THE JOURNAL OF GENETIC PSYCHOLOGY
2023, VOL. 184, NO. 3, 163–177
https://doi.org/10.1080/00221325.2023.2167591

Routledge
Taylor & Francis Group

Ingroup Positivity and Outgroup Negativity Jointly Motivate Toddlers' Social Behavior

Lisa Chalik[a] and Karen Wynn[b]

[a]Skidmore College, Saratoga Springs, New York, USA; [b]Yale University, New Haven, Connecticut, USA

ABSTRACT

Intergroup bias has been a pervasive phenomenon throughout human history, but its psychological underpinnings are still the subject of debate. The present work tests whether intergroup attitudes and behaviors are motivated by ingroup positivity, outgroup negativity, or both, across the first few years of life. In two studies (total $N = 128$), children were introduced to an ingroup doll and an outgroup doll, and interacted with each one independently in a resource allocation task. Toddlers showed both ingroup positivity and outgroup negativity (Study 1). Preschoolers shifted from this pattern, showing positivity and avoiding negativity toward both ingroup and outgroup members (Study 2). Together, these studies suggest that outgroup negativity plays a stronger role in motivating early intergroup bias than previously thought.

ARTICLE HISTORY
Received 15 August 2022
Accepted 9 January 2023

KEYWORDS
Early childhood; ingroup bias; intergroup attitudes; social cognition; social cognitive development

Intergroup bias is a pervasive, early-emerging phenomenon that has led to devastating conflicts throughout human history. To date, a great deal of research has explored the nature of these biases, demonstrating that across a range of situations and group distinctions, people favor ingroup members over outgroup members. For example, people consistently cooperate more with ingroup members than with outgroup members (Brewer, 2007; Brewer & Kramer, 1986; Hackel et al., 2017; Tajfel et al., 1971; Yamagishi & Kiyonari, 2000), and are more likely to help ingroup than outgroup members who have been victims of natural disaster and violence (Levine et al., 2002; Levine & Thompson, 2004). In some circumstances, such as cases of international conflict, people even endorse harm toward outgroup members (Argo, 2009; Bruneau et al., 2017; Ginges & Atran, 2009). These tendencies emerge quite early in life; within the first year, infants form preferences for people based on group distinctions like language and shared interests (Hamlin et al., 2013; Kinzler et al., 2007; Mahajan & Wynn, 2012), and by the preschool years, children favor ingroup members over outgroup members when thinking about groups like race (Aboud, 1988; Rutland et al., 2005), gender (Halim et al., 2017; Hilliard & Liben, 2010), religion (Heiphetz et al., 2013), and nationality (Barrett, 2007).

Given the problematic and far-reaching consequences of these beliefs, it is essential that we understand how they develop. Yet, in the literatures on both developmental and adult social cognition, the psychological forces that motivate intergroup bias remain debated. One possibility is that all (or most) of the biases documented above stem from positive feelings toward the ingroup, commonly referred to as 'ingroup positivity'. On this account, people reserve positive emotions and behaviors for their fellow ingroup members, and as an oft-unintended consequence, withhold positivity from outgroup members (Allport, 1954; Brewer, 1999; Greenwald & Pettigrew, 2014). Another possibility, however, is that intergroup bias is not motivated solely by ingroup positivity, but also by negative feelings toward the outgroup, commonly referred to as 'outgroup

CONTACT Lisa Chalik lisa.chalik@skidmore.edu Skidmore College, 815 North Broadway, Saratoga Springs, NY 12866, USA.

negativity'. On this account, people often hold and act on negative emotions toward outgroup members that are not dependent on any positive feelings that have been reserved for the ingroup (Lehr et al., 2019).

To date, much work with adults has suggested that most intergroup bias is driven by ingroup positivity (reviewed in Brewer, 1999; Greenwald & Pettigrew, 2014). For example, when given the option of contributing money to a pool that will (a) help the ingroup or (b) help the ingroup *and* harm the outgroup, people avoid the option that includes harming the outgroup (Halevy et al., 2008), even in situations where conflict between the two groups has been heightened (Halevy et al., 2012). Furthermore, people avoid ingroup-favoring behavior in situations where that behavior will also result in a negative outcome for the outgroup (Mummendey et al., 1992). Even the people most likely to express outgroup negativity—those with the highest levels of bias—express much more warmth toward the ingroup than feelings of coldness toward the outgroup (Greenwald & Pettigrew, 2014). These findings and others (Amira et al., 2019; De Dreu et al., 2010; Lelkes & Westwood, 2017; Tappin & McKay, 2019; Weisel & Böhm, 2015) all suggest that ingroup positivity trumps outgroup negativity in guiding intergroup bias.

Yet, ingroup positivity appears not to fully explain why people favor ingroup members over outgroup members. One reason why people were likely reluctant to express outgroup negativity in the above studies is social desirability; for example, in most social circles in the United States, it is not socially desirable to express overtly racist beliefs. However, in situations where it is socially acceptable to express negativity toward the outgroup, outgroup negativity takes on a stronger role than the above findings might suggest. For example, in a study on fans of the Boston Red Sox and the New York Yankees—historically rival baseball teams—people reported willingness to pay more money to facilitate negative outcomes for the outgroup than to enable positive outcomes for the ingroup, even when those outcomes were irrelevant to the actual competition between the two teams (Lehr et al., 2019). Yankees and Red Sox fans have even been shown to experience activation in the brain regions associated with reward upon seeing their rival team fail (Cikara & Fiske, 2013), and similar findings have been documented with regard to other sports rivalries (Cikara, 2018).

Thus, the question of how ingroup positivity and outgroup negativity interact to produce people's intergroup behavior remains unanswered. The present work takes a developmental approach to this question. Developmental work is particularly well-suited to speak to issues of ingroup positivity and outgroup negativity, given that in infancy and throughout the preschool years, children are not subject to the same reputational concerns as adults, and are often quite willing to express both positive and negative attitudes toward others. Furthermore, testing children's intergroup biases within the first few years of life allows us to examine the fundamental biases with which children view the world, before they have received extensive experience with the social groups in their environment. Developmental work, therefore, provides a clearer test of how the human mind generally functions as it encounters the many groups that make up our complex social environment.

A great deal of developmental work has explored the development of intergroup bias more broadly (for reviews, see Dunham, 2018; Nesdale, 2017; Skinner & Meltzoff, 2019); yet, little developmental work has explored the relative importance of ingroup positivity and outgroup negativity in early childhood. In one study, Buttelmann and Böhm (2014) assigned 6- and 8-year-olds to color-based groups and gave them a chance to distribute both positive (e.g. a balloon) and negative (e.g. a spider) resources. Children had three options as to where they might distribute these resources: an ingroup puppet, an outgroup puppet, or a neutral box. When distributing positive resources, children in both age groups gave overwhelmingly more to the ingroup puppet than to the other two options, providing clear evidence of ingroup positivity. However, when children were distributing negative resources, a more nuanced picture emerged: 8-year-olds gave more to the outgroup puppet than to the other two options, clearly demonstrating outgroup negativity (i.e. they gave negative resources to the outgroup puppet, even when they had the option of giving these resources to no one), whereas 6-year-olds, instead,

gave similarly to the outgroup puppet and to the other two locations combined. These findings have been interpreted as evidence that outgroup negativity emerges later in development than ingroup positivity, not guiding children's intergroup behavior until after age 6 (Buttelmann & Böhm, 2014).

Yet, we believe that the question of how ingroup positivity interacts with outgroup negativity to motivate young children's intergroup biases remains open. First, in the above study, children's allocations of negative resources to the outgroup may have been somewhat dampened because of the same social desirability concerns that adults hold. By age 5, children alter their behavior in the presence of others in order to manage their reputations (Haun & Tomasello, 2011; Leimgruber et al., 2012; Piazza et al., 2011). Because there was always an experimenter watching the child's behavior in this study, children's negative resource allocations may not have been the truest possible measure of their attitudes toward the outgroup. Furthermore, although 6-year-olds did not allocate significantly more negative resources to the outgroup when these responses were compared to the combination of their ingroup and neutral allocations, they did give more negative resources to the outgroup in comparison to the other two options individually (51% of negative resources were given to the outgroup, versus 12% to the ingroup and 37% to the neutral box). This finding is particularly striking, given that if these children had wanted to avoid negativity toward the outgroup (which may have been especially likely, given their reputational concerns), they could have allocated all of the negative resources to the neutral location—instead, they chose to direct negativity toward the outgroup half the time, even though it wasn't necessary.

Three studies have also investigated whether infants associate positivity or negativity with ingroup and outgroup members, potentially avoiding the above concerns with social desirability. Xiao et al. (2018) examined infants' looking times to images of own-race and other-race faces that were paired with either happy or sad music. They found that 9-month-old infants looked longer when own-race faces were paired with happy versus sad music, but that this pattern was reversed for other-race faces. These findings suggest that by 9 months, infants associate a general sense of positivity with ingroup members, and negativity with outgroup members. Similarly, Hamlin et al. (2013) introduced 9- and 14-month-old infants to a target character who was either similar or dissimilar to them on the basis of food preferences (a potential marker of group membership), then gave infants a choice between an individual who had either helped or harmed the target. Infants' choices differed depending on the target's identity: They preferred individuals who had *helped* similar targets, suggesting positive attitudes toward ingroup members, and they preferred individuals who had *harmed* dissimilar targets, suggesting negative attitudes toward outgroup members (although it is unclear whether attitudes based on similar food preferences can be extended to other forms of group identification).

In contrast, however, Pun et al. (2018) used a habituation procedure to examine how quickly 6- to 12-month-old infants would learn to associate either positivity or negativity with ingroup and outgroup members. Using language-based groups, they found that infants habituated faster when ingroup members were paired with positive stimuli than with negative stimuli, suggesting that these infants generally associated positivity with the ingroup. However, there was no difference in infants' habituation rates to outgroup members paired with positive versus negative stimuli, suggesting that these infants did not generally associate negativity (or positivity) with the outgroup. Thus, the evidence to date on whether infants associate positivity or negativity with ingroup and outgroup members has been mixed. Furthermore, none of these studies tested infants' actual *behaviors* toward outgroup members, leaving open the question of whether the documented associations (e.g. between positive stimuli and ingroup members) would result in the sorts of differential treatment of ingroup and outgroup members that has been shown in older children and adults (Buttelmann & Böhm, 2014; Halevy et al., 2008, 2012; Lehr et al., 2019).

To resolve these issues, in the present work, we directly test children's behavior toward ingroup and outgroup members at ages when social desirability concerns have not yet emerged (Fu et al., 2016; Hepach et al., 2017, 2023; Warneken & Tomasello, 2013). In Study 1, we examine toddlers' resource allocations toward ingroup and outgroup members. In Study 2, we extend the findings

from Study 1 to a wider age range, allowing us to test the extent to which children's behavior toward ingroup and outgroup members remains continuous across early development. Across both studies, we assigned children to groups that we defined using three criteria: colored clothing (a scarf and mittens in purple or yellow), novel group labels (the Zarpies or the Tibbles), and language spoken (English or Italian). Each of these criteria has been used to mark social distinctions for infants and children in prior work (Hamlin et al., 2011; Kinzler et al., 2007; Ting et al., 2019); we elected to combine all three here to ensure that participants would attend to our group manipulation, providing the strongest possible test of our hypotheses. Given that these group distinctions have not been combined in previous work, and that very little work to date has focused on toddlers' intergroup attitudes, we conducted a preliminary study to ensure that this group manipulation would be salient enough to induce intergroup attitudes in toddlers. By coding toddlers' spontaneous behaviors toward the ingroup and outgroup doll, we found that toddlers did show a preference for the ingroup doll (p = .038). Details of this preliminary study can be found at https://osf.io/mjq85/.

In each of the present studies, children interact with ingroup and outgroup members separately from one another, so that instead of testing relative preferences for the ingroup over the outgroup, we are able to test attitudes toward both the ingroup and outgroup independently, each relative to a neutral point. In this way, we can test whether very young children show evidence of ingroup positivity, outgroup negativity, or both. Furthermore, we test both prosocial (giving a resource) and antisocial (taking a resource away) behaviors, in order to test a range of behaviors that children might show toward others. In doing so, we independently test four types of behaviors: prosociality toward the ingroup (*ingroup-give* condition), antisociality toward the ingroup (*ingroup-take* condition), prosociality toward the outgroup (*outgroup-give* condition), and antisociality toward the outgroup (*outgroup-take* condition). The first of these two behavior types (prosocial and antisocial behaviors toward the ingroup) are tests of ingroup positivity: Positive attitudes toward the ingroup should motivate both prosocial behaviors toward the ingroup as well as the avoidance of antisocial behaviors toward the ingroup. The second two (prosocial and antisocial behaviors toward the outgroup) are tests of outgroup negativity: Negative attitudes toward the outgroup should motivate both antisocial behaviors toward the outgroup, as well as the avoidance of prosocial behaviors toward the outgroup. Overall, we hypothesize that both ingroup positivity *and* outgroup negativity will be present in children's intergroup attitudes.

Study 1

In Study 1, we chose to directly elicit a specific behavior that is often shaped by intergroup bias—resource allocation—and test whether toddlers would differ in allocating resources toward ingroup versus outgroup members. Resource allocation tasks have been a hallmark of research on social attitudes in young children (Buttelmann & Böhm, 2014; Hamlin et al., 2011). Thus, here we presented toddlers with a resource allocation task that we framed as either prosocial (giving a treat to someone) or antisocial (taking a treat away from someone). So that we could test toddlers' attitudes toward the ingroup and outgroup member independently against a neutral option, in each task, toddlers only interacted with one of the characters, and they were given an option to direct the prosocial (giving) or antisocial (taking) behavior toward that character versus toward a neutral location. We therefore tested both ingroup positivity and outgroup negativity, each in two ways. Toddlers could show ingroup positivity by either (a) giving a treat to the ingroup member over the neutral location (directing prosocial behavior toward the ingroup), or (b) taking a treat from the neutral location over the ingroup member (avoiding antisocial behavior toward the ingroup). Similarly, they could show outgroup negativity by either (a) giving a treat to the neutral location over the outgroup member (avoiding prosocial behavior to the outgroup), or (b) taking a treat from the outgroup member over the neutral location (directing antisocial behavior toward the outgroup). In each case, we interpret *either* behavior as evidence of the relevant attitude.

Methods

Participants

Participants included 64 18- to 24-month-old toddlers ($M = 20.8$ months, range = 18.0–23.9 months, 32 female) recruited through schools and an online database of families. This sample size was determined a priori, based on prior research with this age group. A post-hoc power analysis using the pwr package in R revealed that this sample size gave 84% power to detect a significant effect. Toddlers were tested either in a child-friendly lab space or in a quiet area at their schools. An additional 10 children were tested but excluded from analysis because either they refused to participate ($N = 4$), their parent interfered ($N = 1$), they did not understand the game ($N = 1$), they did not finish the entire session ($N = 2$), or there was experimenter error ($N = 2$). All toddlers spoke English as their primary language, and had no knowledge of Italian. Sixteen of these participants completed the study directly after participating in a preliminary study, described above; whether toddlers did or did not complete this preliminary study was entered as a factor into all of our main analyses and had no main or interactive effects, so we do not discuss it further. Toddlers were randomly assigned to the *ingroup-give*, *ingroup-take*, *outgroup-give*, and *outgroup-take* conditions ($N = 16$ per condition), described below. All recruitment procedures and methods were approved by the Institutional Review Board at Yale University.

Procedure

Full scripts of the procedures for both studies, as well as all data and code used for analysis, can be found on the Open Science Framework at https://osf.io/mjq85/. Toddlers were seated in their parents' laps at a table, across from two identical plush dolls (see Figure 1). Dolls similar to the ones used here have been used frequently in research with infants and young children and have been shown to be viewed by children as animate agents (for review, see Kominsky et al., 2022). The experimenter first assigned participants to one of two novel groups by putting a scarf and mittens on the child that were either yellow or purple. The experimenter next assigned each doll to one of the groups by dressing them in a scarf and mittens, and explained, 'Look! This kid has yellow [purple] mittens and a yellow [purple] scarf. This kid is a Zarpie [Tibble]. Just like you [different from you]! This kid and you are in the same [different] group! You are a Zarpie [Tibble], and this kid is a Tibble [Zarpie]!' The child's group assignment, the group label associated with each color, and the side of the ingroup and outgroup dolls were counterbalanced across participants. The doll on the child's left was always introduced and referred to first, throughout the testing session. Next, the experimenter played a recording of each doll speaking ('Let's listen to some things they say!'); for the ingroup doll, this recording was in English, and for the outgroup doll, this recording was in Italian. The recordings contained

Figure 1. The dolls used in both studies.

four sentences of child-friendly content (e.g. 'I love dinosaurs!'), and were matched across languages for content and tone. Introducing the dolls in this way allowed us to ensure that the characters were identical in every way except for the features that we intentionally manipulated. This way, although children may have noticed other categories with which the dolls could have been associated—for example, race (both dolls were White) or gender (both dolls were female)—these other forms of categorization could not have driven any differential responding that children showed toward the dolls.

Next, the experimenter told the child's parent to put on a pair of blacked-out sunglasses so that they could not influence the child's responses. The experimenter then introduced the child to a resource distribution game (adapted from Hamlin et al., 2011). The experimenter brought out three plush puppies and lined them up on the table, then placed a small plastic bowl in front of each puppy and explained, 'Now that everyone has a bowl, I'm going to get their treats. Will you help me give them some treats?' The experimenter then brought out three 'treats' (small foam blocks) and instructed toddlers to place one treat in each puppy's bowl. If toddlers had trouble, the experimenter encouraged them until they completed the task.

After this introductory phase, the experimenter brought the ingroup and outgroup dolls back and placed them on the table in the same positions that they had originally occupied. She reminded the child of whether they did or didn't share group membership with each doll ('Remember these kids? This kid is wearing yellow [purple] mittens and a yellow [purple] scarf, just like you [different from you]! You and this kid are both Tibbles/Zarpies [You are a Zarpie/Tibble, and this kid is a Tibble/Zarpie]!'). Then, the experimenter took one of the dolls away, leaving the other on the table. In the *ingroup* conditions, the ingroup doll stayed on the table, and in the *outgroup* conditions, the outgroup doll stayed on the table. Then, the experimenter took out two plastic bowls. She placed one in front of the doll on the table ('She gets a bowl.'), and placed the other in the spot previously occupied by the other doll, which was now empty ('Look! I found an extra bowl. I'm going to put that bowl right here.').

In the *give* conditions, the experimenter now brought out one treat and instructed the toddler to place it in one of the bowls, saying: 'Oh no! Look! There's only one treat left! There's only one treat! I think we need to decide where to put it. We can put the treat here, in this kid's bowl, or here, in this bowl. Can you help me decide where to put the treat?' The experimenter then handed the treat to the toddler and waited until they placed the treat in one of the bowls. Placing the treat in the character's bowl was coded as 1, and placing the treat in the neutral bowl was coded as 0.

In the *take* conditions, after putting out the bowls, the experimenter brought out two treats and placed one in each bowl. She then brought out an additional character (a plush panda) and plastic bowl and instructed the toddler to take a treat from one of the bowls and give it to the panda, saying: 'Oh no! Look! I found someone who didn't get a treat! Look! His bowl is empty! I think we need to take one of these treats and give it to him. We can take a treat from this kid's bowl or from this bowl and give it to him. Can you help me decide where to take a treat from?' The experimenter then placed the panda and his bowl in the center of the table, in front of the toddler, and waited until the toddler took one of the treats and placed it in the panda's bowl. Taking a treat from the character's bowl was coded as 1, and taking a treat from the neutral bowl was coded as 0.

Results

We first investigated whether toddlers acted differently toward the dolls, depending on both a) whether the doll was an ingroup member or an outgroup member, and b) whether the behavior in question was antisocial (taking) or prosocial (giving). We subjected children's responses to a binomial regression model with Group (ingroup vs. outgroup) and Behavior (taking vs. giving) as between-subjects factors. Odds ratios are reported as measures of effect size for each condition that differed significantly from chance responding. We found a main effect of Group, suggesting

that overall, toddlers directed more behaviors toward the outgroup doll than toward the ingroup doll ($\chi^2(1) = 4.77$, $p = .029$). However, as shown in Figure 1, this effect was qualified by an interaction between Group and Behavior, such that for antisocial behaviors, children took from the outgroup doll more than the ingroup doll ($\chi^2(1) = 8.85$, $p = .003$), and for prosocial behaviors, children acted similarly toward the two ($p = .719$). This interaction was reliable, $\chi^2(1) = 4.20$, $p = .040$, and comparing each condition individually to chance confirmed these effects: Intercept-only models revealed that in the antisocial conditions, toddlers were more likely than would be expected by chance to take from the outgroup member rather than the neutral location (12 out of 16 children; $\chi^2(1) = 3.62$, $p = .057$, $OR = 3.00$), and to take from the neutral location rather than the ingroup member (13 out of 16 children; $\chi^2(1) = 5.24$, $p = .022$, $OR = 4.33$). However, in the prosocial conditions, toddlers were equally likely to give to the neutral location and the ingroup (10 out of 16 children; $p = .323$) or outgroup (9 out of 16 children; $p = .618$) member.

Discussion

The behaviors of the toddlers in Study 1 depended on the potential recipient of those behaviors. Unsurprisingly, toddlers avoided taking a resource away from an ingroup member, deciding to instead direct this antisocial behavior toward a neutral location. This finding—that toddlers avoided harm to ingroup members—is consistent with the prior work documenting ingroup positivity in infants and young children (Buttelmann & Böhm, 2014; Pun et al., 2018). Strikingly, however, toddlers showed the opposite pattern for outgroup members: They consistently chose to take a resource away from an outgroup member, even when they had the option of taking from a neutral location instead. Thus, infants chose to direct harm toward an outgroup member, over the clear option of not harming anyone at all. To our knowledge, this is the first evidence of outgroup negativity in children before age 8.

Interestingly, toddlers did not show any reliable pattern of responding for prosocial behaviors. They were equally likely to give a treat to an ingroup member versus a neutral location, as well as to an outgroup member versus a neutral location. Note that this does not mean that we found no evidence of ingroup positivity; we interpret toddlers' avoiding harm toward the ingroup in the *taking* condition as motivated by positive attitudes toward the ingroup. Still, this finding is counterintuitive; if toddlers felt ingroup positivity, as evidenced by their directing an antisocial behavior *away* from the ingroup, shouldn't they also have directed a prosocial behavior *toward* the ingroup? Similarly, if toddlers felt outgroup negativity, as evidenced by their directing an antisocial behavior *toward* the outgroup, shouldn't they also have directed a prosocial behavior *away* from the outgroup? Furthermore, a great deal of prior work suggests that toddlers are generally motivated to act prosocially (Warneken, 2015; Warneken & Tomasello, 2006), so regardless of intergroup attitudes, why did they show so little prosociality here? We cannot conclusively answer these questions given the current data. However, we believe that there exist possibilities that account for our pattern of findings without contradicting the fact that toddlers felt both ingroup positivity and outgroup negativity. One possibility is that prosocial behaviors are not as salient to young children as antisocial behaviors, so toddlers here did not attend to the 'giving a treat' paradigm enough to care whether there was a recipient to their actions. This possibility is consistent with theories positing that antisocial actions are particularly salient because of the importance of intergroup conflict throughout human history (Cosmides et al., 2003) and because of general threat-detection mechanisms (Baltazar et al., 2012; Kinzler & Shutts, 2008), as well as some work with preschoolers suggesting that children hold beliefs about antisocial behaviors before they begin to show similar beliefs about prosocial behaviors (Chalik & Rhodes, 2018; Rhodes, 2012). This finding is also consistent with theorizing in moral philosophy to suggest that antisocial action is an important moral concern, whereas prosocial action, while valuable, is not morally obligatory (Knobe, 2003; Leslie et al., 2006).

Still, this finding is somewhat surprising, given that infants and toddlers have given out resources selectively in prior work. We modeled our tasks after ones used in a set of studies by Hamlin et al. (2011), in which infants and toddlers consistently gave treats to certain characters but not others. In that work, participants watched a number of positive and negative social interactions take place before performing the giving and taking tasks. One key difference in the present study is that we did not expose toddlers to any prior social interactions before asking them to perform these tasks. It is possible that seeing other social behaviors could have primed children in Hamlin's (2011) work to be particularly attentive to prosocial and antisocial behaviors, but in the present work, without that context, the giving behavior was not salient enough to elicit toddlers' differential responding. We acknowledge, however, that we do not have data to speak directly to this possibility, so the question of why toddlers did not show more consistent responding for prosocial behaviors remains open. We return to this issue in the General Discussion.

Study 2

The goal of Study 2 was to investigate the development of the effects documented in Study 1 across the preschool years. Study 1 provided the first evidence that both ingroup positivity *and* outgroup negativity play a role in motivating young children's intergroup attitudes. Yet, it remains an open question whether these effects remain continuous or undergo change across early childhood. As children enter the preschool years, they begin to hear a great deal more input than they had before about what sorts of social behaviors are and aren't acceptable (i.e. they begin to learn the rules of social conduct that apply at school). It may follow, then, that preschool children may shift toward a more egalitarian view, by which they generally direct positivity and avoid negativity toward others, regardless of group membership (consistent with work documenting a 'positivity bias' in preschoolers; Boseovski, 2010). An alternative possibility, however, is that children's behaviors continue to be structured by group membership across the preschool years, consistent with work showing that preschoolers strongly view social groups as constraining the behaviors that are morally obligated (Rhodes & Chalik, 2013). To tease these possibilities apart, for Study 2, we repeated Study 1 with a group of 3- and 4-year-olds.

Methods

Participants

Participants included 64 3- to 4-year-old children ($M = 4.0$ years, range = 3.0–5.0, 30 female) recruited and tested in the same manner as in Study 1. This sample size was set a priori based on the power achieved in Study 1. An additional two children were tested but excluded from analysis because they refused to finish the game. All children spoke English as their primary language, and had no knowledge of Italian. Children were randomly assigned to the *ingroup-give*, *ingroup-take*, *outgroup-give*, and *outgroup-take* conditions ($N = 16$ per condition). All recruitment procedures and methods were approved by the Institutional Review Board at Yale University.

Procedures

Procedures for Study 2 were exactly the same as for Study 1, with the exception that children did not sit in their parent's lap while participating.

Results

As in Study 1, we first investigated whether children acted differently toward the dolls, depending on both a) whether the doll was an ingroup member or an outgroup member, and b) whether the behavior in question was antisocial (taking) or prosocial (giving). We subjected children's

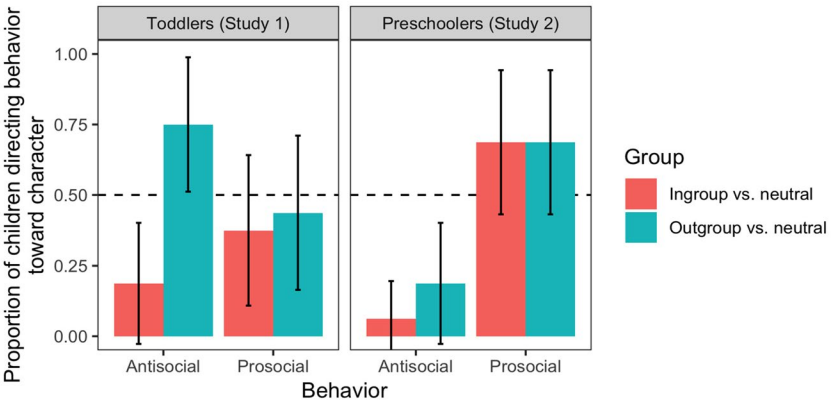

Figure 2. Proportion of children directing behaviors toward each character in Studies 1 and 2.
Note. Error bars represent 95% Confidence Intervals.

responses to a binomial regression model with Group (ingroup vs. outgroup) and Behavior (taking vs. giving) as between-subjects factors. Odds ratios are reported as measures of effect size for each condition that differed significantly from chance responding. As shown in Figure 2, we found a main effect of Behavior, suggesting that overall, preschoolers directed more prosocial behaviors toward the character than antisocial behaviors, regardless of whether the character was an ingroup or outgroup member ($\chi^2(1) = 15.51$, $p < .001$). Neither the main effect of Group nor the interaction between Group and Behavior were significant ($ps > .387$). Intercept-only models comparing each behavior type to chance revealed that for antisocial behaviors, children reliably took from the neutral location rather than the character (28 out of 32 children; $\chi^2(1) = 13.25$, $p < .001$, $OR = 7.00$), and for prosocial behaviors, children reliably gave to the character rather than the neutral location (22 out of 32 children; $\chi^2(1) = 4.27$, $p = .039$, $OR = 2.20$).

Discussion

In Study 2, unlike in Study 1, children showed clear patterns of responding for both prosocial and antisocial actions, and these patterns did not depend on the group membership of the recipient of the behavior. Children consistently avoided harm to and directed prosociality toward both an ingroup member and an outgroup member. One interpretation of these findings is that children at this age did show evidence of ingroup positivity (given that they avoided antisocial behavior and directed prosocial behavior toward the ingroup), but did not show evidence of outgroup negativity. An alternate interpretation is that children in this study did not pay sufficient attention to the characters' group memberships to treat them differentially, and simply wanted to act prosocially toward everyone. The present data cannot fully tease apart these possibilities, but considered alongside the results of Study 1, these findings suggest that a developmental shift happens during the second year of life, where children become less likely to direct negativity toward outgroup members, and become more likely to direct positivity toward both ingroup and outgroup members.

One open question regards how these findings fit in with well-documented patterns of ingroup favoritism among preschoolers in prior work. A great deal of research has shown that preschoolers favor ingroup members over outgroup members across a number of tasks, including resource allocation tasks like the ones used in the present work (Chiang & Wu, 2015; Renno & Shutts, 2015; Sparks et al., 2017; Spence & Imuta, 2020; Yang & Park, 2022). However, findings from resource allocation tasks have been inconsistent—many studies have documented no difference in how preschoolers allocate resources toward ingroup versus outgroup members (Kinzler & Spelke, 2011; Plötner et al., 2015; Sudo, 2021; Yu et al., 2016), and others have found that

preschoolers allocate resources toward ingroup and outgroup members differently under some conditions, but not others (Benozio & Diesendruck, 2015; Dunham et al., 2011; Fehr et al., 2008; X. Xiao et al., 2019). Thus, there is still much work to be done in determining the conditions under which preschoolers favor ingroup members in these sorts of tasks, and although this question is beyond the scope of the present work, we hope that the present findings can contribute to that broader discussion.

General discussion

The present work tested the extent to which ingroup positivity and outgroup negativity motivate young children's behaviors (specifically, resource allocation) toward ingroup and outgroup members. In 18- to 24-month-old toddlers, we found evidence of both ingroup positivity and outgroup negativity: When faced with the option of directing an antisocial action toward a character versus a neutral location, participants directed the action away from an ingroup member (and toward the neutral location instead), and toward an outgroup member (rather than the neutral location). These findings are striking because in both instances, toddlers had the option of directing this antisocial action toward no one—but when faced with an outgroup member, they chose not to take this option. Put plainly, toddlers directed negativity toward an outgroup member, even though they didn't have to. To our knowledge, this finding represents the first evidence of outgroup negativity in early childhood. We also found a developmental shift between 24 and 36 months, such that by age 3, children stopped directing antisocial behaviors toward outgroup members, and started directing prosocial behaviors toward ingroup *and* outgroup members.

These findings suggest a greater role for outgroup negativity in intergroup cognition than previous research has implied. Many scholars have theorized that ingroup positivity is the primary force motivating intergroup bias (Allport, 1954; Brewer, 1999); some have even gone as far as to say that *most* prejudice and discrimination can be explained as the result of ingroup positivity, rather than outgroup negativity (Greenwald & Pettigrew, 2014). The present study is a clearer test of these ideas than has previously been offered because it relied on very young children—in addition to allowing us to test the processes of ingroup positivity and outgroup negativity at an age before social desirability concerns interfere with people's displayed biases, using this age group allows us to test the fundamental biases with which humans view the world. These studies therefore provide a test of how the human mind considers social groups, without the influence of the specific experiences that people have had with the social groups in their local cultural contexts. To that end, our findings suggest that ingroup positivity and outgroup negativity *both* play a fundamental role in guiding the biases and behaviors that people display in intergroup contexts.

How can we reconcile our findings with all of the prior work that has suggested the primacy of ingroup positivity over outgroup negativity in intergroup cognition (Brewer, 1999; Greenwald & Pettigrew, 2014; Halevy et al., 2008, 2012)? In addition to the prospect that social desirability concerns may have motivated much responding in that work, another possibility is that perhaps different experimental paradigms elicit different forms of bias. For example, in one study on partisanship in the US political system (Amira et al., 2019), participants endorsed the publication of an article denigrating their political outgroup over an article that praised their political ingroup (i.e. they prioritized outgroup negativity over ingroup positivity), but only in a condition in which they had previously read an article that threatened the moral identity of their ingroup. When their group's identity had not been threatened, participants showed the reverse pattern. Thus, outgroup negativity only plays a powerful role (whether outweighing ingroup positivity, or acting alongside it) in certain scenarios. Future research should test the specific conditions under which ingroup positivity and outgroup negativity may be elicited independent of one another, in both adults and young children.

An additional (and non-mutually exclusive) possibility is that the relative importance of ingroup positivity and outgroup negativity changes across development. In fact, our findings from Study 2 are evidence for this possibility, as 3- and 4-year-olds did not direct antisocial actions toward outgroup members, and they began to direct prosocial actions toward both ingroup and outgroup members. What might account for this developmental shift? One low-level interpretation is that our methods, which we designed for the toddlers in Study 1, were simply insufficient to detect preschoolers' intergroup biases. The inconsistency in prior work regarding whether children favor ingroup members on resource allocation tasks (Benozio & Diesendruck, 2015; Dunham et al., 2011; Plötner et al., 2015; Renno & Shutts, 2015; Sparks et al., 2017; Sudo, 2021) suggests that children's behaviors in these paradigms are quite fragile, and it may not be appropriate to draw strong conclusions about preschoolers from a task that was designed for toddlers. However, another speculative possibility is that these data reflect a developmental process by which infants' and children's beliefs about ingroup and outgroup members change as they learn about the conditions under which outgroup negativity is considered necessary or appropriate in their cultural context. For example, perhaps within the first two years of life, children assume that outgroups are generally associated with negativity, consistent with work showing that threat detection plays a role in children's recognition of different social categories (Kinzler & Shutts, 2008). Then, as children learn from their environment about their ingroup's relative position in the local status hierarchy, as well as what types of social groups are relevant in the local culture, they stop expressing negativity toward groups that they do not view as particularly salient or threatening. On this account, in the present work, toddlers did not know whether the outgroup member was a part of a threatening group, so they defaulted to treating this person negatively. However, by the preschool years, children had learned that the information that distinguished the two groups from each other in the present paradigm (labels, colored clothing, and language) did not sufficiently support the inference that this particular outgroup should be treated negatively. This account, although speculative, could explain why toddlers demonstrated outgroup negativity, but preschoolers did not. Future work should aim to provide a clearer test of this and other possibilities.

One unanticipated finding from the present work was that toddlers did not show differential responding in their prosocial behaviors. Further work is needed to address this issue, but one direction this work might take is to test the possibility that in our paradigm, the prosocial behavior (giving a treat to someone) was not sufficiently salient to evoke intentional responses in toddlers. In the prosocial conditions, children were told that they needed to 'decide where to put the [only] treat'. In contrast, in the antisocial conditions, they were told that they needed to 'decide where to take a treat from'. It is possible that the concept of *taking*, in the antisocial conditions, automatically evokes an affective response in very young children (who are often told to avoid taking other people's possessions, etc.), whereas the concept of *putting*, in the prosocial conditions, does not attract young children's attention in the same way. As a result, toddlers may not have paid enough attention in the prosocial conditions to show any sort of differential responding. As stated above, this possibility is consistent with theorizing from evolutionary and moral psychology suggesting that intergroup conflict has played a particularly important role throughout human history (Cosmides et al., 2003), and that people generally view the avoidance of harm as a more serious obligation than any obligation to do good (Knobe, 2003)—all suggesting that antisocial behavior may be more salient than prosocial behavior in human cognition. However, we do not have direct evidence of this possibility, and thus, the question of how toddlers weigh the importance of antisocial versus prosocial behavior (and more broadly, how differently-valenced behaviors inform both ingroup positivity and outgroup negativity) remains open. An additional difference between the prosocial and antisocial conditions was that the antisocial conditions involved a third party (a panda who was not a member of either group)—whether this difference across conditions could have influenced children's responses is unclear from the present data. Future work should continue to explore these issues.

Another open question regards the types of group distinctions that can elicit the processes documented here. In the present studies, we chose to combine a number of group manipulations (colored clothing, language, and labels) in order to ensure that children would attend to the groups. However, this method may be viewed as a limitation, given that different sorts of group memberships and individual features lead children to make different inferences about the people around them (Tasimi & Johnson, 2019). It is possible that any of the features manipulated here could alone lead to ingroup positivity and outgroup negativity in toddlers—but it is also possible that only certain combinations of features constitute a clear enough group distinction to elicit these processes. The present work cannot tease apart these possibilities, but future work should attempt to do so, perhaps by pitting different group manipulations against one another in a paradigm similar to the one used here.

One additional limitation regards ambiguity around children's interpretation of the neutral bowl. Because this bowl appeared in the location previously occupied by one of the characters, it is possible that children interpreted the bowl as belonging to that character. We do not believe that this possibility can account for our findings, for a number of reasons. First, we used language to explicitly state that one bowl belonged to a character, and one didn't. Also, throughout the procedure, bowls that belonged to characters always appeared alongside those characters, so there was no reason for a child to assume that an 'unclaimed' bowl actually belonged to someone. Finally, over the course of the procedure, different characters and objects appeared in different locations at different times, so there was no reason for children to assume that any location belonged exclusively to any one character. For all of these reasons, we are confident that children did not view the neutral bowl as belonging to anyone. Yet, we do not have data to completely rule out this possibility, so future work should more directly address this issue.

Despite these open questions, the present studies represent the first evidence that outgroup negativity, in addition to ingroup positivity, is a fundamental motivating force for intergroup attitudes and behavior. Given that the biases that we hold early in life lay the groundwork for how we will relate to members of our own and other social groups for the rest of our lives, these findings have far-reaching implications for how children learn to hold negative attitudes toward outgroup members. This work is thus an important step toward understanding the nature and development of intergroup bias.

Acknowledgments

We are very grateful to all of the families who participated in this research, and to Clarise Ballesteros and the members of the Yale Infant Cognition Center for their assistance with data collection. We also thank Arber Tasimi and Marjorie Rhodes for comments on earlier drafts of this manuscript. Funding was provided by the John Templeton Foundation (#56036) and the Center for the Science of Moral Understanding (Momentum Scholars Award to LC).

Disclosure statement

The authors report there are no competing interests to declare.

Notes on contributors

Lisa Chalik is a Visiting Assistant Professor at Skidmore College. Her research interests include the development of intergroup cognition and moral judgment.

Karen Wynn is a Professor Emerita at Yale University. Her research interests include the development of morality and the mental lives of infants and animals.

References

Aboud, F. E. (1988). *Children and prejudice*. Blackwell.

Allport, G. (1954). *The nature of prejudice*. Addison Wesley.
Amira, K., Wright, J. C., & Goya-Tocchetto, D. (2019). In-group love versus out-group hate: Which is more important to partisans and when? *Political Behavior*, 43(2), 473–494. doi:10.1007/s11109-019-09557-6
Argo, N. (2009). Why fight? Examining self-interested versus communally-oriented motivations in palestinian resistance and rebellion. *Security Studies*, *18*(4), 651–680. doi:10.1080/09636410903368920
Baltazar, N. C., Shutts, K., & Kinzler, K. D. (2012). Children show heightened memory for threatening social actions. *Journal of Experimental Child Psychology*, *112*(1), 102–110. doi:10.1016/j.jecp.2011.11.003
Barrett, M. (2007). *Children's knowledge, beliefs and feelings about the people who belong to different national and state groups*. Psychology Press.
Benozio, A., & Diesendruck, G. (2015). Parochialism in preschool boys' resource allocation. *Evolution and Human Behavior*, *36*(4), 256–264. doi:10.1016/j.evolhumbehav.2014.12.002
Boseovski, J. J. (2010). Evidence for "rose-colored glasses": An examination of the positivity bias in young children's personality judgments. *Child Development Perspectives*, *4*(3), 212–218. doi:10.1111/j.1750-8606.2010.00149.x
Brewer, M. B. (1999). The psychology of prejudice: Ingroup love or outgroup hate? *Journal of Social Issues*, *55*(3), 429–444. doi:10.1111/0022-4537.00126
Brewer, M. B. (2007). The importance of being we: Human nature and intergroup relations. *American Psychologist*, *62*(8), 728–738. doi:10.1037/0003-066X.62.8.728
Brewer, M. B., & Kramer, R. M. (1986). Choice behavior in social dilemmas: Effects of social identity, group size, and decision framing. *Journal of Personality and Social Psychology*, *50*(3), 543–549. doi:10.1037/0022-3514.50.3.543
Bruneau, E. G., Cikara, M., & Saxe, R. (2017). Parochial empathy predicts reduced altruism and the endorsement of passive harm. *Social Psychological and Personality Science*, *8*(8), 934–942. doi:10.1177/1948550617693064
Buttelmann, D., & Böhm, R. (2014). The ontogeny of the motivation that underlies in-group bias. *Psychological Science*, *25*(4), 921–927. doi:10.1177/0956797613516802
Chalik, L., & Rhodes, M. (2018). Learning about social category-based obligations. *Cognitive Development*, *48*, 117–124. doi:10.1016/j.cogdev.2018.06.010
Chiang, Y.-S., & Wu, C.-I. (2015). Social influence and the adaptation of parochial altruism: A dictator-game experiment on children and adolescents under peer influence. *Evolution and Human Behavior*, *36*(6), 430–437. doi:10.1016/j.evolhumbehav.2015.03.007
Cikara, M. (2018). Pleasure in response to outgroup pain as a motivator of intergroup aggression. In K. Gray & J. Graham (Eds.), *Atlas of moral psychology* (pp. 193–200). Guilford Press.
Cikara, M., & Fiske, S. T. (2013). Their pain, our pleasure: Stereotype content and schadenfreude. *Annals of the New York Academy of Sciences*, *1299*(1), 52–59. doi:10.1111/nyas.12179
Cosmides, L., Tooby, J., & Kurzban, R. (2003). Perceptions of race. *Trends in Cognitive Sciences*, *7*(4), 173–179. doi:10.1016/S1364-6613(03)00057-3
De Dreu, C. K. W., Greer, L. L., Handgraaf, M. J. J., Shalvi, S., Van Kleef, G. A., Baas, M., … Feith, S. W. W. (2010). The neuropeptide oxytocin regulates parochial altruism in intergroup conflict among humans. *Science (New York, N.Y.)*, *328*(5984), 1408–1411. doi:10.1126/science.1189047
Dunham, Y., Baron, A. S., & Carey, S. (2011). Consequences of "minimal" group affiliations in children. *Child Development*, *82*(3), 793–811. doi:10.1111/j.1467-8624.2011.01577.x
Fehr, E., Bernhard, H., & Rockenbach, B. (2008). Egalitarianism in young children. *Nature*, *454*(7208), 1079–1083. doi:10.1038/nature07155
Fu, G., Heyman, G. D., Qian, M., Guo, T., & Lee, K. (2016). Young children with a positive reputation to maintain are less likely to cheat. *Developmental Science*, *19*(2), 275–283. doi:10.1111/desc.12304
Ginges, J., & Atran, S. (2009). What motivates participation in violent political action: Selective incentives or parochial altruism? *Annals of the New York Academy of Sciences*, *1167*, 115–123. doi:10.1111/j.1749-6632.2009.04543.x
Greenwald, A. G., & Pettigrew, T. F. (2014). With malice toward none and charity for some: Ingroup favoritism enables discrimination. *The American Psychologist*, *69*(7), 669–684. doi:10.1037/a0036056
Hackel, L. M., Zaki, J., & Van Bavel, J. J. (2017). Social identity shapes social valuation: Evidence from prosocial behavior and vicarious reward. *Social Cognitive and Affective Neuroscience*, *12*(8), 1219–1228. doi:10.1093/scan/nsx045
Halevy, N., Bornstein, G., & Sagiv, L. (2008). "In-group love" and "out-group hate" as motives for individual participation in intergroup conflict: A new game paradigm. *Psychological Science*, *19*(4), 405–411. doi:10.1111/j.1467-9280.2008.02100.x
Halevy, N., Weisel, O., & Bornstein, G. (2012). "In-group love" and "out-group hate" in repeated interaction between groups. *Journal of Behavioral Decision Making*, *25*(2), 188–195. doi:10.1002/bdm.726
Halim, M. L. D., Ruble, D. N., Tamis-LeMonda, C. S., Shrout, P. E., & Amodio, D. M. (2017). Gender attitudes in early childhood: Behavioral consequences and cognitive antecedents. *Child Development*, *88*(3), 882–899. doi:10.1111/cdev.12642
Hamlin, J. K., Mahajan, N., Liberman, Z., & Wynn, K. (2013). Not like me = bad: Infants prefer those who harm dissimilar others. *Psychological Science*, *24*(4), 589–594. doi:10.1177/0956797612457785
Hamlin, J. K., Wynn, K., Bloom, P., & Mahajan, N. (2011). How infants and toddlers react to antisocial others. *Proceedings of the National Academy of Sciences of the United States of America*, *108*(50), 19931–19936. doi:10.1073/pnas.1110306108

Haun, D. B. M., & Tomasello, M. (2011). Conformity to peer pressure in preschool children. *Child Development*, *82*(6), 1759–1767. doi:10.1111/j.1467-8624.2011.01666.x

Heiphetz, L., Spelke, E. S., & Banaji, M. R. (2013). Patterns of implicit and explicit attitudes in children and adults: Tests in the domain of religion. *Journal of Experimental Psychology. General*, *142*(3), 864–879. doi:10.1037/a0029714

Hepach, R., Engelmann, J. M., Herrmann, E., Gerdemann, S., & Tomasello, M. (2023). Evidence for a developmental shift in the motivation underlying helping in early childhood. *Developmental Science, n/a(n/a)*, *26*(1), e13253. doi:10.1111/desc.13253

Hepach, R., Haberl, K., Lambert, S., & Tomasello, M. (2017). Toddlers help anonymously. *Infancy*, *22*(1), 130–145. doi:10.1111/infa.12143

Hilliard, L. J., & Liben, L. S. (2010). Differing levels of gender salience in preschool classrooms: Effects on children's gender attitudes and intergroup bias. *Child Development*, *81*(6), 1787–1798. doi:10.1111/j.1467-8624.2010.01510.x

Kinzler, K. D., Dupoux, E., & Spelke, E. S. (2007). The native language of social cognition. *Proceedings of the National Academy of Sciences of the United States of America*, *104*(30), 12577–12580. doi:10.1073/pnas.0705345104

Kinzler, K. D., & Shutts, K. (2008). Memory for "mean" over "nice": The influence of threat on children's face memory. *Cognition*, *107*(2), 775–783. doi:10.1016/j.cognition.2007.09.005

Kinzler, K. D., & Spelke, E. S. (2011). Do infants show social preferences for people differing in race? *Cognition*, *119*(1), 1–9. doi:10.1016/j.cognition.2010.10.019

Knobe, J. (2003). Intentional action in folk psychology: An experimental investigation. *Philosophical Psychology*, *16*(2), 309–324. doi:10.1080/09515080307771

Kominsky, J. F., Lucca, K., Thomas, A. J., Frank, M. C., & Hamlin, J. K. (2022). Simplicity and validity in infant research. *Cognitive Development*, *63*, 101213. doi:10.1016/j.cogdev.2022.101213

Lehr, S. A., Ferreira, M. L., & Banaji, M. R. (2019). When outgroup negativity trumps ingroup positivity: Fans of the Boston Red Sox and New York Yankees place greater value on rival losses than own-team gains. *Group Processes & Intergroup Relations*, *22*(1), 26–42. doi:10.1177/1368430217712834

Leimgruber, K. L., Shaw, A., Santos, L. R., & Olson, K. R. (2012). Young children are more generous when others are aware of their actions. *PLoS One*. *7*(10), e48292. doi:10.1371/journal.pone.0048292

Lelkes, Y., & Westwood, S. J. (2017). The limits of partisan prejudice. *The Journal of Politics*, *79*(2), 485–501. doi:10.1086/688223

Leslie, A. M., Knobe, J., & Cohen, A. (2006). Acting intentionally and the side-effect effect: Theory of mind and moral judgment. *Psychological Science*, *17*(5), 421–427. doi:10.1111/j.1467-9280.2006.01722.x

Levine, M., Cassidy, C., Brazier, G., & Reicher, S. (2002). Self-categorization and bystander non-intervention: Two experimental studies. *Journal of Applied Social Psychology*, *32*(7), 1452–1463. doi:10.1111/j.1559-1816.2002.tb01446.x

Levine, M., & Thompson, K. (2004). Identity, place, and bystander intervention: Social categories and helping after natural disasters. *The Journal of Social Psychology*, *144*(3), 229–245. doi:10.3200/SOCP.144.3.229-245

Mahajan, N., & Wynn, K. (2012). Origins of "Us" versus "Them": Prelinguistic infants prefer similar others. *Cognition*, *124*(2), 227–233. doi:10.1016/j.cognition.2012.05.003

Mummendey, A., Simon, B., Dietze, C., Grünert, M., Haeger, G., Kessler, S., … Schäferhoff, S. (1992). Categorization is not enough: Intergroup discrimination in negative outcome allocation. *Journal of Experimental Social Psychology*, *28*(2), 125–144. doi:10.1016/0022-1031(92)90035-I

Piazza, J., Bering, J. M., & Ingram, G. (2011). "Princess Alice is watching you": Children's belief in an invisible person inhibits cheating. *Journal of Experimental Child Psychology*, *109*(3), 311–320. doi:10.1016/j.jecp.2011.02.003

Plötner, M., Over, H., Carpenter, M., & Tomasello, M. (2015). The effects of collaboration and minimal-group membership on children's prosocial behavior, liking, affiliation, and trust. *Journal of Experimental Child Psychology*, *139*, 161–173. doi:10.1016/j.jecp.2015.05.008

Pun, A., Ferera, M., Diesendruck, G., Kiley Hamlin, J., & Baron, A. S. (2018). Foundations of infants' social group evaluations. *Developmental Science*, *21*(3), e12586. doi:10.1111/desc.12586

Renno, M. P., & Shutts, K. (2015). Children's social category-based giving and its correlates: Expectations and preferences. *Developmental Psychology*, *51*(4), 533–543. doi:10.1037/a0038819

Rhodes, M. (2012). Naïve theories of social groups. *Child Development*, *83*(6), 1900–1916. doi:10.1111/j.1467-8624.2012.01835.x

Rhodes, M., & Chalik, L. (2013). Social categories as markers of intrinsic interpersonal obligations. *Psychological Science*, *24*(6), 999–1006. doi:10.1177/0956797612466267

Rutland, A., Cameron, L., Bennett, L., & Ferrell, J. M. (2005). Interracial contact and racial constancy: A multi-site study of racial intergroup bias in 3-5 year old Anglo-British children. *Journal of Applied Developmental Psychology*, *26*(6), 699–713. doi:10.1016/j.appdev.2005.08.005

Sparks, E., Schinkel, M. G., & Moore, C. (2017). Affiliation affects generosity in young children: The roles of minimal group membership and shared interests. *Journal of Experimental Child Psychology*, *159*, 242–262. doi:10.1016/j.jecp.2017.02.007

Spence, J. L., & Imuta, K. (2020). Age-related changes in children's accent-based resource distribution. *Journal of Experimental Child Psychology*, *193*, 104807. doi:10.1016/j.jecp.2020.104807

Sudo, M. (2021). Blurred boundaries between us and them: Do young children affiliate with outgroup members with shared preferences? *Journal of Experimental Child Psychology*, *208*, 105150. doi:10.1016/j.jecp.2021.105150
Tajfel, H., Billig, M. G., Bundy, R. P., & Flament, C. (1971). Social categorization and intergroup behavior. *European Journal of Social Psychology*, *1*(2), 149–178. doi:10.1002/ejsp.2420010202
Tappin, B. M., & McKay, R. T. (2019). Moral polarization and out-party hostility in the US political context. *Journal of Social and Political Psychology*, *7*(1), 213–245. doi:10.5964/jspp.v7i1.1090
Tasimi, A., & Johnson, M. K. (2019). Children's initial responses and beyond: Effects of niceness and similarity on preference, giving, and memory. *Child Development*, *90*(2), 432–440. doi:10.1111/cdev.13196
Ting, F., He, Z., & Baillargeon, R. (2019). Toddlers and infants expect individuals to refrain from helping an ingroup victim's aggressor. *Proceedings of the National Academy of Sciences*, *116*(13), 6025–6034. doi:10.1073/pnas.1817849116
Warneken, F. (2015). Precocious prosociality: Why do young children help? *Child Development Perspectives*, *9*(1), 1–6. doi:10.1111/cdep.12101
Warneken, F., & Tomasello, M. (2006). Altruistic helping in human infants and young Chimpanzees. *Science*, *311*(5765), 1301–1303. doi:10.1126/science.1121448
Warneken, F., & Tomasello, M. (2013). Parental presence and encouragement do not influence helping in young children. *Infancy*, *18*(3), 345–368. doi:10.1111/j.1532-7078.2012.00120.x
Weisel, O., & Böhm, R. (2015). "Ingroup love" and "outgroup hate" in intergroup conflict between natural groups. *Journal of Experimental Social Psychology*, *60*, 110–120. doi:10.1016/j.jesp.2015.04.008
Xiao, N. G., Quinn, P. C., Liu, S., Ge, L., Pascalis, O., & Lee, K. (2018). Older but not younger infants associate own-race faces with happy music and other-race faces with sad music. *Developmental Science*, *21*(2), e12537. doi:10.1111/desc.12537
Xiao, X., Liu, L., Xu, L., Liu, L., Chen, C., & Li, Y. (2019). Group bias in children's merit-based resource allocation. *Journal of Experimental Child Psychology*, *188*, 104660. doi:10.1016/j.jecp.2019.06.013
Yamagishi, T., & Kiyonari, T. (2000). The group as the container of generalized reciprocity. *Social Psychology Quarterly*, *63*(2), 116. doi:10.2307/2695887
Yang, L., & Park, Y. (2022). Group membership Trumps shared preference in five-year-olds' resource allocation, social preference, and social evaluation. *Frontiers in Psychology*, *13*, 866966. doi:10.3389/fpsyg.2022.866966
Yu, J., Zhu, L., & Leslie, A. M. (2016). Children's sharing behavior in mini-dictator games: The role of in-group favoritism and theory of mind. *Child Development*, *87*(6), 1747–1757. doi:10.1111/cdev.12635