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Parent and Self-Socialization of Gender Intergroup Attitudes, Perceptions, and Behaviors Among Ethnically and Geographically Diverse Young Children

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Previous work has shown the robust nature of gender bias in both children and adults. However, much less attention has been paid toward understanding what factors shape these biases. The current preregistered study used parent surveys and child interviews to test whether parents' conversations with their children about and modeling of gender intergroup relations and/or children's self-guided interests about gender (*self-socialization*) contribute to the formation of gender attitudes, status perceptions, and gender intergroup behaviors among young 4- to 6-year-old children. Our participant sample also allowed us to explore variation by child gender, ethnicity (Asian-, Black-, Latiné-, and White-American), and U.S. geographical region (Northeast, Pacific Northwest, West, Southeast, and Hawaii). Data suggest that children whose parents reported they were especially active in seeking information about gender tended to allocate more resources to same-gender versus other-gender children and expressed less positive evaluations of other-gender children in comparison to children who were less active. By contrast, we found that parents' conversations with their children about gender intergroup relations and about gender-play stereotypes showed few connections with children's gender attitudes. In terms of demographic differences, boys raised in households with more unequal versus equal division of labor perceived that men had higher status than women, but few differences by ethnicity or geographic region emerged. In sum, our study suggests that both self- and parent socialization processes are at play in shaping early gender attitudes, status perceptions, and gender intergroup behavior, although self-socialization seemed to play a larger role.

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Public Significance Statement
This study suggests that, during the preschool and kindergarten years, the development of gender identity, reflected in seeking out information about what gender means, is associated with early gender biases (favoring one's own-gender group over another). In addition, family context, reflected in parents' division of housework, was associated with boys' perceptions of the social status of men versus women. These findings imply that to promote more egalitarian gender attitudes, we need to focus on multiple factors including the development of gender identity and parent modeling of gender equality.

Keywords: gender intergroup attitudes, gender status perceptions, parent gender socialization, self-socialization, cognitive theories of gender development

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The way we feel toward different gender groups colors our interactions with members of those groups. Such evaluations of gender groups (henceforth "gender attitudes") include thoughts, judgments, and feelings, which may be favorable, unfavorable, or ambivalent (Eagly & Chaiken, 1993). Gender attitudes first emerge in early childhood when children start to recognize and identify with a gender group (Martinez et al., 2020). A large body of research has established that starting in infancy, children differentiate others by gender (e.g., Hillairet de Boisferon et al., 2015), and by 3 years of age, they demonstrate ingroup favoritism toward their own gender group over other gender groups (C. L. Martin & Ruble, 2010). Children in preschool also begin to strongly segregate in accordance with their gender group, which persists across the lifespan (Maccoby, 1998; Mehta & Strough, 2009). These gender attitudes can have implications for children's relationships with others, for example, impacting whom we befriend and classroom harmony (Halim et al., 2021; Hanish et al., 2021). However, surprisingly little work has investigated the factors that shape or are associated with individual differences in gender attitudes. On a playground, why might some children readily engage with other-gender peers, while others shy away from initiating contact? In the present study, we ask whether parent socialization and/or self-socialization are associated with children's gender attitudes. Moreover, we ask these questions using a large and ethnically diverse sample from several geographical regions within the United States, including overlooked but important populations.

Parent Socialization

Parents as Instructors of Gender Attitudes

Parental influence on children's gender development has been examined across several pathways. Traditionally, studies of parent socialization of gender have focused on parents' role as children's interaction partners. For example, parents have been observed to be more likely to encourage children's play with gender-stereotypical toys but criticize play with counterstereotypical toys (Fagot, 1978; Lindsey & Mize, 2001; Lytton & Romney, 1991). Such direct interactions may reiterate gender as an important division to young children, reifying gender categories and facilitating intergroup attitudes. Past work has also theorized that parent talk during joint reading may impact children's gender attitudes (Endendijk et al., 2014, 2018; Friedman et al., 2007). For example, parents have been observed using generic language about gender as well as linguistic gender contrasts, both of which are thought to increase children's attention to differences between genders and inferences about the importance of gender (Gelman et al., 2004).

In addition to these avenues, parents' explicit messages about gender intergroup relations may influence children's feelings toward gender groups. Much as parents across multiple ethnic and racial groups encourage racial egalitarianism or direct children not to choose friends based on their racial/ethnic background (Hughes, Rodriguez, et al., 2006), similar parental socialization around gender—to be or not be friends with members of particular gender groups—may occur. As some parents help to prepare their children for racial bias, parents may similarly bring attention to gender inequities as a form of socialization. For example, parents may discuss a female presidential candidate (Bigler et al., 2008) or a mother's difficulties getting a promotion at work due to sexism. Additionally, young children might become upset for being excluded from playground activities because of their gender (e.g., girls not letting boys pretend play as a princess) prompting discussions about gender bias with parents (Killen & Stangor, 2001). The current work builds on these ideas by examining the associations between parents' explicit messages about gender diversity in friendships, preparing for gender bias, and gender stereotypes about play and young children's gender attitudes. Two influential meta-analyses support the idea that parent socialization could shape children's gender attitudes—finding small but positive correlations between parents' and children's gender-typing, stereotypic beliefs, and gender-role attitudes—(Degner & Dalege, 2013; Tenenbaum & Leaper, 2002), but revealingly did not identify any studies that investigated this question directly.

Parents as Models of Gender Attitudes

In addition to shaping children's gender attitudes through talk, parents might also model gender attitudes through their own behavior (Collins & Russell, 1991). For example, the division of household labor between fathers and mothers might impact children's evaluations toward gender groups. If children observe mothers doing more household work (Greenstein, 2009; Marks et al., 2009), this may impact children's perceptions of the social status of women and men as well as their attitudes toward those groups. Past research on predominantly White American families has found that a more traditional division of household labor predicted adolescents' and young adults' visions for their own family roles in the future (Fulcher & Coyle, 2011), adolescents' more traditional gender-role attitudes (e.g., "A husband's job is more important than a wife's job"; Lam et al., 2012), and adolescents' participation in more traditional household tasks as adults (Cunningham, 2001).

Additionally, two studies have found indirect evidence that division of household labor among heterosexual parents influences children's gender attitudes. One study found that among 4-year-old girls, greater disparity in household labor (mothers doing more than fathers) predicted their reporting that others perceived boys as better than girls (Halim et al., 2013). Another study found that mothers' greater participation in nontraditional household tasks (e.g., washing the car) predicted more diverse gender peer preferences among elementary school-aged children (Serbin et al., 1993). We build upon these findings by testing whether division of household labor in two-parent heterosexual households predicts the gender attitudes of the children who are raised in them.

Possible Variation in Parent Socialization of Gender Attitudes by Gender, Race/Ethnicity, and Geographic Region

Although both girls and boys have shown robust ingroup favoritism, favoring their own-gender group over others, girls have shown a greater degree of ingroup favoritism than boys across a growing number of studies (e.g., Dunham et al., 2016; Egan & Perry, 2001; Halim et al., 2017, 2021; Powlishta, 1995; Susskind & Hodges, 2007; Zosuls et al., 2011). The authors have speculated on why this gender difference exists, but speculations have rarely been empirically tested. However, in one retrospective study of Asian-, Latiné-, and White-American college students, across ethnic groups, women recalled hearing negative messages about men (that they were dangerous and untrustworthy) more frequently while growing up than men recalled hearing about women from their parents (Gutierrez et al., 2022). Qualitative work has similarly shown that parents often express particular anxieties about keeping daughters safe, implicitly and explicitly, from bad men (Raffaelli & Ontai, 2004; Suárez-Orozco & Qin, 2006). These worries can be reflected in greater restrictions and fewer freedoms for daughters versus sons (Guilamo-Ramos et al., 2007; McHale et al., 2005). For example, girls are often kept closer to adult supervision in physical spaces (Maccoby, 1998; Thorne, 1993). Together these studies suggest that messages about intergender contact might be less enthusiastic among parents of girls than parents of boys.

Parent socialization of gender attitudes may also vary by ethnicity, an important area of inquiry given the increasing ethnic diversity of U.S. children (Craig & Richeson, 2014; U.S. Census Bureau, 2023). Here, direct prior research is also scant as parent gender socialization, in general, has primarily sampled non-Hispanic White children. However, Gutierrez et al. (2022) found that parental messages that women were more trustworthy than men were conveyed more frequently among Latiné-American college students than among Asian- and White-American college students. Furthermore, some studies have documented a narrower gender gap in housework among White- and Black-American couples and a wider gap among Latiné- and Asian-American heterosexual couples (Sayer & Fine, 2011; Wight et al., 2013). Important qualitative work also highlights that families from different ethnic groups might emphasize gender to different degrees (Hill, 2002; Skinner et al., 2016; Zosuls et al., 2014). However, research is mixed on whether there is racial and ethnic variation in the degree of bias in children's gender attitudes (some differences: Kovacs et al., 1996; Halim et al., 2017, 2021; no differences: Gülgöz et al., 2019; Halim, Glazier et al., 2023), suggesting possible differential socialization. These studies suggest that further exploration of ethnic variation in parent socialization of gender attitudes is necessary. Within a single study, we will examine differences in parent gender socialization by race/ethnicity among a large sample of Asian-, Black-, Latiné-, and White-American children.

Finally, variation in gender attitudes might also vary by geographical region within the United States, as some regions may be more or less gender-traditional (Harrington & Gelfand, 2014). For example, U.S. states vary in degrees of gender equality indicated by representation in politics and business, and gender gaps in wages (U.S. News, 2019). States also vary in laws concerning gender discrimination and gender expression (Human Rights Campaign, 2021; National Conference of State Legislatures, 2021). As parents are embedded in a larger *exosystem* of the neighborhood and cultural *macrosystem* of the region, parents' practices in socializing gender attitudes may correspond to the attitudes of those around them and structured in institutions and the region's history (Bronfenbrenner, 1992). Our study will investigate this idea by looking at whether parents from five different geographical regions socialize gender attitudes differently.

Self-Socialization and Gender Attitudes

Building upon Piaget's early insights (Piaget, 1936), self-socialization theories propose that children are active participants in shaping their own development (C. L. Martin et al., 2002; C. L. Martin & Ruble, 2004). Rather than merely passively absorbing the myriad of forces of gender socialization, for example, these theories suggest that as children are shaping their gender identities, they are highly attuned to and hungry for information about different gender identities, expressions, and roles. Gleaning information from their environment, children draw their own conclusions and form gender schemas, organized knowledge structures related to gender. Most relevant to the current study, cognitive self-socialization theories of gender development propose that there are motivational consequences to this information seeking (C. L. Martin et al., 2002). As children form gender identities, they are predicted to show a strong desire to conform to gender norms and gender stereotypes (*gender rigidity*; Halim, 2016), including showing more biased gender attitudes (C. L. Martin & Ruble, 2010).

Most research on self-socialization theories have focused on gender-typing, especially gender-typed toy preferences, as the main outcome and has generally found support for children's cognitions predicting greater gender-typing (Ruble et al., 2006). To the best of our knowledge, only one previous study has tested whether self-socialization processes predict gender attitudes. In this longitudinal study of Black- and Latiné-American 4-year-olds, different facets of self-socialization predicted different components of gender attitudes (Halim et al., 2017). Children who had greater knowledge of gender stereotypes and more positive gender identities (suggesting active self-socialization and information-seeking) showed more positive ingroup gender attitudes, but outgroup attitudes were unaffected. Flexibility in the application of gender stereotypes was related to more positive outgroup gender attitudes. A separate study found that knowledge of the relative permanence of gender over time (*gender stability constancy*) predicted more same-gender social interactions among preschool girls, but not boys (Smetana & Letourneau, 1984), suggesting that self-socialization processes might affect gender groups differently. Thus, there is a large gap in understanding what shapes our early gender attitudes, but self-socialization factors may play a key role as

children learn about gender and form their gender identities, and are thus a key focus of the present work.

Study Overview

The current study aims to test whether parent and self-socialization predict intergroup gender attitudes, perceptions, and behaviors among ethnically and geographically diverse children. We also aimed to describe possible variation in parent socialization of gender attitudes by child gender, ethnicity, and geographic region. Given the emergence of gender identity and gender attitudes in early childhood (Martinez et al., 2020), our sample focused on 4- to 6-year-old Asian-, Black-, Latiné-, and White-American children across five geographic U.S. regions (Northeast, Pacific Northwest, West, South, and Hawaii). To assess parent socialization, parents filled out a questionnaire on their talk about gender with their child and their division of household labor. To assess self-socialization, parents reported on their children's attention to and interest in gender. To assess gender attitudes, children were asked to (a) view photos of girls and boys and indicate how much they liked each child, (b) decide whether a girl or boy (shown with photos) should receive an eraser in one task (*resource allocation*), and (c) decide where to "sit" (using toy chairs) when a girl or boy (shown with photos) was sitting at the end of a row of toy chairs (*interpersonal distance*). Finally, we also assessed children's perceptions of the social status of women and men by showing children photos of women and men and asking them to decide who is in charge.

We made several preregistered hypotheses (see the Method section below for links). Regarding parental socialization, we hypothesized that parents' more frequent discussion of gender equality with their children (more preparation for bias and egalitarian messages) would be positively associated with children's more egalitarian gender attitudes and perceptions. Furthermore, within heterosexual two-parent families, we predicted that greater inequality in the division of household labor (specifically, when mothers do more housework than resident male partners) would predict more negative attitudes and behavior toward girls among children (adjusting for child's gender) and greater awareness of men's higher social status than women's (the gender status hierarchy). Next, we hypothesized that parents' messages endorsing gender stereotypes about play (e.g., boys' rough-and-tumble styles, girls' fragility) would predict more negative other-gender attitudes among children. While not preregistered, in this paper we also took an exploratory approach to examine whether parent socialization of attitudes toward other gender groups might be more negative for girls than for boys (more frequent preparation for bias and stereotypical messages about boys' play, less frequent egalitarian messages). We had no specific predictions for whether parent socialization factors vary by ethnicity or geographic region. Regarding self-socialization, we hypothesized that children who are more attentive to and interested in gender information would show more gender intergroup bias, greater awareness of the gender status hierarchy, and greater gender-typed behavior than children who are less attentive to gender information.

Method

Preregistration and Connection to Larger Project

The data reported in the current manuscript are part of a larger cross-sectional, national study of children's racial/ethnic, gender, and novel group attitudes and preferences, and was approved by the Institutional Review Boards of California State University, Long Beach, Duke University, University of Washington, University of Hawaii, and Yale University (#1074895-2/E0259/44379/2017-00441/1305012100; "Origins of intergroup perceptions and attitudes across diverse contexts/Social cognition in children/Development of social category knowledge"). A master methods preregistration with recruitment procedures, initial stopping rule, and additional details related to the study and all other subprojects can be found in the OSF project (https://osf.io/492mx/?view_only=17dc25f77fcf4d3db60c754fb96c0bb65; Enright et al., 2022). All modifications made during the course of data collection were data-independent and based on recruitment circumstances (e.g., onset of COVID-19; data were collected from April 2018 to March 2020). The relevant preregistration for this project is here (https://osf.io/k923s/?view_only=3c3e308a53d54cc8ba067789ec497c8e7; Halim, Atwood, et al., 2023). We separately preregistered another paper that explores some of the same gender measures (https://osf.io/cufd4/?view_only=5a249584fbab4bfd99b9e3cf1a5a5439; Halim et al., 2022), but importantly, that paper did not examine socialization which is the focus of the current work. The other paper focuses on the links between the child measures (as opposed to links between parental measures of socialization and the child measures). Our team determined in advance that including all of these research questions and corresponding analyses/results in a single paper would be difficult for readers to follow; therefore, we separated the two conceptually.

Participants

Participants were recruited from local preschools, child centers, libraries, community centers, museums, and university developmental area participant databases. At the community organizations, flyers were handed out to organization staff and distributed to parents through information packets. Research assistants were also available in person at the sites to speak to potential parents about the study and whether their child might qualify. For the university developmental area participant databases, staff called and emailed parents to provide information about the study. In the master methods preregistration, we stated that we would include all participants if they had completed the task(s) used for data analysis in that paper's preregistration. The overarching preregistration also specified rules for exclusion of participants in a given paper, which included (with parentheticals for the number of participants dropped in this study for this reason): participants who stopped the study during or before the start of any task ($n = 3$), chose not to complete part of a task in the current paper ($n = 77$) (because we tested in school and museum settings in addition to lab settings in order to be more inclusive in our recruitment efforts, this may have added additional distractions; in addition, we had a large number of tasks and trials in the larger project), or had parental/teacher interference (e.g., if a parent/teacher entered the testing area or interfered with the task) ($n = 3$). In line with our preregistration, we also excluded multiracial participants ($n = 70$) for the current paper as only monoracial/ethnic stimuli were created (for the larger study that also examined racial attitudes) and stimuli were matched to the race/ethnicity of the participant (see below for further information) (however, see the online supplemental materials for results with multiracial participants included; https://osf.io/6pdnf/?view_only=630e4fdd7a7f4816b88ca63238ed5f56).

Table 1
Participant and Parent Demographics (Percentage and Frequency N)

Variable	Demographic percentage (*n*)
Child gender	
Boys	53.0% (328)
Girls	47.0% (291)
Child race/ethnicity	
Asian American	15.0% (93)
Black American	14.7% (91)
Latiné American	24.2% (150)
White American	46.1% (285)
Child age	
4-year-olds	60.4% (374)
5-year-olds	27.1% (168)
6-year-olds	10.2% (63)
Date of birth missing	2.3% (14)
Parent education level	
High school equivalent or less	6.6% (41)
Some college or university degree	49.6% (307)
Professional degree/graduate school	41.4% (256)
Not reported	2.4% (15)
Parent annual income	
Below $50,000/year	16.8% (104)
$50,001–$125,000/year	39.9% (247)
Over $125,001/year	39.7% (246)
Not reported	3.6% (22)
Child born in the United States	
Yes	97.3% (602)
No	1.9% (12)
Not reported	0.8% (5)
Languages spoken at home	
One	69.9% (433)
More than one	28.8% (178)
Not reported	1.3% (8)
Parent political ideology[a]	
M	2.92
SD	1.49
Primary caregiver work	
Full time	54.6% (338)
Part time	22.0% (136)
Other	20.0% (124)
Not reported	3.4% (21)
Region	
Honolulu, Hawaii	10.0% (62)
Long Beach, California	11.6% (72)
Seattle, Washington	35.7% (221)
New Haven, Connecticut	17.3% (107)
Durham, North Carolina	23.4% (145)
Not reported	2.0% (12)

[a] Parents indicated their political ideology on a scale from 1 (*very liberal*) to 7 (*very conservative*).

After these children were excluded, the final number of participants was $N = 619$ ($M_{age} = 4.95$ years, $SD_{age} = 0.72$ years; also see Table 1 for breakdown by sex and racial/ethnicity of the participants who are included in the present paper [as reported by parents], as well as parent demographics). The goals of the larger study were also to address issues of replicability and reproducibility in developmental science and examine racial attitudes and perceptions. To examine differences by U.S. region and ethnicity, we recruited White American children in all five regions of the United States and then the largest other racial/ethnic group(s) in each location. This meant that we primarily recruited Black American children in North Carolina and Connecticut, Asian American children in Washington and Hawaii, and Latiné American children in California and Washington. See Table S1 in the online supplemental materials for a breakdown of each sample by U.S. region.

Procedure

Parents' written consent for their child to participate was obtained. All study tasks were performed in a quiet space (e.g., lab, school, or museum space) by an experimenter whose race/ethnicity matched participants' (Asian-, Black-, Latiné-, or White-American), though not necessarily the same gender. In addition to parent's written consent, the experimenter obtained the child's verbal assent at the start of the study. The experimenter then asked participants for permission to take a polaroid picture for an activity (the interpersonal distance task) they would complete later. If participants agreed (98.9% of sample), the experimenter would take their photo and show it to them. Next, the experimenter explained to each participant that they would receive a "passport" to track their progress throughout the study. After completing each task, participants were able to stamp their passport. In the larger study, children completed six main tasks all on a tablet via Qualtrics; however, the present preregistered study focuses on four of these tasks and the parental questionnaire (described further below). We did not include the other two tasks (minimal group preferences, memory for faces) because they were not relevant to this study's research questions but are the focus of other preregistered studies. Importantly, for this paper, we also only analyze the gender-related trials (not the race-related trials) in line with our preregistration. To reduce reactivity among the measures and order effects, all tasks were completed in a randomized order and all blocks and trials within each task were also randomized. The study took approximately 30–40 min to complete in its entirety. At the end of the study, children picked a sticker as a token of appreciation (described in more detail below). Depending on location and the availability of the parent, the parent questionnaire (described below) was completed during the study session or in advance or after the study.

Measures

Predictor: Parent Gender Socialization

All measures of parent gender socialization were assessed through the parent questionnaire.

Parent Talk About Gender Intergroup Relations. Parents were asked to complete four items about their conversations with children regarding gender intergroup relations that included items adapted from Hughes and Johnson (2001). Caregivers rated each item on a 5-point scale (1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *very often*). All items began with the stem "In the past year, how often have you done each of the following with your child…." Per our preregistered plan we split the items into pairs for the purpose of analysis. Two items were included to measure *preparation for bias*: "Spoken to your child about gender equality?" and "Discussed with your child how to handle gender discrimination (observed and/or experienced)?"—$r(605) = .63$, $p < .001$, $M = 2.66$, $SD = 1.08$. The remaining two items were included to measure *egalitarianism*: "Told your child it is important to appreciate people of all gender groups?" and "Encouraged your child to have friends of all gender backgrounds (girls, boys, other genders)?"—$r(606) = .62$, $p < .001$, $M = 3.63$, $SD = 1.06$.

Parental Behavioral Modeling: Division of Household Labor. Parents in two-parent households were asked to "estimate the percentage of domestic/household work each caregiver completes" and wrote a number for one's self and for the other parent that cumulatively summed to 100%. For these analyses, we used the percentage of work done by the mother ($M = 65.1$, $SD = 16.6$) in two-parent heterosexual couples (77.5% of all participants' families). Similar measures of self-report from one partner have shown good predictive validity in the past (e.g., Cunningham, 2001; Greenstein, 2009; Halim et al., 2013). For the analyses below, given that the research question focused on intergroup relations between female and male children and adults, only heterosexual two-parent households were included. This resulted in the exclusion of 36 participants with same-sex parents, 41 participants in single-parent homes, four cases in which one parents' sex was described as "other," and 51 instances of incomplete data (where housework and/or parent sex data were not reported), resulting in a total of 132 excluded from the original ($N = 619$).

Parent Gendered Messages About Play. Robust gender stereotypes of boys' aggressiveness and girls' fragility might also affect children's gender attitudes and perceptions (e.g., Condry & Ross, 1985; Karraker et al., 1995). Thus, we asked parents, "In the past year, how often have you done each of the following with your child…." "Warned your child to be cautious when playing with boys so they don't get hurt?" (*stereotypes about boys' play*), $M = 1.76$, $SD = 1.15$, and "Told your child to be gentle when playing with girls?" (*stereotypes about girls' play*), $M = 1.95$, $SD = 1.29$ (1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *very often*).

Predictor: Children's Gender Self-Socialization

Gender self-socialization was assessed through parent report on the parent questionnaire. Two items were averaged together to make a scale: "How much does your child pay attention to what is 'for girls' or 'for boys'?" and "How interested is your child in learning what is 'for girls' or 'for boys'?" (1 [*not at all*] to 7 [*very much*]), $r(608) = .77$, $p < .001$, $M = 3.81$, $SD = 1.90$ (Halim et al., 2018). The development and wording of the measure builds upon previous parents' interview studies about their children's gender development and upon previous child studies on gender stereotyping (Halim et al., 2014; Signorella et al., 1993). This measure has also shown predictive validity in the past with links to heightened gender-typing, as cognitive theories would expect (Halim et al., 2018). Supporting age trends predicted by cognitive theories (increasing gender "rigidity" with increased gender knowledge), in this sample age was associated with greater self-socialization at ages 5 and 6 compared to age 4 (significant positive linear trend and significant quadratic effect—see the online supplemental materials, p. 24, Figure S1 in the online supplemental materials).

Outcome: Children's Gender Attitudes

Stimuli. The photographs used for this study were selected from a large pool ($N = 405$) of photographs acquired from official data sets (e.g., The CAFE Dataset; LoBue, 2014; LoBue & Thrasher, 2015), web searches, and from the participating research labs. To ensure that children's pictures were matched on age, affect, and attractiveness, 10–12 adult raters independently rated the approximate age of each child in each photograph, attractiveness (1 = *not attractive* to 5 = *very attractive*), affect (0 = *neutral* to 4 = *happy*), race (options: Asian, Black, Latiné, multiracial, and White), and perceived gender (providing comment if child was nongender conforming). Only pictures in which there was over 70% agreement on race/ethnicity and over 90% agreement on gender identity were used. Interrater agreement was high for age ($SD = 1.17$, $\alpha = .92$), attractiveness ($SD = .78$, $\alpha = .84$), and affect ($SD = .72$, $\alpha = .96$). Additional information on general methods for the larger study can be found here: https://osf.io/bfk52/?view_only=17dc25f77fcf4d3db60c754fb96c0bb6. Additional task-specific materials are discussed within the description of each task.

The *gender attitudes task* assessed how much children like members of various gender groups (Dunham et al., 2011; Olson & Shaw, 2011). Participants were introduced to a 6-point sad/happy face scale, which ranged from 1 (*really, really don't like*) to 6 (*really, really like*) and were instructed to point to the face which best indicated how they felt about each target child ("For this game I'm going to show you some pictures of kids, and I just want you to tell me how much you like them"). On each trial, one photo at a time was presented ("How much do you like this kid? Can you point?"). The entire task for the larger project involved 20 trials (including race/ethnicity trials), but for the purposes of the current study, participants viewed eight photographs one at a time—they evaluated four other-gender and four same-gender targets who matched the race/ethnicity of the participant (e.g., an Asian American boy would rate four Asian girls and four Asian boys). As part of the race version of the task, participants also rated racial-outgroup members of the child's gender. These were excluded from the present paper because no racial-outgroup members of different genders were included. For the present study focused on gender, we calculated a measure of *same-gender attitudes* by averaging the scores from the four same-gender faces ($\alpha = .65$). Participants liked children of the same gender at significantly above chance levels, $M = 4.50$, $SD = 1.22$, $t(573) = 20.00$, $p < .001$, $d = 0.82$ (actual range [1.00–6.00]; midpoint/chance [3.50]). We also calculated a measure of *other-gender attitudes* by averaging scores from the four other-gender faces ($\alpha = .75$). Participants liked children of other genders at significantly above chance levels, $M = 3.89$, $SD = 1.48$, $t(552) = 6.20$, $p < .001$, $d = 0.26$ (range [1.00–6.00]; midpoint/chance [3.50]).

Outcome: Children's Perceptions of Gender Groups' Social Status. The goal of the status task was to determine whether participants associate gender with social status (see Brey & Shutts, 2015). However, to prompt children to think about something other than preferences, before this task, participants completed a filler task on which they saw a picture of a child eating broccoli for a snack and a picture of a child eating ice cream for a snack and were asked, "Which kid do you think likes vegetables the most?" After completing the filler task, participants moved on to the actual social status task, where they were asked to indicate social status by picking which adult was "in charge."

To begin and to ensure that participants understood what "in charge" meant, the experimenter defined being "in charge" as, "the person who makes all the rules, they are like the boss." Participants were then shown a series of paired photographs of adult faces and asked to point to who they thought was in charge in each pair ("Look at these two. Who is in charge?"). There were a total of 21 trials. Of these 21 trials, for the purposes of this study, we used the three gender trials (18 trials were race-related trials) where participants saw three pairs of photographs that included a

photo of a man and a woman who were both matched to the participant's race/ethnicity (e.g., an Asian American boy would decide if an Asian man or an Asian woman was "in charge" three times) (0 = *woman selected as in charge*, 1 = *man selected as in charge*) ($\alpha = .50$, $M = 1.34$, $SD = 1.04$; actual range [0.00 to 3.00]). (Race-based trials included only same-gender comparisons and were therefore excluded from the present analyses.) Trial order was randomized in Qualtrics. Photographs of adults were used from the Chicago Face Database (Ma et al., 2015), a well-established and widely used database that has extensively pretested and selected faces based on normed data across multiple dimensions (e.g., attractiveness). Boys ($M = 1.62$, $SD = 1.03$) were more likely than girls ($M = 1.02$, $SD = .96$) to say that a man was in charge over a woman, $t(563) = 7.20$, $p < .001$, $d = .60$, and both means were significantly different from the midpoint of the scale (1.5)—boys: $t(297) = 2.00$, $p = .04$, $d = 0.12$; girls: $t(267) = -8.20$, $p < .001$, $d = .50$. A 2 (gender) × 4 (ethnicity) analysis of covariance covarying participant age found no additional effects.

Outcome: Children's Gender Intergroup Behavior

Interpersonal Distance. The interpersonal distance task was intended to determine whether participants' preference to be closer or further away from other children was influenced by gender (adapted from Halim et al., 2017; also see Kawakami et al., 2007; Mehrabian, 1968; Word et al., 1974). A diorama with a row of seven doll-sized chairs equally spaced apart was presented to participants for this task (see Appendix). The experimenter said, "Look! We are going to play a game where you imagine that you are going into a room, and you have to decide where to sit. See, we have this row of chairs." The experimenter then either placed the stimulus (picture of a child) on the far left or far right chair in the diorama ("This kid is sitting here"), alternating the side across trials to consider potential side biases. Participants were then given the polaroid photograph of themselves taken at the beginning of the study and asked, "Where do you want to sit?" The experimenter recorded the distance (one to six seats apart) between the target and the child's placement of their photograph.

The entire task consisted of 15 trials, five trials for each of three blocks (including race/ethnicity trials). Each block had a different background (e.g., snack room, play room, and classroom) and children were told that they wanted to go to that room for a relevant reason (e.g., they were hungry, felt like playing, and felt like learning). For the purpose of the current study, participants completed six gender trials, selecting their seating preference in response to three same-gender children and three other-gender children (two children total [one same-gender and one other-gender child] in each block). Race/ethnicity was matched between target stimuli and the participant (e.g., a Black American boy would make decisions about seating distance from three Black boys and from three Black girls). (Again, race trials included only own-gender targets, and therefore the racial-outgroup trials are not included in the present analyses.) For this task, the average distance across the three trials for same-gender targets was subtracted from the average for the other-gender targets, resulting in a scale from −5.00 to +5.00 as a measure of gender interpersonal seating preference (0 would indicate no bias, negative numbers indicate a preference to sit closer to other-gender targets, positive numbers indicate a preference to sit closer to same-gender targets. Participants preferred to sit closer to others of their same gender at significantly above chance levels, $M = .45$, $SD = 1.48$, $t(546) = 7.20$, $p < .001$, $d = 0.37$ (actual range [−4.00 to 5.00]; midpoint/chance [0]).

Resource Allocation. The goal of the resource allocation task was to determine whether children would differentially allocate resources to others according to the target's gender (modified from Benenson et al., 2007; Blake & Rand, 2010 to include multiple targets). Participants were instructed, "So, in this game I'm going to show you some pictures of kids. You will get to choose who to give erasers to by touching the kid [on the tablet screen] you want to give it to! I will keep track of who you want to give the eraser to so we can give it to them later." Participants were then presented with tangible, colorful erasers and shown photographs of two children on the tablet screen (side-by-side). Participants were asked to select the image of the child they would choose to give the eraser to ("Ok, see this kid? See this kid? Who do you want to give the eraser to?"). On each trial, the experimenter gave participants a new eraser to allocate and stated that it would be given to the selected target child later. The two pictures presented on each trial were matched on age, attractiveness, and affect as described in the stimuli section above. The entire task consisted of a total of 21 trials (including race/ethnicity trials). However, only three gender trials (three pairs of one boy and one girl) were examined for the current study, as race trials featured same-gender comparisons only. All gender pairs were matched to participant's race/ethnicity (e.g., Latiné participants would decide whether to give an eraser to a Latina girl or a Latino boy). A composite was calculated as the total number of trials in which the participant gave an eraser to the same-gender target, resulting in a score from 0 to 3. Participants were more likely than chance to give a resource to another child of their same gender, $M = 1.88$, $SD = 1.02$, $t(573) = 8.90$, $p < .001$, $d = .37$ (actual range [0.00–3.00]; midpoint/chance [1.50]).

Outcome: Children's Gender-Typed Behavior—Sticker Choice. At the end of the session, all children completed a sticker selection task. Here, children were given a choice of five stickers that were pilot tested to range from appearing *very masculine* (a green monster), *somewhat masculine* (a purple monster), *gender neutral* (a black-and-white cow), *somewhat feminine* (a gray elephant with pink heart ears and pink cheeks), and *very feminine* (a pink cat with a pink background) (see https://osf.io/492mx/?view_only=17dc25f77fcf4d3db60c754fb96c0bb6 for more information about pilot testing). The choice of sticker was recoded into a 1–5 scale such that 1 was selecting the most counterstereotypical sticker for a given participant's gender, and 5 was the most stereotypical for a participant's gender. Participants showed gender-typed behavior as they were more likely to choose gender-stereotypical stickers when compared to chance, $M = 3.84$, $SD = 1.52$, $t(591) = 13.47$, $p < .001$, $d = 0.55$ (range [1–5]; midpoint/chance [3.00]).

See Table 2 for correlations between measures.

Results

To investigate the role of parent socialization and self-socialization in predicting children's gender attitudes, we ran a series of hierarchical multiple regression analyses predicting children's gender intergroup attitudes (same-gender attitudes and other-gender attitudes), perceptions of status, intergroup behaviors (interpersonal distance, resource allocation), and gender-typed behavior (i.e., sticker choice). For each outcome, we entered variables in three steps. In Step 1, we entered demographic information (child's age, gender, and race). In Step 2, we added all parent socialization

Table 2
Zero-Order Correlations Between Measures

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Preparation for bias	—										
2. Egalitarianism	.50**	—									
3. Division of household labor	−.02	−.04	—								
4. Gender stereotypes about boys' play	.09*	.15**	−.03	—							
5. Gender stereotypes about girls' play	−.05	.05	−.01	.68**	—						
6. Self-socialization	.11**	.10*	−.05	.21**	.20**	—					
7. Same-gender attitudes	.06	.06	.00	−.05	−.01	−.03	—				
8. Other-gender attitudes	.04	.02	.00	.02	.07	−.13**	.42**	—			
9. Status	−.02	.03	.06	.01	.05	.05	−.08	−.03	—		
10. Interpersonal distance	.09*	.02	.05	−.02	−.04	.00	.09*	−.13**	.05	—	
11. Resource allocation	.10*	.05	−.01	−.00	−.07	.15**	.05	−.24**	.06	.11**	—
12. Sticker choice	.00	.07	.02	−.01	−.06	.11**	.03	−.17**	−.05	.08	.33**

* $p < .05$. ** $p < .01$.

variables (i.e., preparation for bias, egalitarianism, household gender inequality, and gender stereotypes about boys' and girls' play) along with self-socialization. Finally, in Step 3, we included two-way interactions between gender and the parent socialization and self-socialization variables. See Table 3 for an example. Before running any regressions, we also examined the parent socialization variables for collinearity and found that all variables met our preregistered independence criteria (with correlations less than $r = .80$). Below we focus on a subset of results relevant to our aforementioned hypotheses, and report standardized beta values from the maximal model (i.e., Step 3).

The online supplemental materials (https://osf.io/6pdnf/?view_only=630e4fdd7a7f4816b88ca63238ed5f56) are also available, which include a full reporting of preregistered analyses. This includes all regression summaries including an additional step (4) containing two-way interactions between race and the parent and self-socialization variables. This fourth step generally revealed few effects and is not presented or discussed here for parsimony. The online supplemental materials also include a breakdown of participant demographics by region, identical analyses with the addition of multiracial children, exploratory analyses examining differences in parent gender socialization by demographic factors (including both parent-level factors [household income, education level, political ideology] and zip-code-level factors [average median income, wealth inequality, percentage of women employed, percentage of college graduates]), and analyses examining the association of children's age with gender self-socialization.

Description of Outcome Measures

Children across gender, ethnic, and geographic regions demonstrated more positive attitudes toward same-gender children than toward other-gender children, showing ingroup favoritism, consistent with the literature (e.g., C. L. Martin & Ruble, 2010). Attitudes toward both same- and other-gender children were qualitatively positive (on average, happy faces were selected), but more positive toward same- versus other-gender children. In terms of perceptions of social status based on gender, girls were more likely to choose women as "in charge" over men, while boys were more likely to choose men as "in charge" over women. Children also chose to sit closer to same-gender targets than to other-gender targets and allocated more resources to same-gender targets than to other-gender targets, showing biases in favor of their own-gender group in their intergroup behaviors. No robust differences by ethnic group or geographic region in mean levels of gender intergroup attitudes or gender intergroup behaviors were found. On some (other-gender attitudes, resource allocation), but not all measures, girls showed more bias than boys, favoring girls over boys. Age was generally associated with stronger ingroup favoritism with older compared to younger children "sitting" closer and allocating more resources to same- versus other-gender children. For further details on these patterns for all measures, see Halim, Glazier, et al. (2023).

Parent Socialization Associations With Children's Gender Intergroup Attitudes, Status Perceptions, and Gender Intergroup Behaviors

We examined parent socialization through three measures: conversations about gender intergroup relations, division of household labor, and gendered messages about play. Regarding conversations about gender intergroup relations, we hypothesized that more frequent parental communication about gender equality would be linked with children showing more egalitarian gender intergroup attitudes, status perceptions, and gender intergroup behavior. This hypothesis was not supported for any of our outcome measures (same-gender attitudes, status perceptions, and gender intergroup behavior) (see Tables S2–S7 in the online supplemental materials for regression summaries).

Regarding the division of household labor, we hypothesized that in mother–father households in which mothers do more housework, children would hold more negative attitudes toward girls and have greater awareness of men's higher social status than women's. Although we found no evidence of an association between division of household labor and negative attitudes toward girls, we did find an interaction between division of household labor and child gender in predicting greater awareness of the gender status hierarchy ($\beta = -.379$, $p = .045$). Mothers doing more household labor than fathers was associated with the greater likelihood of boys (simple main effect: $\beta = .137$, $p = .031$) but not girls (simple main effect: $\beta = -.047$, $p = .476$) saying men were "in charge" over women (see Table 3; Figure 1).

We did not find any evidence supporting the hypothesis that parents' messages conveying gender stereotypes about play (e.g., boys'

Table 3
Regression Results of Self- and Parent Socialization Predicting Children's Perceptions of Gender Groups' Social Status

Predictor	Regression Step 1 standardized β	Regression Step 2 standardized β	Regression Step 3 standardized β
Gender (in comparison to boy)			
Girl	−.308**	−.310**	.167
Race/ethnicity (in comparison to White)			
Asian American	.031	.031	.008
Black American	−.009	−.032	−.057
Latiné American	.040	.036	.046
Age at test	.051	.053	.034
Self-socialization		.075	.250**
Parent socialization			
Preparation for bias		−.112*	−.097
Egalitarianism		.103	.082
Division of household labor		.062	.137*
Stereotypes about boys' play		−.009	−.062
Stereotypes about girls' play		.008	−.048
Socialization × Gender Interactions			
Gender × Self-Socialization			−.472**
Gender × Preparation for Bias			−.050
Gender × Egalitarianism			.048
Gender × Division of Household Labor			−.379*
Gender × Stereotypes About Boys' Play			.143
Gender × Stereotypes About Girls' Play			.166
R^2	.100	.118	.171
ΔR^2	—	.018	.053

* $p < .05$. ** $p < .001$.

rough-and-tumble styles and girls' fragility) predicted gender attitudes or behaviors toward other children.

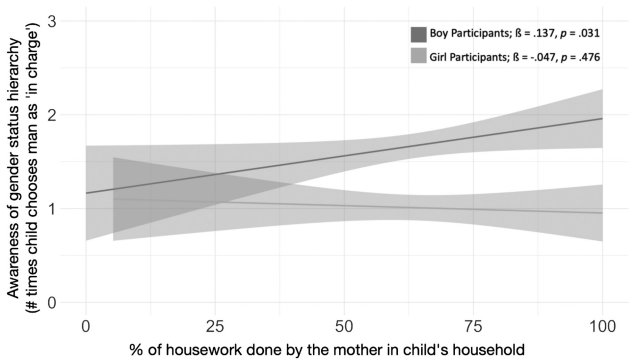
Variation in Parent Socialization Variables by Gender, Ethnicity, and Geographic Region

In order to determine if there were differences in parent socialization by gender or ethnicity, we conducted a series of two-way analyses of variance (ANOVAs) predicting each of the parent socialization outcomes (i.e., preparation for bias, egalitarianism, division of household labor, and gender stereotypes about boys' and girls' play) from child gender and ethnicity (see Table 4 for means and standard deviations by gender and ethnic group).[1] For variation by child gender, we explored whether parent socialization of attitudes toward other gender groups would be more negative for girls than for boys (although not preregistered, we later made this tentative hypothesis).

In terms of variation by gender, we found differences in parent socialization outcomes in terms of preparation for bias, $F(1, 474) = 5.79$, $p = .017$; egalitarianism, $F(1, 474) = 4.07$, $p = .044$; and gender stereotypes about girls' and boys' play, $F(1, 474) = 25.50$, $p < .0001$ and $F(1, 474) = 4.00$, $p = .046$, respectively. Adjusted post hoc comparisons revealed that girls indeed received more frequent preparation for gender bias but also more frequent explicit messages about egalitarianism in comparison to boys (adjusted $ps = .04$ and .02, respectively). In addition, we found that in comparison to boys, girls received less gender stereotyping about girls' play (adjusted $p < .0001$) but no post hoc difference in stereotypes about boys' play (adjusted $p = .19$).

Although we had no explicit predictions for ethnic variation in parent socialization, we also found a difference in parent socialization by child ethnicity specifically in egalitarianism, $F(3, 474) = 3.57$, $p = .014$, and stereotypes about girls' play, $F(3, 474) = 15.10$, $p < .0001$. Adjusted post hoc comparisons revealed that in the domain of egalitarianism, Latiné American parents conveyed messages about egalitarianism more frequently than did Asian

Figure 1
Predicted Values of Children's Perceptions of Gender Groups' Social Status (Number of Trials Selecting a Man as "in Charge" Over a Woman) by the Percentage of Household Labor Done by the Mother Versus Father in Two-Parent Heterosexual Households



Note. Data are truncated to match the actual range of data for division of household labor. Darker top line reflects predicted values for boy participants; lighter bottom line reflects predicted values for girl participants.

[1] This is a deviation from our preregistered analysis plan where we planned to run a 2 (gender) × 4 (race/ethnicity) MANOVA with preparation for bias, egalitarianism, division of household labor, and gender stereotypes about boys' and girls' play as the outcomes. However, we learned that conducting two-way ANOVAs instead was a more appropriate method (we have included results of our original MANOVA in the online supplemental materials).

Table 4
Mean (and SDs) of Parent Socialization Variables by Child Gender and Race/Ethnicity

Gender	Race/ethnicity	Egalitarianism	Preparation for bias	Division of household labor	Stereotypes about boys' play	Stereotypes about girls' play
Boy	(All)	3.54 (1.09)	2.58 (1.06)	65.07 (16.09)	1.82 (1.20)	2.20 (1.40)
Boy	White American	3.59 (1.06)	2.61 (1.01)	66.80 (15.51)	1.68 (1.19)	1.72 (1.13)
Boy	Asian American	3.14 (1.20)	2.46 (0.84)	62.62 (17.13)	1.59 (0.83)	2.04 (1.12)
Boy	Black American	3.32 (1.09)	2.13 (1.13)	62.24 (18.01)	2.18 (1.32)	3.42 (1.43)
Boy	Latiné American	3.80 (0.99)	2.85 (1.14)	64.63 (15.49)	1.98 (1.20)	2.39 (1.48)
Girl	(All)	3.74 (1.01)	2.76 (1.09)	65.15 (17.24)	1.70 (1.09)	1.66 (1.10)
Girl	White American	3.75 (0.97)	2.83 (1.07)	64.82 (17.98)	1.32 (0.64)	1.34 (0.73)
Girl	Asian American	3.61 (1.11)	2.83 (0.98)	63.72 (15.59)	1.91 (1.13)	1.79 (1.17)
Girl	Black American	3.68 (1.00)	2.30 (1.04)	72.15 (18.61)	2.36 (1.46)	2.36 (1.41)
Girl	Latiné American	3.84 (1.05)	2.83 (1.19)	64.93 (16.21)	1.97 (1.30)	1.84 (1.26)
(all)	White American	3.67 (1.02)	2.72 (1.05)	65.85 (16.74)	1.51 (0.97)	1.53 (0.97)
(all)	Asian American	3.37 (1.18)	2.64 (0.93)	63.16 (16.31)	1.75 (1.00)	1.92 (1.14)
(all)	Black American	3.48 (1.06)	2.21 (1.09)	65.40 (18.60)	2.26 (1.38)	2.96 (1.51)
(all)	Latiné American	3.82 (1.01)	2.84 (1.16)	64.75 (15.72)	1.97 (1.28)	2.16 (1.41)

American parents ($p = .016$) but no other significant group differences emerged. In terms of stereotypes about girls' play, we found that White American parents reported conveying fewer stereotypes in comparison to parents from all of the other ethnic groups (vs. Asian American, $p = .021$; vs. Black American and Latiné American, $ps < .0001$). Additionally, we found that Asian American and Latiné American parents conveyed stereotypes about girls' play less frequently than did Black American parents ($ps < .001$).

We took an exploratory approach in testing for regional differences without any explicit hypotheses because of limited past research. We initially preregistered a one-way multivariate analysis of variance (MANOVA) with all ethnic groups analyzed together. However, due to a combination of confounds between region and ethnicity in our planned research design[2] along with learning that ANOVAs were more appropriate to conduct than MANOVAs, we opted to instead separate the data by ethnicity and conducted a series of one-way ANOVAs on preparation for bias, egalitarianism, division of household labor, stereotyping about boys' play, and stereotyping about girls' play. We found few regional differences with one exception. Black American children in Connecticut were more frequently exposed to gender stereotypes about girls' play ($p = .041$) and lived in homes with more inequality of household labor ($p = .013$) in comparison to Black American children in North Carolina. Upon closer examination, the Black American sample in North Carolina had higher levels of household income ($p = .042$) and education ($p = .033$) than the Black American sample in Connecticut, which partially accounted for differences in exposure to gender stereotypes about girls' play (higher socioeconomic status (SES) associated with less exposure). However, these socioeconomic differences did not explain differences in the division of household labor (see Tables 5 and 6).

Self-Socialization Associations With Gender Intergroup Attitudes, Gender Social Status Perceptions, and Gender-Typed Behavior

Based on cognitive theories of gender development, we hypothesized that greater self-socialization would be positively linked to more biased gender intergroup attitudes, greater awareness of the social status of gender groups, and greater gender-typed behavior in line with motivational changes to learn and adhere to rigid gender norms as young children form their gender identities. The data generally supported these hypotheses (see Table 3; Tables S2–S7 in the online supplemental materials). Regression results showed that higher levels of self-socialization were associated with more biased gender intergroup attitudes as evidenced by a greater likelihood of allocating resources to children of the same gender ($\beta = .182$, $p = .006$) and less positive other-gender attitudes ($\beta = -.190$, $p = .005$). Self-socialization was also associated with perceptions of the gender status hierarchy. Greater self-socialization was linked with an increased likelihood of boys (simple main effect: $\beta = .250$, $p < .001$) saying that a man is "in charge" over a woman and linked with an increased likelihood of girls saying that a woman is "in charge" over a man ($\beta = -.140$, $p < .046$, interaction: $\beta = -.472$, $p < .001$; see Figure 2). Additionally, higher levels of self-socialization were associated with a greater likelihood in engaging in gender-typed behavior (i.e., choosing a gender-stereotypical sticker; $\beta = .158$, $p = .005$).

Discussion

In this study, we tested whether parent socialization and self-socialization are linked with children's early gender attitudes, status perceptions, and gender intergroup behaviors. Prior research has established strong gender bias among young children (C. L. Martin & Ruble, 2010), but much less research has sought to understand how these attitudes develop and what determines individual differences.

Self-Socialization and Gender Attitudes

Overall, we found that both self-socialization and parent socialization were linked to some components of children's gender attitudes, although self-socialization showed stronger and more links than

[2] Specifically, because most ethnic groups were only tested in two of the five locations, ethnic group and location were confounded and results of the initially proposed results were driven by ethnic group differences and were thus misleading and not reported here; see online supplemental materials; https://osf.io/6pdnf/?view_only=630e4fdd7a7f4816b88ca63238ed5f56). We conducted an ANOVA among White children across the five regional areas; among Black children across Connecticut and North Carolina, among Asian-American children across Washington and Hawaii, and among Latiné American children across Washington and California.

Table 5
Means (and SDs) of Parent Socialization Variables for Children by Region and Race/Ethnicity

Region	Child race/ethnicity	Egalitarianism	Preparation for bias	Division of household labor	Stereotypes about boys' play	Stereotypes about girls' play
CA	White American	4.02 (0.82)	2.93 (1.18)	64.47 (16.24)	1.55 (0.86)	1.68 (1.09)
CT	White American	3.67 (1.12)	2.65 (1.12)	68.48 (16.48)	1.42 (0.79)	1.68 (1.06)
HI	White American	3.63 (1.09)	2.89 (1.09)	64.50 (14.41)	1.59 (1.22)	1.77 (1.27)
NC	White American	3.55 (1.05)	2.57 (0.91)	66.58 (18.25)	1.35 (0.85)	1.38 (0.83)
WA	White American	3.69 (0.93)	2.85 (1.05)	64.21 (16.51)	1.63 (1.10)	1.42 (0.85)
HI	Asian American	3.39 (1.22)	2.74 (0.95)	63.51 (16.24)	1.62 (0.89)	1.89 (1.13)
WA	Asian American	3.35 (1.18)	2.56 (0.93)	63.17 (16.61)	1.83 (1.06)	1.98 (1.16)
CT	Black American	3.61 (1.17)	2.10 (1.11)	**76.32 (20.21)**	2.47 (1.50)	**3.36 (1.36)**
NC	Black American	3.38 (0.99)	2.28 (1.08)	**61.26 (16.65)**	2.12 (1.29)	**2.69 (1.57)**
CA	Latiné American	3.97 (0.99)	2.64 (1.20)	59.17 (18.20)	2.24 (1.49)	2.44 (1.54)
WA	Latiné American	3.71 (1.00)	3.01 (1.07)	66.06 (14.23)	1.81 (1.12)	2.04 (1.35)

Note. Children in regions who did not belong to the target racial/ethnic group (e.g., an Asian American child in California, as California targeted Latiné American and White American children) were not included in these analyses. Values in bold represent descriptive statistics for significant differences in parent socialization between location within race. CA = California; CT = Connecticut; HI = Hawaii; NC = North Carolina; WA = Washington.

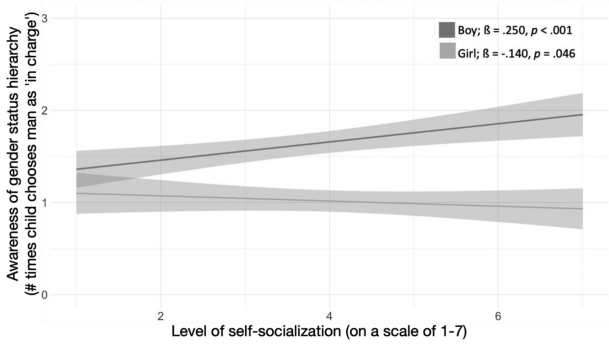
parent socialization. We speculate that during early childhood, children are engaged in so much learning about gender as they first form a gender identity (C. L. Martin & Ruble, 2004) that self-socialization processes take center stage. As hypothesized, greater self-socialization was associated with greater intergroup bias (less positive evaluations of other-gender children, allocation of more resources to same-gender children) and with increased gender-typed behavior. As expected, we also found that both girls and boys who were especially attentive to and interested in gender were more likely to say that adult members of their gender group were more likely to be "in charge" compared to their counterparts who were less attentive to and interested in gender. These patterns likely reflect ingroup preference. Unexpectedly, self-socialization was not significantly associated with evaluations of same-gender children or with interpersonal distance to same- and other-gender children. Children showed less variability in their evaluations of same-gender children than other-gender children. We speculate, then, that perhaps links between self-socialization and gender attitudes might be more apparent in connection with other-gender attitudes than with same-gender attitudes as there was less variance in same-gender attitudes (as was the case in our data), with most children feeling very positive toward their own gender. Indeed, a few studies have also found that other-gender attitudes showed more or stronger links to various predictors and outcomes than did same-gender attitudes (Halim et al., 2017; Halim, Glazier, et al., 2023).

Table 6
One-Way Analyses of Variance Results Comparing Parent Socialization Measures for Each Racial/Ethnic Group by Region

Measure	*df*	95% CI	*F*	*p*
Asian American children ($n = 93$)				
Egalitarianism	(2, 88)	[.000, .025]	0.15	.86
Preparation for bias	(2, 87)	[.000, .057]	0.50	.61
Division of household labor	(1, 77)	[.000, .010]	0.01	.93
Stereotypes about boys' play	(2, 87)	[.000, .094]	1.25	.29
Stereotypes about girls' play	(2, 85)	[.000, .021]	0.40	.67
Black American children ($n = 91$)				
Egalitarianism	(1, 85)	[.000, .075]	0.97	.33
Preparation for bias	(1, 84)	[.000, .064]	0.58	.45
Division of household labor	(1, 44)	[.017, .295]	6.76	.01*
Stereotypes about boys' play	(1, 86)	[.000, .086]	1.42	.24
Stereotypes about girls' play	(1, 86)	[.001, .140]	4.32	.04*
Latiné American children ($n = 150$)				
Egalitarianism	(4, 135)	[.000, .045]	0.67	.61
Preparation for bias	(4, 135)	[.000, .087]	1.49	.21
Division of household labor	(4, 106)	[.000, .154]	2.14	.08
Stereotypes about boys' play	(4, 135)	[.000, .092]	1.61	.18
Stereotypes about girls' play	(4, 135)	[.000, .059]	0.91	.46
White American children ($n = 285$)				
Egalitarianism	(4, 274)	[.000, .031]	0.96	.43
Preparation for bias	(4, 275)	[.000, .038]	1.21	.31
Division of household labor	(4, 237)	[.000, .023]	0.62	.65
Stereotypes about boys' play	(4, 276)	[.000, .033]	1.04	.38
Stereotypes about girls' play	(4, 276)	[.000, .050]	1.73	.14

Note. In accordance with our sampling strategy, Asian American children in Hawaii were compared to Asian American children in Washington; Black American children in Connecticut were compared to Black American children in North Carolina; Latiné American children in California were compared to Latiné children in Washington; White American children were compared across all five regions—California, Connecticut, Hawaii, North Carolina, and Washington. CI = confidence interval.
* $p < .05$.

Figure 2
Predicted Values of Children's Perceptions of Gender Groups' Social Status (Number of Trials Selecting a Man as "in Charge" Over a Woman) by Children's Level of Self-Socialization



Note. Darker top line reflects predicted values for boy participants; lighter bottom line reflects predicted values for girl participants.

Thus, the findings of our paper provide some evidence in support of self-socialization theories, which highlight the role of cognition and children's active agency on the world that surrounds them (C. L. Martin et al., 2002). Self-socialization theories predict that forming a gender identity and paying attention to the meanings we ascribe to gender categories (i.e., the pink/blue divide) occurs in concert with motivational consequences (C. L. Martin et al., 2002). These theories propose that we feel good about ourselves and our gender identity when we highly esteem the gender group to which we belong and by figuring out who we are not, distinguishing and distancing ourselves from an "other" (Bigler & Liben, 2007; Tajfel & Turner, 1986). Our work suggests that when gender attitudes first form they may reflect a constellation of learning about gender in the pursuit of developing a gender identity.

Parents as Instructors of Gender Attitudes

In contrast to our predictions, we found that parents' reports of how they talk to their children about intergroup gender relations showed few connections with children's gender attitudes, status perceptions, or gender intergroup behaviors. Of note, means were low for the preparation for bias scale (M of the two-item scale = 2.66 on a scale from 1 to 5), with parents reporting that they prepared their children for gender bias between "rarely" to "sometimes." Likely, conversations preparing children for gender bias may become more common at older ages when parents might perceive greater readiness to understand bias. It is possible that connections might be found at later developmental periods. Parents reported encouraging egalitarianism between "sometimes" to "often," suggesting this type of communication was more relevant to 4- to 6-year-olds, yet connections were not found with any outcome. Next, we hypothesized that parent communication that boys are physically aggressive and girls are fragile would be linked to more negative other-gender attitudes among children, but we did not find support for this hypothesis. It could be that children's direct experience with potentially clashing gendered play styles, rather than parents' talk about those play styles, might be more influential in shaping gender attitudes. Synthesizing these findings together, overall, our study suggests that parent talk about gender generally showed few connections to children's gender intergroup attitudes, status perceptions, and gender intergroup behaviors. It could be that gender socialization conveyed through verbal means is "falling on deaf ears," as has sometimes been found in past research on parent racial socialization (Hughes, Bachman, et al., 2006; Hughes, Rodriguez, et al., 2006).

Parents as Models of Gender Attitudes

Beyond serving as instructors, we tested whether parents might also serve as models of gender attitudes. We asked parents to report on the division of household labor, which might convey information about the status hierarchy of women and men and how much women and men are valued. Interestingly, although no gender interaction was predicted, data revealed that boys seemed to show more sensitivity to this information than girls. Boys in households where mothers did more housework than fathers were more likely to say that men were in charge over women. This finding may be surprising to some given how young our sample was. However, housework is a tangible concrete activity that children see every day since they are young—there is usually a constant cycle of parent chores revolving around meals, laundry, and cleaning. Parents might express disliking chores through verbal and nonverbal means (i.e., sighing). Thus, it is possible that boys might pick up on a negative connotation with household labor. Alternatively, perhaps the division of household labor is a telling snapshot that taps into parents' overall gender attitudes or is part of a constellation of family characteristics that boys observe (e.g., equity in decision-making, mothers being breadwinners). We did not find similar associations among girls, which was surprising given that girls tend to do more chores than boys, even at very young ages (Huston et al., 1999). Of note, while statistically significant, this gender by division or household labor interaction showed a small effect size; thus, more research needs to be conducted to understand and replicate these gender differences. Nevertheless, our study makes a contribution in understanding how the division of household labor might be one source of information boys from diverse ethnic backgrounds are sensitive to in learning about gender hierarchies in social status. As mentioned earlier, most previous studies have only studied the influence of parental division of household labor on White American adolescents or emerging adults.

Variation in Parent Socialization by Gender, Ethnicity, and U.S. Region

Our second aim was to examine whether parent socialization of gender attitudes varied by child gender, ethnicity, and U.S. region. We explored whether parent socialization of attitudes toward other gender groups might be more negative for girls than for boys (more frequent preparation for bias and stereotypical messages about boys' play, less frequent egalitarian messages). We had no explicit predictions for variation by ethnicity or U.S. region.

Gender Variation

We found gender differences for three of the five parent socialization outcome measures. We initially expected that because girls often show more negativity toward boys than vice versa (Halim, Glazier, et al., 2023), we might see a corresponding influence with parents encouraging egalitarianism less frequently with girls than with boys. Instead, we found the opposite pattern—parents of girls reported more frequently encouraging egalitarianism than did parents of boys. As we only tested correlational patterns, it could be that parents are responding to girls' greater negativity by promoting messages of egalitarianism. In addition, in past studies of racial socialization, including in this study's sample (Albuja et al., 2023), parents of girls have also promoted more racial egalitarianism among girls than boys—encouraging them to make friends with children from different racial backgrounds and telling them to appreciate people of all racial/ethnic groups. Parents, then, seem to be encouraging more egalitarian attitudes among girls, which is consistent with prescriptive gender stereotypes that girls should be prosocial or "nice and sweet" (Ruble et al., 2006). Along with promoting egalitarianism, although infrequent overall, parents of girls reported more frequently preparing them for gender bias than did parents of boys in line with our predictions. For preparation for bias, because girls and women have long struggled for equal rights and protections, parents might feel the need to talk more about gender equality and possible discrimination with their daughters. Also, most parents were mothers in our sample (86.8%), so mothers may be more likely

to talk to daughters than to sons about instances of gender discrimination. It would be interesting for future work to learn whether fathers talk more to sons than daughters about gender intergroup relations and also to explore and describe these conversations. Interestingly our finding here parallels findings in the racial/ethnic socialization literature, where parents tend to prepare adolescents from lower status racial/ethnic groups for bias more than do parents from higher status racial/ethnic groups (Whites) (Hughes, Rodriguez, et al., 2006). In the same way that there have been calls to teach antiracism to both majority and minority racial groups to reduce prejudice, perhaps parents should also teach "antisexism" to not only girls, but boys also.

Finally, parents of boys more frequently told their children to be gentle when playing with girls than did parents of girls. Parents of boys might feel like this is more necessary given that boys tend to engage in more rough-and-tumble play than girls (Hines, 2015). While it is good to teach all children to be gentle at appropriate times with all children, perhaps with repetition focusing on girls' fragility may unintentionally lead children to believe that girls are weak (Gutierrez et al., 2020), contributing to the development of harmful benevolent sexist attitudes (Hammond & Cimpian, 2021).

Ethnic Variation

Taking an exploratory approach, we found ethnic group differences for four of the five parent socialization variables. Latiné American parents seemed to generally talk about gender more than the other groups across several measures—they encouraged gender egalitarianism more than Asian American parents, prepared children for gender bias more than Black American parents, and conveyed stereotypes about girls' and boys' play (being gentle and taking caution) more than White American parents. More frequent talk about gender among Latiné families may reflect a greater salience of gender and gender roles in Latiné cultures overall, seen through gendered language and heightened gender-typed appearances among children (Arciniega et al., 2008; Halim et al., 2013). Interestingly, Latiné American parents seem to be taking a more dialectical approach—compared to other ethnic groups both endorsing gender stereotypes to a greater degree and preparing children for gender bias (in a world where gender is thought to play a strong role), but also encouraging their children to make friends of all genders and emphasizing equality among genders. This greater gender egalitarianism might also, in part, reflect the cultural value of *simpatía*, a general encouragement to promote warm and positive social interactions and avoid conflict (Acevedo et al., 2020).

Black American parents reported conveying stereotypes about girls' play more than White American parents. As access to education is correlated with race in American society and in our sample (Black American parents reported lower levels of education than White American parents; $p < .001$), one possibility was that this effect was due to education. However, even when we adjusted for parental education levels in follow-up exploratory analyses these differences remained. Interestingly, in contrast, White American parents reported preparing their children for gender bias more than Black American parents. Consistent with this difference, past work has found that White American children and adolescents seemed especially aware of gender bias (vs. racial bias) compared to Black American and Latiné American children (Brown et al., 2011). Furthermore, among White American children, adolescents, and emerging adults, gender identity tends to be more central to the self-concept than race/ethnicity (Turner & Brown, 2007; Wilson & Leaper, 2016). Thus, perhaps White parents are more willing to talk about gender bias as gender might be more salient and central in their lives than other forms of bias. Although we found interesting patterns by race/ethnicity, much more future work needs to be conducted to replicate these findings. We consider these findings as a stepping-off point for future investigations.

Regional and Demographic Variation

Finally, we explored U.S. regional differences in parent socialization of gender attitudes to tap into the cultural macrosystem surrounding parents and children (Bronfenbrenner, 1979). However, we found few regional differences when we adjusted for ethnic group composition of each region. Although the regions we sampled from varied on indices of gender equality, it could be that we ended up sampling families who were more similar than different, such as those in university communities. For example, political ideology was left-leaning ($M = 2.92$ and $SD = 1.49$) on a scale from 1 (*very liberal*) to 7 (*very conservative*), and parents were generally highly educated across all regions (with 78.8% of primary caregivers having a 4-year college degree or higher). Regional differences in parent socialization of gender attitudes might emerge given a more diverse sample by SES and political ideology or, in future studies, given more extreme differences in gender equality.

As samples looked somewhat similar across regions, we explored whether individual parent-level demographic factors, namely, parent political ideology, household income, and parental education, were associated with any measures of parent gender socialization.[3] We found that parents who were more politically liberal tended to prepare their children for gender bias and encourage gender egalitarianism more frequently compared to parents who were more politically conservative. Parents who were more politically liberal also conveyed fewer gender-stereotypical messages about girls' play. Consistent with trends in past literature where higher SES is associated with more gender-egalitarian attitudes (Crompon & Lyonette, 2005; Leaper & Valin, 1996; Raffaelli & Ontai, 2004), higher levels of parental education and household income were also associated with less frequent communication of gendered messages about play (see the online supplemental materials, pp. 17–20; we note, however, that results for education should be interpreted with caution as the number of parents with a high school education or less was relatively small).

In addition to parent-level factors, we also used the U.S. Census Bureau 2014–2018 American Community Survey to conduct a set of exploratory analyses examining whether zip code-level factors (median income, GINI index [wealth inequality], percentage of women who are unemployed, and/or percentage of college graduates) were associated with parent gender socialization of young children.[4] Most of these zip code-level factors were not associated with parent gender socialization with one exception. We found that in zip codes where a greater percentage of women were employed, parents tended to convey stereotypes about girls' play less frequently (see the online supplemental materials, pp. 21–22). We believe these

[3] Note that these analyses were not preregistered as they were added at the suggestion of an anonymous reviewer.

[4] See Footnote 3.

exploratory findings together suggest that parent gender socialization content and processes might indeed vary by regions if more diverse regions were able to be sampled (e.g., those that vary widely by political ideology). These results also highlight the need for future work to more directly measure how individual demographic and neighborhood contexts (e.g., availability of childcare) may differentially influence parental gender socialization approaches.

Limitations and Future Directions

Our study possessed several strengths. This study is the first, to the best of our knowledge, to describe parents' communications about intergroup relations between gender groups to young children, as prior studies have primarily focused on adolescent samples (Ayres & Leaper, 2013; Leaper & Brown, 2018) or on relations between racial groups (e.g., Hughes et al., 2017). We also used multiple outcome measures to test children's gender intergroup attitudes, status perceptions, and gender intergroup behaviors. Finally, we sampled a large and diverse population that came from different regions of the U.S. Conducting identical protocols in each of five laboratories lends weight to the generalizability and replicability of our conclusions.

Although the current study possessed these strengths, there are a few limitations to note. Owing to the nature of the larger study, which included multiple measures, we had to keep measures brief, including the questions we used to assess parent socialization of gender egalitarianism and preparation for gender bias. To the best of our knowledge, our study was the first to ask these questions and to do so, we looked to the racial/socialization literature and adapted well-established measures. However, because this is a new area of inquiry, future research should conduct a qualitative study to better explore what kind of things parents talk to their children about in the context of shaping gender attitudes. Perhaps other dimensions that we did not test might emerge (e.g., vigilance of sexual predators or misconduct) that may pinpoint important individual differences related to gender attitude development. In the same vein, we relied on parents' self-awareness and honesty in answering questions. While parent report is valuable and showed meaningful patterns by gender and ethnicity in our study, future work could triangulate data by also including structured or naturalistic observations of parent–child conversations.

The self-socialization measure makes a contribution to the field as a brief measure that can be assessed with parent self-report. Indeed, it is a strength that the self-socialization measure directly asked about children's information seeking and attention, mechanisms that are central to cognitive theories of gender development (C. L. Martin et al., 2002). Moreover, the measure showed good predictive validity by correlating with theorized outcomes, such as more biased gender attitudes and greater gender-typed behavior. However, future work could supplement this parent-report measure with other more traditional measures of self-socialization, such as gender constancy and gender stereotype knowledge. We also acknowledge that parents' biases could have contributed to these self-socialization scores. Another limitation was that the resource allocation measure did not give children a 50–50 fair option or a neutral option. We chose to assess gender intergroup behavior in this way because past studies have used similar measures (e.g., Dunham et al., 2011; Halim et al., 2017; Hamlin et al., 2011). However, we suggest that future work investigate how the results do or do not differ when more neutral options are explicitly included.

In addition to the aforementioned future directions, as our predictors accounted for a significant amount but not all of the variance in children's gender attitudes (6.9%–22.5%), it is important to continue to seek out what other factors influence gender attitudes in early childhood. Beyond self-socialization and parent socialization, children's own direct positive or negative experiences with children from different gender groups would be a likely candidate, such as encounters with exclusion or aggression (Rutland & Killen, 2015), or on the other end of the spectrum, with inclusion, sharing, and kindnesses (Andrews et al., 2016). Media could also play a role, especially in shaping perceptions of the status of gender groups, as children's media continues to portray gender stereotypical roles and attributes (Filipović, 2018; R. Martin, 2017). Peers must also continue to be examined, especially friendships with different-gender children.

Finally, we used a correlational design. Thus, we cannot make any claims as to the direction of effects. Although our focus has been on what shapes children's gender attitudes, it is possible that effects could go in the reverse direction or be bidirectional. For example, a child saying something like, "Boys do not listen. I do not like boys" (reflecting negative attitudes) might prompt a parent to more frequently talk to their child about making friends with and appreciating all gender groups. Future use of longitudinal designs could elucidate the direction of effects and also shed light on how parent socialization might affect changes in gender attitudes over time.

Conclusion

In sum, our study suggests that the formation of children's early gender intergroup attitudes, perceptions, and behaviors is multiply determined. Both parent and self-socialization processes are at play, although self-socialization seemed to play a larger role, especially in comparison to parent talk about gender intergroup relations. In early childhood, cognitive and self-socialization factors might be particularly influential, as this developmental period involves the emergence of understanding gender as a social category, knowledge of gender stereotypes, and the formation of a gender identity (C. L. Martin et al., 2002). However, parents' roles should not be entirely ruled out, as more connections to gender attitudes was found, particularly among boys, with parents' modeled behavior of gender equality (through the division of household labor). Furthermore, perhaps during middle childhood and adolescence, peer and parent socialization may take a larger role, especially as youth begin to engage in more different-gender interactions and make forays into dating and romance. As early gender intergroup attitudes, perceptions, and behaviors might have later implications for relationships and self-evaluations, we must continue to seek to understand what contributes to their formation.

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(*Appendix follows*)

Appendix

Example of Interpersonal Distance Stimuli

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