Children's Reasoning About In-group and Out-group Obligations

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Children's Reasoning About In-group and Out-group Obligations

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Abstract

We examined whether children (ages 4-9 years) show in-group bias in expectations to help others as well as obligations to help others. We showed participants vignettes featuring two novel groups and a variety of scenarios where one character is in need and another is a bystander who notices this. Younger children did not show in-group bias in terms of expectations to help others, but an in-group bias was present in older children. For obligations, however, we did not find an interaction between age and group: children think you have to help in-group members more than out-group members, regardless of age. Children of all ages, despite this bias, still think that individuals are obligated to help members of an out-group, just to a lesser degree than they find this obligation towards in-group members.

1. INTRODUCTION

Humans are group-oriented: we favor "us" over "them" (Cikara & Van Bavel, 2014). Since the early 2000s, developmental psychologists have investigated whether this predisposition begins early in a child's life (Chalik & Rhodes, 2019). By three months of age, infants are able to distinguish individuals from one another based on their race and gender (Bar-Haim, Ziv, Lamy, Hodes, 2006; Quinn, Yahr, Kuhn, Slater, & Pascalis, 2002). Infants develop a preference for speakers of their native language by the time they are 10 to 11 months old (Kinzler, Dupoux, & Spelke, 2007, 2012). By one year, infants expect that others will prefer playing with members of their in-group rather than their out-group (Jin & Baillargeon, 2017; Baillargeon et al., 2015, Bian, Sloane, & Baillargeon, 2018). Even toddlers are more interested in helping an in-group member over an out-group member (Fehr, Bernhard, & Rockenbach, 2008).

These findings tell us about whether infants distinguish between different groups, whether their expectations about helping are influenced by group membership, and whether children's behavior is adjusted depending on group membership. Our study asked a different but related question. Are children's judgments about prosocial obligation also dependent on group membership? That is, do children think individuals are differentially obligated to help others depending on group membership?

Several studies have explored this question of group obligations with mixed results. Specifically, researchers Weller and Lagattuta have found that children believe characters have a greater obligation to help members of their racial in-group than the racial out-group (2013). This trend does not emerge for other social categories, namely gender, as participants in a different study thought boys and girls were equally obligated to help one another (Weller & Lagattuta, 2014). It is then unclear which of

these cases represents how children reason about obligations in general.

To address this question, researchers have moved away from using real-world groups, such as race and gender, and turned to novel groups to see if the trends differed once taken out of the context of real-world scenarios. For example, Rhodes (2012) found that 3- to 5-year-olds who were introduced to novel groups (Flurps and Zazzes) did not hold discriminant expectations: they thought a Zazz was equally as likely to help a fellow Zazz as they were to help a Flurp. However, Rhodes (2012) only measures children's group-based expectations, yet interprets these findings to mean that children do not consider helping to be obligatory (also see Chalik & Rhodes, 2019).

There are distinct differences between expectations and obligations, which makes the above conclusion incorrect. An expectation, in this context, is whether a participant believes that an individual will do something, regardless of whether or not it is mandatory: it is simply what a participant thinks will happen. An obligation is instead what a participant thinks is a required action, making it something that an individual has to do. In any given scenario, an action may be considered obligatory but still not expected; similarly, an action may be expected but not obligatory.

In another study, Marshall, Wynn, and Bloom (2019), told children between the ages of 5 and 9 a story involving a child in need. Both a friend and a stranger watch and decide not to help; children were then asked which character was "meaner" for not helping. They found that, similarly in the Rhodes (2012) study, 5-year-olds do not distinguish between unhelpful strangers and unhelpful friends. This could be the result of younger children lacking the belief that helping is a mandatory social action (in line with Rhodes' interpretation), or it could be due to children believing that helping is obligatory for both friends and strangers, and that this obligation is at an equal level for both types of individuals.

In follow-up studies, Marshall and colleagues (in prep) have found that the second explanation is correct by running a similar study that asked children whether they thought characters (parent, friend, stranger) had to help another character in need in a variety of short vignettes. Marshall et al. (in prep) find that across cultures (United States, Japan, Germany, Uganda, and India) younger children believe helping is obligated regardless of the social relationship between the two individuals; a parent is as obligated to help their child as a stranger is to help an unknown other. This would suggest that younger children do not consider social relationship as much when determining who is obligated to help, resulting in them finding helping to be obligated across broader contexts than older children.

With these mixed findings in mind, we have designed a study to investigate both children's group-based expectation and obligation judgments on helping behaviors in a novel coalitional intergroup context. By doing so, we can potentially replicate Rhodes' (2012) finding that younger children are more inclined to think in-groups are more likely to help each other than out-groups (expectation judgments). But we can better interpret these findings by asking children explicitly about obligation (obligation judgments). To do so, we presented children with two novel groups and gave them a variety of scenarios in which one child is in need and another (whose group membership varies) is a bystander. We asked children expectation questions as well as obligation questions.

2. POTENTIAL HYPOTHESES

We expected we would see one of three possible results. One possibility is the universalism hypothesis: children start out thinking we should help everyone regardless of their group affiliation. As they get older, children then become more selective and consider obligations to help to only be directed towards the in-group.

Another possibility is the early group hypothesis: children start out thinking they are only obligated to help in-group members and these judgments do not change as they age. If this is correct, it would indicate that children begin with universalist beliefs in regards to social relationships (Marshall et al., 2019; Marshall et al., prep) and that these beliefs do not change as they age.

Lastly, it is also possible that children start out thinking they are obligated to help everyone and that these opinions do not change as they get older: the egalitarian hypothesis. We expect this outcome to be less likely due to prior relevant research that has found age differences (Rhodes, 2012; Marshall et al., in prep) and lack of results that support the absence of age effects in regards to moral obligations.

3. METHOD

3.1 Participants

We tested children ranging from four to nine years of age in order to be consistent with the ages used in previous studies on in-group obligations in children. A power analysis revealed that we needed to test approximately 162 participants (27 participants per categorical age group) to have 95% power to observe an interaction effect of small to medium size (f = .18; α = .05). We thus aimed to test approximately 27 children per categorical age. We stopped data collection on the last day in which the final child in a given age range was tested. In doing so, we ultimately tested 199 children between the ages of four and nine (M = 7.11, SD = 1.76; 32 4-year-olds, 31 5-year-olds, 32 6-year-olds, 29 7-year-olds, 34 8-year-olds, 41 9-year-olds). This sample size and power analysis were pre-registered at as.predicted.com: https://aspredicted.org/blind.php?x=h2gr9d. Participants were placed in categorical age groups, one for each of the six ages studied (four to nine years).

Ninety-nine participants were tested in the lab at Yale University. Thirty-three additional children were tested at the Peabody Museum, 28 at Central Park in Manhattan, 17 at festivals in the New Haven area, and 21 at local schools and programs; one participant's location is unknown. One hundred and sixteen participants were female (58.3%). The final sample was 69.3% White, 7.5% East Asian, 6.5% Black, 4% Hispanic, and 2% South Asian. 10.6% reported as "other" or did not report ethnicity. We did not find any effects of demographic variables, nor the testing location, in our study. No participants were excluded.

3.2 Design, Materials, and Procedure

This study used a 2 (Social Group: in-group, out-group) x 2 (Scenario: hungry, hurt) within-subjects factorial design, resulting in four total scenarios. We asked questions that measured two dependent variables—expectations and obligations—resulting in eight total stories.

First, each participant was given a brief introduction to the groups. We based this introduction off of Rhodes' (2012) study on novel groups. This described Flurps as the "red group" and Zazzes as the "blue group" and additionally described each group as building separate towers in order to win a prize during a non-competitive event (see Figure 1).
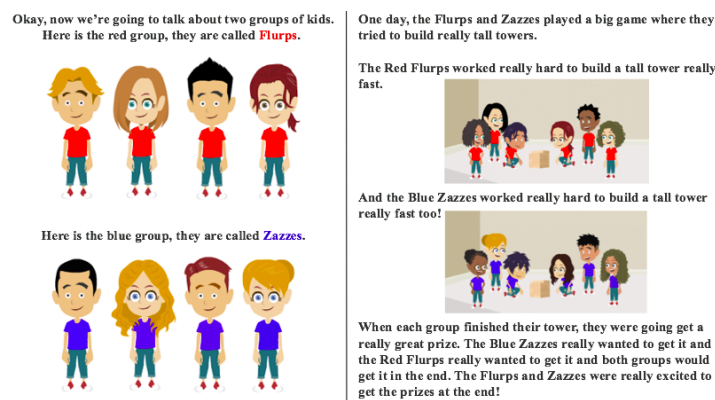

Figure 1. Introduction to novel groups—Flurps and Zazzes.

Participants were next presented with eight stories—four "hungry" scenarios and four "hurt" scenarios; four involved in-group interactions and four involved out-group

interactions. Finally, four featured questions about expectations, and four featured questions about obligations. The ordering of these questions was counter-balanced across participants. Similarly, questions involving hungry scenarios were asked together and questions involving hurt scenarios were asked together. Whether participants were asked about in-group (versus out-group) interactions was randomized within each scenario type. The gender of the characters in the stories matched the participant's gender.

The hungry stories featured a character without food while at a fair and feeling very hungry, while the hurt stories featured a character feeling sad after falling and hurting themselves at the park. In both stories another character sees the initial character in need (see Figure 2).
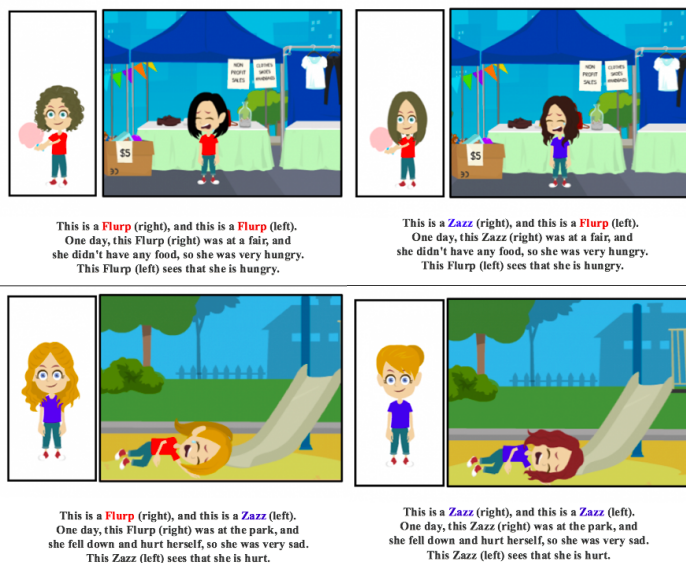

This is a **Flurp** (right), and this is a **Flurp** (left). One day, this Flurp (right) was at a fair, and she didn't have any food, so she was very hungry. This Flurp (left) sees that she is hungry.

This is a **Zazz** (right), and this is a **Flurp** (left). One day, this Zazz (right) was at a fair, and she didn't have any food, so she was very hungry. This Flurp (left) sees that she is hungry.

This is a **Flurp** (right), and this is a **Zazz** (left). One day, this Flurp (right) was at the park, and she fell down and hurt herself, so she was very sad. This Zazz (left) sees that she is hurt.

This is a **Zazz** (right), and this is a **Zazz** (left). One day, this Zazz (right) was at the park, and she fell down and hurt herself, so she was very sad. This Zazz (left) sees that she is hurt.

Figure 2. Examples of the hungry (top) and hurt (bottom) stories for both in-group helping and out-group helping.

For the expectation questions, participants were asked if the bystander will help the character in need. If they answered "yes", they were asked how much they think the bystander will help (only a teeny bit, a little bit, or a lot). If they answered "no", they were asked no further questions about the vignette. This

measured children's expectations of helping behaviors toward in-group members in comparison to out-group members.

For the obligation question, participants were asked whether they thought the bystander had to help. If they answered "yes", they were asked how much they thought the bystander had to help (only a teeny bit, a little bit, or a lot). If they answered "no" they were asked no further questions about the vignette. This measured whether children think group members are obligated to help other in-group members more than out-group members. We based our wording of this question off of work by Kalish and Lawson (2008).

Upon completion of all eight stories, the participant was brought to a demographics form to be filled out by the researcher. This form collected information on the participants' date of birth, age, gender, and ethnicity. This concluded the study.

4. RESULTS

4.1 Expectations

We examined participants' responses in terms of expectations to help others via a mixed modal ANOVA. We did not find a Social Group x Age x Scenario interaction, $F(1, 195) = 1.77$, $p = .185$, $\eta p2 = .009$, so we collapsed across Scenario. In doing so, we found a Social Group x Age interaction, $F = (1, 196) = 12.48$, $p = .001$, $\eta p2 = .060$.

To assess the nature of this interaction, we examined the simple effect of Social Group at -1.5 SD (Age: 4.48) and +1.5 SD (Age 9.74). At younger ages, there was not a simple effect of Social Group, $F(1, 196) = 3.19$, $p = .076$, $\eta p2 = .016$, although it was marginally significant. Children expected in-group members, $M = 3.10$, $SD = 1.85$, and out-group members, $M = 2.85$, $SD = 1.38$, to help one another. At the higher ages, there was a simple effect of Social Group, $F(1, 196) = 58.58$, $p < .001$, $\eta p2 = .230$: children expected in-group members, $M =$

3.69, SD = 1.85, to help one another more than out-group members, M = 2.62, SD = 1.96. See Figure 3.

We also analyzed the data in a binary formation—just "yes" and "no" responses—to examine whether children expected in-groups (and out-groups) to help compared to chance. We found that the youngest children (4-year-olds) and oldest children (9-year-olds) considered both in-groups and out-groups likely to help compared to chance, ps < .001.
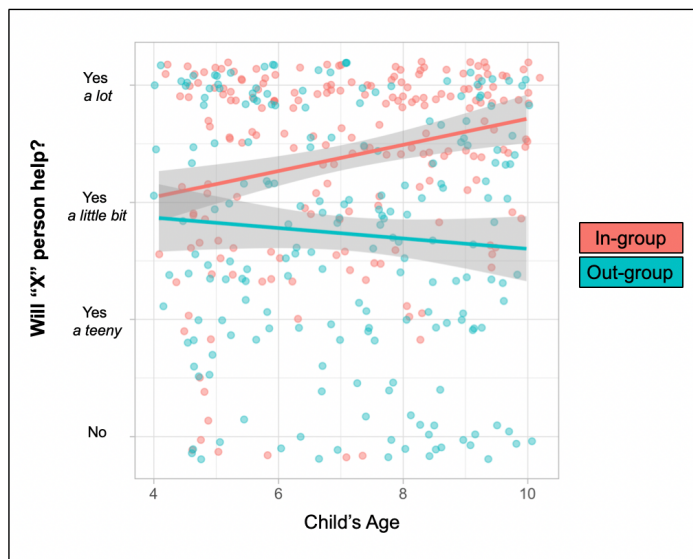

Figure 3. Children's expectations of whether or not a bystander will help an in-group member (red) or out-group member (blue) in need. The y-axis represents how much they think the person will help. The error bands represent plus or minus one SE.

4.2 Obligations

To examine participants' responses in terms of obligations to help others, we conducted a mixed model ANOVA with Social Group (in-group, out-group) and Scenario (fair, park) as a within-subjects factor and child's Age as a continuous predictor. We did not find a Social Group x Age x Scenario interaction, F(1, 194) = 1.23, p = .269, ηp2 = .006, so we collapsed across Scenario. In doing so, contrary to our expectations, we did not find a Social Group x Age interaction, F(1, 195) = 2.32, p = .129, ηp2 = .012. We then decided to collapse across age, and we found a main effect of Social Group,

F(1, 197) = 25.41, p < .001, ηp2 = .114. Children, regardless of age, rated in-group members as more obligated to help one another, M = 3.11, SD = 1.06, than out-group members, M = 2.75, SD = 1.14. See Figure 4.
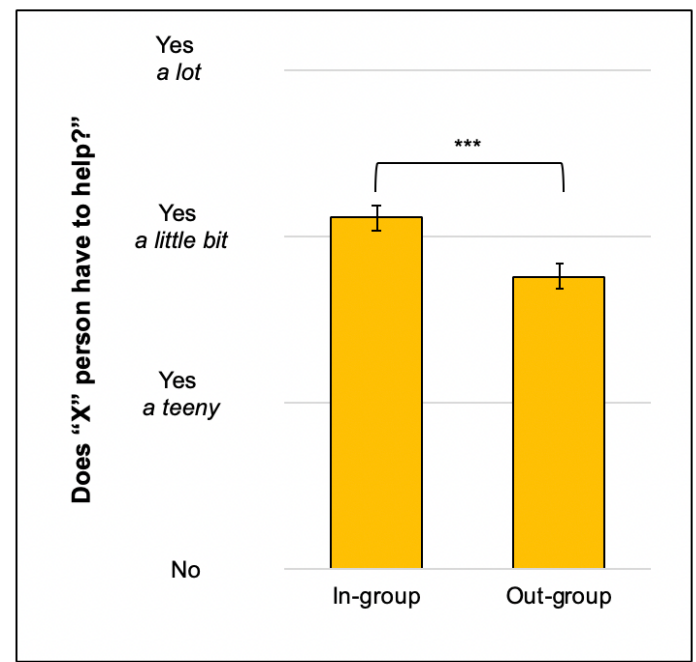

Figure 4. Average degree to which participants thought the bystander character was obligated to help the character in need. The error bars represent plus or minus one SE.

We also examined whether children in general (collapsed across age) considered in-groups (and out-groups) obligated to help one another compared to chance. We did so by just examining participants' binary ("yes" versus "no") responses. In doing so, we found that all children in general consider both in-groups and out-groups obligated to help one another, ps < .001, although children consider in-groups more obligated to help one another than out-groups.

We opted to examine the Social Group x Age interaction for exploratory purposes, as it was necessary to assess the validity of the universalism hypothesis. These findings were not significant. We still examined the simple effect of Social Group at -1.5 SD (Age: 4.48) and +1.5 SD (Age:

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9.7). At the younger ages, there was not a simple effect of Social Group, $F(1, 195) = 2.39$, $p = .124$, $\eta p2 = .012$. Children thought in-group members were as obligated to help each other, M = 3.35, SD = 1.88, as out-group members, M = 2.37, SD = 1.99. See Figure 5.
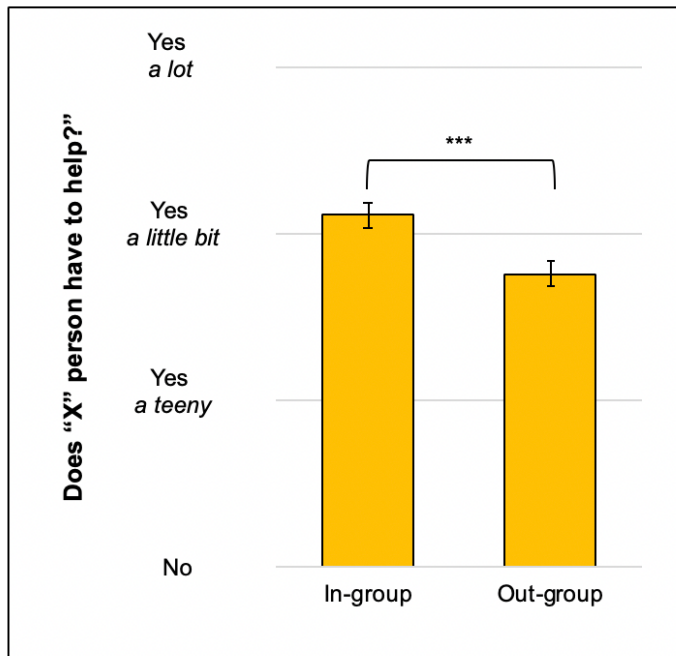

Figure 5. The degree to which children think bystanders are obligated to help an in-group member (red) or out-group member (blue) in need. The y-axis represents how much they think the person will help. The error bands represent plus or minus one SE.

We also analyzed the data in a binary formation—just "yes" and "no" responses—to examine whether children considered in-groups (and out-groups) obligated to help one another compared to chance. We found that the youngest children (4-year-olds) and oldest children (9-year-olds) considered both in-groups and out-groups obligated to help compared to chance, ps < .018.

4.3 Correlations amongst all relevant variables

Additionally, we examined the correlations amongst all relevant variables (see Table 1). We found that age positively correlates with increasingly thinking in-group members will help one another, $r = .25$, $p < .011$, although age does not correlate with expecting that out-group members will not help one another, $r = -.08$, $p = .29$. With respect to obligations, we found that age negatively correlates with thinking that there is an obligation for in-group members to help each other, $r = -.15$, $p = .038$. This is true of the correlation between age and thinking that there is an obligation for out-group members to help each other as well, $r = -.23$, $p = .001$.

	1)	2)	3)	4)	5)
1) Age	--	.25***	-.08	-.15*	-.23***
2) Expectations of in-group help		--	.26***	.26***	.06
3) Expectations of between-group help			--	.18***	.35***
4) In-group help obligations				--	.59***
5) Out-group help obligations					--

Table 1. Correlations amongst all relevant variables.

We also examined whether age correlated with considering helping less obligatory in general. That is, collapsing across in-group and out-group helping, does age correlate with thinking helping is an obligation? We found it did, $r = -.22$, $p = .002$: as children get older, they tend to think helping is less obligatory in general.
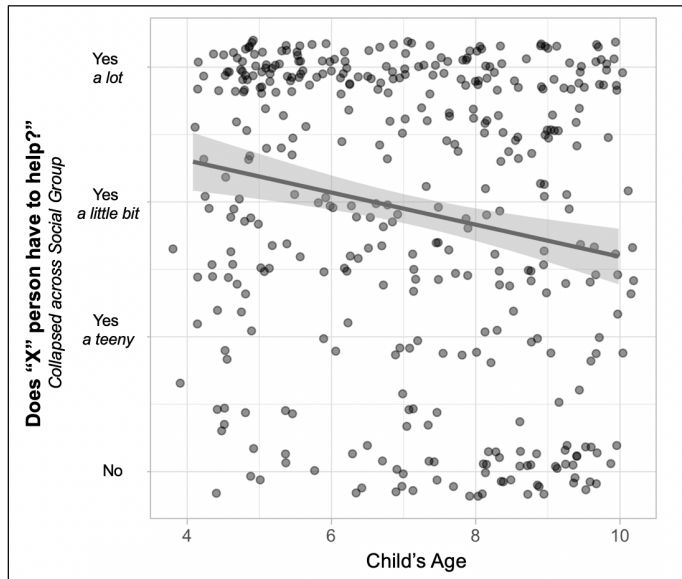
Figure 6. The degree to which children think bystanders are obligated to help someone-in-need (collapsed across group membership). The y-axis represents how much they think the person will help. The error bands represent plus or minus one SE.

DISCUSSION

Our data shows that bias towards in-group members in "helping" situations does not emerge until age 8 or 9 in terms of expectations. This is in line with the universalism hypothesis: we begin life thinking we are obligated to help everyone, and these beliefs shift as we age. These results conceptually replicate Rhodes' (2012) work because it corroborates her findings that younger children are non-discriminating. We also found that children expected individuals to help members of both groups, regardless of their affiliation. That is, although older children considered in-groups more likely to help one another than out-groups, they considered out-groups more likely to help one another compared to chance.

The story is more complicated for obligations. We did not find an interaction between age and group. This supports the early group hypothesis: children seem to think you have to help in-group members more than out-group members, regardless of age. Like for expectations, though, children tend to consider out-groups obligated to help one another, despite considering in-groups as more obligated to help one another. This finding is important because it shows that Rhodes' (2012) interpretation is incorrect: even though children discriminate between in-group and out-group obligations, they all think that you have to help everyone, you just have to help an in-group member more than an out-group member. Contrary to the interpretation Rhodes (2012) presents, children are not indifferent to helping, it is something they think we are all obligated to do but at slightly different degrees depending on social group membership.

These findings show that, although children tend to think that we are less obligated to help others as they get older, they still expect us to help each other at all ages. Although this help is expected and considered to be obligated to occur to a higher degree towards in-group members, children believe that out-groups should receive help and will receive help as well.

It is also important to consider limitations of this study. One limitation is that our sample comes predominantly from Yale University spaces, mostly the Peabody Museum and our lab. Families that participate in our studies are usually middle-to-upper class. Consequently, generalizability is limited, as lower-income families are not equally represented. Another limitation is that we do not measure children's behaviors, but rather their beliefs. Thus, we do not know what the downstream consequences are for these effects. Lastly, this is just one study; replicating it would be important in validating its findings.

There are many potential follow-ups that we could conduct to clarify these results further. One involves changing the nature of the groups. We utilized novel groups because we wanted to ensure children had limited exposure to the groups in question, but these were very meaningless. It would be interesting to follow-up with a study where the groups are described as competitive (Rhodes & Brickman, 2011) or where they have more meaning, like a sports team. It is possible in such

a case that we will find even stronger evidence for the early group hypothesis. Second, we could create a study where children are primed with notions of collectivism to see whether this promotes more biased reasoning in older children. Finally, we could conduct a study using real-world groups such as race and gender (like Weller and Lagattuta) to see if our findings remain consistent in previously established social groups.

To conclude, by asking children questions about their expectations and obligations for characters to help in-group versus out-group members, we found that, in line with the universalism hypothesis, children do not show group-based bias until they are approximately 8 years old. Additionally, in line with the early group hypothesis, children think we are more obligated to help in-group members compared to out-group members, even though children still think we are obligated to help out-group members. While this study has expanded our knowledge of how children reason about group-based obligations, there is still much to explore. We hope to do this by introducing competition between the two groups, and by testing real-world rather than novel groups.

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