Children's Judgments of Inequitable Distributions That Conform to Gender Norms

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To evaluate whether distributions by sex are judged to be unfair, children at ages 6, 8, and 10, and adults ($N = 96$), judged an authority distributing items to children by using different methods (i.e., randomly or by sex), types of items (i.e., related or unrelated to gender norms), and differences in the equivalency of the items (i.e., equivalent or unequal). Children often approved of equivalent distributions by sex and unequal distributions by sex when items were related to gender norms. The 6- and 8-year-olds, but not 10-year-olds and adults, perceived that everyone would agree to the method of distribution. Only adults were more critical of distributions by sex than random distributions.

Is it gender discrimination to provide boys and girls with different resources and opportunities? Sometimes differential treatment is based on assumptions about the interests or abilities of the different sexes, and some may not consider this discrimination. The current study examines whether children and adults judge that differential treatment for boys and girls is unfair when the differences in treatment coincide with gender stereotypes related to interests or abilities. For example, participants judged whether it is acceptable for a teacher to reward children in a class by giving the boys a robotics kit and the girls an old maid card game.

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Research shows that children do sometimes experience differential treatment based on sex. The largest difference in the way parents treat boys and girls is in the provision of toys and the assignment of chores (Lytton & Romney, 1991). While some may suggest that it is appropriate to treat boys and girls differently when it is in response to children's apparent gender differences (Sax, 2006), extensive research also shows that when adults emphasize group membership, including membership based on sex, children respond with increased bias toward out-group members (e.g., Bigler, Brown, & Markell, 2001; Patterson & Bigler, 2006). If emphasizing gender categories leads children to diminish their valuations of activities related to the other gender, children may accept unequal treatment. Thus, the issue of children's judgments of differential treatment is of practical importance because acceptance of unequal treatment may limit the opportunities children pursue. Theoretically, it is also important to explore the circumstances under which children and adults judge distributions based on sex as acceptable or unacceptable because it can shed light on how children juggle competing demands in reasoning about fairness.

Reasoning About Distributive Justice

Several lines of research address the issue of whether children identify distributions as unfair. Research is clear that, at a very young age, children are concerned with fairness. Fehr, Bernhard, and Rockenbach (2008) find that children develop an increasingly strong aversion to inequality between the ages of 3 and 8. Other research has shown that children ages 6–8 have such a strong sense of inequality aversion that they discard a resource, even when it could have gone to themselves, rather than distribute resources unevenly (Shaw & Olson, 2012). This inequality aversion may also explain why children sometimes reject unequal distributions that adults judge to be appropriate, such as providing the person who did the most work with more rewards (Damon, 1977; McCrink, Bloom, & Santos, 2009). Some of this research (McCrink et al., 2009) shows that adults are more capable of considering the context of the distribution than are children. Taken together, this research indicates that young children have a strong sense of justice but may have more difficulty than adults in considering other relevant information that would justify an unequal split of resources.

Reasoning About Gender

Gender is also a very salient category for young children both because of the environment they live in and because of the way they construct the

idea of gender (Blakemore, Berenbaum, & Liben, 2009). One result is that young children go through a stage of inflexibility about gender around ages 5–7 in which they see the sexes as opposites and deny variations in adherence to gender norms (Levy, Taylor, & Gelman, 1995; Taylor, 1996; Taylor, Rhodes, & Gelman, 2009). The research on gender essentialism shows that children attribute gender-norm-specific qualities to a child, even when that child has been raised entirely by the opposite sex with no exposure to others of their same sex (Taylor et al., 2009). Other research (Biernat, 1991) shows that younger children have difficulty using information about individuals that is inconsistent with gender norms. This may be an indication that children are insensitive to the idea that some people hold preferences that are not in line with gender norms. Given the strength of young children's beliefs of gender especially around ages 5–7, the current study examines whether children at ages 6, 8, and 10 are more accepting of unequal distributions when the items distributed conform to gender norms and sex is used a method of distribution, and whether they become more flexible with age. Because gender is also an important category for adults, (e.g., as already noted, adults provide children with different toys and chores, depending on the child's sex [Lytton & Romney, 1991], and adults may not always condemn differential treatment of boys and girls), the current study examines adults' reasoning, too. This allowed for a comparison of children and adults to see whether children at the age of gender essentialism endorse gender roles more than do adults.

Reasoning About Gender and Fairness

Clearly, concerns with both fairness and gender are very strong for children at ages 5–7. Social domain theory suggests that children are capable of distinguishing moral concerns (implying issues of rights, justice, and welfare) from conventional concerns (which are culture specific and may include gender norms), and that with age they are capable of coordinating moral and conventional domains (Smetana, 2006; Turiel, 1998). When young children reason about gender in situations involving justice, they often reject unfair treatment based on sex. For example, young children judge that it is unfair to exclude someone because of their sex (Theimer, Killen, & Stanger, 2001), and they reject a school rule that enforces gender norms (e.g., that only boys can sign up for a computer class; Conry-Murray & Turiel, 2012). Thus, even young children make judgments that sex should not be a basis for exclusion from groups or opportunities at school.

Social domain theory research shows that gender issues can be judged to be either conventions (Carter & Patterson, 1982), dependent on the

norms of the setting; or part of the personal domain, entailing a personal choice (Conry-Murray & Turiel, 2012). When preferences related to gender were made explicit, children aged 4–8 condoned the wishes of a child who wanted to engage in a counter-norm activity (e.g., a boy who wants a ballet costume for Halloween; Conry-Murray & Turiel, 2012). In the current study, children must infer the preferences of those affected by the distribution. This is an important part of judgments of fairness because personal preferences are not always clear, and children at the height of gender essentialism may infer that gender norms reflect the real preferences of individuals. The current study assessed whether children believe that girls agree to receive feminine items and boys agree to receive masculine items. If so, children may judge that distributions based on gender norms to boys and girls are acceptable because they are consistent with the preferences of those affected. In addition, the current study included an assessment of children's justifications for their judgments of the distributions to see whether children explain their judgments in terms of gender norms, preferences, or other concerns. Finally, an assessment of whether participants judged that everyone agreed to the distributions was also included.

Brown and Bigler's (2005) model of the development of children's perceptions of discrimination suggests that one criterion for perceiving discrimination is an understanding of the relevant stereotypes. The current study examined whether stereotypes about gender may also work in the reverse: leading children to overlook differential treatment because it is assumed to reflect boys' and girls' preferences. Thus, the current study examined reasoning about distributions of items related to gender norms as compared to distribution of items unrelated to gender norms. If participants judge that it is acceptable to distribute gender-norm-related items to the expected sex, it would be in line with Bigler and Liben's (2007) model of children's stereotyping, which indicates that children believe that group membership is an indication of other qualities. It is also consistent with social domain theory research indicating that young children have a strong sense of justice but coordinate different information to construct judgments through reasoning (Smetana, 2006; Turiel, 1998). If children infer that gender norms reflect true preferences, it may lead them to overcome any inequality aversion. In fact, a recent study (Baumard, Mascaro, & Chevallier, 2012) showed that even very young children (ages 3–4) are capable of using additional relevant information to distribute goods; in that case, the children used information about merit. The current study examines whether assumptions about preferences related to gender norms may also affect judgments of distributions.

The Present Study

Past research has examined children's judgments of gender equity by assessing children's judgments of a child of one sex engaging in a gender-norm-atypical activity (Conry-Murray & Turiel, 2012; Theimer et al., 2001). However, no research that I could find has assessed the role of gender norms in judgments of distributive justice. Therefore, the study was constructed to compare judgments of gender-neutral distributions and gender-norm-related distributions to assess the role of gender norms in judgments. In the current study, two methods of assessing the role of gender norms were involved. First, children judged items either distribution randomly (without regard to the sex of the recipient) or by sex. This is referred to as *method of distribution*. Second, children judged items that were either gender neutral or items that were related to gender norms. This is referred to as *item properties*. To assess the extent of endorsements of gender-norm-related distributions, we also asked participants to judge items of differing relative value. Either the items were equivalent in value or one item was higher in value.

Thus, children and adults judged several distributions when the method of distribution was random (e.g., the back of the room gets one item and the front of the room gets a different item) or by sex (e.g., boys each get one item and girls each get a different item). The item properties also differed: They were either related to gender norms (e.g., math and reading video games) or not (e.g., apples and oranges), and they were either equivalent (e.g., dot-to-dot book and maze book) or unequal (a banana and M&Ms). Each condition had two assessments with different items. See Table 1 for a list of the conditions and items. Unequal items were only described as being distributed by sex (and not randomly) because the focus was on assessments of gender-related distributions.

The items that related to gender norms were also selected for being nontrivial: They often related to learning opportunities. Participants were asked to judge each of these distributions and to explain why they came to that conclusion. As an assessment of sensitivity to diverse preferences, judgments about whether everyone in the class agreed to the method of distribution were also assessed. As manipulation checks, participants were also asked whether they judged the items to be equivalent and whether one sex liked each item more.

Different types of judgments of the distributions were expected at different ages, given the age differences in flexibility about gender (e.g., Taylor et al., 2009) and previous research that has shown that, with age, children increasingly accommodate and coordinate more information

Table 1. Items distributed within each condition

	Item properties			
	Equivalent items		Unequal items	
Method of distribution	Gendered items	Gender neutral	Gendered items	Gender neutral
Random	Classes: Science project class vs. creative writing class	Books: Dot-to-dot book vs. maze book	—	—
	Games: Math computer games vs. reading computer games	Snacks: Apples vs. oranges		
By sex	Classes: Science project class vs. creative writing class	Books: Dot-to-dot book vs. maze book	Classes: Trash cleanup crew School newspaper	School supplies: Eraser vs. set of 24 markers
	Games: Math computer games vs. reading computer games	Snacks: Apples vs. oranges	Games: Old maid card game vs. robotics kit	Snacks: Banana vs. M&Ms

(Bigler & Liben, 1992; Killen & Stangor, 2001; Stoddart & Turiel, 1985). First, no age effects were expected for the random distribution. These judgments provided a baseline to compare the distributions by gender. Distributions involving gender (both in the method of distribution and the item properties) were expected to be judged more positively by younger children, who may see these distributions as consistent with the preferences of boys and girls as compared to older children and adults. However, distributions of unequal items were expected to be judged as less acceptable than distributions of equivalent items.

Participants' justifications for their evaluations of the distributions were expected to differ depending on the evaluation of the distribution and the type of items. Specifically, negative evaluations of distributions were expected to be accompanied by justifications related to personal choice and moral concerns with fairness, whereas positive evaluations were expected to be accompanied by justifications regarding the efficiency of the method of distribution and gender norms.

Judgments of whether the children in the class agreed to the distribution were assessed in order to examine the role that perceived

agreement has on judgments of the distributions. These were expected to differ by age, with the youngest children more likely to assume that those affected by the distribution would agree to the distributions when they reflected gender norms, given their lack of sensitivity of nonnormative preferences (Biernat, 1991). Perceptions that everyone agrees to the distributions were also expected to predict judgments that the distributions were acceptable.

Judgments of the items as being highly gendered or being relatively equivalent were also expected to be related to positive evaluations of the distributions, given that gendered items distributed to boys and girls may be seen as being consistent with preferences. Distributing items perceived to be equivalent is expected to be acceptable because the degree of unfairness is minimal.

Although it is not the focus of this study, some studies have found sex differences in sensitivity to sexism and exclusion based on sex (Killen & Stangor, 2001; Liben, Bigler, & Krogh, 2001). However, other studies have shown very few gender differences, even in reasoning about gender and fairness (Conry-Murray & Turiel, 2012). The current study assesses whether there are sex differences in judgments of gender-based distributions, but none are predicted.

It is clear that middle childhood is a time when concepts of justice and gender are developing in ways that sometimes lead to gender norms being highly valued (e.g., Killen & Stangor, 2001; Taylor et al., 2009) and sometimes leads to concerns with fairness (e.g., Brown & Bigler, 2004; Conry-Murray & Turiel, 2012; Killen & Stangor, 2001), but few studies have investigated these issues in the realm of distributive justice, and few studies have also assessed children's reasons for their judgments and their beliefs about gender norms and preferences.

Methods

Participants

The participants were 73 children, 24 six-year-olds (range 6.33–7.25 years, $M = 6.88$, $SD = .25$, 11 boys and 13 girls), 24 eight-years-olds (range 7.5–9.42 years, $M = 8.49$, $SD = .64$, 13 boys and 11 girls), and 25 ten-year-olds (range 9.5–11.5 years, $M = 10.61$, $SD = .58$, 12 boys and 13 girls). An additional group of 23 young adults (12 men and 10 women) were over the age of 18. The adults were college students; unfortunately, no more information is available about their ages. The final sample was size 96. Children were recruited through their elementary school and through the snowball method, in which parents of participants forwarded the study

information to other parents. Adults were recruited through their college classes. Participants came from communities that are primarily White and middle class.

Design and Procedures

Children were interviewed individually in audiotaped sessions of about 25 minutes. The audiotapes were later transcribed and coded. The 6-year-olds were interviewed in two sessions of about 10–15 minutes each unless they requested to complete the interview at the first sitting and seemed attentive.

Each assessment described an authority figure (a teacher, school counselor, parent, or librarian) who distributed rewards to all the children in a class. The situation was described as rushed so that the authority figure had to quickly decide how to distribute the items without having an opportunity to ask the children for their preferences and without the possibility for the children to trade items. The sex of the authority figures was alternated, but the type of authority figure remained the same across the item-value and distribution-type conditions for each type of item distributed. Four types of items were distributed: Two included rewards that were associated with gender norms (games and extracurricular classes), and two were not associated with gender norms (snacks and puzzle books/school supplies). The gendered items were selected based on previous research that indicates sex differences in children's self-perceived competencies and values, as well as parents' and teachers' attitudes about these topics (e.g., Eccles, Wigfield, Harold, & Blumenfeld, 1993; Yee & Eccles, 1988). For example, research shows that, by age 7, children perceive that boys like math more (Cvenek, Meltzoff, & Greenwald, 2011). Within each of the four types of items, authority figures were described as distributing items three different ways: (a) equivalent items distributed relatively randomly (i.e., not by sex; e.g., Mr. Bowen hands out math games to the kids sitting in the front of the room and reading games to the kids at the back of the room, called *random equivalent*), (b) equivalent items distributed according to sex (e.g., Ms. Warren hands out math games to the boys and reading games to the girls, called *equivalent by sex*), and (c) unequal items distributed according to sex (e.g., Mr. French hands out robot building kits to the boys and old maid card games to the girls, called *unequal by sex*). Each participant heard all stories: four types of items (games, classes, snacks, and books/school supplies) with the three variations of distribution types (random equivalent, equivalent by sex, and unequal by sex) within each item type, for a total of 12 stories. Two of the unequal-by-sex stories described girls getting

the better item, and two described boys getting the better item. The three variations in distribution were always presented in the order described here so as to begin without presenting participants with the idea that gender was relevant. However, the order of the four types of items being distributed was randomized.

For each distribution, participants saw photographs of the two items being distributed together on one page.

Judgments of the distributions. First we assessed judgments of each type of distribution. For each distribution, participants were asked to evaluate the distribution (e.g., "Is it OK or not OK to divide the games that way?"). Responses that the distribution was *OK* were coded as 1, and *not OK* was coded as 0.

Justifications. The judgment of the distribution was followed by a request for a justification: "Why or why not?" Justifications were coded by using categories derived from previous research (Davidson, Turiel, & Black, 1983) and adapted to responses from this study. The justification categories and brief examples of responses are listed in Table 2. The categories were grouped into those pertaining to *Gender Norms* (Gender Norms, Gender-Related Preferences, and Gender-Related Capabilities) and *Moral Justifications* (Fairness/Equity and Rights). The other justifications fell into *Personal Choice* of the children in the class and a focus on the *Randomness/Efficiency* of the distribution. An additional category for responses that were uncodable or for responses with missing responses was labeled *Unelaborated*. Other justification categories were included in the coding but were used so rarely that they were not included in analysis. These included references to the teacher's authority (0.6%), the cultural context (1.4%), personal statements about the participants' own experiences (0.8%), and references to the authority figure having a bias against one sex (2.8%). Coding for justifications was 0, *did not use the justification*; or 1, *did use the justification*. Up to two justifications were coded for each response and, when participants used multiple justifications, proportional coding was used (i.e., each of the two justifications was coded as 0.5).

Perceived agreement. Participants were then assessed on their perceptions about whether all the children would agree with the particular method of distribution (e.g., "Do you think all of the kids agree with the way Mr. Bowen decided to do it?"). Responses that *everyone agreed* were coded as 1, whereas *not everyone agreed* was coded as 0.

Judgments of items. Two questions assessed judgments of the items in each comparison as a manipulation check. These questions were asked after the judgments of the comparison in question were complete so as to

Table 2. Justification categories used at least 10% of the time

Category	Justifications	Definitions and examples
Gender	Gender norms	Traditional gender norms or observations of the frequency of actions by males and females.
		Example: "Boys do that more."
	Gender preferences	Preferences that are inferred from traditional gender norms.
		Example: "Girls don't want that anyway."
	Gender capabilities	Abilities that are inferred from traditional gender roles.
		Example: "Girls are better writers."
Moral	Fairness/equity	A comparison implying that there should be equality or very similar treatment/opportunities. Concerns that one sex will be excluded.
		Example: "Girls and boys should both be able to go to that class."
	Rights	References to a right that applies to the whole sex or human category.
		Example: "Girls have the right to go to a science class."
Personal choice		Statements that individuals (and not the teacher) should be able to choose about this issue. The issue is not legitimately regulated by rules or authorities.
		Example: "Boys might like oranges more."
Randomness/ efficiency		A focus on convenience, ease of distribution or a statement that the distribution was random.
		Example: "It was just easier that way."
Unelaborated		Uncodable responses and missing data.

avoid highlighting the connection to gender norms and/or relative value of each item.

   To see whether the participants associated the items with one sex or the other, they were asked, "Who likes [this item] better, boys, girls or do both like it the same?" This question was coded 0 = *girls like it better*,

.5 = *both like it the same*, and 1 = *boys like it better*. For analysis, it was recoded as 0 = *both like it or unexpected sex likes it better* (collapsed because both responses indicate that the norm is flexible) and 1 = *the expected sex likes it better*. The question followed all evaluations of the distributions.

Finally, to see whether participants perceived the items as equivalent or unequal, participants were asked, "Overall, which is better [item 1, item 2], or are they about the same?" This question was coded 0 = *the first item is better*, .5 = *both items are about the same*, and 1 = *second item is better*. For analysis, it was recoded as 0 = *both items are the same or the unexpected item is better*, and 1 = *the expected item is better*.

Reliability

Two trained research assistants did all of the coding. For evaluations of the distributions and judgments of agreement, 10% of interviews were coded for reliability and the Cohen's kappa was .90. For the justifications of the evaluations of the distributions, reliability was calculated based on coding of 29% of the interviews by both coders. Cohen's kappa was .75 for the justifications.

Results

Perceptions of the Equality of the Items

Participants were asked which of the items was better or whether the items were about the same to determine whether the items distributed were perceived to be equivalent or unequal as expected. Table 3 shows the means of each response, which indicated that all comparisons were in the expected direction. The majority judged the equivalent items to be about the same for each comparison, and *t* tests showed that, on average, participants judged the unequal items to be unequal (significantly different from .5) in the expected direction for each comparison. However, there was a slight preference for apples over oranges, as Table 3 shows. Univariate analyses of variance (ANOVAs) on judgments of the items were conducted to determine whether here were age differences in these judgments. Given that there were 8 sets of items, 8 ANOVAs were performed, and Bonferroni corrections were made so that significance levels were set at .006, given the number of comparisons. There were no sex or age effects.

Sex-Related Preferences

Participants also judged whether boys, girls, or both sexes like each item more. Means indicate that participants most often stated that both sexes

Table 3. Mean judgments of items

		Equivalent	Which item is better	Which sex likes it more	Unequal	Which item is better	Which sex likes it more
Gendered	Classes	Science project class	.44 (.29)	.65* (.24)	Trash cleanup crew	.84* (.28)	.69* (.30)
		Creative writing class		.35* (.27)	School news-paper		.37* (.25
	Games	Math computer games	.47 (.24)	.53 (.21)	Old maid card game	.64* (.31)	.18* (.27)
		Reading computer game		.44* (.23)	Robot build-ing kit		.88* (.25)
Gender neutral	Books/school supplies	Dot-to-dot book	.53 (.26)	.49 (.15)	Eraser	.80* (.32)	.52 (.22)
		Maze book		.51 (.21)	Set of 24 markers		.40* (.26)
	Snacks	Apple	.42* (.25)	.50 (.13)	Banana	.81* (.32)	.45* (.23)
		Orange		.49 (.15)	M&Ms		.55* (.17)

Notes. *The response is significantly different from .5 at $p < .05$. "Which item is better" was coded as $0 =$ first listed item is better, $.5 =$ both items are the same, and $1 =$ the second item listed is better. "Which sex likes it more" was coded as $0 =$ girls like more, $.5 =$ both like it the same, and $1 =$ boys like it more.

liked the gender-neutral items, although some items showed a slight tendency to be preferred by one gender or the other. For the gendered items, most items were judged to be preferred by the expected sex, as Table 3 shows. However, math games were most often judged to be liked the same by both sexes. This may be a result of children responding that neither sex would like to receive this type of game.

Univariate ANOVAs on each of the judgments of which sex preferred each item were conducted to determine if there were age differences in these judgments. There were 16 items judged, so significance levels were set at .003. There were no significant age or sex differences.

Judgments of the Distributions

ANOVAs are appropriate for use with dichotomous data if the proportion of the responses in the smaller category is over .20 or the degrees of freedom are over 40 (Lunney, 1970). The results here all meet at least one of these criteria, and no analysis had to be excluded because of these criteria. Initial analyses included sex to test for an own-sex bias, but no effects of sex were found, so it was dropped.

For the random distribution, an average evaluation was calculated for all distributions and a 4 (age group) univariate ANOVA was conducted to determine whether age or sex differences were found in judgments of the random distributions. As expected, judgments of the random distributions of equivalent items had no effects of age. These distributions included items that were not drastically unequal, and sex was not the method of distribution, so they were expected to be judged to be relatively innocuous distributions. However, they provided a baseline for comparing the judgments of the other distributions. Means for judgments of this and the other distributions are located in Table 4.

Judgments of the equivalent distributions by sex were analyzed with a 2 (gendered vs. neutral) × 2 (individual items) × 4 (age group) repeated-measures ANOVA with gendered vs. neutral and individual items as repeated measures. Contrary to expectations, the gendered or neutral nature of the items being distributed did not affect judgments. There was no effect for gendered vs. neutral items. The distributions were expected to be judged as acceptable more by younger children than older children or adults since the older groups may be more concerned by different treatment for boys and girls. Indeed, an age effect, $F(3, 84) = 4.25$, $p = .008$, $\eta = .13$, indicated that 6-year-olds were significantly more positive about using sex to the distribute the items than were young adults ($p = .019$). The *t* tests comparing each age group's judgments of this question to the baseline provided by their evaluations of the random-equivalent distribution indicate that only adults' judgments of random distributions were significantly different from distributions of the same items by sex ($p < .001$). However, note that the 10-year-olds judged both types of distributions as not OK at levels significantly lower than chance (random equivalent $M = .38$, $p = .030$; equivalent by sex $M = .28$, $p = .001$), and thus were critical of both random distributions and distributions of equivalent items by sex. The judgments by the 6- and 8-year-olds did not differ from chance or from their judgments of the random-equivalent distributions.

Judgments about unequal distributions by sex were analyzed with a 2 (gendered vs. neutral) × 2 (individual items) × 4 (age group)

Table 4.   Judgments that the distribution is OK by distribution type, age, and item type

Distribution type	Age group	Item type		Total
		Neutral	Gendered	
Random equivalent	6	.64 (.45)	.55(.37)	.61 (.35)
	8	.44 (.43)	.50 (.43)	.46 (.36)
	10	.52 (.40)	.24 (.29)	.38 (.27)
	18	.68 (.37)	.43 (.46)	.56 (.35)
	Total	.56 (.42)	.42 (.40)	.49 (.34)
Equivalent by sex	6	.52(.46)	.53(.41)	.51 (.40)
	8	.44 (.43)	.46(.36)	.45 (.33)
	10	.30 (.37)	.26(.32)	.28 (.30)
	18	.23 (.34)	.17(.33)	.20 (.28)
	Total	.37 (.41)	.35 (.38)	.36 (.24)
Unequal by sex	6	$.21_a$ (.30)	$.63_b$ (.36)	.43 (.29)
	8	$.10_a$ (.29)	$.52_b$ (.43)	.30 (.30)
	10	$.06_a$ (.16)	$.41_b$ (.37)	.23 (.23)
	18	$.13_a$ (.27)	$.25_a$ (.38)	.19 (.25)
	Total	.12 (.26)	.45 (.40)	.28 (.28)

Notes. Subscripts that differ within rows indicate that means are significantly different at $p < .05$. Means without subscripts were not analyzed because the effect was not significant in the initial ANOVA.

repeated-measures ANOVA, with gendered vs. neutral and individual items as repeated measures. These judgments were expected to be negative at all ages, given the unequal value of the items being distributed and children's focus on fairness. However, the results indicate that, when the items were gendered, young children were not strongly negative about the distributions. A marginal gendered × age interaction $F(3, 84) = 2.44$, $p = .070$, $\eta = .08$, was followed up because it was hypothesized. Follow-up tests within each age group indicated that only the adults evaluated gendered and neutral items similarly ($p = .20$). All other age groups judged distributing unequal, gendered items more positively than unequal neutral items (all ps $< .001$ and therefore significant with Bonferroni corrected alpha levels; see Table 4). The t tests show that unequal distributions of *neutral* items were judged to be not OK at levels that were significantly different from judgments of random-equivalent-neutral items and chance for all ages ($p < .001$ for all comparisons). However, in judgments of *gendered*

items, only the adults judged unequal distributions as not OK more than they judged random-equivalent distributions OK, $t(19) = -2.12$, $p = .048$, and more than chance, $t(19) = -.2.94$, $p = .008$. All of the children (ages 6, 8, and 10) judged unequal-by-sex distributions of gendered items to be OK at about the same rates as they judged that random-equivalent distributions were OK. The 10-year-olds actually judged these unequal-by-sex distributions as acceptable *more* than random-equivalent distributions, $t(26) = 2.37$, $p = .026$. Thus, children judged unequal distributions by sex to be not OK when the items were gender neutral. However, when the items were related to gender norms, children, but not adults, were significantly *more likely* to approve of distributing the unequal items by sex.

Justifications

Justifications for each of the distributions were analyzed only if they received at least 10% of responses. Initial analyses found no age or sex differences, so these variables were dropped. To examine the relationship between justifications and evaluations of the distributions, average scores were calculated for each condition: within each of three types of distribution (random, equivalent by sex, and unequal by sex) and within each type of items (gendered or neutral), for a total of six averages. Averages were also calculated for the justifications that were used in at least 10% of cases within each of the six conditions. Next, six linear regressions were run to determine which justifications predicted average judgments within each condition.

Within the gender-neutral items, only Random/Efficiency, Personal Choice, and Moral justifications were used more than 10% of the time (see Table 5). When evaluations of the equivalent distributions were positive, Random/Efficiency justifications were more likely to be used. Within all three distributions of neutral items, the Personal Choice justification predicted negative evaluations of the distributions. Finally, Moral justifications predicted negative evaluations of unequal distributions of neutral items. Means are located in Table 5, and Table 6 lists the standardized coefficients and R^2.

In the distributions of gendered items, Random/Efficiency, Personal Choice, and Moral, justifications were again used more than 10% of the time. Within the random distributions of gendered items, Random/Efficiency justifications were associated with positive evaluations of the distributions, whereas Personal Choice and Moral justifications were associated with negative evaluations. In the two distributions of gendered items distributed by sex, Gender-Norm justifications were also

Table 5. Justifications of judgments of distributions by distribution type and item type (proportions)

Distribution type	Neutral items			Gendered items		
	Random equivalent	Equivalent by sex	Unequal by sex	Random equivalent	Equivalent by sex	Unequal by sex
Gender	.00 (.00)	.01 (.01)	.05 (.19)	01. (.05)	.14 (.30)	.14 (.30)
Moral	. 14(.26)	.18 (.25)	. 42(.37)	.16 (.27)	.18 (.27)	.22 (.27)
Personal choice	.35 (.36)	.37 (.36)	.37 (.36)	.41 (.40)	.38 (.39)	.38 (.39)
Random/ efficiency	.40 (.37)	.23 (.34)	.23 (.34)	.28 (.32)	.17 (.29)	.17 (.29)
Unelabo- rated	.10 (.24)	.11 (.23)	.11 (.23)	.13 (.27)	.10 (.25)	.10 (.25)

Table 6. Standardized coefficients of justifications as predictors of positive evaluations of distributions

Justifications	Neutral items			Gendered items		
	Random equivalent	Equivalent by sex	Unequal by sex	Random equivalent	Equivalent by sex	Unequal by sex
Random/ efficiency	.45***	.55***	.15	.22*	.29*	.23†
Choice	−.45***	−.26*	−.26*	−.70***	−.41***	−.05
Moral	−.01	.04	−.26**	−.29**	−.17†	−.26*
Gender					.23*	.25*
R^2	.65***	.52***	.20***	.66***	.44***	.19**

Notes. Empty cell indicate that the justification was not included in the regression because it was used in less than 10% of cases.

† $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

used more than 10% of the time. For both equivalent and unequal distri-
butions by sex of gendered items, Random/Efficiency and Gender-Norm
related justifications were associated with more positive evaluations

of the distributions, whereas Moral justifications were associated with negative evaluations. For equivalent items distributed by sex, Personal Choice was also associated with more negative evaluations, as Tables 5 and 6 show.

Perceived Agreement

It was expected that younger children would be more likely to state that everyone affected by the distribution would agree to it. Perceived agreement was analyzed with a 2 (gendered vs. neutral) × 2 (individual items) × 4 (age group) repeated-measures ANOVA, with gendered vs. neutral and individual items as repeated measures. A main effect for age, $F(1, 49) = 4.75$, $p = .005$, $\eta = .23$, confirmed this hypothesis, indicating that the 6-year-olds ($M = .44$, $SD = .34$, $p = .017$) and 8-year-olds ($M = .38$, $SD = .32$, $p = .043$) saw total agreement more than did the 10-year-olds ($M = .08$, $SD = .11$). The judgments of agreement for the adults did not differ from other age groups ($M = .18$, $SD = .20$).

Distributing gendered items to boys and girls was expected to elicit the most judgments that everyone affected agreed to the distribution. This was not confirmed across all distribution types, but a distribution type × gendered interaction, $F(2, 98) = 13.89$, $p < .001$, $\eta = .22$, indicated that, in the unequal distributions, participants perceived more agreement when the items were gendered than when they were neutral, as shown in Figure 1.
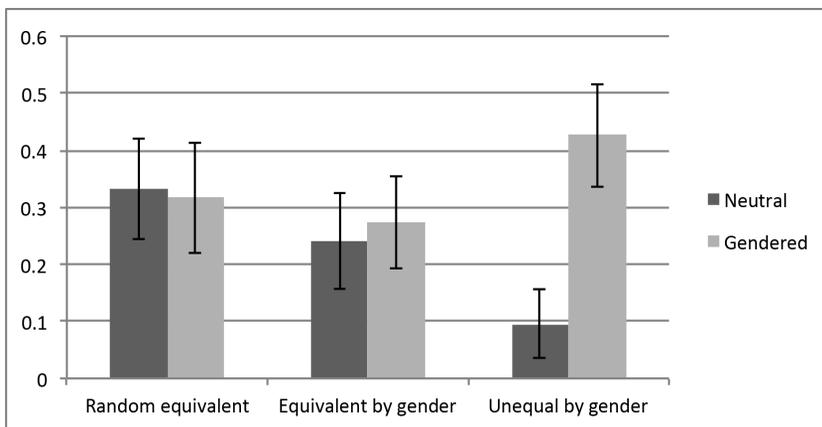
Figure 1.   Perceived agreement by distribution type and item type. Error bars show 95% confidence intervals.

Perceived Agreement, Equality of Items, Gendered Items, and
Judgments of Distributions

Participants' judgments that those affected by the distributions would agree to them were expected to predict positive evaluations of the distributions. In addition, a view of the items as more geared toward one sex or the other was expected to also predict positive evaluations. The perception that the items were unequal was expected to predict negative evaluations of the distributions. To test these hypotheses, the judgments were averaged over the two types of items (within gendered items and within neutral items) within each of the three distributions. Average judgments of perceived agreement to the distribution, perceived gendered natures of the items, and perceptions that the items were equal were entered as predictors of evaluations of the distributions. To see whether these effects existed above and beyond the effect of age, age was also included as a predictor in the regressions. Six regressions were run to examine predictors of each of the three distributions types, with both gendered and neutral items, controlling for age. As expected, all six regressions showed that perceived agreement predicted evaluations of the distribution (all at $p < .001$), such that judgments that everyone agreed predicted judgments that the distribution was acceptable. Participants' perception that the items were gendered predicted more positive evaluations of the distributions for two distributions with gendered items: equivalent by sex and unequal by sex. The belief that the items were equal did not significantly predict evaluations. Finally, older age predicted more positive evaluations but only for the random distribution of neutral items. Older age predicted more negative evolutions in the equivalent-by-sex condition with gendered items. See Table 6 for standardized coefficients and significance levels.

Discussion

Overall, both children and adults were not overwhelmingly accepting of any distribution. Even the relatively random distributions, which did not involve gender or sex in either the type of item distributed or in the method of distribution, were only judged to be acceptable 49% of the time. Participants sometimes stated that the demand of distributing the items quickly was a legitimate reason to hand out items relatively randomly, but they also frequently mentioned that those affected should be able to choose their own items. Still, in one assessment, participants at all ages were especially critical of the idea of distributing different items to boys and girls: When items were unrelated to gender norms and when they were clearly

unequal, only 12% of participants judged these distributions acceptable. This is consistent with previous research, which shows that people are sensitive to inequality but that they reason about the specific features of each individual situation (e.g., Turiel, 1998). Within each age group, participants judged some distributions differently than others. Still, important age differences were found that point toward different reasoning at different ages. These will be discussed first, followed by specific findings that cut across ages.

Consistent with research that shows age differences in flexibility about gender (Taylor et al., 2009), children around ages 6–8 judged distributions related to gender norms as more acceptable than did older children and adults. In the distributions of equivalent items related to gender, this finding was expected because the element of unfairness was less salient. However, age differences were also found in the distribution of unequal items by sex, indicating that younger children were more accepting of using sex as a basis of distribution than were older children and adults, regardless of the relative value of the items. This seems to be contrary to the results of past research that has shown that children are sensitive to unfairness (Fehr et al., 2008) even when gender norms are relevant (Conry-Murray & Turiel, 2012). However, in previous research related to gender and fairness, explicit information about the preferences of those affected by the distribution was provided. In the current study, information about preferences was not provided. The fact that the 6- and 8-year-olds viewed agreement to the distributions as high compared to children of the other ages may indicate that the young children relied on gender norms for information about what items the children would prefer to receive. Also note that, although only about half of young children judged that there was agreement, the question was worded strongly, asking whether *everyone* agreed to the distribution.

Given the dynamics of classrooms and other group settings, children often observe authority figures, including parents (Lytton & Romney, 1991), dividing rewards based on gender norms and may not know whether this method truly reflects the preferences of those affected. For example, some research shows that children may not feel comfortable expressing nonnormative preferences in some settings (Conry-Murray, 2013). The current study shows that children, especially children around ages 6 and 8, may assume that those affected agree to sex-based distributions, especially when the items are in line with gender norms.

The 10-year-olds' judgments were less positive about the distributions than were those by the younger children, but, like the younger children, they were more accepting of unequal treatment of boys and girls when the items were related to gender norms. However, only 10% of the

10-year-olds indicated that everyone agreed to the distributions. Sensitivity to the diversity of preferences has been shown to increase with age through childhood (Ruble, Martin, & Berenbaum, 2006), and this may be one reason that 10-year-olds are less accepting of distributions by gender. They may have also considered group functioning, as has been found in other research (Killen & Stangor, 2001). It is clear that the 10-year-olds are capable of reasoning in ways that indicate that they coordinate domains: They seem to acknowledge that a distribution may not make everyone happy but may still be acceptable.

Only the adults distinguished between random distributions and distributions by sex, in which random distributions were accepted more than either distribution by sex. Adults may also be more sensitive to the possibility that individual preferences vary, and this fits with the finding that they saw relatively little agreement among the recipients of the items in the stories.

The implication of these age differences is that young children may be less likely to attribute differential treatment to discrimination. Brown and Bigler's (2005) developmental model of perceptions of discrimination suggests that children need to be aware of stereotypes in order to recognize discrimination. The current research indicates that at young ages, when discrimination is related to a stereotype, young children may also be *less* likely to attribute motives to discrimination. This may be a result of children's assumptions at different ages about how gender works. Gender norms might disguise gender discrimination by young children by making it seem as though differential treatment is in line with preferences.

These findings differ from those reported by Fehr et al. (2008), who found that children at ages 3–8 had an aversion to inequality. Although the methods of that study differed, the current research shows that that any aversion to inequality depends on the assumptions that children have about the situation, including information about presumed gender-norm-related preferences. If children believe that others' preferences are in line with gender norms, it could impact their judgments of gender-related fairness. In fact, in the regressions predicting positive evaluations of the distributions, beliefs that the items were neutral perceived less positive evaluations in the distributions of gendered items by sex conditions, whereas perceived agreement predicted positive evaluations in all conditions. These effects were above and beyond the effect of age. Still, given the findings here that perceived agreement and gendered items seem to be especially influential around the ages of 6–8, it may be important to help children to see the diversity of preferences that exist so that they can more easily identify unfairness and be less likely to engage in discrimination themselves.

Conry-Murray (2013) found that a significant minority of children at ages 5–8 (around 20%) held a preference not typically associated with their sex, but many did not feel comfortable expressing those preferences in public. If many children do not realize how common gender-atypical preferences are, they may miss opportunities to address discrimination and to express themselves and pursue non-gender-typical opportunities.

Age differences were not found in the justifications for judgments of the distributions, perhaps because cell sizes are small, given that only a proportion of participants endorsed any one justification. Still, the justifications shed light on the reasoning behind the overall pattern of judgments. As expected, references to the randomness of efficiency of the distributions tended to be associated with positive evaluations of the distributions. Distributing items to boys and girls appears to be most often seen as a quick and efficient method of distribution (even though it requires the class to be segregated before items can be distributed). References to moral concerns with fairness or with personal choice were associated with negative evaluations of the distributions. References to gender norms were used only when gendered items were distributed to boys and girls. In that case, references to gender norms were associated with a greater number of positive evaluations of the distributions. That is, the trend over all ages was for participants to judge that gender norms were a reason that distributing different items to boys and girls is acceptable. There are two possible explanations for this finding: One is that participants may have been unable to see the inequality of the items because they were so focused on the gender norms. However, most of the time, participants explicitly stated that one item was better, as shown in Table 3. A second related possibility is that participants may have assumed that the authority figures had good intentions in distributing along sex lines, perhaps assuming that girls' and boys' preferences do indeed align with gender norms so that the children received the item they most wanted.

Indeed, participants perceived greater agreement to unequal distributions when items were gendered than when they were neutral, whereas this difference was not found in equivalent distributions. This may be an indication that distributions of relatively equivalent gendered items seems to be viewed as innocuous and perhaps do not require agreement of the class, whereas the distributions of unequal, gendered items requires some amount of buy-in by the class. All types of distributions showed that perceptions that everyone affected agreed to the distributions predicted positive evaluations of distributions. However, perceptions that the items were in line with gender norms predicted more positive evaluations for only the two distributions by sex of gendered items.

Participants might have viewed the distributions as acceptable because they came from an authority figure, but the results do not support that contention. At all ages, participants judged some distributions differently than others, indicating that the specific features of each situation (including how the items were split up, the relative value of the items, and the connection of the items to gender norms) led them to different judgments. They did not appear to accept the authority figure's decision unless they viewed the circumstances of the distribution as acceptable. In addition, the authority justification was used in under 1% of justifications. Extensive research shows that even young children judge that authorities are not the source of moral principles (e.g., Smetana, 2006; Turiel, 1998). For example, research shows that children do not accept teachers making decisions that would harm students or be unfair to them even as young as age 3 (Wainryb & Ford, 1998).

Finally, although sex differences in judgments of the distributions were investigated, none were found. This is an indication that participants were not influenced solely by an in-group bias that favored their own sex when rewards were unequal. Instead, both sexes were similarly concerned with fairness at times and with gender norms at other times. Again, the variety of judgments is an indication that participants judged each case based on the specific features of the distribution, using reasoning to make judgments regardless of which sex might benefit.

The current study suggests that children and adults make judgments based on multiple domains of multifaceted situations. Justifications across all ages indicate that, at times, moral concerns with fairness, conventional considerations like gender norms, and personal choice were relevant, and these can lead to different judgments. Still, the younger children were more likely to accept distributions of unequal items when the distributions were related to gender norms, seemingly because they assumed that preferences are usually consistent with gender norms. Increasing classification and domain coordination abilities, and more nuanced views of gender, may allow older children and adults to reason about the distributions more critically (Bigler & Liben, 1992).

Limitations and Future Directions

Future research should examine children's reasoning about gender and distributive justice further. Specifically, it would be useful to replicate this study with different gendered items. It is not possible to find exactly parallel items that are associated with boys and girls. For example, the math game and the reading game presented here were pictured as the same size

and brand, but math and reading have many different associations that children may have considered in addition to the games' relationship to gender norms. Since masculine and feminine gendered items will always differ in many ways, examining many different types of gendered items can help to determine whether the gendered nature of the items affects judgments.

An additional limitation was the inclusion of different types of authority figures. Although each authority type distributed the items both by gender and randomly, and each authority type distributed both equitable and unequal items, the authority types were different for gendered (school counselor and teacher) versus nongendered items (librarian and parent). Although each authority figure was in a situation where they were traditionally in charge (e.g., the parent handed out snacks for a whole-class birthday party, and the teacher handed out rewards in class), this should be corrected in future research to ensure that the school counselors and teachers described here were not more influential than the librarians and parents.

Data about income and ethnicity were not collected, limiting the generalizability of the findings. Future research should examine this issue because some research finds that flexibility about gender can vary by cultural context (e.g., Rhodes & Gelman, 2009).

Research should also examine individual differences in reasoning about gender equity. It may be that children who themselves hold nonnormative preferences are more critical of distributions that would not fit with their preferences. On the other hand, children who feel more pressure to adhere to gender norms may interpret that others adhere voluntarily, so these children may see consensus even if they themselves do not hold gender-typical preferences.

The current research does not examine whether children would act in ways that reinforce gender norms. However, it does indicate that children may not be concerned by others' behavior that supports traditional gender norms, even when it is unequal. Understanding the factors that lead children to sometimes accept unequal treatment based on gender is important because if children do not notice gender inequalities in some cases, they will not challenge them and might not avail themselves of important opportunities to grow in ways that may not be typical of their sex.

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