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Children's evaluation and categorization of transgender children

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Abstract

Despite extant evidence of negative peer treatment of transgender adolescents and adults, little is known about how young children perceive transgender peers, particularly those who have socially-transitioned, or are living in line with their gender, rather than sex at birth. Whereas children have been shown to be averse to gender nonconformity in peers, because many transgender children appear and behave in ways consistent with their expressed gender (but not their sex at birth), it is unclear how children evaluate these identities. In two studies, we investigated 5- to 10-year-old children's (N_{total}=113) preferences for transgender vs. gender-"typical" peers who either shared their gender identity or did not. We also examined whether children categorize transgender peers by their sex or expressed gender, as this might inform their evaluations. Children preferred cisgender peers over transgender peers; however, they also liked peers of their own gender rather than the other gender (e.g., female participants preferred girls over boys), demonstrating that the oft-documented own-gender bias plays an important role even when children are reasoning about transgender peers. Children did not reliably categorize transgender peers by sex or gender; yet, those who categorized transgender peers by their sex showed greater dislike of transgender peers. The current studies are the first to investigate cisgender children's attitudes toward transgender children, and suggest that perceptions of gender categorization and conformity play a role in children's evaluations of transgender peers.

Keywords

social cognitive development; social categorization; gender categories; transgender children; gender bias

Children's evaluation and categorization of transgender peers

In 2013, 6-year-old Coy Mathis became known nationwide, when a Colorado court ruled that she could use the girls' bathroom at school (Payne, 2013). Coy is a natal boy who, since the age of 18 months, has identified as a girl, expressing her gender role through wearing her sisters' dresses, playing with dolls more than trucks, and preferring to play with female

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rather than male playmates. By the time she was in preschool, Coy began to clearly state that she was a girl, and displayed signs of distress when she was not allowed to wear girl-typed clothes. An increasing number of young transgender children like Coy (i.e., children identifying as the gender opposite their sex assigned at birth) are supported by their parents through a *social transition* (Steensma & Cohen-Kettenis, 2011). Social transitions involve switching pronouns (e.g., from "she" to "he"), and are typically accompanied by changes in appearance (e.g., cutting hair) and names (e.g., from Joan to Jon). Socially-transitioned, pre-pubescent children like Coy are increasingly visible (Steinmetz, 2014; Vine & Cupples, 2016), yet we know little about how they are viewed by their peers.

Survey data from transgender adolescents and adults reporting on their treatment by their peers when they were younger, suggest that most of them experienced maltreatment in the form of verbal, physical or sexual harassment in school (James et al., 2016; Kosciw et al., 2012; Perez-Brumer et al., in press). However, those individuals were unlikely to have socially-transitioned when they were young (because childhood social transitions are a relatively recent phenomenon), and were therefore likely showing gender nonconformity during childhood. In contrast, once transitioned, transgender children often appear quite gender conforming—that is, children like Coy look and behave according to stereotypes of girls (Olson et al, 2015; Fast & Olson, in press). Therefore, in terms of demonstrated behaviors, socially-transitioned girls appear much like gender "typical" girls, and socially-transitioned transgender boys behave much like gender "typical" boys. From the perspective of an observer, the only major difference between cisgender and socially transitioned transgender children is knowledge of their sex at birth. Since childhood transitions are a recent phenomenon (Pyne, 2014), to our knowledge, there have been no empirical studies investigating peer evaluations of socially-transitioned children. The current studies examined cisgender children's (i.e., children whose gender identity align with their sex at birth) evaluations and categorization of transgender peers.

Children's evaluations of transgender peers

The current studies are the first to examine children's perceptions of transgender peers. Although there has been research on children's evaluations of gender nonconformity in peers, the targets presented to children in these studies were not transgender (i.e., they had not socially transitioned to identify as a gender different from the one aligned with their sex at birth). Nevertheless, past literature on children's beliefs about gender and gender nonconformity can be useful in helping us predict several possible patterns of children's responses to *transgender* peers.

Patterns predicted by children's gender-based preferences.—Young children show strong preferences for same-gender peers over other-gender peers by around age 3 (LaFreniere et al., 1984; Maccoby, 1988; Martin, 1989; Poulin & Pedersen, 2007; Serbin & Sprafkin, 1986; Strough & Covatto, 2002). Past work has almost exclusively demonstrated these effects with cisgender exemplars; therefore, it is unclear how children's preferences for the same gender might play a role in their evaluations of transgender peers.

One possibility is that children's same-gender peer preferences stem from a preference for peers who share their gender identity and show behaviors that are similar to their own. If this is the case, we might expect that children will prefer to play with peers who are of their own gender, regardless of whether they are cisgender or transgender. For example, a cisgender girl might equally like cisgender and transgender girls (i.e., natal males) insofar as they show girl-typed behaviors and preferences, more so than they like cisgender or transgender boys (i.e., natal females) who prefer boy-typed behaviors and preferences.

Alternatively, children might care most about what they perceive to be peers' "innate" categorizations, believing that sex at birth is the key determinant of one's social group membership. In this case, they might show stronger preferences for children who share their sex at birth, regardless of whether peers are cisgender or transgender. For example, a cisgender girl might equally like cisgender girls and transgender boys (i.e., natal females), and more so than they like cisgender boys and transgender girls (i.e., natal males).

A third possibility is that children care about both a sex match and a gender identity match. If so, we would expect children to show stronger preferences for cisgender children who match their gender, and these targets could be preferred to all others who might be perceived as different on key dimensions. For example, a cisgender girl might like cisgender girls best and treat transgender girls, transgender boys, and cisgender boys equally.

Patterns predicted by children's preferences for gender conformity.—Previous research has also documented young children's preferences for gender conformity. As young as 3 years old, children view peers who behave in gender-stereotypic ways more favorably over those who behave in ways that defy stereotypes of their gender (Braun & Davidson, 2017; Carter & McCloskey, 1984; Maccoby 1990; Martin, 1989; Shrum et al. 1988; Underwood, 2007). Although these studies did not examine children's perceptions of transgender peers, but simply peers who did not behave in ways stereotypical of their gender, the findings might suggest that, as described above, children might care most about whether peers are gender conforming (i.e., whether they behave in ways that are expected of their sex/gender). If this is the case, children might favor both same and other gender cisgender peers to same and other gender transgender peers.

However, another interpretation of past work showing a dislike for gender nonconformity is that children generally dislike peers whose stated gender and gender behaviors are not aligned. That is, in past work, children have often heard about boys who behave according to female stereotypes (e.g., Braun & Davidson, 2017; Carter & McCloskey, 1984; Maccoby 1990; Martin, 1989; Shrum et al. 1988; Underwood, 2007). Perhaps the strong dislike exhibited for these targets is driven by children seeing a mismatch between the child's category and behavior. In the case of transgender children who have socially-transitioned, their current category membership and behavior align. That is, Coy is living as a girl and behaving stereotypically as a girl. Therefore, perhaps transgender children will not be disliked compared to cisgender peers as much as gender nonconforming children in past work have been disliked compared to their gender conforming peers. Under this view, children may like transgender children as much as cisgender children as all of these children's gender categories align with their behaviors.

One further finding from past literature on evaluations of gender nonconforming peers is that children are more accepting of gender norm transgressions perpetrated by girls than by boys (Blakemore, 2003; Levy et al., 1995). This finding is in line with research showing that gender nonconforming boys experience greater struggles in their relationships with peers, compared to gender nonconforming girls (D'Augelli et al., 2006; Kosciw et al., 2008; Toomey et al., 2010). Therefore, an open question is whether there might be asymmetries in the acceptance or rejection of transgender girls versus boys.

Children's categorization of transgender peers

Transgender people are often misgendered. That is, they are frequently miscategorized by medical professionals, legal institutions, and others as members of the gender category that aligns with their sex at birth, rather than within the gender category they identify as (Ansara & Hegarty, 2012; James et al., 2016; Transgender Law Center, 2017). Gender miscategorization among transgender adults has been associated with negative mental health outcomes, including negative affect and lowered self-esteem (McLemore, 2015), illustrating the importance of transgender individuals to be seen by others as they wish to be seen. Although children become adept at categorizing themselves and others based on gender from a young age (Leinbach & Fagot, 1986), studies of categorization have focused on cisgender (or presumed cisgender) targets. Whether children would categorize transgender peers by their sex at birth or their gender identity remains an open question. Although researchers have shown that children categorize people with mixed identities differently than they do those with singular identities (e.g., children's categorization of multiracial people; Hirschfeld, 1995; Roberts & Gelman, 2015), these data do not necessarily inform our understanding of children's categorization of transgender children who appear to switch from one gender category to another, rather than espousing both or a hybrid of identities. Therefore, in the current studies, we also wanted to understand how cisgender children categorize transgender peers.

Finally, how children categorize transgender peers might play a role in how they evaluate transgender peers, as children's categorization of peers are likely to be related to their attitudes toward those peers (Bigler & Liben, 2007; Rhodes, Leslie, Saunders, Dunham & Cimpian, 2017). Certainly among adults, those who categorize transgender people according to their sex at birth (rather than their gender identity) tend to have more negative views of transgender people (Allen, 2017). For example, one of the largest political issues surrounding transgender people currently is whether they should be allowed to use bathrooms based on their gender identity or sex at birth. The former is seen as a more transgender-supportive view and the latter is seen as discrimination against transgender people. Whether there is an association between categorization and prejudice in children remains unclear.

Current studies

Across 2 studies[1], we assessed 5- to 10-year-old cisgender children's evaluations and categorization of transgender peers. As this was largely exploratory work, many possible findings were possible and we outlined these possibilities above. Of particular interest is whether children will show same-gender preferences, whether these will apply to

transgender targets and/or if children will show general preferences for cisgender over transgender targets. Further, how these preferences relate to categorization of transgender targets (as members of sex-based or gender-based groups) is a central guiding question.

Children in this age range were selected because they are well aware of gender stereotypes (for a review, Ruble & Martin, 1998), are strong enforcers of these stereotypes (Martin, 1989; Trautner et al., 2005), and show strong same-gender preferences (Martin & Fabes, 2001). Additionally, they are at school age, which is our target range for understanding peer prejudice given that formal school is a location of much childhood bullying (for a review, Griffin & Gross, 2004). **S**ome studies have shown that children within this age range show increased acceptance of gender transgressions as they grow older (Blakemore, 2003; Carter & Patterson, 1982; Conry-Murray & Turiel, 2012; Levy et al., 1995; Martin et al., 1990; Stoddart & Turiel, 1985), though researchers are divided on the validity of this finding (Carter & McCloskey, 1984). Therefore, in the current studies we will also examine age-related change in cisgender children's liking of transgender peers. If children do show a general increase in flexibility in beliefs about gender, we might find that any negative views that cisgender children might hold about transgender peers will become less negative with age as well. However, if this increase in flexibility is specific to gender conformity among cisgender peers, we might not find age-related changes in children's evaluations of transgender peers.

In each study, participants heard vignettes about children who identified as members of a gender group (e.g., girls) and acted stereotypically consistent with that gender. For half of the vignettes, participants were told the target children were born with the corresponding sex (cisgender targets) and for half of the vignettes children were told the children were born with the "opposite" sex (transgender targets). To examine the relation between evaluations and categorization, and to assess their relation with age we collapsed across both studies to gain additional power for correlational analyses.

Study 1

In Study 1, participants heard about children whose sex at birth and gender identity either matched (cisgender targets) or did not match (transgender targets), and who identified as boys or girls. The vignettes of transgender children were designed to represent socially transitioned children (i.e., children who appear and behave in ways stereotypically associated with the gender that is opposite the sex assigned to them at birth). Children were asked to evaluate the targets and to categorize them as boys or girls.

[1]In addition to the studies reported here, we ran one preliminary study that assessed evaluations and categorization of gender nonconforming targets (i.e., targets who had not socially-transitioned but showed preferences associated with the other sex). However, the study had counterbalancing problems that prohibited comparisons by target gender. Further, the targets were not described as having socially-transitioned, a common definition of transgender used here and elsewhere (e.g., Olson et al, 2015). These issues were resolved in the two current studies. However, to be maximally transparent, we made the initial study available in the online supplemental material. In addition, in the supplement, we report a meta-analysis of all three studies showing that the overall effects discussed in this paper hold even if that study is included.

Method

Participants

Participants were 55 5- to 10-year-old cisgender children (M = 7;9 years, SD = 1;5 years, 30 females, 80% White, 5% Asian, 5% Hispanic, 3% Black, 3% White/Black biracial, 2% White/Asian biracial, 2% Pacific Islander). Participants were recruited through a university database of local children in the Pacific Northwest (USA), whose parents expressed interest in participating in research on child development.

Measures and Procedure

Participation in both studies occurred at a developmental psychology research lab. In both studies, before testing, parental consent and child verbal assent were obtained; all study protocols were approved by the university's IRB. Videos showing the procedure of each task can be found online at https://osf.io/k8nur/.

In this study, participants were given a liking task and a categorization task[2]:

Liking task.—The experimenter trained participants on a 6-point Likert scale (using smiley and frowning faces representing the following options: 1-really don't like, 2-don't like, 3-kind of don't like, 4-kind of like, 5-like, 6-really like; Appendix A) by asking two questions: "If I told you about someone who you kind of liked, which face would you point to?" and "If I told you about someone you didn't like, which face would you point to?" The experimenter confirmed correct responses and corrected incorrect responses to the training questions.

In the Liking task, the experimenter read participants 4 short vignettes (Appendix B), describing four target children's sex at birth and later gender expression. Across the vignettes, participants heard about: a cisgender girl, a cisgender boy, a transgender girl, a transgender boy. In each vignette, participants were told the child's sex at birth, and identity and preferences; the latter either aligned with the sex at birth of the target child (cisgender trials), or with the other sex (transgender trials). Below is an example of a vignette describing a transgender girl (natal boy):

> When Casey was born, many people thought Casey looked like a boy. When Casey was older and could talk, Casey insisted Casey was a girl. Casey liked to wear dresses and play with dolls. Casey had long hair and most people who met Casey said Casey looked like a girl.

After hearing about each target child, participants were asked to rate how much they liked the child using the Likert scale.

Participants were sequentially assigned to one of four versions of the task, where order of question presentation was counter-balanced. Gender-neutral names were used in all

[2]Participants in this study completed one additional task that was not central to the purposes of the current study. The results from this task are reported in the online supplemental materials for full transparency.

vignettes, and third-person pronouns were not used. Data from one participant were dropped from these analyses because she did not complete the task.

Categorization task.—Participants were presented with 4 vignettes that were nearly identical to the ones presented in the liking task (only the names and exact details of behavior changed; Appendix C). After hearing each vignette, participants were asked whether they thought the target character was "really a boy or a girl". Responses were coded such that if participants identified the target based on their sex at birth, they received a score of '1', and if they identified the target based on the opposite of their sex at birth (for the transgender targets, this meant the selection based on their gender identity instead of their sex at birth), they received a score of '0'. Thus, higher scores meant that they used sex at birth in categorization decisions. Data from two participants were dropped from these analyses for not completing the task.

Results

Liking

A 2 × 2 repeated measures ANOVA was conducted with sex/gender concordance (transgender, cisgender) and target gender (matched to participant's own gender, matched to the other gender) as independent variables, and liking score as dependent variable. Results showed a significant main effect of sex/gender concordance, $F(1,53) = 8.30$, $p = .006$, $\eta_{p2} = .14$, where participants liked cisgender targets ($M = 4.27$) better than transgender targets ($M = 3.97$). There was also a significant main effect of target gender, $F(1,53) = 23.38$, $p < .001$, $\eta_{p2} = .31$, indicating that participants liked own-gender targets ($M = 4.55$) better than other-gender targets ($M = 3.69$). There was not a significant sex/gender concordance x target gender interaction, $F(1,53) = .11$, $p = .747$, $\eta_{p2} = .00$.

One-sample *t*-test comparisons to the midpoint of the scale (3.5) found that participants reported liking both transgender ($M = 3.97$) and cisgender peers ($M = 4.27$) at rates above the midpoint, $t(53) = 3.82$, $p < .001$and $t(53) = 6.55$, $p < .001$, respectively.

Finally, because previous research has often found differential evaluation of gender nonconforming boys vs. girls, we conducted a paired *t*-test comparing evaluations of transgender boys (natal female) and transgender girls (natal males). We found that evaluations did not differ, $t(53) = .55$, $p = .587$. See Table 1 for all descriptive statistics.

Categorization

Given that participants were only given binary response options on the categorization task, we used a generalization of logistic regression, Generalized Estimating Equations (GEE), with an unstructured covariance matrix due to the repeated measures nature of the design (Diggle, Heagerty, Liang, & Zeger, 2002). We examined whether there were significant differences in participant's categorization by natal sex or gender when reasoning about a cisgender or transgender boy or girl. We conducted a 2 (sex/gender concordance: transgender, cisgender) x 2 (target gender: matched to participant's own gender, matched to the other gender) binomial logistic regression on categorization scores. We found a significant effect of sex/gender concordance, $p = .046$, suggesting that participants

categorized cisgender targets (M = .73) by their sex at birth more often than transgender targets (M = .40). There was not a significant effect of target gender, p = .192. The effect of sex/gender concordance was subsumed under a significant sex/gender concordance x target gender, p = .015. Pairwise comparisons showed that participants categorized cisgender targets of their own gender by their sex at birth (M = .79) more often than transgender targets of their own gender (M = .36), p < .001. Similarly, participants categorized cisgender targets of the other gender by their sex at birth (M = .66) more often than transgender targets of the other gender (M = .45), p = .040. Participants did not differentiate between cisgender targets of their own and other gender, p = .062, or between transgender targets of their own and other gender, p = .190. See Table 1 for all descriptive statistics.

To ask whether children differed in their frequency of categorizing cisgender versus transgender targets by their gender, we ran a chi-square test. We found that the responses of children differed across these types of trials, X^2 (2, N = 53) = 15.74, p < .001. We then ran chi-square goodness of fit tests to ask whether children differed from chance in how they categorized each group. Because scores from each of the two trials for each type of target were averaged, participants could have a score of '0' (categorization by other gender on both trials), '0.5' (categorization by other gender on one trial, and by own gender on the other trial), or '1' (categorization by own gender on both trials). The distribution of these scores was compared to 25%, 50%, and 25% respectively. We found that participants' categorization of cisgender targets, X^2 (2, N = 53) = 31.72, p < .001, and their categorization of transgender targets, X^2 (2, N = 53) = 13.76, p < .001, both significantly differed from chance. Examination of frequencies suggested that, when categorizing cisgender targets, participants were more likely than the chance distribution to categorize by their sex at birth on both trials (58% vs. the chance distribution of 25%). When categorizing transgender targets, participants were more likely than the expected distribution to categorize by the target's identified gender (which is the sex opposite their sex at birth) (45% vs. the chance distribution of 25%) on both trials. As can be seen in Table 2, approximately half of children categorized transgender targets by their gender identity, with the remaining half split between categorizing by sex at birth and chance responding.

Discussion

While participants rated all targets positively on average, they showed a preference for cisgender peers over transgender peers. This effect was observed in addition to the oft-observed finding that participants preferred peers of their own gender over peers of the other gender (Powlishta et al., 1994; Yee & Brown, 1994). Taken together these results suggest two independent additive results combined to mean that girls liked cisgender girls the most, followed by transgender girls, and boys liked cisgender boys the most, followed by transgender boys. Given participants' overall positive evaluation of both transgender and cisgender targets, together these results indicate that gender-typed behavior was a big driver of preferences, rather than just liking peers who acted in accordance with their sex at birth. Additionally, we did not find that participants showed any significant dislike for transgender girls over transgender boys, contrary to what previous literature has found regarding gender nonconforming boys vs. girls (D'Augelli et al., 2006; Kosciw et al., 2008; Toomey et al., 2010).

Participants in this study were more likely to identify cisgender targets than transgender targets by their sex at birth. While they fairly consistently categorized cisgender targets by sex, they were less consistent in responses for transgender targets. Goodness of fit tests indicated that more participants consistently (i.e., across both trials) categorized transgender targets by their gender (i.e., the other sex) than would be expected by chance, but still this was a minority of participants overall.

One surprise in the categorization findings was the lack of ceiling effect for cisgender targets. Although it is difficult to determine why this is, we had some concerns that children could have had trouble tracking the relevant information, making it difficult to interpret both the cisgender and transgender categorization results. Additionally, it is possible that the information provided to participants about the target characters (cisgender or transgender) was not sufficiently conveying their natal sex. Specifically, participants hearing "When Casey was born, many people thought Casey looked like a boy," might not have necessarily understood that as referring to Casey's natal sex. Due to these concerns, and concerns that the categorization question ("Is this child *really* a boy or a girl?") could have led children to believe there was a hidden identity that they needed to figure out, in Study 2, we added pictures to the stories to serve as visual aids for comprehension, used simplified language in our categorization task, and conveyed the target characters' natal sex more explicitly by referring to their body parts. As an added measure, we introduced manipulation checks to ensure participants were attending to the vignettes.

Study 2

Method

Participants—Participants were 58 5- to 10-year-old cisgender children (M = 7;9 years, SD=1;5 years, 31 females). Although participant race and social class information was not collected from these participants, they were recruited from the same research database. Data from an additional 5 participants were excluded from this study, because they failed the manipulation check (described in the next section). There was no overlap between participants of Studies 1 and 2.

Measures and Procedure—Participants heard short vignettes about four target children who varied in terms of sex/gender concordance and target gender (cisgender boy, cisgender girl, transgender boy, transgender girl; see Appendix D). The vignettes were accompanied by images shown on a PowerPoint slideshow (Appendix E). Each vignette described a target child's sex at birth, their later preferences for toys, activities and outfits, and how content they were with their name (gendered) and the pronouns others used to refer to them. For cisgender targets, toy, activity, outfit, name and pronoun preferences aligned with stereotypes associated with their sex at birth, but for transgender targets they did not. In addition, transgender targets were described as going through a *social transition*-- changing their name, pronouns and appearance--and becoming a lot happier. These vignettes were based loosely on the findings of research on socially-transitioned transgender children (e.g., Fast & Olson, in press; Olson & Gülgöz, 2017; Olson et al., 2015). For cisgender targets, the vignettes ended with the description of the child wanting to keep their name, pronoun and

appearance the same because the child was happy with them. Below is a sample vignette describing a transgender girl (natal boy):

> One day, a little baby was born. This baby's name was Jack, because he had a boy body. Jack's parents bought him toy cars and trucks to play with.
>
> Every day, Jack would play outside. But Jack didn't like to play with his toy cars and trucks. He only wanted to play with his sister's fairy dresses.
>
> Jack's mom was very confused. She asked him, "Don't you want to play with your trucks, like other boys?" But Jack said, "No, mom, I'm not a boy. I don't want to play with trucks. I want to play with fairy dresses and unicorns, just like my sister, because I'm a girl."
>
> So Jack's parents decided to buy some fairy dresses and unicorns for him. This made Jack very happy, and he played with them all the time.
>
> Jack was still a little sad, though, because he didn't like his name. Jack knew he was a girl, but he had a boy's name, and everyone called him 'he' instead of 'she'. So Jack asked his parents if he could change his name to Annie, because Annie is a girl's name. Jack's parents said "Of course, we'll call you Annie from now on."
>
> Annie was much happier being called Annie. She was glad that she didn't have to be called Jack any more. Annie grew her hair really long, just like her sister, and Annie was very happy.

After each vignette, participants were asked four questions: categorization ("Do you think this kid is a boy or a girl?"), liking ("How much do you like this kid?"), and two manipulation check questions ("Did this kid have a boy name or a girl name at the beginning?" "Did this kid have a boy name or a girl name now, at the end of the story?"). For the liking question, participants were again trained on the same 6-point Likert scale used in the previous study. Five participants who did not answer the manipulation check questions correctly were excluded from the study, due to concerns regarding their comprehension of the vignettes. Data from 1 additional participant were excluded from the analyses for the liking questions because they did not complete that measure. A video showing the procedure of this task can be found online at https://osf.io/k8nur/.

Results

Liking

A repeated-measures ANOVA was conducted with sex/gender concordance (transgender, cisgender) and target gender (participant's own gender, the other gender) as independent variables, and liking score as the dependent variable. We did not find a significant main effect of sex/gender concordance, $F(1,56) = 1.28$, $p = .262$, $\eta_{p2} = .02$. However, there was a significant main effect of target gender, $F(1,56) = 18.09$, $p < .001$, $\eta_{p2} = .24$, indicating that participants favored targets of their own gender ($M = 4.64$) compared to targets of the other gender ($M = 3.91$). There was also a significant interaction of sex/gender concordance x target gender, $F(1,56) = 7.64$, $p = .008$, $\eta_{p2} = .12$. Post-hoc simple effects analyses showed that, whereas participants showed a preference for cisgender targets over transgender targets

when reasoning about their own gender, $p = .007$, they did not show a difference for cisgender and transgender targets of the other gender, $p = .481$.

One-sample *t*-test comparisons to the midpoint of the scale (3.5) found that participants reported liking both cisgender ($M = 4.36$) and transgender ($M = 4.19$) peers at rates above the midpoint, $t(56) = 7.94$, $p < .001$and $t(56) = 5.31$, $p < .001$, respectively.

As in Study 1, we again conducted paired-sample *t*-tests to compare evaluations of transgender girls and transgender boys, and again, we did not find any differences between the two, $t(56) = .54$, $p = .591$. See Table 1 for all descriptive statistics.

Categorization

Similar to Study 1, because of the binary nature of the response options provided to participants in the categorization task, we conducted a Generalized Estimating Equations analysis. However, because there was no variation in participants' categorization of cisgender targets, given that categorization of cisgender targets was used as a manipulation check for excluding participants who did not correctly categorize cisgender targets, sex/gender congruence (i.e., whether a target character is cisgender or transgender) was not included as a factor in the analysis. Instead, we could only analyze transgender trials. We examined the effect of target gender (matched to participant's own gender, matched to the other gender) on categorization. We found that this effect was not significant, $p = .363$. Participants did not differentiate in their categorization of own-gender transgender targets ($M = .46$) and other-gender transgender targets ($M = .41$).

Additionally, a chi-square goodness of fit test was used to assess whether participants' categorization of transgender targets differed from chance (this analysis was not done for cisgender targets, as an exact p-value could not be computed because all participants evaluated all cisgender peers according to their gender in every case). Like in Study 1, because scores from two trials were averaged, participants could have a score of '0' (categorization by gender identity on both trials), '0.5' (categorization by sex at birth on one trial, and by gender on the other trial), or '1' (categorization by sex at birth on both trials). The distribution of these scores was compared to 25%, 50%, and 25% respectively. Results showed that participants' categorization of transgender targets significantly differed from a chance distribution, X^2 (2, $N = 58$) = 22.66, $p < .001$. The frequencies of participants' responses suggested that participants were more likely either to consistently categorize transgender targets by their gender than was expected by chance (43% vs. 25%), or to consistently categorize them by their sex at birth more often than chance (38% vs. 25%). Additionally, participants were less likely to categorize by sex at birth on one trial and by gender on the other trial, compared to what was expected by chance (19% vs. 50%), indicating that participants tended to be consistent across the two items, rather than random in their responses.

Discussion

Consistent with Study 1, participants in Study 2 also showed strong preferences for peers of their own gender vs. peers of the other gender, which is consistent with extant literature

showing that children at these ages prefer to affiliate with same-gender peers (e.g., Maccoby, 1988). In contrast to Study 1, participants did not show a significant preference for cisgender targets over transgender targets, though the means were in the same direction as in Study 1 (see Table 1). However, in Study 2 we did see a significant interaction between target gender and sex/gender concordance. This interaction indicated that the preference for one's own gender was especially strong within cisgender targets. The lack of preference for cisgender targets is likely explained by how much lower other-gender, cisgender targets were rated; as in Study 1, same-gender cisgender targets were rated the most highly, demonstrating that both similar gender and similar sex/gender concordance played a role in evaluations. Also like in Study 1, we once again found that participants did not differ in their liking of transgender girls and transgender boys.

As in Study 1, participants did not show better categorization for transgender targets of their own vs. the other gender. Overall, we found that children tended to adopt a categorization strategy (i.e., by sex or by gender) and use that across both items, rather than randomly using these strategies when categorizing transgender targets. There was no consensus, however, in whether to generally categorize by sex or gender. Even though our manipulation check excluded participants who did not consistently categorize cisgender children by their gender, considering that only 5 participants were excluded for this reason, we believe it is safe to conclude that participants were less likely to categorize transgender children by their identified gender, compared to cisgender children.

Because the effect of participants' preference for cisgender over transgender targets was not replicated, we next conducted a meta-analysis to ask whether across studies there was a significant effect of sex/gender concordance. Additionally, to maximize power for examining the relations between categorization and liking, and age-related changes, in the following section, we present these analyses conducted by collapsing across studies.

Cross-study analyses

Meta-analysis of liking

Because results showed variation, we meta-analyzed the two studies on the main effects of liking of cisgender vs. transgender peers using fixed effects as outlined by Goh, Hall and Rosenthal (2016). For each study, we converted Cohen's *d*s into Pearson's correlations, which were then Fisher's *z* transformed for analyses and converted back to Pearson correlations for ease of presentation here. Results were significant, $Mr = .27$, $Z = 2.68$, $p = .007$ two-tailed, indicating that participants liked cisgender peers more than they liked transgender peers. Unsurprisingly given that each study was itself significant, a meta-analysis based on gender of targets also was significant, $Mr = .58$, $Z = 5.44$, $p < .001$ two-tailed, demonstrating that children favored targets who shared their gender identity over those who did not.

Relations between liking and categorization of transgender targets

We combined across the two studies to obtain additional power for examining possible relations between participants' tendency to categorize transgender targets by their sex at

birth, and their liking of transgender targets. We conducted partial correlations controlling for study, and found a significant negative correlation between liking transgender targets and identifying transgender targets by sex at birth, $r(111) = -.24$, $p = .011$. This finding indicates that the more likely participants were to categorize transgender targets by their sex at birth, the less they liked transgender targets.

Age-related changes in liking and categorization

We combined data across the two studies to examine age-related changes in participants' liking of cisgender vs. transgender children, as well as their categorization of cisgender vs. transgender children. For these correlations, we calculated difference scores for liking and categorization (cisgender minus transgender), and conducted partial correlations controlling for study. Whereas there was not a significant correlation between liking and age, $r(111) = -.10$, $p = .304$, there was a significant negative correlation between categorization and age, $r(111) = -.20$, $p = .032$, indicating that younger children showed a bigger difference than older children in their categorization of cisgender and transgender children, though across the age range children were more likely to categorize cisgender targets by their sex than transgender targets.

General Discussion

Across two studies exploring evaluations of transgender and cisgender children, a meta-analysis indicated several central findings. First, replicating decades of work, children showed a preference for targets who shared their own gender. Second, children showed a significant preference for cisgender peers over transgender peers. These effects combined to show that cisgender participants tended to prefer cisgender peers who shared their gender most, followed by transgender peers who shared their gender identification. Overall, we found that participants were unsure whether to categorize transgender boys and girls into categories based on their sex at birth or their gender, but those who tended to categorize by sex also tended to dislike transgender targets more.

Children's preferences for cisgender vs. transgender peers

Despite greater preference for cisgender peers over transgender peers, it is important to note that children in our study did not necessarily dislike transgender peers. Overall, participants liked both cisgender and transgender peers more than neutral. Still, it is apparent that relative to cisgender peers, transgender peers are less preferred. Given that ingroup preference alone (in the absence of outgroup hostility) can lead to discrimination (Greenwald & Pettigrew, 2014), disparate evaluation is important to note. Nonetheless, it is interesting that unlike past work on gender nonconformity, the transgender targets here did not appear to be strongly disliked. There are a few possible reasons for this. First, in general, support for gender nonconformity may be increasing in broader society (Halloran, 2015). This might be particularly true of our sample, as participants were recruited in an urban, liberal city known for its support for LGBTQ individuals (Jasthi, 2014). Second, transgender children can in some ways be seen as conforming to gender norms. That is, their appearance and claimed identity align with their behaviors, while past work on gender nonconforming children has usually kept these two factors distinct (i.e., a boy who identifies as a boy but who

demonstrates other gender typed behaviors). Perhaps it is the juxtaposition of behavior and identity that drives lower liking of gender nonconforming peers, rather than the mismatch between sex and gender identity in transgender children. This possibility is particularly supported by findings of Study 2, where participants were clearly told about targets whose sex and gender identity were not aligned, and they did not show differences in liking of transgender and cisgender peers.

Transgender children vary in the extent to which they conform to gender stereotypes. Our findings might imply that cisgender children would prefer transgender children who are highly gender conforming to those who are less so. However, our study does not provide direct evidence for this, and future research to address this possibility is needed. It is also worth noting that, unlike previous research showing that gender nonconforming boys are liked less and experience more prejudice than gender nonconforming girls (D'Augelli et al., 2006; Kosciw et al., 2008; Toomey et al., 2010), our studies show that participants did not differentiate between transgender girls (natal males) and transgender boys (natal females). Moving forward, direct comparisons of evaluations of transgender and gender nonconforming targets would be useful.

Children's categorization of transgender peers

Across two studies, participants were unsure of how to categorize transgender peers. Whereas about half of participants consistently used gender to categorize transgender peers, the remaining half were split between consistently using sex at birth, or alternating between the two. While children generally categorized cisgender targets by their sex more than transgender targets, this pattern was more extreme for younger children than older children, suggesting that younger children were more likely to categorize transgender targets by their gender than older children were. This is somewhat surprising when considering older children's increased flexibility regarding gender nonconformity (Blakemore, 2003; Carter & Patterson, 1982; Conry-Murray & Turiel, 2012; Levy et al., 1995; Martin et al., 1990; Stoddart & Turiel, 1985; but also see Carter & McCloskey, 1984). It is possible that younger children have an underdeveloped sense of gender constancy; the understanding that gender is stable and consistent despite superficial changes (Kohlberg, 1966). Researchers have argued that children do not attain a full understanding of constancy until ages 6 or 7 (Marcus & Overton, 1978; Wehren & De Lisi, 1983), which might explain younger children's willingness to categorize transgender peers by their gender (rather than sex at birth). This lack of understanding gender constancy may lead younger children to be more open to accepting transgender children's category claims. However, there is not a consensus in the field of gender constancy on this developmental timeline, as others have also shown that changes in stimuli and questions can elicit gender constancy in children as young as 3 years old (Bem, 1989). Further research is needed for understanding what might determine individual differences as well as developmental changes in children's beliefs about the nature of gender.

Relations between categorization and evaluations of transgender peers

In addition to the main findings, we found that the more likely children were to categorize transgender peers by their sex at birth (as opposed to their gender), the less they liked

transgender peers. Thus, if participants viewed transgender peers as a member of their sex at birth, and not their expressed gender, they likely viewed their behaviors as nonconforming of gender stereotypes, and disliked them for transgressing gender boundaries. In contrast, if participants viewed transgender peers as members of their gender, and not their sex at birth, they likely viewed their behaviors as conforming of gender stereotypes, and were more likely to like them. This appears to be consistent with what is true of adults (Allen, 2017).

These results may also help reconcile the present findings with past observations that children dislike gender nonconforming children considerably. About half of participants in both current studies consistently categorized transgender peers into categories based on their gender (and not their sex at birth). Insofar as a child like Coy was seen as a girl, her behaviors aligned with stereotypical expectations of her gender. In contrast, remaining participants who were either unsure of how to categorize transgender peers, or categorized transgender peers by their sex at birth, likely saw the same behavior as counter-stereotypical. In past work on children's evaluations of gender nonconformity, children were specifically told (or were led to believe) that the behavior exhibited was counter-stereotypical from the perspective of the child's category membership. Thus, one explanation for our generally more favorable evaluations might be that a large subset of children accepted the target's stated gender categorization. Because the targets' behaviors were aligned with their gender categorization, they did not show the level of dislike previously observed in studies where children were asked to evaluate sex nonconforming peers (i.e., peerss whose stated gender categorization did not align with their behavior). These results suggest that it might be the perceived contradiction between a category and behavior associated with that category that leads to more negative evaluations. Insofar as a target is seen to "switch" categories, the same exact behavior may no longer be seen as so problematic. That said, it is important to remember that even in the case of the current studies, children tended to rate transgender targets less positively than cisgender targets.

Limitations

Although the current studies inform our understanding of cisgender children's evaluations of transgender peers, they are limited in several ways. First, participants in our study were recruited from a liberal city and came from families who were alright with their child's participation in a study on transgender children. Although we did not gather this information, it is also possible that participants in our study were familiar with transgender peers in real life. Thus, it is difficult to estimate how representative our sample is of the larger population, and whether children living in less liberal and LGBT-supportive environments would show similar findings. A second limitation is that, the vignettes used in the current studies did not allow us to single out participants' relative evaluations of sex-nonconforming identity and sex-nonconforming behaviors. Although we attempted this in our pilot study (see online supplement), our limited sample size prevented confident interpretation of findings. Future research should focus on understanding specific aspects of gender identity expression that drive cisgender children's preferences.

Conclusion

The studies described in this paper were the first to examine cisgender children's evaluations and categorization of transgender peers. Our findings showing that cisgender children like cisgender peers of the same gender the most, followed by transgender peers of the same gender expression (i.e., sex/gender concordance), suggesting that children's same-gender preferences are driven by a combination of a preference for one's own gender ingroup and simultaneous attention to whether that ingroup categorization had been present since birth. We also found that the tendency to dislike transgender peers was associated with categorizing them by sex rather than gender.

Findings of the current research also carry important implications for the development and wellbeing of transgender children. Transgender youth are disproportionately subjected to peer victimization and discrimination (Almeida et al., 2009; Clements-Nolle et al., 2006; Kosciw et al., 2011; Russell et al., 2011), and experience concurrent mental health problems at much higher rates than the general population (de Vries et al., 2015; James et al., 2016; Maguen et al., 2010). Recent research implicates the role of support and rejection by family and peers in transgender individuals' mental health outcomes (de Vries et al., 2015; Durwood et al., 2017; Olson et al., 2016; Ryan et al., 2009, 2010). Therefore, understanding cisgender children's evaluations of transgender peers is crucial. We look forward to future work that specifically investigates the relation between cisgender children's attitudes toward their transgender peers and the well-being of those transgender children, as well as work investigating effective ways to reduce bias against transgender children.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Resources

In compliance with the Open Science Framework Badge disclosure requirements, our data and materials can be accessed at the following link: https://osf.io/k8nur/. All reported results can be reproduced using these data, except for age differences. In the process of de-identifying our data, as stipulated by our IRB, we transformed participant age into a categorical variable to ensure that participants could not be identified (e.g., being the only seven-year-old girl could identify a participant). In addition, study procedures are fully described in uploaded videos in the link above.

Table 1.

Means (standard deviations) of participants' liking and categorization scores in Studies 1 and 2.

		Study 1		Study 2	
	Target	**Male participants**	**Female participants**	**Male participants**	**Female participants**
Liking	Cisgender boy	4.52 (1.08)	4.14 (1.22)	4.78 (.93)	4.00 (.50)
	Transgender boy (natal female)	4.32 (1.18)	3.83 (1.56)	4.15 (1.10)	4.13 (1.31)
	Cisgender girl	3.44 (1.08)	4.90 (1.01)	3.67 (1.44)	4.97 (1.03)
	Transgender girl (natal male)	3.28 (1.34)	4.41 (1.40)	3.81 (1.42)	4.63 (.96)
Categorization	Cisgender boy	.75 (.44)	.59 (.50)	1.00 (.00)	1.00 (.00)
	Transgender boy (natal female)	.46 (.51)	.48 (.51)	.63 (.49)	.40 (.49)
	Cisgender girl	.75 (.44)	.83 (.38)	1.00 (.00)	1.00 (.00)
	Transgender girl (natal male)	.42 (.50)	.28 (.45)	.48 (.51)	.37 (.49)

Table 2.

Distribution of participant scores on the categorization tasks for transgender targets in Studies 1 and 2.

	Study 1	Study 2
0 points(Gender identity on both trials)	45%	43%
0.5 points(Gender identity on one trial, sex at birth on one trial)	28%	19%
1 point(Sex at birth on both trials)	26%	38%

Note. The table shows the percentage of participants who received each possible score on trials where they were asked to categorize transgender targets either by their sex at birth or gender identity. Participants who only used gender identity to categorize transgender targets received '0' points, those who used sex at birth on one trial and gender identity on the other trial received '0.5' points, and those who consistently used sex at birth on both trials received '1' point.