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The role of in-group norms and group status in children's and adolescents' decisions to rectify resource inequalities

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Children's and adolescents' resource allocation was examined in a context of inequality between schools and a peer group norm of either equality or equity. Participants (N = 257; children, 7–11 years old and adolescents, 13–16 years old) were inducted into groups with either a lot (advantaged) or few (disadvantaged) art resources, in the context of an art competition. Participants were prescribed an equality (equal distribution) or equity (more resources for disadvantaged groups) norm, before allocating resources between groups. Adolescents, but not children, allocated significantly more resources to their disadvantaged in-group than they did to a disadvantaged out-group, particularly when prescribed an in-group norm of equity. Participants who rectified the inequality referred to the unfair nature of the initial disparity. The findings revealed an important developmental shift between middle childhood and early adolescence regarding the influence of group status and norms on intergroup resource allocation in a competitive context.

Statement of contribution

What is already known on this subject?

- Children have the capacity to challenge intergroup resource allocation inequalities.
- Peer group norms can guide resource allocation in situations where inequality is not made salient.

What does this study add?

- A peer group equity norm can guide adolescents to rectify an intergroup inequality.
- Relative peer group advantage plays an increasingly important role in adolescence.
- For children, maintaining equality can supersede adherence to a peer group norm.

By early childhood, children understand that in certain situations it is fair to allocate equitably (i.e., in favour of those who have less to begin with) (Blake & McAuliffe, 2011; Elenbaas & Killen, 2016; Schmidt, Svetlova, Johe, & Tomasello, 2016). With age, the influence of peer group factors, including peer group norms, becomes increasingly important in social interactions (Mulvey, 2016). By adolescence, resource allocation

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decisions increase in complexity, as decision-makers must coordinate moral concerns, peer group expectations, and the relative advantage of different societal groups. So far, it is not known how children and adolescents apply their understanding of peer group norms when allocating resources in situations where their group may be more or less advantaged relative to others.

Researchers have begun to focus on how intergroup processes (i.e., group membership, status, and norms) interact with moral concerns to guide the development of resource allocation decisions in childhood and adolescence (Rutland & Killen, 2017). So far this understanding has not been applied to *competitive* situations of intergroup inequality. This is an essential topic to investigate given the increasing importance of peer group factors from middle childhood into adolescence (Brown & Dietz, 2009; Rivas-Drake, Umaña-Taylor, Schaefer, & Medina, 2017). In the present study, for the first time, we examined children's and adolescents' decisions about whether to rectify inequality in a competitive intergroup context where both peer group norms and advantage status were made salient.

Social reasoning developmental approach

The present study was guided by a social reasoning developmental (SRD) approach, which contends that moral and social judgements develop from childhood into adolescence through coordinated reasoning based on moral principles and group concerns (Rutland, Killen, & Abrams, 2010). Moral concerns (e.g., equality and equity) play an important role in resource allocation decisions. Yet, decisions about intergroup resource allocation often involve more than moral principles. Between middle childhood and early adolescence, children become increasingly aware of their membership of social groups (Nesdale, 2007), and favour their in-group when making decisions about social exclusion and resource allocation (Fehr, Bernhard, & Rockenbach, 2008; Killen, Elenbaas, Rizzo, & Rutland, 2016). The SRD approach argues that children and adolescents come to simultaneously consider both moral and group (e.g., loyalty, norms) concerns when making resource allocation decisions in intergroup contexts (Rutland & Killen, 2017).

The SRD approach predicts changes in reasoning between childhood and adolescence. Adolescents are more likely than children to simultaneously consider both issues of morality and group identity. For instance, in recent resource allocation research adolescents engaged in more complex reasoning than children, considering in-group norms when prioritizing different moral or social goals (McGuire, Manstead, & Rutland, 2017; McGuire, Rizzo, Killen, & Rutland, 2018). Given this developmental shift in consideration of peer groups and moral concerns across social contexts, we tested for differences in resource allocation decisions between children (7–11 years old) and adolescents (13–16 years old).

First-person perspective on resource allocation

One area of resource allocation research has examined whether children reject resource inequalities between pairs of children (Almås, Cappelen, Sørensen, & Tungodden, 2010; Williams & Moore, 2014). In these contexts, participants correct inequalities in early childhood (Li, Spitzer, & Olson, 2014; Paulus, 2014; Rizzo & Killen, 2016), suggesting that from a third-person perspective, children are motivated to rectify inequalities (e.g., giving more resources to someone who is lacking in resources). However, resource inequalities often occur in complex intergroup contexts (e.g., between racial or gender groups)

where children have been shown to allocate preferentially to their in-group (Benozio & Diesendruck, 2015; Dunham, Baron, & Carey, 2011; Renno & Shutts, 2015). In addition, most studies have focused on young children's allocation strategies with less attention to adolescents' perspectives.

With increasing complexity, it becomes more challenging to reconcile group and moral factors. The first-person situation utilized in the present study was designed to extend understanding of the conditions under which children and adolescents challenge inequality. In first-person situations, the individual has a substantive stake in the outcome of their decision, forcing them not only to consider goals of equity, but also to balance this with their (and their group's) own desire to access resources. Such decisions reflect power dynamics experienced in everyday life where groups with greater resource access make decisions about who has access to what and why.

Understanding advantage

Pre-existing advantage between social groups (i.e., how many resources groups have to begin with) can be influential when deciding whether to allocate equitably. In some cases, when an intergroup inequality is salient, children allocate resources in favour of those who have less. For example, Elenbaas and Killen (2016) demonstrated that 10- and 11-year-old children rectified an inequality when the disadvantaged group was African American. In their study, children's knowledge of broader intergroup inequality in the United States was significantly related to rectifying decisions. Other research has shown that children can perpetuate an inequality between novel groups. Olson, Dweck, Spelke, and Banaji (2011) demonstrated that whilst children between 4.5 and 7.5 years gave more to new members of a privileged group, 7.5 to 11.5 years old gave more to new members of an underprivileged group. Such findings suggest that the *capacity* to challenge unfair resource inequalities between groups emerges early in childhood. However, individuals do not always *choose* to rectify such an inequality, especially in intergroup contexts where specific group norms are salient.

It is likely that peer group resistance to the equitable allocation of resources will decrease the chance of an inequality being challenged. It is essential to understand how children and adolescents begin to understand the complexities of intergroup inequality, since as young people and adults they will increasingly encounter situations where they will have to make social and moral decisions in the contexts involving social inequalities. This study will, for the first time, examine how children's *and* adolescents' resource allocation decisions in competitive intergroup contexts depend on their group's relative advantage.

Group norms in competitive contexts

Whilst children develop the capacity to rectify inequalities in middle childhood, less is known regarding how group norms influence resource allocation in situations of intergroup inequality. Extensive research has demonstrated that children support equality norms (i.e., sharing resources equally between recipients), preferentially evaluating those who adhere to them (Killen, Rutland, Abrams, Mulvey, & Hitti, 2013). However, children and adolescents also adhere to equity norms (Almås *et al.*, 2010), expecting resources to be distributed according to recipient need.

Group norms may facilitate the challenging of inequities. Therefore, it is important to establish how influential norms of equity are in contexts of intergroup inequality.

The present study also extended previous work examining challenges to inequality by placing participants in a competitive intergroup scenario. Often groups compete for access to resources that are required to succeed in a competition. Evidence suggests that competitive contexts reduce out-group prosociality (Abrams, Van de Vyver, Pelletier, & Cameron, 2015), but it is possible that such contexts may also play a role in accentuating in-group disadvantage. Understanding how children and adolescents allocate resources in competitive contexts where they can challenge inequality will provide important insights into how this behaviour develops at a broader level. Crucially, our competition was designed within the school context in order to be believable to participants.

Despite interest in children's and adolescents' behaviour under conditions of competition, less is known about competitive situations in which children are provided the opportunity to rectify inequalities, rather than an authority figure simply ensuring that resources are distributed fairly. These types of situations occur amongst children and adolescents in the context of peer clubs, neighbourhood groups, sports teams, and *ad hoc* contexts in which individuals have resources (such as toys, money, or food) to distribute amongst themselves. In school contexts, these situations typically arise once authority figures have already made resources available and children have to decide who gets what at a more micro-level. In such situations, children may also have to decide whether one person – or group – is more deserving than another. Children and adolescents readily provide an array of claims (legitimate and not legitimate) regarding their access to resources from an early age. Further, in competitive contexts, claims to resources are often well articulated given the salience of the end goal. The present study was designed to reflect such a situation.

Present study

The present study examined three factors that may influence the decision to rectify a resource inequality between groups. First, group norms for equality and equity were manipulated in order to examine their impact on resource allocation decisions in a competitive intergroup context where existing inequality is made salient. Second, the study aimed to determine how, between childhood and adolescence, equality and equity norms are coordinated with peer group advantage. Third, participants were asked to allocate resources from a first-person perspective, rather than make judgements about third-party decisions.

Participants were inducted into simulated groups within a competitive intergroup context and informed that their peer group either had a greater initial amount of resources than an out-group (advantaged) or vice versa (disadvantaged). Their peer group endorsed either an equal or equitable allocation norm. In order to examine in detail why participants allocated resources, we assessed participant's justifications with the expectation that they would use different reasoning depending on their decision to rectify or perpetuate the inequality.

Hypotheses

The SRD model expects that adolescents will show a more advanced and coordinated understanding of how intergroup processes, together with contextual information, interact to moral goals when making social and moral decisions within an intergroup context (Rutland & Killen, 2017; Turiel, 2015). Therefore, it was predicted that adolescents' allocation decisions would depend on their advantaged status and the norm

held by their in-group. In contrast, the complex intergroup competitive scenario was expected to challenge children's capabilities in coordinating intergroup and moral concerns, leading to a reliance on equality as a distribution strategy. We formulated three specific hypotheses for this study.

Hypothesis 1: When *disadvantaged* by a resource inequality and prescribed an in-group norm of *equity*, we expected adolescents to allocate a greater share of resources to their in-group than children in the same condition. We did not expect norm-dependent differences in resource allocation between adolescents and children who were *advantaged* by a resource inequality.

Hypothesis 2: When *disadvantaged* by a resource inequality, we expected adolescents to allocate a greater share of resources to their in-group when prescribed an equity norm than an equality norm. We did not expect norm-dependent differences in resource allocation amongst *advantaged* adolescents. For children, we did not expect to observe differences in resource allocation between the norm conditions.

Hypothesis 3: For participants who rectified an inequality by giving more resources to the disadvantaged group, compared to those who did not rectify the inequality, we expected to see more justifications based upon the unfair nature of the existing inequality and the need to use resources to rectify this disparity.

Method

Participants

Participants (N = 257) were recruited from schools in a metropolitan area in the South East of the United Kingdom. Participants comprised 166 (87 female, 79 male) 7- to 11-year-old children (M^{age} = 10.21, SD = .69), and 91 (55 female, 36 male) 13- to 16-year-old adolescents (M^{age} = 14.47, SD = .81). Power analysis for an ANOVA with eight groups was conducted in G*Power to determine a sufficient sample size using an alpha of 0.05, a power of 0.95, and a medium effect size (η^2 = .025) (Faul, Erdfelder, Lang, & Buchner, 2007). Based on these assumptions, the desired sample size was 210 participants. Participants attended schools serving lower to middle-class socioeconomic populations. The ethnic mix of these schools reflected the population of the metropolitan area in which testing took place. The sample consisted of approximately 40% White British, 22% Black British, 20% South East Asian British (including Bengali British, Indian British, and Pakistani British), and 13% other ethnic backgrounds (including Dual-Heritage, Chinese British, and Eastern European participants). Six percent of participants withheld ethnic identity information. Parental consent and child assent were obtained for all participants.

Design and procedure

All measures were approved by the [Goldsmiths, University of London] Ethics Committee as part of the project 'The influence of group norms on children's resource allocation decision making'. The study used a 2 (Age; Children, Adolescents) × 2 (In-group Norm; Equity, Equality) × 2 (Advantage Status; Advantaged, Disadvantaged) between-participants design. All measures were completed in classrooms using online survey software (Qualtrics, Provo, UT, USA). An experimenter was available throughout the testing procedure to answer questions. The total procedure took approximately 30 min, including time for debriefing.

Group membership was established by informing participants that they would be taking part in an inter-school arts competition between their own school and a local rival school (a named school from the same geographical area). Given the geographical

proximity, these schools were matched for student SES and ethnic/cultural breakdown. Participants were shown an illustration of four same-gender individuals representing their own team (in-group), and a separate illustration of their rival team (out-group). They picked a team name, colour, and logo in order to further emphasize in-group membership. This method has been reliably shown to induce in-group identification and preference in children (Nesdale & Dalton, 2011; Nesdale, Durkin, Maass, Kiesner, & Griffiths, 2008).

Advantage status

In the Advantaged condition, participants were told that their school already had 'lots of materials (e.g., paint and brushes) to use in the competition. These materials will help make better art, which is more likely to win the competition. (Local Rival School) do not have many of these art materials'. In the Disadvantaged condition, the amount of art supplies owned by the in-group school and out-group schools were reversed.

In-group norm

Next, the resources were introduced by informing participants that the student council of their school and the rival school had purchased materials (pictorially represented by 10 boxes of crayons, paints, and paper) that could be shared between the two groups.

In-group norm was manipulated by informing participants that their teammates had a secret message for new team members prior to the art event (norm manipulation method adapted from McGuire, Rutland, and Nesdale (2015)). All participants read the following: 'Hello, we're really happy you're going to be on our team for this drawing competition. We want everybody in the competition to have a good time. . .'. Then, participants in the *Equality Norm* condition read, 'We want to give the same amount to both teams', whilst participants in the *Equity Norm* condition read, 'We want to give more to the team that has less to begin with'. At the end of the message participants read, 'We're really happy you're going to be a member of the team, good luck!'

Participants were then told how their team had voted to allocate the art supplies for this competition (in line with their norm). This voting procedure has been used in conjunction with a secret message to introduce a group's stance ahead of a resource allocation decision (McGuire *et al.*, 2017). Thus, in the *Equality Norm* condition, the team voted to give five boxes of art supplies to the in-group, and five boxes of art supplies to the out-group. In the *Equity Norm* condition, the team voted to give eight boxes to the disadvantaged team (in-group or out-group) and two to the advantaged team.

Measures and analysis

Resource allocation

The survey emphasized that each group member would get to vote on this issue to ensure that participants felt their vote mattered. Participants could allocate 10 boxes of art supplies to columns marked 'Your School Group' or 'Other School Group'. All 10 boxes had to be allocated in order to complete the task. For the analyses presented below, responses were coded in terms of the number of resources (from 0 to 10 possible boxes of art supplies) allocated to the disadvantaged group (which could be the in-group or out-group, depending on condition).

Initial analyses did not reveal any effects of gender, so this factor was not included in the analyses presented below. Participants' resource allocation (number of boxes

allocated to the disadvantaged group) was first subjected to a 2 (Age Group: Children, Adolescents) × 2 (In-group Norm: Equity, Equality) × 2 (Advantage Status: Advantaged, Disadvantaged) univariate ANOVA. Follow-up simple main effects tests were conducted with Bonferroni corrections for multiple comparisons applied.

To further assess resource allocation decisions, we created an 'Allocation Strategy' variable. Participants who assigned five boxes to each team were coded as Equality Strategists. Participants who assigned more boxes to the disadvantaged team were coded as Rectifiers; and those who assigned more to the advantaged team were coded as Perpetuators. We assessed whether Allocation Strategy differed as a function of age, in-group norm, or advantage status, and used this categorical variable to analyse reasoning data (described below) using chi-square tests of independence.

Reasoning coding

After completing the behavioural task, we assessed participants' reasoning for their proposed allocation using the probe question: 'Why did you choose to share the boxes this way?' Responses were coded using categories adapted from theoretical formulations (Turiel, 1998) and previous research (Killen *et al.*, 2013) and assigned to one of seven categories (see Table 1).

Two coders, one of whom was blind to the hypotheses of the study, conducted the coding. Inter-rater reliability procedures assessing 25% of the sample of responses (n = 90) indicated good agreement between the two coders, Cohen's κ = .81. Fewer than 5% of participants (n = 1) referenced personal choice, so these responses were omitted from analysis along with responses that were coded as 'other' (n = 29). This left a final sample of 227 participants whose reasoning was analysed.

Results

Resource allocation decisions

The univariate ANOVA testing H1 and H2 revealed a significant main effect of Advantage Status, $F(1, 231) = 11.94, p = .001, \eta^2 = .05$, and a significant interaction between Age Group, Advantage Status, and In-group Norm, $F(2, 231) = 6.39, p = .01, \eta^2 = .03$. For the main effect of Advantage Status, disadvantaged participants gave significantly more boxes of art supplies to their disadvantaged in-group (M = 5.50, SD = 1.51) than advantaged participants gave to a disadvantaged out-group (M = 4.91, SD = 1.40).

In regard to H1, disadvantaged adolescents who were prescribed an in-group equity norm (M = 6.60, SD = 2.03) allocated significantly more to a disadvantaged in-group than children in the same condition (M = 5.49, SD = 1.45; p = .01) (see Figure 1). Advantaged adolescents' (M = 4.38, SD = 1.20) and children's (M = 4.73, SD = 1.46) allocations did not significantly differ by norm condition (p = .34).

Further, in regard to H2, for disadvantaged adolescents, an equity norm (M = 6.60, SD = 2.03) led to significantly greater allocations to the in-group than an equality norm (M = 5.22, SD = 1.40, p = .003). Interestingly, advantaged adolescents who were prescribed an equality norm (M = 5.62, SD = 1.86) allocated more resources to a disadvantaged out-group than participants who were prescribed an in-group equity norm (M = 4.38, SD = 1.20; p = .005).

As expected, amongst disadvantaged children there was no significant difference in resource allocation between participants who were prescribed an equity norm (M = 5.49,

Table 1. Reasoning coding framework with examples

Category	Examples
(1) Inequality Explicit references to the fact that one team has less to begin with	'Because we already had 9 packs but they only had 1 so if we give them 9 and us 1 then we will both have 10.'
(2) Fairness Generic references to being fair	'I did it because it's fair'
(3) Fair Competition Specific references to making sure the competition is fair	'That's the fairest way to do it and they need as good a chance as us'
(4) Equality Generic references to numeric equality as an allocation method	'There were 10, so 5 and 5 each. It's equal.'
(5) Group Functioning Any reference to group functioning, loyalty, group norms, or making the in-group win	'Because I want our team to win and it would give us a better chance of winning'
(6) Personal Any reference to personal choice or autonomy	'It's my choice what to do with the boxes'
(7) Undifferentiated Doesn't easily fit in with the above categories	'I don't really mind about stickers''They're okay'

SD = 1.45) and those who were prescribed an equality norm (*M* = 5.21, *SD* = 1.18; *p* = .42). Similarly, when advantaged by a resource inequality there was no difference in allocation between children who were prescribed an equity norm (*M* = 4.73, *SD* = 1.46) and those prescribed an equality norm (*M* = 5.09, *SD* = .83; *p* = .24).

Allocation strategy

We used a chi-square test of independence to further explore differences in participants' allocation strategies (categorized as equality, rectify, perpetuate, see Table 2) as a function of age, in-group norm, and advantage status. Where cells included fewer than five responses, we report the Fisher's exact test statistic. Where follow-up tests were needed, we report *z* tests with Bonferroni correction for multiple comparisons.

In regard to H1, there were significant differences between children's and adolescents' strategies when their in-group was disadvantaged in the equity norm condition, Fisher's exact (2, *N* = 76) = 6.34, *p* = .03. In this condition, a greater proportion of children used an equality strategy (*M* = .84) than did adolescents (*M* = .53). Further, a greater proportion of adolescents used a rectifying strategy (*M* = .47) than did children (*M* = .14).

Further, when the in-group norm was equity, there were significant differences between children's and adolescents' strategies when their in-group was advantaged, Fisher's exact (2, *N* = 76) = 7.31, *p* = .02. In this condition, a greater proportion of adolescents used a rectifying strategy (*M* = .33) than did children (*M* = .09).

Reasoning

Following the approach described above, a chi-square test of independence was used to examine differences in reasoning as a function of resource allocation strategy. The relation

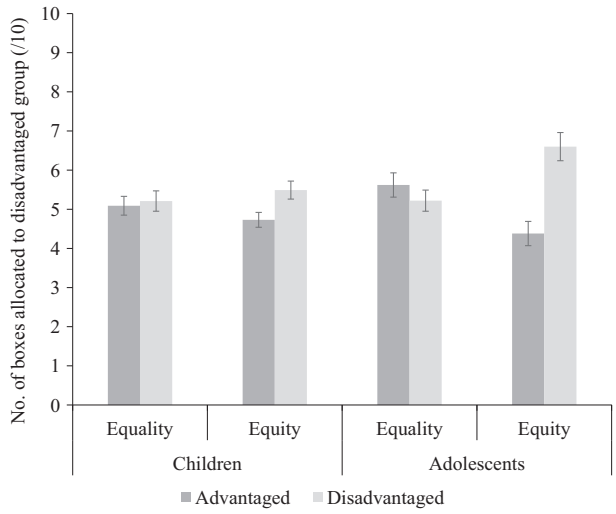

Figure 1. Participants' allocation of boxes of art supplies to the disadvantaged group as a function of age, advantage, and in-group norm condition (with standard error bars).

Table 2. Resource allocation strategy as a function of age group, in group norm, and advantage status

Group norm	Group Status	Allocation Strategy	Children	Adolescents	Row total
Equality	Advantaged	Equality	29 (.85)	16 (.76)	45
		Perpetuate	2 (.06)	3 (.14)	5
		Rectify	3 (.09)	2 (.10)	5
	Disadvantaged	Equality	22 (.76)	20 (.74)	42
		Perpetuate	1 (.03)	1 (.04)	2
		Rectify	6 (.21)	6 (.22)	12
Equity	Advantaged	Equality	39 (.71)	13 (.62)	52
		Perpetuate	11 (.20)	1 (.05)	12
		Rectify	5 (.09)	7 (.33)	12
	Disadvantaged	Equality	31 (.84)	8 (.53)	39
		Perpetuate	1 (.03)	0 (.00)	1
		Rectify	5 (.14)	7 (.47)	12
Column total			155	84	$N = 239$

Note. Observed values are reported with proportions within age group in brackets.

between reasoning style and allocation strategy was significant, Fisher's exact (8, $N = 226$) = 161.01, $p < .001$. Table 3 reports the observed counts and proportions within category of each of the five reasoning categories. All differences reported in the text were significant at the $p < .05$ level.

Supporting H3, significantly more references were made to *Equity* amongst participants who rectified an inequality ($M = .60$) than participants who used an equality strategy ($M = .01$). There were no references to equity amongst participants who perpetuated the inequality. These participants emphasized the unfair nature of inequality and the importance of challenging it through resource allocation (e.g., 'because they

Table 3. Participants' reasoning about resource allocation decisions as a function of allocation strategy

Allocation strategy	Equity	Fairness	Fair competition	Equality	Group functioning	Row total
Equality	2 (.01)	37 (.22)	62 (.36)	63 (.37)	7 (.04)	171
Rectify	22 (.60)	5 (.10)	1 (.03)	1 (.03)	9 (.24)	38
Perpetuate	0 (.00)	0 (.00)	1 (.06)	1 (.06)	16 (.89)	18
Column Total	24	42	64	65	32	$N = 227$

Note. Observed values are reported with proportions within allocation strategy in brackets.

didn't have many from the start, but we already did so it would be fair to give them more, so we have equal amounts now').

Significantly greater reference was made to *Fair Competition* amongst participants who used an equality strategy ($M = .36$) than those who rectified ($M = .03$) or perpetuated an inequality ($M = .06$). These participants referenced the importance of establishing a level playing field independent of pre-existing inequality (e.g., 'because it would make the competition fair, the winner will win due to their skills – not the amount of supplies they have').

Finally, there was significantly greater reference to *Group Functioning* amongst participants who perpetuated an inequality ($M = .89$) than amongst participants who allocated equally ($M = .04$) or rectified an inequality ($M = .24$). These participants justified their advantaged group bias with reference to the in-group benefits of perpetuating the inequality (e.g., 'We need the resources to win. If the other team don't have enough and want ours, then that's too bad').

Discussion

This study was the first to explore the influence of peer group norms and existing advantage on children's and adolescents' resource allocation in a competitive context of intergroup inequality. As predicted, disadvantaged adolescents allocated a greater share of resources to their in-group when prescribed a peer group norm of equity, compared to an equality norm. By comparison, children used an equality strategy across both norm conditions. In a multi-faceted situation requiring consideration of both moral concerns ('should I be fair?') and group goals ('do I want my group to succeed?'), children utilized an unambiguous strategy based on a generic equality norm. These results suggest an important developmental transition between middle childhood and early adolescence regarding the influence of group status and norms on intergroup resource allocation.

Rectifying inequality

When their peers supported equity, disadvantaged adolescents sought to rectify an inequality. However, adolescents also demonstrated an understanding of group loyalty. When the group supported equality, disadvantaged adolescents adhered to the norm by allocating equal amounts of resources between the two groups. It is important to recognize that concerns for in-group loyalty can potentially maintain inequality under the guise of equal treatment. An essential step for educators is to communicate that fairness does not always require equal allocation. Participants who rectified the resource inequality referenced the unfair nature of the inequality and the need to give more to the

group who had less. Thus, moral reasoning about equity and relative disadvantage were central to the participants' allocation decisions.

Equality and perpetuation of inequality

The majority of participants allocated equally between groups irrespective of their relative advantage. Such decisions represent a form of fairness, but did little to ameliorate the overall disparity between the groups. It is troubling that advantaged adolescents rarely rectified. However, within this context it is perhaps not surprising given the dual influences of group membership and advantage status. In-group preference is reflected in displays of in-group loyalty, even when this means acting antisocially towards an out-group (Nesdale *et al.*, 2008). This is amplified in competitive contexts, where children and adolescents maximize in-group access to resources and behave less prosocially towards an out-group (Abrams *et al.*, 2015; McGuire *et al.*, 2017).

For children, a situation requiring simultaneous consideration of advantage, norms, and moral goals is inherently complex. Evidence has demonstrated that equality is a primary resource allocation strategy in early to middle childhood, before equity and meritocracy are incorporated into these decisions (Rizzo, Elenbaas, Cooley, & Killen, 2016). The present study extends this work by demonstrating that equality can still be used as a resource allocation strategy in late childhood. Equality can be a useful heuristic to guide children through such complex decisions for a number of reasons. First, equal allocation is in line with the general societal moral norm of fairness. Second, children recognize that when they do go against group norms, equal deviants are less negatively evaluated than those who show in-group bias (Mulvey, Hitti, Rutland, Abrams, & Killen, 2014).

Competitive context

Previous work has rarely examined intergroup contexts where participants hold a first-person 'stake' in the outcome of their decision. Under such conditions, in-group members may feel pressure not to display out-group favouritism, even if this means perpetuating an inequality. The competitive context of this study likely emphasized the consequences of out-group favouritism for their own position within the in-group.

Adolescents who rectified the inequality referenced equity (e.g., 'We have less supplies'), indicating that they were attuned to their disadvantaged status. However, advantaged adolescents who perpetuated the inequality were equally attuned to their group's status hierarchy, and maintained it when they had the opportunity to distribute resources. Instead of following an equity norm, their reasoning referred to group success (e.g., 'If they have less it's too bad, we need the supplies to win'). One interpretation of these findings is that, for advantaged adolescents, exposure to an equity in-group norm was not enough to counter their desire to maintain their advantaged status and succeed within the competition.

Previous research has demonstrated that, in third-party contexts, older children and adolescents correct resource inequalities between groups, even if that means giving fewer resources to in-group members (Elenbaas, Rizzo, Cooley, & Killen, 2016). The results of this study raise an important qualification to this previous work. In society, those who allocate resources are often in positions of power and may be especially likely to benefit from preserving the status quo. Here, advantaged adolescents cemented the status quo by not allocating a greater share of resources to an out-group, suggesting that there may be an upper bound to rectifying inequality in first-person allocation contexts. When group

success was at stake, disadvantaged adolescents articulated their commitment to equity but advantaged adolescents focused on in-group success.

Implications

Considering the complexity of group-based inequalities in broader society, educators and policymakers could use these findings to inform developmentally targeted interventions. These findings suggest that educational interventions aimed at challenging inequality should focus on the need for equity amongst disadvantaged adolescents. However, such a strategy may be less effective amongst advantaged adolescents, who are more likely to challenge disadvantage when an equality norm is made salient. Attempts to raise awareness of inequality amongst children and adolescents should consider the relative advantage of children's groups when deciding on the best message to promote consideration of fairness in everyday decision-making.

Intergroup competition is a real-world issue that has the potential to exacerbate intergroup prejudices (e.g., racism at international sports events). Inter-school competitions are one of the earliest contexts in which children can see that certain groups have greater access to resources than others (e.g., certain schools may have greater budgets). The present findings stress the importance of direct education related to historical injustices, especially for adolescents who are members of groups who have suffered such injustices. Teaching that includes examples of instances where inequality has been challenged in the broader world (e.g., affirmative action) may prove powerful in establishing group norms of equity.

Future directions and conclusions

Related work in this area has used diverse types of resources, from stickers to educational supplies (Elenbaas *et al.*, 2016; Rizzo *et al.*, 2016). Whilst art supplies were appropriate resources for the scenario used in the current study, future work should explore whether the relative worth or necessity of the resource in question interacts with intergroup factors to influence resource allocation decisions.

Whilst the group norm manipulation was based on a number of studies that have successfully shown that children as young as seven years old understand such messages (McGuire *et al.*, 2017, 2018; Nesdale & Dalton, 2011), future replications could consider including a manipulation check to verify that all participants understand the norm message. Further, it would be useful to include a group identification measure in order to ensure the in-group induction phase of the protocol successfully engendered feelings of in-group identification.

The present study extends previous research by showing an important developmental shift between middle childhood and early adolescence regarding the influence of group status and norms on intergroup resource allocation in a competitive context. As anticipated by the SRD approach (Killen *et al.*, 2016; Rutland & Killen, 2017), adolescents took into consideration both group norms and their relative in-group advantage. Individuals in early adolescence, compared to those in middle childhood, have a more advanced understanding of group processes, coupled with the ability to coordinate this understanding with moral goals. The findings from this study are important for those seeking to challenge inequalities, since they suggest any intervention used amongst adolescents needs to recognize the significant influence of group norms and group status on intergroup resource allocation.

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