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Friend or Foe? Empathy Across Demographics and Children's Perceptions of In-group and

Out-group Members

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Abstract

Preschool children often operate under the lens of essentialist thought- forming in-group and out-group attitudes, assigning common characteristics to members of a group, and evaluating in-group members more positively than out-group members (Gelman, 2004; Dunham, 2018). The current study explored whether presenting groups in particular ways and helping children connect to characters on a personal level could influence children's group attitudes. Preschool children (N = 88, age range = 3.08 to 6.97 years, 53% girls) were introduced to paper characters, some of whom belonged to the same arbitrary group as the child (in-group) and some who belonged to a different group (out-group). The study employed a two-by-two factorial design; In one between-subjects manipulation, children either did not receive any information about characters (Baseline condition), or were told that some characters across groups shared their characteristics and preferences (Similarity condition). In another between-subjects manipulation, the two groups were presented either in a competitive context (Competition condition), or in a neutral context (No-competition condition). After assessing children's attitudes toward both in-group and out-group characters in a series of measures, we found differential effects of similarity and competition. Children in the Similarity condition were significantly more likely to choose out-group individuals over in-group individuals than children in the Baseline condition. Additionally, children in the No-competition condition were more likely to share resources with the out-group than children in the Competition condition. These results demonstrate the role of context and personal experience in the formation of children's group attitudes and suggest that finding commonalities with individual group members can override group bias.

Empathy Across Demographics and Children's Perceptions of In-group and Out-group Members

In today's multicultural, globalized world, it is more important than ever before to be able to interact favorably with those who are different from ourselves. One of the most salient indicators of children's ability to engage in prosocial behavior, or behavior that is intended to benefit another, is their ability to feel empathy for another person's distress. Across the literature, there are strong links between empathy and prosocial behavior, and strong negative correlations between empathy and displayed anger and aggression (Strayer & Roberts, 2004). In almost all cases, empathy is seen as a beneficial display of emotion that can aid in the formation of healthy social relationships, increase helping behavior, and even persuade children to have more favorable attitudes toward others. However, children's tendency to operate under the lens of essentialism, an early cognitive bias that promotes categorization, may mediate how, when, and if children decide to show empathy to those different from themselves. If children tend to be inherently biased against members of an "out-group," are they still able to display empathy towards these out-group members? What are some potential mediators that may have the power to override the effects of out-group bias? The present research seeks to understand how essentialist thought influences children's liking and empathetic behavior toward those different from them, and whether or not an emphasis on similarity changes how they interact with out-group members.

In general, empathy is considered to be an other-oriented response intended for the benefit of another person's welfare (Batson, 2005). To offer a more nuanced examination of the term, Daniel Batson (2009) characterized empathy into eight distinct phenomena, which can be briefly summarized as the following: 1) knowing another person's internal state and their thoughts and feelings; 2) adopting the posture and matching the neural responses of an "observed

other” in order to experience a sort of “motor mimicry;” 3) feeling as another person feels; 4) projecting oneself into another’s situation; 5) imagining how another is thinking and feeling; 6) imagining how one would think and feel in another person’s place (in other words, role taking); 7) feeling distress at another person’s suffering or more generally, 8) feeling for another person who is suffering. Although there is not one agreed-upon definition for what empathy is, it is important to distinguish the exact phenomena being studied in a particular research study. When children have this ability to share in other’s emotional states and feel their distress, they often act prosocially in order to relieve that distress (Batson, 2011). For the purposes of this study, we sought to understand whether or not children would be able to feel the distress of out-group members and act to alleviate that distress via altruistic resource allocation.

Another term relevant for the current study is essentialism, which Susan Gelman (2004) describes as a viewpoint in which certain categories have an inherent quality or underlying truth that give an object its often unchangeable identity. Because essentialism serves as the basis for identifying similarities that category members share, it is important to study as an early cognitive bias, as it leads to the categorization of objects on the basis that a category itself gives the object its identity. Essentialism argues that children have a tendency to search for more hidden, inherent features associated with group membership. For example, a child may know that a girl and boy belong to different groups, even though they may not understand exactly what makes them different. Essentialism also has inductive potential, meaning that children can apply what they know about group dynamics to novel instances. The study of essentialism helps illuminate children’s inherent biases in response to in-group/out-group dynamics, indicating that children tend to associate with members of the same “in-group” because they have the same identity as a result of belonging to the same category. “Out-group” members may be seen as “other” because

they belong to a different category. Because essentialism predicts that children classify people in categories as having fixed identities, particularly around 4-6 years of age when children begin to understand innate potential in which properties are fixed at birth, the classification of people into certain groups can have lasting influence on inter-group relations. If group dynamics seem to be fixed entities that cannot be changed, differences are emphasized and opportunities to find shared commonalities are hindered. In the context of empathy across demographics, formation of categories on the basis of race, gender, or even social class can affect how children interact with one another and show empathy based on their beliefs about the relationships among different groups. Even arbitrary groups (such as distinction based solely off shirt colors) can drastically affect attitudes and the ability to share or help an out-group member (Fawcett & Markson, 2010). The studies reviewed below explore how this interplay among different groups and the simultaneous influence of essentialism can affect empathetic behavior.

Children's understanding of social groups and the development of essentialism

One line of research has investigated how children's notions about social groups develop and how these notions influence children's expectations about social interactions among groups. A study by Rhodes (2012) aimed to examine one particular component of naïve sociology theory - the idea that children have abstract expectations that can lead them to believe that group membership can constrain behavior. Children's understanding of the social world stems from the notion that people can be categorized into groups that reflect similarities amongst those group members and differences between groups. Findings from this study indicate that preschool children (3-6 years old) can predict between-group harm, even in the absence of information about negative interactions between groups. The same study also found that the first evidence of children predicting within-group helping appears in older children beginning around 6 years old.

These data suggest that children develop expectations about negative between-group interactions before developing expectations about positive within-group interactions. Overall, these findings provide evidence that categories play a huge role in social cognition by influencing how children predict social interactions. By introducing groups that the children were not affiliated with in any way, this study design was able to highlight that children have abstract expectations that they apply to categories in general, meaning they make generalizations about how groups constrain social behavior. While the within-group helping behavior that the children identified may not be directly attributable to showing empathy, one can still conclude that the presence of between-group harm shows a lack of empathy between groups.

Another series of experiments by Marjorie Rhodes and colleagues (Rhodes, Leslie, Saunders, Dunham, & Cimpian, 2017) explored children's theories of social groups in terms of essentialism. This research found that psychological essentialism can have negative effects on inter-group relations, although it does not necessarily lead to prejudice. Overall, the studies showed that essentialist beliefs affect children's decisions about resource allocation, causing them to withhold resources, whether or not they are exposed to negative information about the group they are sharing with. When one group was explicitly painted as an "out-group," again children withheld resources. Still, in no study did the children seem to feel negatively toward the out-group. These data suggest that while essentialist beliefs do influence resource allocation, decisions about resource allocation are not based on social preferences or liking. While this view of categories as discrete, unchangeable entities might seem to have implications for leading to the development of prejudice, it does not seem like the present research supports the notion that children would generalize properties of one group to a broader population and thus show prejudice (Rhodes et al., 2017). Further work needs to be done to examine how essentialist

beliefs can affect social attitudes, and whether these beliefs may eventually lead to negative perceptions of the out-group. It would also be useful to examine essentialist beliefs across a broader, more diverse demographic to see how essentialist beliefs manifest in response to more diverse subject populations.

Both of the above studies found that group membership affects inter-group social interactions. Children tended to expect between-group harm amongst two different groups, and they tended to withhold resources from out-group members (Rhodes, 2012; Rhodes et al., 2017). Other research has also demonstrated that 5-year-olds show inter-group bias by expressing favoritism for their own group members and predicting positive behaviors for in-group members (Dunham, Baron, & Carey, 2011). All these findings suggest that group membership influences and governs social interactions. When translating these findings to real-world dynamics, this means that membership to categories based on things like race, gender, or socioeconomic status can influence relationship dynamics among children as early as 3 years old. However, it could be possible that the saliency of these categories may not be as explicit in real life as it was made in these studies, indicating that perhaps the effects of in-group and out-group bias may be slightly minimized in more day-to-day interactions. One study by Kinzler and colleagues (Kinzler, Shutts, DeJesus, & Spelke, 2009) challenged this notion of saliency of group membership by finding that 5-year-old children chose to be friends with other children on the basis of having the same accent, trumping their preference for children of the same race. This shows that sometimes characteristics as seemingly insignificant as accent can have powerful effects on social interactions, so powerful that accent can categorize people even more-so than the more salient physical characteristic of race. In summary, interpersonal relationships are influenced by

category-membership, even if that membership is rather arbitrary and minimal, and this categorization influences prosocial behavior amongst groups.

Factors that influence categorization and ways to minimize bias

Now that it has been established that children form biases that favor in-group members and disfavor out-group members, how can one minimize the effects of these biases? Studies have shown that children who have higher levels of empathy are able to increase their liking for members of an ethnic minority group (Nesdale, Griffith, Durkin, & Maass, 2005). While children's empathetic responses were enhanced when the in-group had a norm of inclusion and acceptance for those different from themselves, their empathetic responses were much more inhibited when the in-group had a norm of exclusion and rejection of others. These findings suggest that while empathy can increase liking for out-group members and reduce prejudice, group norms and context play a large role in influencing how likely the child is to display empathy in the first place. Subsequently, it is important to find ways to enhance empathic responses in children so that they can engage in more favorable ways with out-group members.

One way to enhance empathetic response may be to increase exposure to out-group members. A recent study found that people who live in more racially diverse neighborhoods are actually more prosocial (Nai, Narayanan, Hernandez, & Savani, 2018). Participants who imagined living in a more racially diverse neighborhood were more likely to help people following a tragedy than were people who were asked to imagine living in a homogenous neighborhood. This difference was most likely mediated by the fact that people in more diverse neighborhoods were more likely to identify with all of humanity, which leads people to have broader identities. These broader identities in turn have been found to increase prosocial behavior, or behavior that is positive, helpful, and conducive for forming positive social

relationships (Nai et al., 2018). While this study was done in adults, its findings could still have implications for children's notions about different racial groups. If children grew up in more racially diverse areas, would they too adopt broader identities that would make them more willing to help others, regardless of their race or group affiliation? Future research would have to be conducted with children to test whether or not this was applicable, but the current studies do support the notion that exposure to different groups may aid the likelihood that someone will exhibit prosocial behavior, regardless of in-group or out-group bias.

Another way to reduce expressions of bias may be to induce and enhance perspective taking. Experimenters found that actively thinking about others' psychological experiences reduces expressions of bias (Todd, Bodenhausen, Richeson, & Galinsky, 2011). By prompting participants to either imagine the target person's perspective, their own perspective as if they were in the target's shoes, or an objective perspective, researchers found that perspective taking, regardless of the specific form, generated more positive automatic interracial evaluations. These findings indicate that it is possible to diminish contemporary forms of bias against out-group members using simple perspective-taking strategies. While this research was again done in adults, its findings provide an important platform for the development of programs that could be useful for teaching children important anti-bias strategies. Targeting biases amongst children early in their development can help curb the effects of essentialist thinking and naïve categorization, allowing for positive social relationships to flourish amongst a more diverse group of people.

Overall, prior research supports the notion that children in early childhood adopt essentialist beliefs that govern their expectations about group behavior and allow them to predict between-group harm and within-group helping behavior. While children are known to gravitate

toward those to whom they are similar, there are still ways to decrease bias toward those from whom they are different. Exposure to racially diverse neighborhoods and perspective taking are two options that could help diminish the impact of essentialist attitudes, strengthen prosocial behavior, and potentially enhance empathy amongst members of different groups. However, exposure to diversity is not always possible, and perspective taking requires a level of cognitive ability that younger children may not be able to handle. What more practical methods, beyond raising kids in racially diverse neighborhoods or perspective taking, can help children identify more with kids who are different from themselves?

A potential method to increase empathy or liking may be to emphasize similarities with out-group members. One study found that children choose to play with those who have similar preferences or physical appearances that match their own (Fawcett & Markson, 2010). Children in this study interacted with puppets who were either similar or dissimilar to them on particular dimensions. When asked who they would rather play with, children would most often choose the puppet who had the same toy preference as themselves, or someone who had the same physical characteristic, such as hair color. Stable physical characteristics, such as hair color, influenced liking more strongly than more flexible similarity markers, such as shirt color. Meanwhile, random arbitrary similarities, such as being given the same sticker as the puppet, did not seem to sway liking. While this study did not explicitly test liking across established groups, it did emphasize the importance of similarity in predicting liking--more-so than arbitrary measures of having the same sticker.

Based off this research, the present study aimed to test whether or not emphasizing similarities with out-group members in particular could override the effects of out-group bias amongst children. Using established groups, based on both physical characteristics and arbitrary

group assignment, our study examined the power of similarity within a group-centric context in which out-group members and in-group members were pitted against one another. When presented with the choice between an in-group member with similar physical characteristics as the child but different preferences, and the choice of an out-group member with different physical characteristics, but similar preferences, who would the child rather play with? We hypothesized that emphasizing similar preferences that the child has in common with a member of an out-group (a character on another team or of a different race) could potentially help the child identify with the character more and therefore help them exhibit more empathy or liking toward them, persuading them to choose an out-group member over an in-group one.

To take this one step further, we also aimed to examine the effects of cooperation and competition on team dynamics and group biases. Cooperation with team members can help increase positive feelings related to team membership and facilitate team bonding and fair resource distribution (Garaigordobil, Maganto, & Etxeberria, 1996; Hamann, Warneken, Greenberg, & Tomasello, 2011). On the other hand, intergroup competition has been shown to increase negative biases toward out-group (Abrams, Rutland, & Cameron, 2003; Rhodes & Brickman, 2011). In a situation when groups compete, and the child belongs to a winning group, would the child's attitudes toward out-group members change, and would the child still be able to show empathy toward an out-group member's distress? Using a proxy of altruistic resource allocation, the present study examined if children are able to be empathetic toward out-group members in situations of increased vs decreased competitiveness.

Method

Participants

After being approved by the Duke University Institutional Review Board, a group of 93 children (mean age: 4.9 years old) participated in the experiment. The data of 5 participants were excluded from the study because of rowdiness/limited attention, mistakes in the script, or cut-off videos, reducing the final participant population to 88 children (*M* age: 4.9 years old, age range: 3.08 to 6.97 years; 53% girls). In a between-subjects fully crossed design, two factors were experimentally manipulated: similarity (yes/no) and competition (yes/no). Thus, participants were randomly assigned to one of four cells: Baseline-Competition ($n = 23$), Similarity-Competition ($n = 21$), Baseline-No Competition ($n = 21$), and Similarity-No Competition ($n = 23$). Across all four cells, there were a total of 47 girls and 41 boys, with at least ten boys and ten girls in each cell. Participants came from a medium-sized American city. Approximately half of the participants were recruited via phone using a database with birth records of babies living in the surrounding area, and they were tested in a university laboratory setting. They received a small gift for their participation, and parents were offered \$10 for gas compensation. The other half of the participants were recruited and tested at nearby children's museums and also received a small gift for their participation. The majority of the final sample was White ($n = 66$), but also included Black ($n = 7$), Hispanic ($n = 5$), Asian ($n = 5$), and biracial/mixed race ($n = 5$) children. Parents or legal guardians provided written informed consent for their children's participation.

Design

The study employed a between-subjects, fully crossed two-by-two factorial design. All children interacted with paper characters who were assigned to either the same group as the child ("gold team") or a different group ("silver team"). The independent variables manipulated what additional information children received about individual characters and how the teams were

introduced. In one between-subjects manipulation, children either did not receive any additional information about the characters (Baseline conditions), or they were told that some characters across teams shared the child's characteristics and preferences while other characters did not (Similarity conditions). In another between-subjects manipulation, the teams were presented to the child either in a competitive context (Competition conditions) or in a neutral context (No-competition conditions). Thus, participants were randomly assigned to one of four cells: Baseline-Competition, Similarity-Competition, Baseline-No Competition, and Similarity-No Competition. The dependent variables, similar across conditions, were children's choices between characters and their distribution of resources to the teams. We analyzed the effects of similarity and competition on these measures.

Set-up and materials

Children were tested either at a university lab or at a children's museum. In both settings, a female experimenter interacted with the child. The child and the experimenter sat at a small square table (approximately 80 cm x 80 cm) across from each other. The parent or guardian of the child was typically present in the room, at a separate table, and filled out questionnaires during the procedure; at the museum, parents occasionally left the testing space to explore nearby museum activities with their other children. Participating children were always informed about where their parents were.

The study's materials consisted of five paper characters (line drawings of children), coloring crayons, sets of stickers that designated team membership (gold or silver), a wooden 6-piece puzzle for team play, and six attractive erasers that the child could distribute to the characters at the end of the game. The five paper characters were gender-matched to the participant, had similar outfits, but different hair in order to differentiate between them. In the

process of the game, each character was colored in according to their particular designation (either similar in-group, dissimilar in-group, similar out-group, or dissimilar out-group).

The questionnaires that the parents filled out were a participant information sheet, a demographic home survey, and an empathy questionnaire adapted from the Griffith Empathy Measure (Dadds et al., 2008).

Procedure

During the recruitment process, parents were asked to provide a list of the child's likes and dislikes. These included favorite and least favorite color, animal, game, toy, food, or other activities and objects that the parents generated. At the beginning of testing, these likes and dislikes were again confirmed by the child. This list formed the basis for the likes and dislikes of the characters for the Similarity conditions.

The experimenter started by presenting the child with five paper characters and asked the child to choose one that looked the most similar to themselves. After the child chose a character, they were instructed to color their character's skin and hair to match their own, then color the character's clothes with their favorite colors. While the child colored their character, E colored the skin and hair of the remaining four characters, matching two of them to the child's colors, and coloring the other two with different colors. The four characters were given random names (Ash, Jay, Ted, and Cam for the boys; Ivy, Zoe, Mya, Tia for the girls). The experimenter then announced that the child and the characters would play a game where they would be in different teams. She gave the child a gold sticker to put on their character to signify their membership to the gold team. Then, the experimenter brought out two more gold team characters with skin and hair that matched the child's. Two other characters with skin and hair that was different from the child's were introduced as silver team members and given silver stickers.

After introducing both teams, the child played a simple six-piece puzzle game with other gold team members. To make it seem as though all the characters were working together, the experimenter picked up the two gold team characters and used them to move the puzzle pieces around, while the child used their own character to help as well. After the gold team finished, the experimenter held up the silver team characters to do the same puzzle at a slower pace as the child watched. In the Competition conditions, the silver team made a lot of mistakes and did the puzzle much slower, and the gold team was announced to be the clear winner. In the No-Competition conditions, the silver and gold teams performed about equally as well (although the silver team still made a couple of mistakes), and there was no winner announced as both teams were commended.

The next phase of the game differentiated between the Similarity and the No-Similarity conditions. Children in the Similarity conditions were introduced to each character in more detail by learning about their likes and dislikes. Using the information about the child's own preferences (obtained from the parents and confirmed by the child at the beginning of the game), the experimenter presented one in-group character and one out-group character as similar to the child (e.g. "Ted from the gold team likes the color blue, and Ash from the silver team likes pizza") and then presented one in-group character and one out-group character as having opposite preferences to those of the child's (e.g. "Cam from the gold team likes the color black, and Jay from the silver team likes spiders"). The experimenter colored the characters' shirts with corresponding colors, to make the differences more salient and memorable for the child. Thus, for the children in the Similarity condition, this phase of the game put the characters into categories: an in-group similar character, an in-group dissimilar character, an out-group similar character, and an out-group dissimilar character. Children in the Baseline condition did not get

the similarity manipulation, so for them, the characters were categorized as two in-group characters and two out-group characters. Following these categorizations, children's attitudes toward the characters and the teams were measured.

Dependent measures

First, the experimenter asked a series of forced-choice questions, comparing every character to every other character, for a total of six comparisons (in random order). For example, the experimenter held up "Ted" and "Jay" and asked: "Who would you rather play with, Ted or Jay?" In the Similarity conditions, when naming the characters, she also mentioned their characteristics, for example, "...Ted, who likes blue and pizza, or Jay, who likes spiders and broccoli?" In the Baseline conditions, there were no mentions of characteristics. However, in all the conditions, the characters had their gold or silver stickers, so it was clear which ones were in-group members and which were out-group members. For all the children, four of the comparisons were between an in-group member and an out-group member. For data analyses, we calculated the proportion of trials on which the child chose an out-group member, and compared this measure across conditions. We hypothesized that children would choose out-group members more often in the Similarity conditions than in the Baseline conditions. We did not expect to find differences in children's choices between the Competition and No-Competition conditions, because in both of them the child's belonging to their team was reinforced.

Additionally, for the Similarity conditions, we specifically looked at the children's choices between the in-group dissimilar and the out-group similar characters, then calculated the proportion of children who chose the out-group similar character.

Finally, a resource distribution task was introduced. The child was presented with six erasers. After giving one eraser to the child's character, the experimenter wondered aloud what

she should do with the remaining five erasers. She told the child, "I have five erasers left. I don't really know what to do with these erasers. Right now, the silver team is really sad. Remember how they made a couple of mistakes on the puzzle earlier? So they're really really sad right now. What do you think I should do with these erasers? I could give them to either team; it's up to you to decide." First, the experimenter held all five erasers in one pile, making it clear that they all should go to one team. Once the child chose a particular team to give the erasers to, the experimenter then asked the child how to individually distribute the erasers amongst the different characters. This procedure was intended to measure the child's ability to display empathy toward out-group members via altruistic resource allocation (giving erasers to the silver team over the gold team or expressing distress at their sadness). For the first trial (giving all erasers to one team), we measured the proportion of children in each condition who chose to give the erasers to the out-group (the silver team). For the second trial (individual distributions), we measured the proportions of resources (out of 5) the children gave to each team, and again, compared them across conditions. We hypothesized a possible effect of competition on children's responses, assuming children in the No-Competition conditions would be more likely to feel empathy for the silver team.

Coding and Reliability

All the sessions were videotaped for later coding. A primary coder coded all the data; a second coder independently coded videos of 18 participants (20% of the data). For continuous variables, such as numbers of trials on which out-group members were chosen and the numbers of stickers distributed to in-group vs out-group members, intra-class correlations between the two coders' scores were calculated. Reliability between the coders was excellent; ICC coefficients ranged from .96 to 1.0.

For categorical variables, such as the choice of the in-group vs out-group member on one trial of interest and the choice of group to which the child allocated all the stickers, Cohen's kappas were calculated. Again, the reliability was excellent with 100% agreement between the coders; all $k = 1.0$.

Results

The first outcome measures of interest were children's choices of out-group vs in-group members in the Baseline conditions vs the Similarity conditions. Among the 6 trials on which children had to choose between characters, 4 trials presented children with the choice between an in-group member (from the "gold team" that the child belonged to) and an out-group member (from the "silver team"). In the Baseline condition, children only had the information about characters' belonging to one of the two teams. In the Similarity condition, children had additional information about characters' traits and preferences, such that some of the characters were similar to the child and some were dissimilar.

We measured the proportion of trials (out of 4) on which children chose an outgroup member over an ingroup member. We conducted an independent-samples T-test with condition (Baseline vs Similarity) as a between-subjects factor, and found a statistically significant difference between conditions, $t(1, 86) = -2.943, p = .004$. As seen in Figure 1, children chose outgroup members on a higher proportion of trials in the Similarity conditions ($M = .33, SD = .24$) than in the Baseline conditions ($M = .18, SD = .24$).

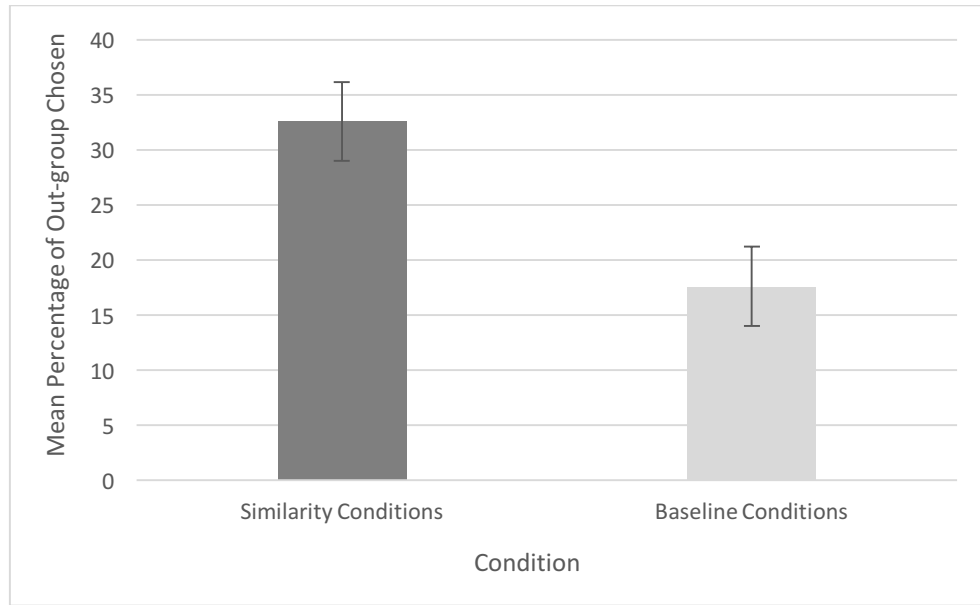


Figure 1. Average Percentage of Trials on Which Children Chose Out-group Members. Error bars represent standard errors.

While we did not predict an effect of the competition manipulation on this measure, we ran a similar independent-samples T-test with Competition versus No-Competition as a between-subjects factor. There was no difference across conditions, with equal proportions of trials on which outgroup members were chosen in the Competition conditions ($M = .25$, $SD = .23$) and the No-Competition conditions ($M = .25$, $SD = .27$), $t(1, 86) = -.035$, $p = .97$.

A particularly interesting choice trial in the Similarity condition was the trial where children had to choose between an outgroup member who was similar to them vs an ingroup member who was dissimilar. Out of 44 children in the Similarity condition, 33 children (75%) chose the outgroup member, $p < .001$ (Binomial probability test). We cannot directly compare this distribution with that in the Baseline condition, because children in that condition did not have the information about characters' similarity to them. However, as a proxy, we calculated the proportion of children in the Baseline condition who chose an outgroup member on half or

more of the trials, which yielded 20.5%. A chi-square analysis comparing the two conditions on this measure showed a significant difference between conditions, $\chi^2(1, 88) = 26.23, p < .001$, which can be seen in Figure 2.

Thus, the similarity manipulation had an effect on children's choices. When children had no information about individuals, they tended to choose ingroup members over outgroup members. However, when children knew that some characters were similar to them, they tended to choose them more often, and the effects of similarity appeared to override the effects of group belonging.

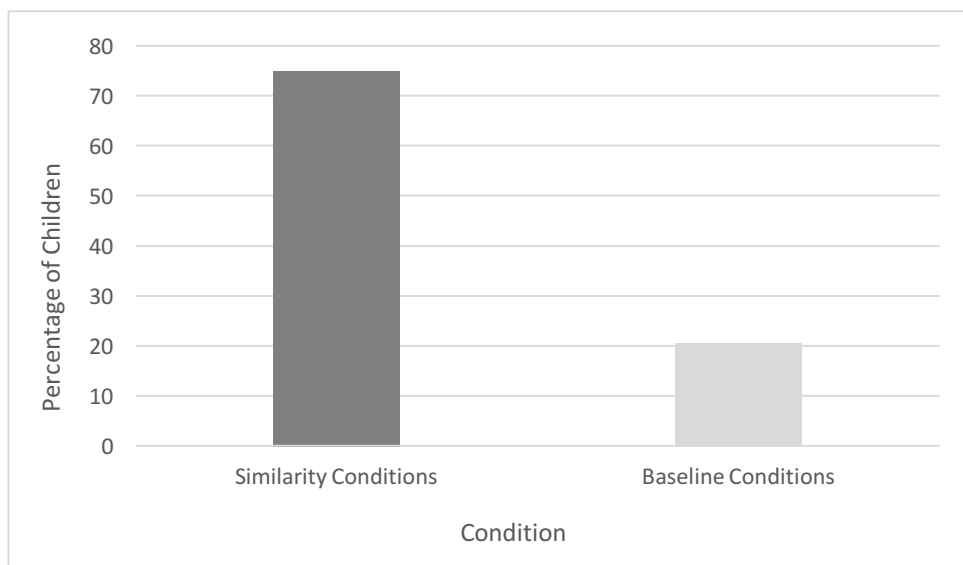


Figure 2. Percent of Children Who Chose an Out-group Member over an In-group Member.

The second outcome measures of interest were children's distributions of erasers between the teams, and then between the individual characters at the end of the game. There were five erasers available, and the child was first asked to give them all to one team, then to distribute

them amongst the four characters. Before the distribution, children were told that “the silver team (out-group) is really sad”, so their decisions reflected the degree of empathy toward the distressed out-group members and the tendency to allocate resources altruistically (choosing the out-group silver team over their own gold team). We predicted an effect of competition on this measure. Thus, we measured the number of children who chose to give the erasers to the silver team in the Competition and the No-Competition conditions. As seen in Figure 3, a chi-square analysis showed a significant difference between conditions, $\chi^2(1, 79) = 4.805, p = .03$, with more children in the No-Competition conditions choosing to give the erasers to the silver team. There were no significant effects of the similarity manipulation on this measure, $\chi^2(1, 79) = .006, p = .941$.

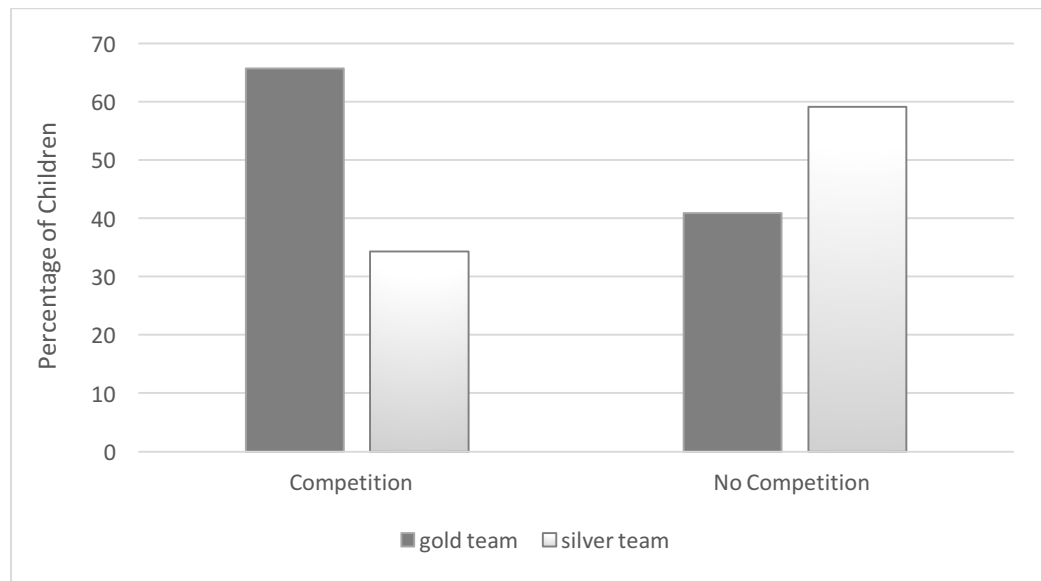


Figure 3. Children's Choice of Team for Eraser Distribution across Competition and No Competition Conditions.

Additional analyses showed there were also differences in the age distribution of children who chose to give erasers to the silver team first. A one-way ANOVA showed that younger

children ($M = 4.74$, $SD = 0.61$) were less likely to give to the silver team than older children ($M = 5.11$, $SD = 0.72$), $F(1, 78) = 6.253$, $p = .015$. This highlights that older children may be better at exhibiting empathetic behavior via altruistic resource allocation than younger children.

Finally, we looked at the effects of gender. Although gender was not found to be a significant factor influencing eraser distribution, we did see a strong trend indicating gender may have an impact on outgroup choosing. An independent-samples T-test showed that girls tended to choose out-group members on a higher proportion of trials ($M = .29$, $SD = .24$) than boys ($M = .20$, $SD = .25$), $t(1,86) = 1.698$, $p = .093$. Although this result is not significant at a $p < .05$ level, it does show a strong trend toward that direction.

Discussion

This study investigated the effects of a variety of factors (similarities, differences, cooperation, and competition) on children's liking, group perceptions, and in general, intergroup relations. Results indicate that emphasizing similarity with out-group members does indeed override group bias, as children in the similarity conditions chose out-group members on a higher proportion of trials than in the baseline conditions. On a more direct measure, when children were presented with either an in-group member who was different from them and in out-group member who was similar, they chose the similar out-group member more in the similarity conditions than in the baseline conditions. Still, children did not necessarily choose out-group members more than in-group members overall, which supports findings from previous research that state that children tend to favor their in-groups (Dunham et al., 2010; Rhodes, 2012).

Regardless, emphasizing similarities did have a significant effect on persuading children to choose out-group members more than they normally would in the absence of information

about preferences. This strengthens findings in previous studies that found that children choose to play with those who have preferences that match their own (Fawcett & Markson, 2010).

Because these previous studies did not test the influence of similarity on children's liking in the presence of groups, our study adds to the significance of similar preferences by noting that they still influence children's liking, even in the presence of distinct teams and an in-group bias.

Previous studies also note that children choose to play with others based on physical appearances as well (Fawcett & Markson, 2010). Our findings were particularly interesting because even when out-group members were pitted against in-group members who shared similar physical characteristics as the child, children still chose out-group members on the basis of similarity, seeming to override their preferences for physical characteristics within the similarity conditions. This shows that emphasizing similar preferences has significant power in masking more apparent characteristics such as hair color, skin color, or team membership that often govern group interactions and serve as the basis for group bias. While the stronger influence of preferences over physical characteristics has been documented in the literature (Fawcett & Markson, 2010), the findings in the current study are especially significant because children were presented with these preferences in a group-centric context where team membership mattered.

In addition to looking at the percentage of times children chose out-group members, we also examined whether or not children would be able to display empathy toward out-group members via altruistic resource allocation. A large proportion of children (48%) did choose to give to the silver team over their own team members when they learned the silver team was sad. While these results may seem to challenge previous studies that note that children withhold resources from out-group members (Rhodes, 2017), it is important to note that our study

purposely elicited empathy before the distribution task by telling children the silver team was upset. This suggests that eliciting empathy in children by pointing out other's emotions has the potential to override children's tendencies to want to withhold resources from out-group members. Still, slightly more than half the kids (52%) chose to give to the gold team instead of the silver team, meaning that group bias is still very much relevant, and eliciting empathy only helped override the effects of group bias in less than half the population of children.

Within the conditions, we examined some more interesting behaviors. Although the inclusion of similarities and differences were not significantly related with whether or not the child chose to distribute erasers to the silver team, competition did have a significant influence. Children in the competition conditions chose to give erasers to the silver team significantly less than the children in the no-competition conditions did. This suggests that the presence of competition may constrain empathetic behavior and make it more difficult for children to be willing to distribute resources to out-group members. Meanwhile, downplaying a sense of competition during the puzzle game and applauding both teams afterward made it easier to elicit empathy from the child so they chose to give erasers to the silver team more often. Because competition is often highly encouraged and lauded in schools as a measure of excellence and academic achievement, these findings can have significant implications for social interactions between children in the presence of competitive circumstances.

Finally, we looked at gender and age differences. There were no significant gender differences across all conditions that influenced out-group member choosing or eraser distribution. However, there was a slight trend that showed that on average, girls tended to both choose out-group members more and distribute erasers to the silver team more than boys. There could be several of reasons for this. For starters, previous research has indicated that girls tend to

be more empathetic than boys (Hoffman, 1977). In the context of the eraser distribution task, it would thus make sense that girls were more affected by hearing that the silver team was sad, and therefore decided to give them erasers to cheer them up. In the context of group membership, it is possible that perhaps girls cared less about team membership than boys. Still, because these gender differences were not significant, possible explanations for these trends are speculative and should be interpreted with caution.

Age comparisons also yielded results that were significant under certain conditions. While no age differences were found amongst children when examining the percent of out-group members chosen, older children tended to give erasers to the silver team more than younger children. This suggests that older kids may be better at exhibiting empathetic response and distributing resources accordingly than younger kids. This is in line with previous research that finds that older children often have higher empathetic understanding than younger kids (Dymond, Hughes, & Raabe, 1952; Eisenberg & Miller, 1987; Hoffman, 2000).

These findings have several implications for team dynamics and children's ability to engage in prosocial behavior. Because the impacts of essentialism and group bias are well-documented, it is important to discover ways to minimize this bias and encourage children to interact favorably with those who are different from themselves. Emphasizing similarity and minimizing competition are just two of the ways we can consciously facilitate more favorable intergroup interactions and increase prosocial behavior amongst children who tend to favor in-group members over out-group members.

Notwithstanding these insights, the present research does have several limitations that must be addressed and may help guide future research. For starters, the sample size was relatively small considering there were two between-subjects conditions and thus four

experimental groups. Additionally, the groups had slightly unequal numbers of children, which may have affected chi square analyses.

The sample was majority white, upper-middle class, with highly-educated parents. This means the data are not necessarily generalizable to groups of lower socioeconomic status or to other racial groups. Future studies should look at differences across race when it comes to in-group/out-group biases, especially because certain racial groups may interact with “out-group” members differently based on the dominant hierarchy of racial groups in the United States. For example, there were several instances during testing in which a child of color would purposely choose an out-group member because the character was white, and the child might have found physical characteristics associated with whiteness to be favorable. One girl mentioned, “I want to play with her because she has pretty blonde hair,” choosing an out-group member over her own in-group because of these characteristics. Future studies should be more intentional about looking at differences in out-group choosing across racial lines, especially in the context of racial hierarchies in the United States and the implications they have for influencing in-group/out-group dynamics.

Another limitation of the study is that sometimes the child would not indicate having any strong likes or dislikes, making it harder to attribute characteristics to the characters that would be relevant for our comparisons. In these cases, the researcher would focus on the child's likes (which were usually easier for the child to articulate than dislikes), and use the opposites of these for the dislikes. In addition to this, the differences between the Competition and No-Competition conditions may not have been apparent or pronounced enough to elicit different responses across conditions to out-group member choosing. Over the progression of the study design, the competition condition was tweaked several times, making it harder to distinguish between the

competition and no competition conditions, as both conditions involved having the silver team make mistakes. While a clear winner was only announced in the competition conditions, children may still have interpreted the silver team's mistakes during the puzzle as an indication of loss across all conditions. This may explain the lack of significant effects of competition on out-group member choosing, and future studies should make this distinction more apparent.

It is also important to note that direct comparisons between particular conditions could not be made because the baseline conditions did not introduce children to character's preferences. For example, in the trials where children had to choose between a different in-group member and a similar out-group member, we could not directly compare the percentage of children who chose the similar out-group member in the similarity conditions to the percentage of children who chose an out-group member in the baseline. To address this, we used a proxy measure that calculated the proportion of children in the baseline condition who chose an out-group member on half or more of the trials.

Other future directions to consider would be to parse out the different measures used in the study and look at them separately. For example, instead of having children divided into groups on the basis of both physical similarities (skin and hair color) and minimal group assignment (gold or silver team), it would be interesting to test these group distinctions separately to see whether or not physical characteristics influence group bias more than arbitrary group assignment. This study joined the two together for the sake of efficiency and limited resources, and to mirror real life because it is more likely that one's "in-group" consists of people who look similar to themselves and not people who were arbitrarily assigned to teams.

Another area that deserves more study would be to implement a joint task between multiple children, instead of using paper characters as group members. One limitation of the

eraser task is that children may have found it difficult to believe that silver team members were sad because they were paper dolls who did not have any apparent emotions. Using real children who could outwardly display their sadness or talk about their preferences could be much more effective in eliciting empathetic responses from the children or influencing their desire to pick an out-group member.

Finally, future studies should examine how cooperation with out-group members may influence out-group choosing or resource distribution. The present study only looked at cooperation within teams and competition between; this was intended to help the child identify with his or her group more and at least in the competition condition, feel a sense of superiority over the other team. An interesting follow-up would be to examine how cooperating with out-group members from another team may influence children's liking toward them and their ability to display empathy toward their distress.

Overall, the current findings contribute to literature on children's understandings of groups and inter-group relations. Our study also adds to the body of research looking at ways to mediate bias and elicit empathy to produce more favorable interactions with out-group members. While the present research did not explicitly test the effects of demographics such as race or social class, the in-group/out-group manipulations mirror how group interactions may occur in real life on the basis of these demographics. Therefore, the findings may have important implications for how children interact with those different from themselves on characteristics more relevant to daily life—such as race, class, or status—rather than just team membership or physical appearance. For these reasons, emphasizing similarity and minimizing competition may be valuable tools for effectively mediating real-life interactions amongst kids and building empathy across demographics in today's increasingly globalized, multicultural world.

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