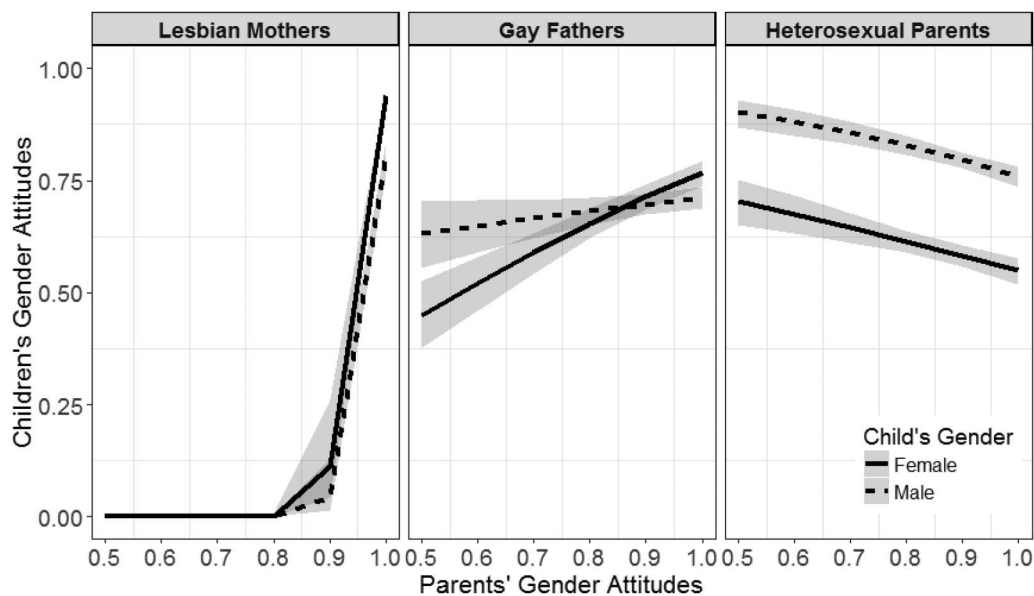


Figure 4. Children's gender attitudes predicted by the three-way interaction between parents' sexual orientation, children's gender, and parents' gender attitudes. The shaded region represents standard error.

tudes did not increase the overall fit of the model as much as did parents' specialization of childcare; the relative change in AIC when comparing Model 2 to Model 3 ( $\Delta\text{AIC} = 654.7$ ) was larger than the relative change in AIC when comparing Model 1 to Model 3 ( $\Delta\text{AIC} = 23.5$ ). In other words, although both measures were associated with children's gender attitudes, parents' gendered behaviors (specialization of childcare labor) were stronger predictors than parents' gender attitudes.

**Children's sex-typing, parents' childcare specialization, and gender attitudes.** To examine children's feminine and masculine sex-typing and associations with parents' attitudes and behaviors, we fit a series of linear mixed-effects models with parents' gender attitudes, division of labor, sexual orientation, and children's gender as fixed effects, as well as a random effect of family. These analyses uncovered no associations among children's sex-typing and parental gender attitudes and behaviors (all  $p$  values  $> .05$ ).

### Summary of Results

In sum, parents' sexual orientation was associated with children's gender attitudes, but not with children's sex-typing. Daughters of lesbian/gay versus heterosexual parents reported more flexible gender attitudes; no such differences were found among sons. Furthermore, both parents' gender attitudes and division of childcare were associated with children's gender attitudes, but not with sex-typing. As expected, parents who divided childcare more equitably were more likely to have children with egalitarian gender beliefs about occupations, activities, and traits. This association, however, was only in the expected direction for children of same-sex couples. Similarly, children of same-sex couples reported gender attitudes that were similar to those of their parents, while children of heterosexual couples reported contrasting gender attitudes to those of their parents. Lastly, in comparing both parents'

gender attitudes and behaviors, we found that parents' division of childcare labor was better than parental attitudes alone at predicting children's attitudes regarding gender.

### Discussion

This study explored children's gender development and its associations with parental attitudes and behaviors among lesbian, gay, and heterosexual parents and their adopted children. There were three main findings: first, parents' sexual orientation was associated with children's gender attitudes, but not sex-typing. Second, parents' gender attitudes and division of childcare labor were both associated with children's gender attitudes, and this association was moderated by parents' sexual orientation. Third, parents' division of childcare labor was found to be a better predictor of children's gender attitudes than parents' gender attitudes.

### Differences in Children's Gender Development

Consistent with prior research (Bos & Sandfort, 2010), sexual minority parents in our study reported more flexible gender attitudes than did heterosexual parents, particularly lesbian mothers who reported the most flexible attitudes as compared with all other groups. Lastly, heterosexual fathers reported the least flexible gender attitudes compared with all other groups. These results align with prior work, suggesting men hold more traditional gender attitudes than women (Marks, Bun, & McHale, 2009). Similarly, children of same-sex couples also reported more flexible gender attitudes than children of heterosexual couples. These differences were, however, primarily driven by daughters. While sons were relatively similar in their gender attitudes across families, daughters of lesbian mothers reported the most flexible attitudes, daughters of heterosexual parents reported the least flexible, and daughters of gay fathers were intermediate. These

results are somewhat consistent with earlier findings, demonstrating that children of same-sex parents hold more egalitarian views regarding gender than children of heterosexual parents (Bos & Sandfort, 2010; Fulcher et al., 2008). However, the results for sons are inconsistent with other findings that sons of lesbian mothers may report more feminine behaviors and attitudes than sons of heterosexual parents (MacCallum & Golombok, 2004).

Furthermore, we found that children's gender, but not parents' sexual orientation, was significantly associated with children's self-reported sex-typing. Overall, children reported relatively similar interest in masculine occupations, activities, and traits. Boys, however, were less interested in feminine occupations, activities, and traits than were girls. Based on past research (McHale, Kim, Whiteman, & Crouter, 2004), these findings were not unexpected. One explanation may be the higher prestige associated with masculine (vs. feminine) occupations, activities, and traits. For example, 6- to 12-year-old boys and girls rate masculine jobs as having higher prestige than feminine jobs (Liben, Bigler, & Krogh, 2001). In their study, boys also expressed significantly less interest in feminine occupations than did girls, although both boys and girls expressed equal interest in masculine occupations.

It is also possible that these results may reflect differences among girls and boys in gender norms and acceptance of cross-gender behavior. Previous studies indicate that parents view cross-gender behavior among boys more negatively than among girls (Sandnabba & Ahlberg, 1999). Thus, a broader range of characteristics and activities may be socially encouraged (or at least accepted) among girls, whereas for boys, stricter social regulations may dictate which occupations, activities, and traits are deemed acceptable (Sandnabba & Ahlberg, 1999). This may also explain why boys in our sample did not differ in gender attitudes across families.

### Associations Between Children's Gender Development and Parents' Gender Attitudes and Behaviors

Parents' division of childcare labor was strongly associated with children's gender attitudes for daughters of lesbian mothers and all children of gay parents. Among same-sex parent households, when parents were more specialized in childcare labor, children reported less flexible gender attitudes. In contrast, this association was in the opposite direction for children of heterosexual parents—when parents divided childcare less equitably, children reported more flexible gender attitudes. While these results were unexpected, they are in line with some prior work suggesting that egalitarian divisions of labor were associated with traditional gender role attitudes for children (Dawson et al., 2016) and that mothers who performed more stereotypically feminine tasks had sons with less knowledge of masculine behavior (Halpern & Perry-Jenkins, 2016).

One explanation for these differences in association between family types may be the gap between modeled behavior and children's cognitions and interpretations. Parental reports of childcare divisions may not accurately account for how these behaviors are observed or interpreted by children. While social approaches to children's gender development emphasize the importance of interactions with social agents, cognitive theories of gender development place greater weight on the active role children play in their own gender development and the cognitive processes affecting

children's understanding and interpretation of their world (Martin, Ruble, & Szkrybalo, 2002). Thus, these results may reflect the need to assess children's cognitive processes and their interpretations of parents' modeled behaviors, in tandem with social processes, contributing to children's gender development.

Parents' gender attitudes were also associated with children's gender attitudes. Among gay fathers, gender attitudes were positively correlated between parents and their children, while children of heterosexual couples were discrepant from their parents in this regard. These associations could not be examined among lesbian mothers due to the lack of variance in lesbian mothers' gender attitudes; all lesbian mothers reported extremely flexible gender attitudes. Although these findings are partially unexpected, some research suggests that family patterns of gender role attitudes (whether children match or differ from their parents' gender attitudes) may vary as a function of various family system characteristics—such as the gender of siblings, parents' socioeconomic status, or parents' participation in household tasks (Marks et al., 2009). It may also be that parents' gender attitudes are simply not a reliable predictor of children's gender development.

Indeed, model comparisons suggest that parents' division of childcare labor was a better predictor of children's gender attitudes than parents' gender attitudes. These results suggest that parents' actions and modeled behavior, rather than their beliefs, may have more influence on children's gender attitudes. This would be consistent with previous research among elementary school-age children demonstrating that parents' behaviors were better predictors of children's gender role attitudes than parents' gender ideologies (Halpern & Perry-Jenkins, 2016).

### Strengths and Limitations

This study had a number of strengths. Our sample consisted of children who had all been adopted by their parents, which eliminates any biological confounds that could affect associations between children's gender development and parents' gender attitudes and behaviors. Our sample also represents families from a wide range of geographical areas in the United States, which increases the generalizability of our findings.

Some limitations of the current study should also be acknowledged. No measures of children's cognitive processes related to their gender development were included here, which could be especially important for uncovering the mechanisms driving differences in gender development between children of heterosexual and same-sex parents. In addition, our specific measure of gender attitudes assessed the degree to which participants were egalitarian in their gender attitudes (e.g., holding beliefs that "both men and women" or "neither men nor women" can hold or represent selected occupations, activities, or traits), but did not assess counterstereotypical responses (e.g., "Only men can be nurses" or "only women can be doctors"). Moreover, most of childcare tasks were stereotypically feminine (e.g., cooking); it is not known whether these results might generalize to tasks that are stereotypically masculine. Moreover, families surveyed in this study all resided in states that provided legal recognition for adoption by same-sex couples. As a result, we cannot evaluate the impact of variations in law or policy. Finally, as our sample consisted of adoptive fami-

lies, our results may not generalize to children growing up in other types of families.

## Conclusion

Many factors may contribute to children's gender development. Our results highlight the importance of parental behaviors and the interaction of those behaviors with parents' sexual orientation. Despite significant differences among parents in their gender attitudes, parents' gender ideologies were not as strongly associated with children's gender outcomes when compared with parents' gendered behavior. Although parents in our sample were not significantly different in their division of childcare labor, it was this measure which was found to be the strongest predictor of children's gender attitudes. Moreover, the effect of parents' division of labor was moderated by the gender composition of the parenting dyad (two mothers, two fathers, or one mother and one father). Future research on children's gender development should assess practices and behaviors surrounding parents' socialization of their children, as well as address children's interpretation and processing of the information they receive.

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