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Journal of Experimental Child Psychology

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How do young children expect others to address resource inequalities between groups?



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ARTICLE INFO

Article history:

Received 2 October 2015

Revised 21 April 2016

Keywords:

Resource allocation

Inequality

Social cognition

Social development

Moral development

Group norms

ABSTRACT

Age-related changes in young children's expectations for others' resource allocation decisions were investigated. Children ages 3 to 6 years ($N = 80$) were introduced to an inequality of resources between two groups. Participants gave their expectations for (a) how a member of the group with more resources (advantaged group) and a member of the group with fewer resources (disadvantaged group) would evaluate the inequality (okay or not okay), (b) which group each of the two individuals would prefer (ingroup or outgroup), and (c) how each of the two individuals would allocate subsequent resources between the groups. Findings revealed children's differing expectations for how others would address resource inequalities based on group status. Children expected that if the disadvantaged group member evaluated the inequality negatively then he or she would reduce the disparity. But children expected that if the advantaged group member evaluated the inequality positively then he or she would increase the disparity. Furthermore, 5- and 6-year-olds, but not 3- and 4-year-olds, expected individuals to seek more for their ingroup if they preferred their ingroup over the outgroup. Different from previous research on children's own resource allocation decisions, these findings reveal the circumstances under which children *expect others* to perpetuate or attenuate resource inequalities between groups.

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Introduction

Children's expectations for how others will address resource disparities between groups reflect their developing understanding of inequality. Because inequality during childhood contributes to the cycle of exclusion that continues through adulthood, whereby some social groups experience restricted access to resources (Abrams & Killen, 2014; Brown & Bigler, 2005), it is important to understand children's perspectives on others' allocation decisions. Resource allocation decisions are complex; multiple factors contribute to decision making in distributive contexts. Moreover, children's developing expectations for how others will respond to a resource inequality sheds light on their awareness of who might be expected to reinforce an unequal status quo and who might be expected to rectify a resource disparity. The current study examined young children's expectations for others' resource allocation decisions in the context of a preexisting resource inequality between groups.

Past research has largely focused on children's own resource allocation behavior rather than expectations for how others might address inequality. This work has demonstrated that, from as early as the preschool years, children strongly prefer equal allocation of resources (e.g., Cooley & Killen, 2015; Warneken, Lohse, Melis, & Tomasello, 2011) yet sometimes give priority to members of their own group when making allocation decisions (e.g., Dunham, Baron, & Carey, 2011; Fehr, Bernhard, & Rockenbach, 2008; Renno & Shutts, 2015). Although the tension between fairness considerations and ingroup biases in children's own allocation decisions is important, little is known about whether children expect others' behavior to be guided by these same considerations.

In a broad sense, such expectations could reflect some of the early origins of children's understanding of how resources move through social systems (Arsenio, 2015; Wainryb & Recchia, 2014). Evidence that children recognize the roles of fairness considerations, ingroup preferences, and group status differences in others' allocation decisions would reflect part of their developing understanding of how individuals within groups seek to perpetuate or attenuate group-based inequalities. As they gain experience as members of groups, children increasingly recognize that groups are defined by the norms that they hold (Abrams & Rutland, 2008). Yet in the context of resource allocation, very little research has investigated what children expect these norms to be.

One possibility is that young children may expect others to allocate more resources to their social ingroup, as considerable research demonstrates that children themselves consider affiliations with social groups when allocating resources (Dunham et al., 2011; Moore, 2009; Olson & Spelke, 2008; Renno & Shutts, 2015). But in a context of group-based inequality, another possibility is that children may expect others to adhere to principles of equality or seek to correct the disparity by giving more to the group with less. Many studies show that children value these fairness issues when making their own allocation decisions (Baumard, Mascaró, & Chevallier, 2012; Fehr et al., 2008; Shaw & Olson, 2012; Warneken et al., 2011). Concern for equality in resource allocation, for example, may even emerge during infancy (e.g., Geraci & Surian, 2011; Sloane, Baillargeon, & Premack, 2012; Sommerville, Schmidt, Yun, & Burns, 2013), highlighting children's strong concern for fairness in distributive contexts.

A third possibility is that older preschoolers may recognize the coexistence of both concerns in others' resource allocation behavior. This was the prediction tested in the current study. Recent work has demonstrated that many considerations, including concerns for group cohesion and ensuring fair distribution, coexist in children's own resource allocation decisions from as early as the preschool years (see Killen, Elenbaas, Rizzo, & Rutland, *in press* for a review). In fact, some research suggests that, in a complex social context like intergroup resource allocation, older children may recognize that others weigh multiple considerations when making allocation decisions (Killen & Rutland, 2011). In a context of preexisting inequality, such considerations may include an interest in correcting the group-based resource disparity as well as promoting the interests of the ingroup. Unique from research on children's own grappling with competing concerns, such evidence would shed light on early understanding that others may have differing perspectives about how to address resource inequality between groups (and perhaps these perspectives diverge based on the groups' advantaged or disadvantaged status).

Thus, the question addressed in the current study was not whether children expect others to allocate resources in the same way as they would allocate themselves. Rather, we investigated children's expectations for how others would choose to distribute resources based on those individuals' differing priorities. Broadly, we asked the following question: Who do children expect to reduce an inequality between groups, and who do children expect will perpetuate it? Specifically, we investigated the extent to which children's expectations for the allocation behavior of an advantaged group member and a disadvantaged group member were related to their expectations for how those individuals would evaluate the resource inequality (acceptable or not acceptable) and which group they would prefer (ingroup or outgroup).

To frame the current investigation, we drew on an integrative theoretical model called the social reasoning developmental (SRD) model (Killen, Elenbaas, & Rutland, 2016; Killen & Rutland, 2011; Rutland, Killen, & Abrams, 2010). Research based on this model has demonstrated that children balance (inter)group and fairness concerns in their own allocation decisions (e.g., Mulvey, Hitti, Rutland, Abrams, & Killen, 2014). We also drew on related work on young children's understanding of how groups differ in their access to resources. For example, during early childhood, children begin to recognize that some social groups are higher in status than others (e.g., Nesdale & Flesser, 2001) and have more resources than others (Horwitz, Shutts, & Olson, 2014; Li, Spitzer, & Olson, 2014; Shutts, Brey, Dornbusch, Slywotzky, & Olson, 2016).

Also during early childhood, children begin to recognize that groups that benefit from resource inequality (i.e., a history of unequal distributions) are unlikely to support a change to the status quo. For example, drawing on the SRD model, Cooley and Killen (2015) found that 5- and 6-year-olds expected an advantaged group that traditionally received more resources to be less approving of an individual member advocating for equal distribution between groups compared with 3- and 4-year-olds. Furthermore, 5- and 6-year-olds personally evaluated an individual who advocated for equality positively but recognized that an advantaged group would not like an individual member who was seeking to change the unequal norm of the group.

Along these same lines, children may expect that a member of an advantaged group (with many resources) and a member of a disadvantaged group (with few resources) may allocate new resources differently between the two groups. Prior to the current study, however, this possibility had not been tested. Children's expectations for how groups will react to members who want to change established allocation norms shed light on the origins of knowledge about group dynamics (Cooley & Killen, 2015). They do not, however, answer the question of whether children expect that membership in a resource-advantaged or resource-disadvantaged group would impact allocation behavior. Concerns for inequality and preferences for one's own ingroup may be perceived to operate differently for members of advantaged and disadvantaged groups. Determining whether children's expectations for allocation behavior differ by group status has the potential to reveal important information about their developing knowledge concerning the actual allocation norms that groups hold and about how resource inequalities between groups are exacerbated (Arsenio, 2015; Wainryb & Recchia, 2014).

Although research in this area is scarce, some evidence has emerged to suggest that, when there is no preexisting resource disparity between recipients, children begin to expect others to share preferentially with ingroup members during early childhood. For example, one study found that, whereas 3-year-olds expected a protagonist to share equally at the same rate regardless of who the potential recipient was, 5-year-olds expected equal sharing among friends approximately 90% of the time and equal sharing with disliked peers approximately 40% of the time (Paulus & Moore, 2014). Furthermore, one study found that 4- to 10-year-olds increasingly expected members of school groups in competition to allocate more cookies to their ingroups rather than dividing equally between groups (DeJesus, Rhodes, & Kinzler, 2014). Approximately 40% of 4-year-olds expected an allocator to give more to their ingroup in this context, and this number increased to approximately 80% by 8 years of age.

These findings provide support for the possibility that expectations for ingroup bias in others' allocation decisions emerge during the preschool years. That is, between 3 and 6 years of age, children begin to expect others to advantage their ingroup when resources are scarce. The role of group status (i.e., *preexisting inequality between groups*) in expectations for allocation behavior, however, remains unexplored. In this context, children may expect fairness considerations to coexist with ingroup

preferences. As outlined above, children themselves judge denial of resources negatively from as young as 3 years and choose to correct resource inequalities by giving more to an individual with less from as young as 4 years (Li et al., 2014). Accordingly, expectations that others would behave fairly may also emerge early in development, although this possibility has not yet been weighed against ingroup preferences in an allocation context.

Specifically, no previous work has investigated whether or not children expect that another person's evaluation of a preexisting inequality (okay or not okay) would be associated with different allocation behavior. In a context of preexisting inequality between groups, however, it is possible that children may perceive allocators' evaluations of the disparity at the outset (acceptable vs. unacceptable) as influential in their allocation decisions. Finally, little is known regarding the extent to which children expect that an individual's preference for the ingroup or the outgroup (beyond simply belonging to one group or another) would impact their allocation behavior. Directly investigating children's expectations for others' group preferences has the potential to reveal new information because these expected preferences can be used to predict expected allocations and can be differentiated from other factors that may influence expected allocations.

To test these questions, we introduced 3- to 6-year-olds to an inequality of resources between two groups of peers and to one member of the group with more resources (advantaged group) and one member of the group with fewer resources (disadvantaged group). Participants were asked to give their expectations for (a) which group each of the two individuals would prefer (ingroup or outgroup), (b) how each of the two individuals would evaluate the inequality (okay or not okay), and (c) how each of the two individuals would allocate subsequent resources between the two groups.

We examined age-related changes in how expected preferences and expected evaluations predicted expected resource allocation decisions for the advantaged and disadvantaged group members. We sampled 3- to 6-year-olds because during the preschool years children consider both existing inequalities (e.g., Li et al., 2014) and group affiliations (e.g., Renno & Shutts, 2015) when allocating resources themselves, and they also begin to independently recognize that some social groups are higher in status or have more resources than others (Horwitz et al., 2014; Nesdale & Flessner, 2001). Thus, children may begin to recognize the roles of fairness considerations, ingroup preferences, and group status differences in others' allocation decisions during early childhood as well. Some previous research supports this possibility, with one study finding evidence for preschoolers' recognition that advantaged groups are less supportive of equality than they are (Cooley & Killen, 2015) and two studies suggesting that expectations for ingroup bias in others' resource allocation decisions emerge between 3 and 6 years of age (DeJesus et al., 2014; Paulus & Moore, 2014). What is not known is how group status (advantaged or disadvantaged), expected group preferences, and expected evaluations of a preexisting inequality interact to predict young children's expectations for others' resource allocation decisions. We investigated this question with 3- to 6-year-olds in order to shed light on the origins and early development of children's recognition of the circumstances under which individuals within groups may seek to perpetuate or attenuate group-based inequalities.

We hypothesized that children would expect different allocation behavior from a member of the disadvantaged group (with few resources) versus a member of the advantaged group (with many resources). Furthermore, drawing on the SRD model (Killen et al., *in press*), we predicted that allocation expectations would be moderated by whether children thought that the individual evaluated the inequality as acceptable or unacceptable and whether children thought that the individual preferred his or her own group or the outgroup. Our hypotheses centered around two main predictions.

First, we predicted that children would expect individuals to allocate more resources to their ingroup if they preferred their ingroup over the outgroup. This assumption is implicit in previous work on children's expectations for ingroup bias in others' allocations, but it is especially important to explicitly measure in this context where groups had different statuses with regard to the preexisting inequality (advantaged vs. disadvantaged). Specifically, we predicted that 5- and 6-year-olds who expected the allocator (from the disadvantaged or advantaged group) to prefer the ingroup over the outgroup would also expect that individual to allocate more resources to the ingroup (H1). Related research indicates that by 5 years of age (but not before), young children expect ingroup bias in intergroup allocation scenarios (DeJesus et al., 2014; Paulus & Moore, 2014). Expanding on this previous work, however, we hypothesized that mere membership in a group would not be expected to result

in preferential allocation to the ingroup. Rather, 5- and 6-year-olds would expect the allocator to distribute preferentially to the ingroup only if that person was thought to *prefer* the ingroup over the outgroup.

Second, we predicted that children's expectations for others' allocation decisions would also vary as a function of their expectations for how those individuals would evaluate the inequality (okay or not okay) and as a function of that individual's group status (advantaged or disadvantaged). No previous studies have examined the role of expected evaluations in expected allocations, but related research indicates that young children themselves take steps to correct resource inequalities when they judge them negatively from as early as 4 years of age (Li et al., 2014; Paulus, 2014). Thus, we hypothesized that children would expect a member of a *disadvantaged* group to reduce the inequality when he or she viewed the inequality as *not okay* (H2). The disadvantaged group member would not be expected to reduce the disparity, however, if he or she viewed the inequality as okay (H3).

By contrast, research indicates that young children expect advantaged groups to disapprove of a change to a status quo (Cooley & Killen, 2015), leading to the hypothesis that the *advantaged* group member would be expected to increase the disparity when he or she viewed the inequality as *okay* (H4). The advantaged group member would not be expected to increase the disparity, however, if he or she viewed the inequality as not okay (H5). Thus, we predicted that children's allocation expectations for the advantaged and disadvantaged group members would be moderated by children's expectations for how these individuals would evaluate the inequality (acceptable vs. unacceptable).

Method

Participants

Children ages 3 to 6 years ($N = 80$) participated in the study, including $n = 44$ 3- and 4-year-olds ($M = 4.09$ years, $SD = 0.56$) and $n = 36$ 5- and 6-year-olds ($M = 5.84$ years, $SD = 0.52$). The sample was evenly divided by gender and was racially and ethnically diverse (reflecting the demographics of the metro area where data were collected). The 3- and 4-year-old group was 41% girls ($n = 18$) and 59% boys ($n = 26$); of the 3- and 4-year-olds, 43% ($n = 19$) were European American, 32% ($n = 14$) were African American, 9% ($n = 4$) were Latino/a, 14% ($n = 6$) were multi-racial or multi-ethnic, and 2% ($n = 1$) declined to provide race or ethnicity information. The 5- and 6-year-old group was 58% girls ($n = 21$) and 42% boys ($n = 15$); of the 5- and 6-year-olds, 31% ($n = 11$) were European American, 28% ($n = 10$) were African American, 17% ($n = 6$) were Latino/a, 6% ($n = 2$) were Asian American, 11% ($n = 4$) were multi-racial or multi-ethnic, and 8% ($n = 3$) declined to provide race or ethnicity information. Participants were recruited from eight preschools and kindergartens serving middle- and lower middle-income families in the mid-Atlantic region of the United States. Written parental consent and children's verbal assent were obtained for all participants. All children with parental consent participated.

Procedure

Participants were individually interviewed by a trained experimenter in a quiet space at their school. All stimuli and measures were presented on laptops using MediaLab v2012 (Empirisoft) data collection software. The entire experimental session took approximately 10 min.

Measures

Children were introduced to two groups of peers (depicted by illustrations of young children on a laptop screen). Groups were composed of 4 children apiece, including 2 girls and 2 boys per group. Both groups were enclosed in light gray squares on the laptop screen to differentiate the two groups. The members of both groups were in possession of star stickers. In one group (the disadvantaged group) every child had one sticker, and in the other group (the advantaged group) every child had

six stickers. Children were told, “See these kids and these kids? Everybody in this group has one sticker [experimenter points to group], and everybody in this group has six stickers [experimenter points to group].”

Then children were introduced to one member of the disadvantaged group (Sophie/Jackson) and one member of the advantaged group (Mia/Lucas). Individual group member gender was matched to that of the child. Pilot testing indicated no order effects (i.e., no differences based on whether children considered the disadvantaged or advantaged group member first). Thus, to simplify data collection procedures, children gave their expected preferences, evaluations, and allocations for the disadvantaged group member first and gave their expected preferences, evaluations, and allocations for the advantaged group member after that. The questions used to elicit expected group preferences, expected evaluations of the inequality, and expected resource allocations were the same for both the disadvantaged and advantaged group member. The questions were as follows.

Expected group preference (ingroup/outgroup)

Children were asked, “Can you point to the group that [X] likes more?” Children answered by pointing to one of the groups.

Expected evaluation of the inequality (okay/not okay)

Children were asked, “Does [X] think it’s okay or not okay that everybody in this group has one sticker [experimenter points to group] and everybody in this group has six stickers [experimenter points to group]?” Children answered verbally or by pointing to a smiley face (“okay”) or a frowny face (“not okay”).

Expected resource allocation

Next a cardboard rectangle was placed over the laptop keyboard and children were asked, “Now it’s [X]’s turn to give out stickers to these groups! Can you show me how [X] wants to give them out?” The experimenter handed children five star stickers and said, “Stickers for this group go here [experimenter points to the cardboard under one group], and stickers for this group go here [experimenter points to the cardboard under the other group].” Children responded to the questions by distributing the star stickers beneath the two groups.

Results

Preliminary analyses

In regard to group preferences, preliminary analyses indicated that 59% of participants ($n = 47$) expected the advantaged group member to like the ingroup more than the outgroup, whereas 31% of participants ($n = 25$) expected the disadvantaged group member to like the ingroup more than the outgroup. A McNemar test was significant ($p < .001$), indicating that children were more likely to say that the advantaged group member (59%) than the disadvantaged group member (31%) preferred the ingroup over the outgroup.

In addition, in regard to evaluations, 61% of participants ($n = 49$) expected the disadvantaged group member to evaluate the inequality as not okay, whereas 45% of participants ($n = 36$) expected the advantaged group member to evaluate the inequality as not okay. A McNemar test, however, was not significant ($p = .05$).

Furthermore, 59% of participants ($n = 47$) expected the disadvantaged group member to allocate more resources to the ingroup than to the outgroup, whereas 55% of participants ($n = 44$) expected the advantaged group member to allocate more resources to the ingroup than to the outgroup. A McNemar test was not significant ($p = .74$), indicating that children’s expectations for the two individuals’ allocation decisions did not vary by their group membership alone.

We conducted preliminary tests for differences in expected group preferences, evaluations, and allocations by participant age group (3- and 4-year-olds and 5- and 6-year-olds), participant race or ethnicity, and participant gender. Because no significant differences emerged, all tests are reported

above with the sample collapsed across age group, race or ethnicity, and gender. See the [online supplementary material](#) for details on these preliminary tests. Next, we tested our central hypotheses regarding whether children's expectations for others' allocation decisions would be moderated by expected evaluations of the inequality and expected group preferences.

We used separate models to test children's allocation expectations for the disadvantaged group member (presented first below) and for the advantaged group member (presented second below). This was done in order to provide the most straightforward tests of our hypotheses, which pertained to how the disadvantaged and advantaged group members would allocate resources based on expectations for these individuals' group preferences and evaluations of the inequality. We used analysis of variance (ANOVA) models to test for the coexistence of concerns about inequality and group preferences in children's expectations for others' resource allocation decisions. In addition to these tests addressing relative differences in expectations, we also used one-sample *t*-tests to determine the conditions under which children would expect others to perpetuate or rectify the group-based inequality. Results are presented below in order of the hypotheses, with findings from the ANOVA and *t*-tests for the disadvantaged group member presented first, followed by findings from the ANOVA and *t*-tests for the advantaged group member.

Disadvantaged group member

To determine whether children's expectations for the disadvantaged group members' evaluations of the inequality and group preferences would be related to their allocation expectations, a 2 (Age Group: 3- and 4-year-olds or 5- and 6-year-olds) \times 2 (Expected Group Preference: ingroup or outgroup) \times 2 (Expected Evaluation: okay or not okay) ANOVA was conducted for children's expectations for the number of stickers that the disadvantaged group member would allocate to the ingroup (range = 0–5 stickers). This revealed main effects for Age Group and Expected Evaluation with an additional Age Group \times Expected Group Preference interaction.

H1: Role of expected group preferences in allocations

The main effect of Age Group, $F(1, 72) = 6.16, p = .02, \eta_p^2 = .08$, indicated that older children (5- and 6-year-olds) thought that the disadvantaged group member would give more stickers to the ingroup compared with younger children (3- and 4-year-olds) ($M_{3- \text{ and } 4\text{-year-olds}} = 2.45, SD = 1.84; M_{5- \text{ and } 6\text{-year-olds}} = 2.89, SD = 1.55$). However, the Age Group \times Expected Group Preference interaction, $F(1, 72) = 10.05, p = .04, \eta_p^2 = .05$, revealed that these age-related changes were moderated by children's expectations for this individual's group preference. Supporting our hypothesis (H1), older children who expected the disadvantaged group member to prefer the ingroup thought that this individual would give more stickers to the ingroup ($M_{5- \text{ and } 6\text{-year-olds}} = 3.50, SD = 1.09$) than did younger children who expected the disadvantaged group member to prefer the ingroup ($M_{3- \text{ and } 4\text{-year-olds}} = 2.55, SD = 2.16$). For younger children who expected the disadvantaged group member to prefer the (advantaged) outgroup, however $M = 2.42, SD = 1.75$. Furthermore, older children (5- and 6-year-olds) who expected the disadvantaged group member to prefer the ingroup thought that this individual would give more stickers to the ingroup ($M = 3.50, SD = 1.09$) than older children who expected the disadvantaged group member to prefer the (advantaged) outgroup ($M = 2.50, SD = 1.69$). That is, older children, but not younger children, recognized that preference for the ingroup could lead a disadvantaged group member to allocate more resources to his or her own group.

Tests against chance for H1. Furthermore, we predicted that older children who expected the disadvantaged group member to prefer the ingroup over the outgroup would also expect that individual to allocate more resources to the ingroup (H1). To test this hypothesis, separate from the relative differences revealed by the ANOVA, we conducted four one-sample *t*-tests against a chance allocation of 2.5 (see [Fig. 1](#)). In line with our hypothesis, 5- and 6-year-olds who expected the disadvantaged group member to prefer the ingroup expected that individual to give significantly more stickers to the ingroup than would be expected by chance ($M = 3.50, SD = 1.09, t(13) = 3.43, p = .005, d = 0.92$). All other *t*-tests did not differ significantly from chance: 5- and 6-year-olds expecting preference for the outgroup ($M = 2.50, SD = 1.68, t(21) = 0, p = 1.00, d = 0$; 3- and 4-year-olds expecting preference for the

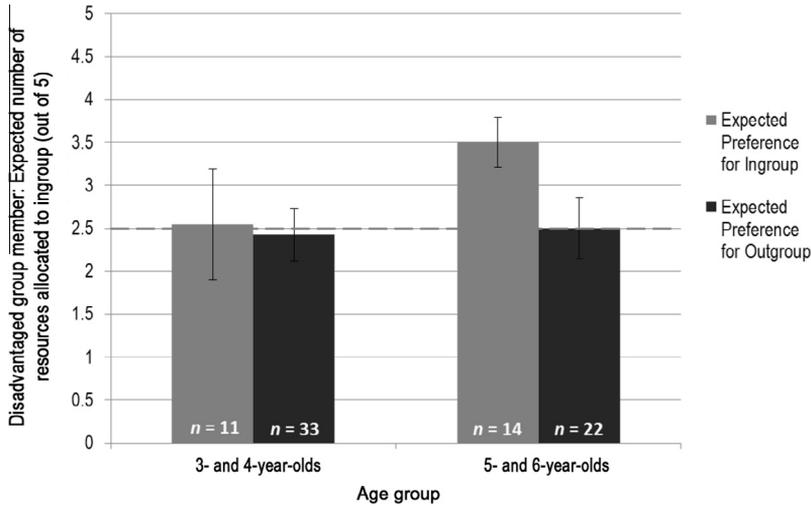


Fig. 1. Children's resource allocation expectations for the member of the disadvantaged group, by age and expected group preference. Bars represent standard errors of the mean.

outgroup ($M = 2.42$, $SD = 1.75$), $t(32) = -0.25$, $p = .81$, $d = -0.05$; 3- and 4-year-olds expecting preference for the ingroup ($M = 2.55$, $SD = 2.16$), $t(10) = 0.07$, $p = .95$, $d = 0.02$. Thus, older children, but not younger children, thought that the member of the disadvantaged group would seek more resources for his or her own group if that individual preferred it over the outgroup but would not do so if the individual preferred the (advantaged) outgroup over his or her own (disadvantaged) group.

H2 and H3: Role of expected inequality evaluations in allocations

Returning to the ANOVA model, for H2 and H3, the main effect of Expected Evaluation, $F(1,72) = 15.27$, $p < .001$, $\eta_p^2 = .18$, indicated that children who expected the disadvantaged group member to view the inequality as “not okay” thought that this individual would give more stickers to the ingroup ($M = 3.06$, $SD = 1.69$) than children who expected an evaluation of “okay” ($M = 2.00$, $SD = 1.57$). Thus, supporting our hypotheses (H2 and H3), children who thought that the disadvantaged group member would evaluate the inequality negatively thought that this individual would give more resources to his or her own (disadvantaged) group than children who expected an evaluation of “okay” from the disadvantaged group member.

Tests against chance for H2 and H3. As with H1, we conducted separate one-sample t -tests to provide further tests of H2 and H3 in addition to the relative differences revealed by the ANOVA. In this case, the allocation expectations of children who expected an evaluation of “okay” and children who expected an evaluation of “not okay” were tested against chance (2.5) (see Fig. 2). These tests revealed (H2) that children who expected the disadvantaged group member to evaluate the inequality as “not okay” expected that individual to give the ingroup significantly more stickers than would be expected by chance ($M = 3.06$, $SD = 1.69$), $t(48) = 2.33$, $p = .02$, $d = 0.33$. However (H3), children who expected the disadvantaged group member to evaluate the inequality as “okay” did not differ significantly from chance in their allocation expectations for that individual ($M = 2.00$, $SD = 1.57$), $t(30) = -1.77$, $p = .09$, $d = -0.32$. Thus, children who expected the disadvantaged group member to deem the inequality unacceptable thought that this individual would take action to reduce it by allocating more resources to his or her own (disadvantaged) group. But children who expected the disadvantaged group member to find the inequality acceptable (okay) did not expect that individual to take corrective action to reduce the disparity.

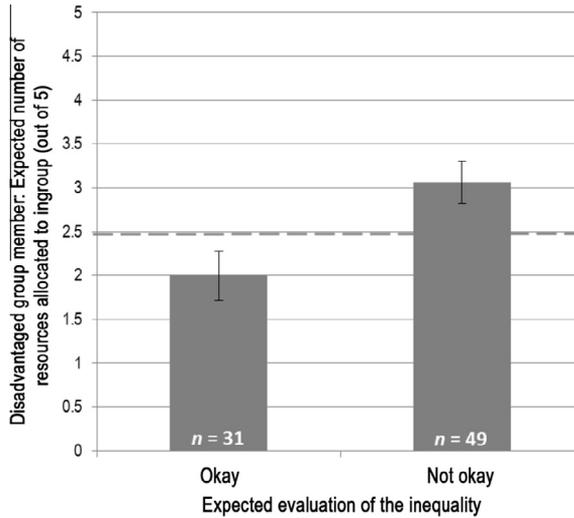


Fig. 2. Children's resource allocation expectations for the member of the disadvantaged group, by expected evaluation of the inequality. Bars represent standard errors of the mean.

Advantaged group member

Parallel to the analyses for the disadvantaged group members' allocation behavior, a 2 (Age Group: 3- and 4-year-olds or 5- and 6-year-olds) \times 2 (Expected Group Preference: ingroup or outgroup) \times 2 (Expected Evaluation: okay or not okay) ANOVA was conducted for children's expectations for the number of stickers that the advantaged group member would allocate to the ingroup (range = 0–5 stickers). This revealed a main effect of Expected Evaluation only, with no main or interaction effects for Age Group or Expected Group Preference.

H1: Role of expected group preferences in allocations

Interestingly, unlike the findings for the role of expected group preferences in children's expectations for the disadvantaged group member's allocation, there was no significant effect for expected group preference in the ANOVA for the advantaged group member's expected allocation. However, whereas the ANOVA addressed the question of relative differences in resource allocation expectations, we hypothesized certain conditions under which children would expect the advantaged allocator to seek significantly more resources for the ingroup. These hypotheses, pertaining to means rather than mean differences, were tested using one-sample *t*-tests, parallel to the approach taken above with the disadvantaged group member.

Tests against chance for H1. This separate set of four one-sample *t*-tests against a chance allocation of 2.5 (see Fig. 3) tested our prediction that older children who expected the advantaged group member to prefer the ingroup over the outgroup would also expect that individual to allocate more resources to the ingroup (H1). In line with our hypothesis, 5- and 6-year-olds who expected the advantaged group member to prefer the ingroup expected that individual to give significantly more stickers to the ingroup than would be expected by chance ($M = 3.35$, $SD = 1.67$), $t(22) = 2.44$, $p = .02$, $d = 0.51$. All other *t*-tests did not differ significantly from chance: 5- and 6-year-olds expecting preference for the outgroup ($M = 2.15$, $SD = 1.52$), $t(12) = -0.82$, $p = .43$, $d = -0.23$; 3- and 4-year-olds expecting preference for the outgroup ($M = 2.55$, $SD = 1.54$), $t(19) = 0.15$, $p = .89$, $d = 0.03$; 3- and 4-year-olds expecting preference for the ingroup ($M = 2.33$, $SD = 1.86$), $t(23) = -0.44$, $p = .66$, $d = -0.09$. Thus, as with their expectations for the disadvantaged group member, older children, but not younger children,

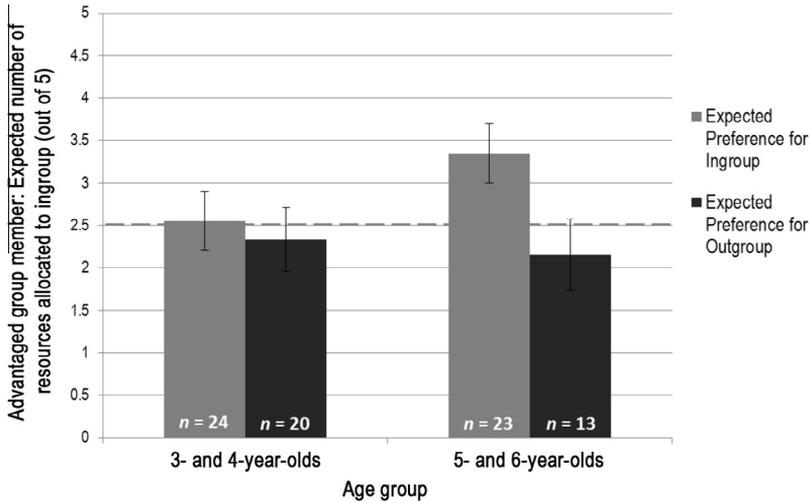


Fig. 3. Children's resource allocation expectations for the member of the advantaged group, by age and expected group preference. Bars represent standard errors of the mean.

thought that the member of the advantaged group would also seek more resources for his or her own group if that individual preferred it over the outgroup.

H4 and H5: Role of expected inequality evaluations in allocations

Returning to the ANOVA model for H4 and H5, supporting our hypotheses, the main effect for Expected Evaluation, $F(1, 72) = 4.30$, $p = .04$, $\eta_p^2 = .06$, indicated that children who expected that the advantaged group member would view the inequality as “okay” thought that this individual would give more stickers to the ingroup ($M = 3.05$, $SD = 1.54$) than children who expected an evaluation of “not okay” ($M = 2.17$, $SD = 1.80$). That is, children who thought that the advantaged group member would perceive the inequality positively thought that this individual would give more resources to his or her own (advantaged) group than children who expected an evaluation of “not okay” from the advantaged group member.

Tests against chance for H4 and H5. Providing further support for our hypotheses (H4), a separate one-sample t -test revealed that children who expected the advantaged group member to evaluate the inequality as “okay” expected that individual to give the ingroup significantly more stickers than would be expected by chance ($M = 3.05$, $SD = 1.54$), $t(43) = 2.35$, $p = .02$, $d = 0.36$ (see Fig. 4). However (H5), children who expected the advantaged group member to evaluate the inequality as “not okay” did not differ significantly from chance in their allocation expectations for that individual ($M = 2.17$, $SD = 1.80$), $t(35) = -1.11$, $p = .27$, $d = -0.18$. That is, children who expected the advantaged group member to find the inequality acceptable (okay) thought that this individual would take steps to maintain it by allocating more resources to his or her own (advantaged) group. But children who expected the advantaged group member to deem the inequality unacceptable (not okay) did not expect that individual to perpetuate the disparity. These findings contrast with results for the disadvantaged group member, who was expected to reduce the disparity when he or she evaluated the inequality as “not okay”.

Discussion

Although past research has highlighted both concerns for fairness and preferential treatment of social ingroups in children's own resource allocation decisions, this study is the first investigation of young children's *expectations* for others' resource allocation behavior in response to an inequality

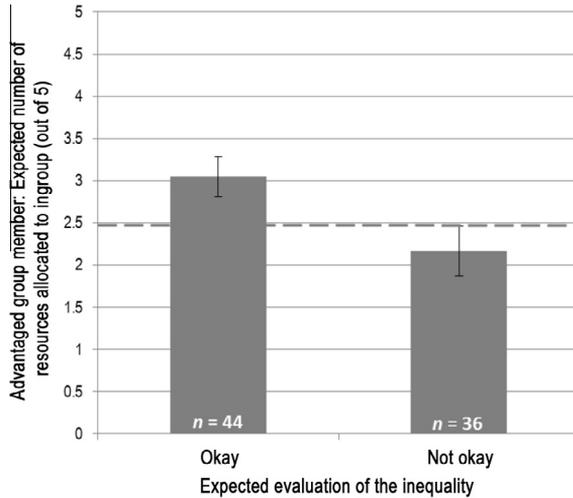


Fig. 4. Children's resource allocation expectations for the member of advantaged group, by expected evaluation of the inequality. Bars represent standard errors of the mean.

between groups. The novel findings revealed that children expected members of disadvantaged and advantaged groups to allocate resources differently. Specifically, children expected a member of the disadvantaged group to reduce the disparity when that person evaluated the inequality negatively and expected a member of the advantaged group to increase the disparity when that person evaluated the inequality positively. Furthermore, older children, but not younger children, recognized the role of group preferences in others' resource allocation decisions, expecting an individual to seek more for his or her own group if that individual preferred the ingroup over the outgroup.

These findings indicate that children recognize the coexistence of both fairness and group concerns in others' responses to inequality. Assessing both expected evaluations of the inequality and expected group preferences directly allowed us to disentangle the effects of these factors on children's expectations for others' allocation decisions. Furthermore, assessing children's expectations regarding the behavior of a member of a disadvantaged group and a member of an advantaged group allowed us to determine whether concerns for inequality and preferences for one's own ingroup were perceived to operate differently based on group status. Contributing to the growing literature drawing on the SRD model to understand social cognition related to fairness and intergroup concerns (e.g., Cooley & Killen, 2015; Mulvey et al., 2014), findings from this study highlight children's developing understanding of how others' behavior may be expected to differ based on group status, evaluations of a preexisting inequality, and group preferences.

Disadvantaged group member: Competing concerns

Most notably, we found only one set of circumstances in which children consistently expected another individual to reduce the resource inequality between groups. Children expected that a member of the disadvantaged group who evaluated the inequality negatively would reduce the disparity by allocating more resources to his or her own (disadvantaged) group. Like their expectations for the advantaged group member, older participants (5- and 6-year-olds) *also* expected the disadvantaged group member to allocate more resources to the ingroup if that individual preferred it over the outgroup. In fact, it would initially seem that two variables predicted corrective actions for the disadvantaged group member: evaluating the inequality negatively and preferring the ingroup. However, children's expectations for this individual's behavior based on expected group preferences revealed their increasing awareness of the disadvantaged group member's competing concerns. Older children who expected this individual to prefer the (advantaged) outgroup over his or her own group did *not* expect that individual to reduce the disparity.

Thus, children did not perceive membership in a group with considerably fewer resources (the disadvantaged group) to be an adequate predictor for reducing the inequality on its own. Rather, corrective action was anticipated *only* from individuals who not only were members of a disadvantaged group but also actively judged the disparity to be unacceptable or, among older children, preferred the ingroup over the well-resourced outgroup. Considerable research has revealed young children's strong preference for equal distribution of resources (e.g., Fehr et al., 2008; Geraci & Surian, 2011; Warneken et al., 2011), and recent research has found that, beginning around 4 years of age, young children personally seek to correct inequalities by giving more to individuals with less of a given resource (Li et al., 2014; Paulus, 2014). Our findings, however, indicate that children expected this corrective response to be fairly rare in others' behavior. These findings extend research on young children's concern for disadvantage by revealing the limited conditions under which children expect others to reduce group-based resource disparities.

Related research indicates that, during early childhood, children themselves positively evaluate and prefer to associate with individuals and groups who have more resources (Horwitz et al., 2014; Li et al., 2014; Shutts et al., 2016). Following from these implications, our findings suggest that 5- and 6-year-olds also recognize that preference for an advantaged group, when manifested in a member of a disadvantaged group, may diminish that individual's tendency to maximize opportunities to reduce the group-based resource disparity. This may have problematic implications for the perpetuation of inequality during childhood, with related research indicating that assumptions about status and deservedness based on observed inequality emerge as early as the preschool years (Olson, Dweck, Spelke, & Banaji, 2011). As revealed in this study, young children expected disadvantaged individuals who prefer advantaged groups to forgo opportunities to reduce a group-based resource disparity. Over time, these assumptions may have a detrimental impact on children's own motivation to reduce inequality between groups.

Advantaged group member: Converging concerns

In contrast to the competing concerns of the disadvantaged group member, children's expectations for the advantaged group members' allocation decisions were consistent in terms of the expected roles of evaluations and group preferences. Building on recent work indicating that young children expect advantaged groups to disapprove of a change to a status quo (Cooley & Killen, 2015), these findings revealed that children expected that a member of the advantaged group who evaluated the inequality positively would take steps to maintain it by giving more resources to his or her own group. Furthermore, older children expected the advantaged individual to demonstrate an ingroup preference, seeking more for his or her own group when they preferred it over the outgroup.

Notably, in no circumstance did children expect a member of the advantaged group to reduce the inequality by giving more resources to the disadvantaged group. In fact, chance allocation was the "best case scenario" expected for advantaged group members who evaluated the disparity as unacceptable (not okay). These findings coincide with and extend previous work on expected ingroup bias in others' allocation decisions by addressing the context of preexisting inequality. Specifically, for the advantaged group member, deeming the inequality acceptable and (for 5- and 6-year-olds) preferring the ingroup were both associated with the expectation that this individual would perpetuate the inequality when he or she had the opportunity to allocate resources. Interestingly, deeming the inequality unacceptable and (for 5- and 6-year-olds) preferring the ingroup were both associated with the expectation that the *disadvantaged* group member would rectify the inequality by giving more resources to his or her own (disadvantaged) group. Thus, the primary difference between expectations for the advantaged and disadvantaged group members related to the impact of expected evaluations of the inequality (okay vs. not okay). In light of recent work indicating that stereotypes about deservedness based on status and group membership impact older children's allocation decisions (e.g., McGillicuddy-De Lisi, Daly, & Neal, 2006; Monteiro, de França, & Rodrigues, 2009), our findings are an indication of how early, and under what conditions, children expect others to exacerbate disparities.

The findings regarding the member of the advantaged group can also be interpreted in light of system justification theory, which holds that, in addition to motivations to favor one's own group, people

are often motivated to favor or maintain the existing social order (Jost, Banaji, & Nosek, 2004). That is, research with adults has revealed that people, when exposed to systematic inequality, often seek a reason for observed disparities, leading to implicit or explicit justification of an unequal status quo. From this perspective, both preference for the ingroup and positive evaluation of the inequality may have been perceived as system-justifying attitudes for members of advantaged groups. One implication of these findings is that recognition that advantaged group members are unlikely to challenge an unequal status quo may have a detrimental impact on children's own motivation to do so, perhaps particularly for children who themselves are members of advantaged groups.

Future directions and conclusions

In addition to highlighting 3 to 6 years of age as a period of significant growth in children's understanding of the roles of fairness considerations, ingroup preferences, and group status differences in others' responses to group-based inequality, these age-related changes point to important areas for future research. This study was conducted with a relatively small sample ($N = 80$). Although a priori power analyses indicated that this sample size would be adequate, power to detect some effects may have been limited. Furthermore, the cell sizes for some analyses were small (e.g., 3- and 4-year-olds who expected the disadvantaged group member to prefer the ingroup, 5- and 6-year-olds who expected the advantaged group member to prefer the outgroup). Additional research should be conducted in order to replicate and extend these findings with larger samples. In addition, this study tested for age-related differences in children's expectations using ANOVAs and *t*-tests with two age groups (3- and 4-year-olds and 5- and 6-year-olds) because our central hypotheses pertained to questions of means and mean differences. It may be beneficial, in future research, to expand on this foundation through the use of other statistical models, including regression models with age as a continuous variable, in order to develop a more detailed picture of age-related changes in children's expectations for others' allocation decisions.

An important next step for this research is to examine potential differences in children's expectations for others' allocation behavior in different contexts of inequality. For instance, young children endorse certain inequalities as legitimate such as those based on effort or merit (Baumard et al., 2012; Liénard, Chevallier, Mascaro, Kiura, & Baumard, 2013). Like evaluations of inequality, understanding of merit and effort has long been considered central to children's conceptions of fair resource allocation (Damon, 1975). Yet little is known about how young children expect others to allocate resources when inequality between groups may be considered fair or how children's expectations for individuals' evaluations and group preferences impact their expectations in such contexts. In the current study, the source or origin of the resource inequality between groups was not specified. Future research could extend this paradigm to examine whether the reason for an inequality impacts children's expectations for how others will allocate subsequent resources between groups.

Furthermore, emerging research indicates that by 6 to 8 years of age children differentiate between resources that are enjoyable but not essential for well-being versus resources that are important for ensuring others' welfare when allocating resources themselves (Rizzo, Elenbaas, Cooley, & Killen, *in press*). Future research could examine how developmental understanding of legitimate versus unfair inequalities interact with conceptions of resource necessity when older children anticipate others' resource allocation decisions. Extending the findings revealed in the current study with older children may be especially interesting when the resource allocator does not stand to personally gain from differential allocation. That is, it would be interesting to know whether children expect an individual who is a member of an advantaged or disadvantaged group, but not a potential resource recipient himself or herself, to allocate differently based on that individual's group affiliation and status and how that individual judges the disparity between groups.

Different from previous research on children's own resource allocation decisions, findings from this study revealed the circumstances under which children *expect others* to perpetuate or attenuate resource inequalities between groups. It would be very relevant to know whether children also expect others to reason differently about their allocation decisions. Interestingly, some previous research supports this possibility. Cooley and Killen (2015), for example, found that young children who expected a resource-advantaged group to disapprove of an individual advocating for equal

distribution reasoned about how this would disrupt the status quo that benefitted the advantaged group. It may also be the case that children expect advantaged and disadvantaged group members to reason differently about their allocation decisions in light of a preexisting inequality, although this possibility remains untested. Future studies could use multiple methods, including collecting reasoning data, to better understand children's expectations for others' allocation decisions.

Finally, this study investigated the allocation expectations of young children from middle- and lower middle-income backgrounds. It is possible that children who are themselves from highly resource-advantaged or resource-disadvantaged backgrounds may have different expectations for others' allocation decisions. That is, family income or wealth may impact the extent to which children expect others to rectify or perpetuate resource inequalities between groups, especially in older samples. Some existing research on donation behavior supports this possibility. For instance, one study found that family income was negatively correlated with the number of tokens that preschoolers opted to donate to a "sick kid" who could not come in to the lab to claim a prize (Miller, Kahle, & Hastings, 2015). Whereas these findings pertain to children's own donation behavior, future research could investigate whether similar differences emerge in young children's expectations for others' resource allocation behavior. Future research could also investigate how family income, wealth, or socioeconomic status impacts allocation expectations differently among older age groups as children gain more knowledge about their own "advantaged" or "disadvantaged" position in society.

Young children's expectations for others' resource allocation decisions reflect their developing understanding of group dynamics in the context of inequality. This study demonstrated that 3- to 6-year-olds expect a member of a disadvantaged group to reduce the disparity if that individual evaluates it negatively but expect chance allocation at best and increases to the inequality at worst from a member of the advantaged group, depending on that individual's evaluations of the resource disparity. Furthermore, 5- and 6-year-olds recognized that preference for a group with more resources may diminish disadvantaged group members' tendency to take advantage of opportunities to obtain more resources for their group. Together, these findings provide a window on the early emergence and development of children's understanding of how individuals within groups seek to perpetuate or attenuate group-based inequalities.

Acknowledgments

The first author is supported by a National Science Foundation Graduate Research Fellowship under Grant No. DGE 1322106. As well, appreciation is extended to the Society for the Psychological Study of Social Issues for a Clara Mayo Grant award. We thank Shelby Cooley, Jeeyoung Noh, and Michael T. Rizzo for invaluable feedback on all phases of the project and thank Lucas Butler for very helpful comments on a previous draft of the manuscript. We acknowledge the helpful undergraduate research assistance from Anna Biddle, Victoria Daley, Natasha Duggal, Savannah Hudson, Nicole Lang, Leon Li, and Miranda Rosenberg. We thank the students, parents, and teachers who participated in this study.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.jecp.2016.05.002>.

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