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# Gender Development in Children with Gay, Lesbian, and Heterosexual Parents: Associations with Family Type and Child Gender 

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#### Abstract

Objective: To examine whether the gender development of $\mathbf{1 2 0}$ Italian children ( $\mathbf{4 0}$ born to gay fathers [GFs] through surrogacy, 40 born to lesbian mothers [LMs] through sperm donation, and $\mathbf{4 0}$ born to heterosexual parents [HPs] through sexual intercourse) aged 3 to 9 years differed as a function of family type and/or child gender. Methods: Children took part in observed free-play sessions while primary caregivers and nonparent caregivers were administered standardized interviews. Hierarchical linear modeling, analysis of covariance, simple effects analysis, and bootstrapping were conducted. Results: Boys and girls of GFs and HPs were reported to show less gender flexibility in their activities and characteristics than boys and girls of LMs. They also received higher scores of gender conforming dress-up play and spent more time playing with genderconforming toys. In all family types, boys and girls were reported to show low levels of gender-nonconforming dress-up play and observed to spend less time playing with gender-nonconforming toys. Overall, comparisons within genders indicated that boys and girls of GFs and HPs were considered more masculine and feminine, respectively, in their behavior and play, relative to boys and girls in LM families. Age was not a significant covariate in any analysis. Conclusion: Our findings do not support the idea that children of gay or lesbian parents show greater gender nonconformity relative to children of HPs. The findings are informative to those concerned with the effects of the absence of a male or female live-in parent on child gender development.


(J Dev Behav Pediatr 41:38-47, 2020) Index terms: gender development, gay father, lesbian mother, toy selection, gender-typed play, modeling.
nsofar as children spend large amounts of time engaged in toy play, developmentalists have directed great attention to studying pathways of gender development in play situations (e.g., gender-conforming or gender-nonconforming play behavior), exploring whether gender-typed toy play may account for gender differentiation in children's skills and abilities. ${ }^{1,2}$ In this vein, the gender-typing of children's play may "serve as a heuristic for other domains within the field of gender development"2 (p. 254), such as the formation of gender stereotypes and gender-typed interests.

[^0]According to this developmental perspective, children choose gender-typed toys and activities from as young an age as 18 months, with boys preferring stereotypical masculine toys and play activities (e.g., toy vehicles, tool sets, swords, balls, toy guns) and girls preferring stereotypical feminine toys and play activities (e.g., tea sets, art, dolls, dress-up). These patterns are fairly well established by the age of 3 years, remain stable across development, and become more pronounced during middle childhood. ${ }^{1-3}$

A significant effort has been made to explain the factors contributing to gender development, indicating the complex interplay of biological, psychological, social, and cognitive factors, beginning in early fetal development. ${ }^{1-4}$ Nonetheless, a commonly held view is that the lack of different-sex parents in gay and lesbian parent families is detrimental for children's gender development and identity. ${ }^{5}$ In this regard, debate over the suitability of gay men and lesbian women as parents is particularly pronounced in the study context of Italy, where traditional gender ideology strongly stigmatizes gender-nonconforming behavior, especially when enacted by men. ${ }^{6}$ Italy is also bound by traditional family values, whereby the presence of a mother and father in the family home is considered central to children's well-being. ${ }^{7-11}$ Concerns expressed refer to the fact that children of same-sex parents could develop confused or nonconforming gender identities,
express inappropriate gender roles, show less differentiation in their gender-related play, and be more likely to report same-sex attraction or engage in a same-sex relationship. ${ }^{12-14}$ However, a recent meta-analysis ${ }^{15}$ found that children of same-sex parents score higher on traditional gender role behavior than children of different-sex parents.

It is further relevant to note that, even when variations in some domains of gender development (e.g., same-sex attraction, gender [non-]conformity, stereotypical play behavior) have been found between children with same-sex and different-sex parents, none of these particular outcomes has been tied to poor individual adjustment. ${ }^{5,12,13}$ Rather, research has shown that gender flexibility has psychological benefits for children, including better psychological adjustment; the development of greater mobility and manipulative play, linked to play with masculine-typed toys; and greater nurturance and role play, linked to play with feminine-typed toys. ${ }^{16,17}$ In this vein, comparisons of children of gay fathers (GFs), lesbian mothers (LMs), and heterosexual parents (HPs) are fundamental precisely because they enable differences in parenting and child outcomes to be explored and appreciated ${ }^{5,14}$ and because they may help to weaken the heterosexist assumption that children's gender flexibility in play or toy preferences implies that a mistake was made in childrearing. ${ }^{12}$

Previous research examining the role of parents' sexual orientation in children's gender development has predominantly compared children raised by LMs (through adoption or sperm donation) with those raised by HPs. Most studies have found that children of LMs demonstrate less traditional gender attitudes (e.g., greater tolerance of peers' gender transgressions, less pressure to conform to gender stereotypes, less knowledge of gender stereotypes, and fewer preferences for gender-stereotyped current or future activities) than children with HPs ${ }^{16,18-20}$; however, some studies have failed to find any differences. ${ }^{21}$

Recently, 4 studies included adoptive GF families in examinations of gender-typed play in same-sex versus different-sex parent families, yielding mixed findings. Three of the studies found no differences across family types (GF, LM, and HP families), at a single time point ${ }^{22,23}$ or longitudinally, ${ }^{24}$ whereas the fourth study found that, when children were mean aged 2.8 years, according to parent reports, boys of lesbian parents were significantly less masculine in their play than boys of HPs and boys of gay male parents. ${ }^{17}$ Regardless of family type, parentreported gender-typed play of boys, but not girls, was found to change significantly over time, becoming more masculine ${ }^{24,25}$; in addition, older children were reported as more gender conforming than younger children. ${ }^{24}$ Of note, all of the 4 studies used the parent version of the Preschool Activities Inventory ${ }^{26}$ to examine the gendertyped play of children. Because there is evidence that parents' own gender role attitudes and beliefs likely influence their reports of childen's gender development, ${ }^{18}$
the extent to which such parental factors may explain the results of previous studies cannot be determined.

To date, no study has investigated the gender-typed play of children born through surrogacy in families headed by gay men. Insofar as fathers and mothers socialize their children differently regarding gender ${ }^{12,27,28}$ and parents' attitudes toward toys and gender play likely influence children's preferences ${ }^{2}$ (e.g., because of parents' purchasing more same-gender-typed toys than gender-neutral or cross-gender-typed toys for their children ${ }^{29}$ ), children born to GFs through surrogacy may display different pathways of gender development relative to children of LMs or HPs. In the same vein, earlier studies with LMs through sperm donation or adoptive gay and lesbian parents have mainly been conducted in the Netherlands, the United States, and the United Kingdom, ${ }^{16-25}$ which are very different sociocultural contexts from Italy regarding the paths to parenthood available to gay and lesbian couples. Contrary to the Netherlands, the United States, and the United Kingdom, Italy prohibits adoption and assisted reproduction for gay and lesbian people, who must instead turn to transnational surrogacy and sperm donation, respectively, to have children. Furthermore, these 4 national contexts show wide differences in their social attitudes toward same-sex parenting: recently, Italy was ranked 34 out of 49 European countries (with the United Kingdom and the Netherlands ranked 8 and 12, respectively) on the impact of national laws and policies on the lives of gay and lesbian people. ${ }^{30}$

In addition to exploring different cultural contexts, previous studies have also studied different age groups (some studies have involved preschool children, ${ }^{17,18,20,22}$ whereas others have focused on early adolescents ${ }^{16,19}$ ) and gender-related outcomes (some studies have focused, e.g., on pressure for gender conformity, ${ }^{16}$ occupational aspirations, ${ }^{18}$ and gender-typed behavior, ${ }^{17,22-25}$ whereas a few have examined gender role orientation ${ }^{19}$ ). Finally, it is relevant to note that gay and lesbian parent families through assisted reproduction differ from adoptive gay and lesbian parent families because, in the former arrangement, only 1 parent shares a genetic relationship with his/her child, whereas, in the latter arrangement, neither parent is genetically related to the child. In light of the above considerations, questions remain about the generalizability of previous findings to Italian GFs through surrogacy and LM through sperm donation.

Much of the research on children's gender-related attitudes and behavior during play has been framed by social constructionism and social learning theories. ${ }^{17,24,25}$ Both of these frameworks are particularly useful for studies of this nature because they suggest that children's gender-related behavior may differ according to gender and/or family type. Specifically, social constructionism ${ }^{31}$ enables researchers to speculate, at a general level, how gay, lesbian, and heterosexual parents may create different home environments that endorse or limit gender flexibility. These home environments (i.e., parents' conscious or unconscious gender socialization models, as
enacted with their children) may, in turn, be influenced by wider social contexts. By the same token, GFs, in particular (as parents who contrast most with norms relating to gender, as well as given their multi-minority status as both gay and male in the HP community and fathers in the gay community ${ }^{8,9}$ ), may be less interested in challenging gendered norms and thus less likely to initiate and reinforce cross-gendered play relative to LMs and HPs. ${ }^{25}$

In addition, emphasizing the role of modeling, social learning theory ${ }^{32}$ enables researchers to consider how the absence of a same-sex parent in the household may affect gender development. Because gay, lesbian, and heterosexual parents may hold different views on what constitutes acceptable parenthood or gendered behavior, ${ }^{12,27,28}$ their children may show different gender-typed behavior. This effect may be further moderated such that children who grow up in homes without a parent of their own gender may be less gender-typed because they lack a same-sex model. ${ }^{32}$

The aim of the present study was to compare Italian children of gay, lesbian, and heterosexual parents through naturalistic observation and multiple reports of gender development domains: observational gender-conforming and gender-nonconforming toy play, gender-typed behavior, and gender-conforming and gender-nonconforming dress-up play. Along with Goldberg et al., ${ }^{17}$ the following research questions and expectations were addressed: First, does gender development differ across family types? On the basis of social constructionism, we expected that children in gay and lesbian parent families would show less gender-typed behavior and toy preferences than children in HP families. Second, do child gender and parents' sexual orientation interact in determining differences in gender development? In keeping with social learning theory, we expected that boys in LM families would demonstrate less masculine (more feminine) behavior and toy play preferences than boys in GF families and HP families and girls in GF families would demonstrate more masculine (less feminine) behavior and toy play preferences than girls in LM families and HP families.

## METHOD

## Participants

Forty gay father (GF) families through surrogacy were compared with 40 lesbian mother (LM) families through sperm donation and 40 heterosexual 2-parent families through sexual intercourse, all with a child aged 3 to 9 years. The decision to focus on this age range was guided by both practical and theoretical reasons: although children show gender-stereotyped toy and activity choices from as early as 18 months of age, by the age of 3 years, this pattern is well established, and it becomes more pronounced during middle childhood. ${ }^{1-3,17}$ Furthermore, the upper age limit of 9 years was chosen to optimize the sample size while ensuring the appropriateness of the measures across the age range. No families had experienced separation or divorce, and, in families with more
than 1 child in the relevant age range, the oldest child was studied. LM families were chosen as a comparison group to control for both the presence of 2 same-sex parents and the use of assisted reproduction to conceive; children of heterosexual parents (HPs) were chosen because, in Italian society, the heterosexual 2-parent family through sexual intercourse is widely considered, at an ideological level, the best family environment in which to raise children. ${ }^{5,12,14}$

Gay father and LM families were recruited in the context of a larger study of child adjustment in Italian samesex parent families (for further recruitment details, see Carone et al. ${ }^{8}$ ). To facilitate the recruitment of a matched group of heterosexual 2-parent families, each GF family was asked to involve 3 heterosexual 2-parent families with a child attending the same school class as their child. All selected heterosexual 2-parent families received an invitation to participate, and those who expressed interest were asked to provide sociodemographic details. It was thus possible to conduct 1 -to- 1 matching (i.e., random sampling without replacement) between the heterosexual 2-parent families and GF families on the target child's characteristics (age, gender, number of siblings, and geographic residence). Heterosexual 2-parent families that had experienced parental divorce or separation and those with an adopted child were excluded from further analysis. The final sample comprised 40 matched heterosexual 2-parent families. Table 1 presents the sociodemographic information of each group.

## Procedure

Study approval was provided by the Ethics Committee of the Department of Developmental and Social Psychology, Sapienza University of Rome. Informed consent was obtained from each participant. Participation in the study was entirely voluntary, and no financial compensation was provided. Families were visited at home by 3 researchers who were trained in the study techniques. Because of time constraints, data were collected from the perspective of the parent who reported the most involvement with the child on a day-to-day basis (labeled "primary caregiver") during 2 timeframes: January to September 2017 for gay and lesbian parent families and January to April 2018 for HP families. To identify the primary and secondary caregivers in each family, 6 items on the "who does what" instrument ${ }^{33}$ were used. Both parents were asked who was responsible for their child's weekday care (1) when getting up, during breakfast, and when dressing the infant; (2) from 9:00 am to 1:00 pm; (3) from 1:00 pm to 5:00 pm; (4) when having dinner, during playtime, and at bedtime; (5) from 5:00 PM to midnight; and (6) when the child needed care in the middle of the night. Response options ranged from 1 (I do it all) to 9 (partner does it all). The primary caregiver was the parent with the lower average score on the 6 items. When both parents did get the same score, the "primary caregiver" label was randomly assigned by the researcher. This last event concerned 15 (37.5\%) GF families, 27 (67.5\%) LM families, and none of the HP

Table 1. Sociodemographic Information of Participating Families $(\mathrm{n}=120)$

|  | GF Families (n = 40), n (\%) | LM Families $(n=40), n(\%)$ | HP Families $(n=40), n(\%)$ | $\chi^{2}$ (df) |
| :---: | :---: | :---: | :---: | :---: |
| Child's gender |  |  |  | 0.07 (2) |
| Boy | 19 (47.5) | 18 (45) | 19 (47.5) |  |
| Girl | 21 (52.5) | 22 (55) | 21 (52.5) |  |
| No. of siblings |  |  |  | 2.17 (4) |
| 0 | 17 (42.5) | 16 (40) | 17 (42.5) |  |
| 1 | 21 (52.5) | 19 (47.5) | 21 (52.5) |  |
| 2 or more | 2 (5) | 5 (12.5) | 2 (5) |  |
| Parents' ethnicity (white) | 75 (93.8) | 76 (95) | 80 (100) | 4.85 (2) |
| Parents' residence |  |  |  | 1.22 (4) |
| Northern Italy | 16 (40) | 13 (32.5) | 16 (40) |  |
| Central Italy | 19 (47.5) | 23 (57.5) | 19 (47.5) |  |
| Southern Italy | 5 (12.5) | 4 (10) | 5 (12.5) |  |
| Parents' educational level (bachelor's degree or higher) | 60 (75) | 54 (67) | 52 (65) | 2.03 (2) |
| Parents' occupation (professional/managerial) | 59 (73.7) | 33 (41.2) | 46 (57.5) | 17.29 (2) ${ }^{\text {a }}$ |
| Parents' work status (full-ime) | 75 (93.7) | 63 (78.7) | 52 (65) | 20.06 (2) ${ }^{\text {a }}$ |
| Length of couple's relationship, yr |  |  |  | 0.68 (4) |
| $<10$ | 12 (30) | 12 (30) | 10 (25) |  |
| 11-15 | 10 (25) | 12 (30) | 11 (27.5) |  |
| $>15$ | 18 (45) | 16 (40) | 19 (47.5) |  |
| Marital status |  |  |  | 19.94 (4) ${ }^{\text {a }}$ |
| Married/civil partnership in Italy | 20 (50) | 22 (55) | 36 (90) |  |
| Married/civil partnership abroad | 12 (30) | 13 (32.5) | 0 |  |
| Unmarried/no civil partnership | 8 (20) | 5 (12.5) | 4 (10) |  |


|  | GF Families ( $\mathbf{n}=40$ ), M (SD) | LM Families ( $\mathrm{n}=\mathbf{4 0}$ ), M (SD) | HP Families ( $\mathrm{n}=40$ ), M (SD) | F(df) |
| :---: | :---: | :---: | :---: | :---: |
| Child's age ot visit (mo) | 71.30 (28.18) | 72.95 (22.01) | 71.18 (22.48) | 0.07 (2117) |
| Parents' age (yr) | 45.90 (6.59) | 40.51 (5.60) | 39.88 (5.42) | 25.26 (2237) ${ }^{\text {a }}$ |
| Household income (€) | 124,972 (66,122) | 70,263 (28,205) | 71,212 (32,219) | 36.47 (2117) ${ }^{0}$ |

Data are presented as average scores across both parents in each family. For the individual parent variobles of ethnicity, educational level, occupation, work status, and age, the $n$ for each family type is 240 rather than 120 . Parents' educational level was coded as less than high school education, high school diploma, and bachelor degree or higher. Parents' occupation was coded as unemployed, skilled/partly skilled, and professional/managerial. Parents' work status was coded as unemployed, part-ime, and full-ime. ${ }^{\circ} p$ $<0.001$. GF, gay father, HP, heterosexual parent; LM, lesbian mother.
families, where the mother was the most involved parent and, thus, participated in the study. To obtain an independent assessment of children's gender-typed behavior, a nonparent caregiver ( 55 babysitters, 33 grandparents, 20 uncles/aunts, 12 family friends) who frequently (i.e., at least 3 times a week) spent time with the child was also asked to participate (with the parents' permission). In each family, each participant in the study (i.e., the primary caregiver, the nonparent caregiver, and the child) was assessed in a different room of the house. Finally, the nonparent caregivers were informed that their responses would not be reported back to the child's family.

## Measures

## Observed Children's Gender-Typed Toy Play

Children participated in a 5-minute free-play session to obtain information on their gender-typed toy play. Each child was introduced to a backpack containing toys ap-
propriate for their age (preschool- vs school-aged) and given freedom to play with whatever they wished in whatever way they chose. Each backpack included 15 toys that, according to research, ${ }^{24,34,35}$ were boy-typical ( 5 toys; e.g., construction set, truck), girl-typical ( 5 toys; e.g., stuffed horse and tea set), and gender neutral ( 5 toys; e.g., telephone, books). The toys were arranged in a standard order (girl-typical, gender neutral, boy-typical) in a semicircle in front of the child on a blanket designating the play area.

Play behavior was independently rated by 2 research assistants, with an interrater agreement of $95 \%$, in accordance with the coding procedure reported by Farr et al. ${ }^{24}$ and Zosuls et al. ${ }^{35}$ : the number of seconds each child played with a particular toy was recorded from the time the child picked up the toy until he or she lost interest or put it down. Toy preferences were tallied into the total time played with gender-conforming,
gender-nonconforming, and gender-neutral toys. When a child played with more than 1 toy at a time, seconds were counted separately for each toy. When direct contact was intermittent because of the nature of the play (e.g., "feeding" a doll by moving a spoon from a bowl to the doll), play time was recorded for the entire duration that the child's gaze was fixed on the toy and engaged in ongoing play activity with it. ${ }^{36}$ Interrater reliability for gender-conforming and gendernonconforming toys was, respectively, 0.91 and 0.85 for boys and 0.92 and 0.83 for girls. Any discrepancies were resolved by averaging the coders' scores.

## Interview on Children's Gender-Conforming and Gender-Nonconforming Dress-Up Play and Gender-Typed Behavior

In each family, the primary caregiver and a nonparent caregiver participated in an adapted version of a standardized interview assessing children's gender-conforming and gender-nonconforming dress-up play and gendertyped behavior. ${ }^{36}$ For the present study, the original English version was translated into Italian and back-translated into English to check for problems. A pilot version of the interview was administered to 12 parents ( 4 for each family type) who were not involved in the study, and any questions that were reported as unclear were reworded. Participants were asked: "Over the past month, how often did your child play with dress-up clothes or costumes like princess or Spiderman costumes, pocketbooks, or adultlike shoes?" ( $0=$ never, $1=$ once or twice a month; $2=$ once a week; 3 = several times a week; $4=$ every day). Interviewers also asked parents to list the type of dress-up clothes with which their child played. Both genderconforming and gender-nonconforming clothes were independently coded and counted by 2 researchers who adapted the distinctions reported in earlier studies ${ }^{36,37}$ to the Italian context (e.g., television characters such as the Power Rangers, who present a boy-typical appearance with a helmet and chest armor, were coded as gender conforming when girls chose to dress up as the Pink Ranger). Interrater reliability for gender-conforming and gender-nonconforming dress-up play was, respectively, 0.83 and 0.87 in parent reports and 0.81 and 0.87 in nonparent caregiver reports. Disagreements over codes were discussed until consensus was met.

Participants were also asked how often over the past month their child had engaged in 6 gender-typed activities (3 typically feminine activities, such as playing with dolls, and 3 typically masculine activities, such as climbing) and shown 6 gender-typed characteristics (3 typically feminine characteristics, such as risk avoidance, and 3 typically masculine activities, such as rough-andtumble play) $(0=$ never; $1=$ once or twice a month; 2 $=$ once a week; $3=$ several times a week; $4=$ everyday). These 12 items were used to create a scale of gender-typed activities and characteristics ("gendertyped behavior"), reversing the 6 typically feminine items. Higher scores indicated more masculine behavior
and lower scores indicated more feminine behavior. Interrater reliability for parent-reported and nonparent caregiver-reported gender-typed behavior was 0.89 and 0.86 , respectively.

## Data Analysis

All analyses were conducted using the Statistical Package for Social Science software, version 24. To test our first hypothesis, we ran a 2 (gender: boy vs girl) $\times 3$ (family type: GFs vs LMs vs HPs) factorial design that examined the effects of child gender and family type on composite gender measure scores, treating child's age (grand mean centered) as a continuous control variable, given its theoretical relevance to the outcomes. No other family demographics were entered as covariates because preliminary analyses showed that they were not significantly associated with outcome variables. The effects of family type and child gender on gender behavior, genderconforming dress-up play, and gender-nonconforming dress-up play were analyzed using hierarchical linear modeling ${ }^{38}$ because the data were nonindependent within families (i.e., 2 members for each family provided separate reports on their child). By contrast, the same effects on gender-conforming and gender-nonconforming toy play were analyzed using an analysis of covariance, using child's age as a covariate. When significant interactions were found, simple effects analyses were run to explore the nature of the interaction by comparing the average child gender difference in gay, lesbian, and HP families.

Our second hypothesis expected an interaction between family type and child gender, with a difference expected within gender, by family type. To test this hypothesis, we ran a planned contrast that compared boys in gay, lesbian, and HP families and girls in gay, lesbian, and HP families.

## RESULTS

Univariate score distributions for the interview and observational measures indicated no issues with skewness and kurtosis among any study variables. Table 2 displays the associations between gender measures after controlling for child's age. Associations between child's age and gender measures across family types and by child's gender are presented in Table 4 as supplemental material, http:// links.lww.com/JDBP/A228. To ensure that the effects of (potential) family type and/or child gender differences on the outcome variables (i.e., reported gender-typed behavior, gender-conforming and gender-nonconforming dress-up play, observed gender-conforming and gendernonconforming toy play) could not be attributed to associations between the outcome variables and demographic variables that differed between family types, preliminary analyses were carried out. $T$ tests and nonparametric Mann-Whitney $U$ tests were used to assess differences in outcome variables on the basis of primary versus shared caregiving and parents' occupation and parents' work

Table 2. Partial Correlations Among Gender Measures Across Family Types and by Child's Gender, Controlling for Child's Age ( $\mathrm{n}=120$ )

| Variable | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| 1. Gender-typed behavior | 1 | $0.65^{* * *}$ | $-0.52^{* * *}$ | $0.68^{\star * *}$ | $-0.53^{* * *}$ |
| 2. Dress-up play GC | $-0.51^{* * *}$ | $0.40^{* *}$ | $-0.27^{\star}$ | $-0.30^{\star}$ | $0.60^{\star * *}$ |
| 3. Dress-up play GNC | $-0.52^{* * *}$ | $0.56^{* * *}$ | $-0.25+$ | $-0.34^{\star}$ | $-0.39^{* *}$ |
| 4. Observed toy play GC | $-0.34^{* *}$ | $0.40^{* * *}$ | $0.42^{* *}$ |  |  |
| 5. Observed toy play GNC |  |  | $-0.53^{* * *}$ | $-0.59^{* * *}$ |  |

Values above the diagonal refer to the boy group $(\mathrm{n}=56)$, whereas values below the diagonal refer to the girl group $(\mathrm{n}=64)$. Parent and nonparent caregiver reports were averaged within each family after their associations were checked: gender-typed behavior, $r=0.62, p<0.001$; dress-up play $G C, r=0.71, p<0.001$; dress-up play $G N C, r=0.68, p<0.001$. When these associations were tested using the report of the parent and that of each nonparent caregiver type (i.e., babysitter, grandparent, uncle/aunt, and family friend), their strength was similar to when this distinction was not made. $\dagger p<0.08$ (marginally significant), ${ }^{*} p<0.05, * * p<0.01, * * * p<0.001$. GC, gender conformity; GF, gay father; GNC, gender nonconformity; HP , heterosexual parent; $L M$, lestion mother.
status and marital status (coded for this analysis as married/civil partnership vs unmarried/no civil partnership), respectively. No significant differences emerged in any comparison. Finally, correlations were run between outcome variables and parents' age and household income; these revealed no significant associations.

## Differences in Gender Development Domains as a Function of Family Type and Child Gender

All of the following analyses were conducted using child's age as a covariate.

## Children's Gender-Typed Behavior

The interclass correlation for the interview scores was $r=0.87$, Wald $\mathrm{Z}=5.34, p<0.001$. Hierarchical linear modeling (HLM) analysis revealed a significant main effect of child gender, $F(1,120)=72.89, p=$ $0.001, \eta_{p}^{2}=0.55$, indicating that parents and nonparent caregivers reported boys to exhibit more masculine characteristics and to engage in more masculine activities than girls. Furthermore, although there was no evidence of a main effect for family type, $F(2,120)$ $=0.35, p=0.704, \eta_{p}^{2}=0.01$, the interaction between family type and child gender was statistically significant, $F(2,120)=3.97, p=0.024, \eta_{\mathrm{p}}^{2}=0.12$. To inspect the nature of this interaction, simple effects analysis was conducted, comparing the average child gender difference in gay, lesbian, and heterosexual parent (HP) families. Findings showed that both boys of gay fathers (GFs), $F(1,59)=54.81, p<0.001, \eta_{p}^{2}=$ 0.48 , and boys of HPs, $F(1,59)=23.71, p<0.001, \eta_{p}^{2}$ $=0.29$, received significantly higher ratings than girls in these family types. Conversely, boys and girls of lesbian mothers (LMs) tended to be perceived as less gender differentiated in their activities and characteristics, $F(1,59)=3.56, p=0.064, \eta_{p}^{2}=0.06$. Child's age was not a significant covariate, $F(55,120)=0.65$, $p=0.943, \eta_{\mathrm{p}}^{2}=0.38$.

## Children's Dress-Up Play

Regarding gender-conforming dress-up play, the interclass correlation for the interview scores was $r=0.80$, Wald $\mathrm{Z}=5.73, p<0.001$. HLM analysis indicated a significant main effect of family type, $F(1,120)=9.02, p<$ $0.001, \eta_{p}^{2}=0.23$, with children of GFs and HPs reported to engage in significantly more gender-conforming dressup play than children of LMs (LM vs GF, $p<0.001$; LM vs

HP, $p=0.022$; GF vs HP, $p=0.402$ ). Neither child gender, $F(1,120)=1.80, p=0.185, \eta_{\mathrm{p}}^{2}=0.03$, the interaction between family type and child gender, $F(2,120)$ $=2.17, p=0.120, \eta_{p}^{2}=0.07$, nor child's age, $F(55,120)$ $=1.23, p=0.218, \eta_{p}^{2}=0.53$, resulted in significant findings. Finally, regarding gender-nonconforming dressup play, the interclass correlation for the interview scores was $r=0.79$, Wald $Z=5.68, p<0.001$. No differences were reported on the basis of family type, $F(2,120)=1.47, p=0.240, \eta_{\mathrm{p}}^{2}=0.05$; child gender, $F(1,120)=0.38, p=0.540, \eta_{\mathrm{p}}^{2}=0.01$; or their interaction, $F(2,120)=0.25, p=0.780, \eta_{p}^{2}=0.01$. Furthermore, there was no child's age effect, $F(55,120)=$ $0.93, p=0.603, \eta_{p}^{2}=0.47$.

## Observed Children's Toy Play

Differences emerged in the observed genderconforming toy play as a function of family type, $F(2,120)=4.19, p=0.020, \eta_{\mathrm{p}}^{2}=0.12$, with children of GFs and heterosexual fathers spending more time playing with gender-conforming toys than children of LMs (LM vs GF, $p=0.042$; LM vs HP, $p=0.042$; GF vs HP, $p=1.00)$. Neither child gender, $F(1,120)=0.15, p$ $=0.700, \eta_{p}^{2} \leq 0.01$, the interaction between family type and child gender, $F(2,120)=1.08, p=0.350, \eta_{\mathrm{p}}^{2}$ $=0.04$, nor child's age, $F(55,120)=0.05, p=0.830$, $\eta_{p}^{2}=<0.01$, resulted in significant findings. Conversely, children did not differ in the amount of time spent playing with gender-nonconforming toys on the basis of family type, $F(2,120)=2.21, p=0.110, \eta_{p}^{2}=$ 0.04 ; gender, $F(1,120)=0.65, p=0.420, \eta^{2}{ }_{p}=0.01$; or the interaction between these variables, $F(2,120)=$ $0.06, p=0.950, \eta_{p}^{2} \leq 0.01$. Furthermore, there was no child's age effect, $F(55,120)=1.17, p=0.281$, $\eta_{p}^{2}=0.52$.

## Intragender Contrasts as a Function of Family Type on Gender Measures

Findings are displayed in Table 3.

## Bootstrapping Simulation

We used bootstrapping to understand the stability of the results with a larger simulated sample. The analysis confirmed that repeated samples of $n=1000$ participants

Table 3. Means and SDs of the Gender Measures for Boys and Girls: Differences by Family Type ( $\mathrm{n}=120$ )

|  | Full Sample $(n=120)$ | GF Families $(n=40)$ | LM Families $(n=40)$ | HP Families $(n=40)$ | F(df) | $\eta^{2}{ }_{p}$ | Cohen's \|d| |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Boys | $n=56$ | $\mathrm{n}=19$ | $n=18$ | $\mathrm{n}=19$ |  |  |  |
| Gender-typed behavior |  |  |  |  | $9.38(2.56)^{* * *,}$ | 0.26 | 0.97 |
| Parent report | 2.97 (0.54) | 3.17 (0.43) | 2.59 (0.51) | 3.12 (0.49) |  |  |  |
| Nonparent caregiver report | 2.89 (0.56) | 3.04 (0.43) | 2.50 (0.57) | 3.11 (0.50) |  |  |  |
| Dress-up play (GC) |  |  |  |  | 3.18 (2.56)** | 0.11 | 0.59 |
| Parent report | 1.61 (0.74) | 1.74 (0.75) | 1.26 (0.56) | 1.82 (0.78) |  |  |  |
| Nonparent caregiver report | 1.65 (0.70) | 1.79 (0.66) | 1.36 (0.57) | 1.80 (0.80) |  |  |  |
| Dress-up play (GNC) |  |  |  |  | 0.42 (2.56) | 0.02 | 0.11 |
| Parent report | 0.73 (0.76) | 0.68 (0.76) | 0.89 (0.86) | 0.63 (0.66) |  |  |  |
| Nonparent caregiver report | 0.68 (0.78) | 0.66 (0.82) | 0.78 (0.83) | 0.61 (0.72) |  |  |  |
| Observed toy play ( $s$; GC) | 138.41 (69.43) | 154.48 (68.55) | 102.36 (52.14) | 156.50 (74.47) | $3.97(2.56)^{\star}$, | 0.13 | 0.69 |
| Observed toy play (s; GNC) | 49.23 (25.44) | 47.06 (28.30) | 56.72 (22.66) | 44.32 (24.62) | 1.21 (2.56) | 0.04 | 0.25 |
| Girls | $\mathrm{n}=64$ | $\mathrm{n}=21$ | $\mathrm{n}=22$ | $\mathrm{n}=21$ |  |  |  |
| Gender-typed behavior |  |  |  |  | 6.85 (2.64) ${ }^{\star \star \text { d }}$, | 0.18 | 0.91 |
| Parent report | 1.88 (0.57) | 1.67 (0.51) | 2.20 (0.55) | 1.76 (0.53) |  |  |  |
| Nonparent caregiver report | 1.93 (0.56) | 1.69 (0.52) | 2.20 (0.50) | 1.87 (0.54) |  |  |  |
| Dress-up play (GC) |  |  |  |  | 6.93 (2.64)**, | 0.19 | 0.91 |
| Parent report | 1.64 (0.77) | 1.89 (0.80) | 1.21 (0.54) | 1.85 (0.77) |  |  |  |
| Nonparent caregiver report | 1.72 (0.78) | 1.96 (0.74) | 1.26 (0.66) | 1.97 (0.73) |  |  |  |
| Dress-up play (GNC) |  |  |  |  | 0.12 (2.64) | $<0.01$ | 0.07 |
| Parent report | 0.73 (0.60) | 0.68 (0.52) | 0.78 (0.78) | 0.72 (0.47) |  |  |  |
| Nonparent caregiver report | 0.72 (0.68) | 0.69 (0.64) | 0.76 (0.85) | 0.71 (0.52) |  |  |  |
| Observed toy play (s; GC) | 131.95 (65.98) | 148.48 (68.83) | 101.27 (49.29) | 147.56 (69.60) | 3.97 (2.64) ${ }^{\text {* }}$, | 0.12 | 0.69 |
| Observed toy play ( $s$ GNC) | 53.40 (27.61) | 49.16 (28.02) | 60.40 (27.45) | 50.33 (27.26) | 1.09 (2.64) | 0.03 | 0.23 |

 $p<0.05$. ${ }^{\text {CContrasts: }}$ LMs vs $G F s$ and heterosexual parents, $p<0.06$. ${ }^{\star} p<0.05,{ }^{\star \star} p<0.01, * * \star p<0.001$. GC, gender conformity; GF, gay father; GNC, gender nonconformity; HP, heterosexual parent; $L M$, lesbian mother.
(nested in 500 families) would be unlikely to detect different statistically significant effects.

## DISCUSSION

This study used a multi-informant and multi-method design to compare several domains of gender development in children born to gay fathers (GFs) through surrogacy, lesbian mothers (LMs) through sperm donation, and heterosexual parents (HPs) through sexual intercourse. Our expectation that children of gay and lesbian parents would show less gender-conforming development was partly confirmed. Boys and girls of GFs and HPs were rated by their parents and nonparent caregivers to engage in more masculine and feminine behaviors, respectively, and more gender-conforming dress-up play than boys and girls of LMs. Furthermore, children of GFs and HPs were observed to spend more time playing with gender-conforming toys than children of LMs. The greater gender differentiation in gendertyped behavior and dress-up play between child genders in GF and HP families, relative to LM families, partly reflects the findings of Goldberg and Garcia, ${ }^{25}$ which showed that boys demonstrated more masculine
play behavior in both HP and GF families during early childhood. However, differences as a function of family type were no longer detected over time (at the child's age of 6 years), with boys' masculine-typed behavior increasing and girls' feminine-typed behavior remaining stable.

In the same vein, our findings contrast with those of Golombok et al. ${ }^{23}$ and Farr et al. ${ }^{24}$ in the United Kingdom and the United States, respectively, which also examined gay, lesbian, and heterosexual parents and their children of a similar age to ours. In these studies, children were not found to differ in their play behavior across family types. These differences in findings may pertain not only to the variety of routes to parenthood characterizing our sample (involving surrogacy, sperm donation, and conception through sexual intercourse) versus the exclusive adoptive parenthood of the other researchers' samples and the different measures of gender development used but also to the different sociocultural contexts in which the studies were conducted. In this regard, it may be helpful to remind readers of the traditional gender ideology and family values that are strongly established in Italy, ${ }^{6,9}$ which lead GFs (and, to a lesser extent, LMs) to be viewed
as less suited for parenthood than HPs. ${ }^{9-11}$ Because of this context, GFs may feel more pressure to conform to gendered norms and, in turn, influence their children's behavior and play in a more gender-typed way.

Viewed through the lens of social constructionism, ${ }^{31}$ the less gender-conforming behavior and play shown by children of LMs relative to children of GFs and heterosexual fathers might reflect the fact that the former are typically raised in an especially tolerant environment. LMs might endorse or even initiate cross-gendered behavior and play because their families do not demonstrate the somewhat controversial feature of being headed by both male and sexual minority parents. ${ }^{12,13}$ In addition, social constructionism would suggest that, although the behavior and play of boys and girls significantly differed in both family types, boys and girls in GF and HP families were perceived to show markedly less gender flexibility in their behavior and play than boys and girls in LM families. There is growing evidence that, in HP families, children's gender socialization differs as a function of parent gender, ${ }^{28}$ with fathers tending to be stricter than mothers regarding genderappropriate child behavior. Although we did not directly assess the influence of parents' gender beliefs on their children's gender-typed behavior and play, the lack of difference across all gender domains between children raised in GF families and children raised in heterosexual father families-family types in which children can and do interact with their fathers-suggests this might be the case.

Our second hypothesis also expected differences by family type, but within child genders, whereby boys in LM families would show less gender-typed behavior and play than boys in GF and HP families and girls in GF families would show less gender-typed behavior and play than girls in LM and HP families. Again, the findings partly supported this hypothesis. Social learning theory ${ }^{32}$ might explain the finding that boys with GFs received significantly higher ratings on gender-conforming behavior and play than boys with LMs. From this perspective, having 2 fathers and no mother might have exposed boys in GF families to only male role models and higher levels of the rough-and-tumble play that is typically initiated by fathers. ${ }^{12,27,28}$ This might have resulted in their development of more masculine play preferences and activities. Because boys of GFs received similar scores as children of HPs across all gender measures, our findings support the role of male modeling on male child gender development.

However, we did not find the opposite tendency in daughters of GFs: they were not perceived as less feminine in their behavior and play but were perceived as more feminine than daughters of LMs. Social constructionism ${ }^{30}$ thus seems more appropriate for understanding these findings. Furthermore, it is conceivable that, as Biblarz and Stacey ${ }^{12}$ noted, GFs did not provide a "double dose of 'masculine' parenting" (p. 12). Rather, they appeared to adopt parenting practices and styles that were less gender
stereotyped, and they sometimes described themselves as demonstrating a balance of masculine and feminine energies. Thus, although lacking a female live-in parent, daughters of GFs might have experienced their fathers as modeling both masculinity and femininity. Finally, it is worth noting that neither boys nor girls showed significant gender-nonconforming play as a function of family type. In line with the findings of a longitudinal study of adopted children in gay and lesbian parent families, ${ }^{24}$ our results did not support the idea that LMs or GFs encourage or allow more gender nonconformity in their children.

This cross-sectional study was limited in a number of ways. First, although multiple recruitment strategies were used, our sample was relatively small and was recruited using convenience techniques. Thus, the generalizability of the findings is limited. In addition, our cell sizes, which were broken down by child gender and family type, were quite small and thus might have prevented us from detecting small effects between groups. However, the bootstrapping simulation confirmed the stability of the results. It would be valuable to replicate this study in other countries because parents participating in our study might have consciously or unconsciously socialized their children according to Italian gender norms; in addition, the children might have engaged in play activities that were considered appropriate for their gender in the Italian context, as reinforced by their relationships with peers. For instance, it is possible that a child who knew that his/her peer lived with 2 fathers or 2 mothers gave more notice to gendered attitudes and behavior and aimed at reinforcing normative gendered behavior. Whetherand to what extent-children's relationships with peers moderate their gender-typed behavior should be addressed in future investigations.

Second, because our sample did not include only firstborn children, potential variance due to the presence of an older sibling-a factor known to influence gender development ${ }^{1}$-was not removed. Third, our sample was quite rarified regarding household income and education, especially in the case of GFs. Parents' financial and social resources might have had implications for their gender ideologies and role modeling, as well as the range and types of activities they offered to their children; all of these factors could have affected gender development. Fourth, although the wide range of children's ages in the study (3-9 years) represented a strength by reducing 1 source of variability, it also represented a limitation by precluding an examination of how children's gender-related play might have varied according to a specific developmental stage. Such high variability might have also prevented the detection of a child's age effect on the gender domains considered. Fifth, the inclusion of only primary caregivers in the reports of child gender development necessitated a constraint in cases in which gay or lesbian parents reported an equal share in child care. This might be viewed as
problematic because it obscures variability both within and across families' experiences and traces heteronormative configurations of work-family roles. In addition, because not all family types were formed through assisted reproduction (i.e., in the case of HP families), parents were differentially genetically (un)related to their children. Considered in light of the inclusion of only 1 parent per family, this implies that, in gay and lesbian parent families, not all primary caregivers reporting on their child's gender development were the genetic parents; thus, whether the interaction between genetic (un)relatedness and the primary caregiving role introduced a confounding effect on the results cannot be determined. Finally, 1-to-1 matching was possible only for gay and HP families. However, it should be noted that all 3 family types were similar on most demographic variables, including child gender and age, which have been shown to relate to gender development. ${ }^{1-3}$ In addition, we confirmed that the effects of (potential) family type and/or child gender differences on the outcome variables could not be attributed to associations between the outcome variables and demographic variables, which differed between family types.

Notwithstanding these limitations, our study had a number of strengths. First, it comprised the first examination of the gender-typed behavior and play of pre-school- and school-aged children in families headed by GFs through surrogacy. Second, the use of multiinformant reports and observational data limited parent self-report bias. Of relevance, associations between parent and nonparent caregiver reports were strong, suggesting that, in their home environment, children showed consistent gender-related behavior during play, regardless of which caregiver was present. Further evidence that this might be the case was provided by the observational and interview data. The inclusion of different reporting caregivers or significant adults in contexts other than the home (e.g., school) would be valuable to clarify the genuineness of our results. For example, we cannot draw conclusions on the extent to which children of gay and heterosexual parents exhibited greater gender differentiation in gender-typed behavior and dress-up play than children of LMs as an effect of (1) parental pressure for (or expectations of) gender conformity, (2) a genuine pattern in nature, or (3) both. In the same vein, we can only speculate over whether the greater gender flexibility of children of LMs reflected (1) the more tolerant family environment in which they were raised, (2) the fact that these children simply felt free to express their toy preferences and gender-related behavior when playing at home, or (3) both. Third, the hierarchical linear modeling analyses allowed us to control for the effect of shared variance within each family on child outcomes. Finally, unlike most previous research, which has compared only LM families with HP families, ${ }^{16,18-21}$ the present study included GF families, offering valuable insight into variations in children's gender-typed play with only 1 parent gender present in the household.

## CONCLUSIONS

This study reconsidered the impact of parents' gender modeling on children's gender-typed behavior and play and supported the idea that children's gender development is influenced by both parental and environmental characteristics. ${ }^{1-3}$ As some authors have noted, ${ }^{12,13}$ it may be inappropriate to emphasize the significance of male and female role models in these families when children tend to be exposed to a wide range of adults-both male and female-in their daily lives and peers, who become increasingly influential as children age. Rather, it would be beneficial to investigate the impact of family type on children's gender development in combination with other parental factors, such as parental perception of their own gender, gender ideology, internalized sexual stigma, and the division of household labor, because there is evidence that these factors may interact in predicting children's gender-conforming behavior and play. ${ }^{39-42}$ It is important to broaden research on children's gender development and socialization in the context of research on parents' gender-related behavior and attitudes ${ }^{20}$ because same-sex parents may themselves create an environment in which cross-gender behavior and play are neither stigmatized nor discouraged. Same-sex parents also possess a heightened awareness of "gender accountability," such that they recognize societal pressures to accomplish their children's gender socialization. ${ }^{13}$

In light of the interest in investigating multiple determinants of gender development in children, ${ }^{1}$ future studies should involve both same-sex parent families through assisted reproduction (in which the child is genetically related to only 1 parent) and adoptive samesex parent families (in which the child is genetically related to neither parent) to test the potential effect of genetic relatedness within families on child gender development while controlling for parents' nonheterosexual orientation. Such comparison would allow us to consider whether parents' different expectations for their child's gender typicality ${ }^{29}$ are conditioned by the presence/absence of genetic relatedness between parents and children and to what degree.

Regarding practical implications, the current study may be informative to policy makers, mental health professionals, and social workers concerned with the effects of the absence of a male or female live-in parent on children's gender development and socialization. ${ }^{5,11,14}$ In this vein, although it was not possible to compare our findings with population norms, future studies should take into account this possibility once such norms are available. To summarize, our study found that, although boys and girls of gay fathers and heterosexual parents engaged in more gender-conforming behavior and play than boys and girls of lesbian mothers, who in turn showed greater gender flexibility, the gender development of children with same-sex parents proceeded in a typical fashion. Furthermore, in all family types, children showed a low level of gender-nonconforming behavior, both when
reported by their parents and nonparent caregivers and when observed during play. To gain a deeper understanding of gender development in such understudied family forms, we must follow up children's behavior and play over time because these patterns may change.

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