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‘An ounce of loyalty’: Children’s expectations about loyalty and preference for in-group members and authority figures

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Abstract

The current study investigates children’s understanding of the social dynamics of complex groups. We asked children to use relative differences in intragroup status to predict the behaviors of individuals. Specifically, who do children (ages 3 to 10, $n = 120$) and adults ($n = 34$) believe a subordinate “worker” would be loyal to (another worker or to their “boss”), and whom the worker would prefer to socialize with? Young children predicted that workers would be loyal to other workers, but as age increased so did children’s tendency to predict that workers would be loyal to bosses. Regardless of age, children and adults believed that workers would prefer to spend time with other workers. These results have important implications for how children understand and navigate nuanced power differentials within a group.

Keywords: Loyalty; Ingroup Bias; Authority, Group Dynamics

Introduction

The American writer and philosopher, Elbert Hubbard once wrote, “An ounce of loyalty is worth a pound of cleverness.” Loyalty is considered a highly valuable trait among groups. Authorities, people with power, appreciate subordinates who support them (e.g., offering raises for long-term employees) and punish those who turn their backs on the group (e.g., punishments of treason). Additionally, even ethical forms of disloyalty (e.g., whistleblowing) can result in retaliation (Mesmer-Magnus & Viswesvaran, 2005). Because groups are often hierarchically structured, including leaders and subordinates with different goals, authority, and responsibilities, navigating social situations may be difficult and require a nuanced understanding of group dynamics. However, adults’ identities often place them in many, sometimes competing, groups and hierarchies that they must negotiate daily.

How do people learn to navigate power differentials within complex groups? Although hierarchy and authority may seem to be cognitively “mature” concepts, we propose that learning to navigate complex groups begins early in life. For example, adolescent relationships are often marked by power differentials. This structure is apparent in terms like “queen bee” and “alpha male” (Hawley et al., 2008; for a review of the “Queen Bee Phenomenon” literature, see Derks et al., 2016). These labels reference intragroup structure where a powerful member often engages in mean behaviors yet

maintains the favor of, and status within, the group (Cillessen & Rose, 2005).

Navigating social hierarchies is important even early in children’s development, and these skills remain essential into adulthood. Thus, learning to identify and navigate these social structures is an important developmental challenge that children must face. Children must be able to determine whether they are in a group or outside of it and, when they are in a group, they must learn to identify who holds power and authority, as well as where the loyalties of group members lie. Because the power dynamics of these relationships influence judgements and decisions within and across groups, navigating social groups requires an almost reflexive mastery of group dynamics. However, it is unclear when children learn to notice and track these affiliations, and when they begin to use what they know about relationships and relative social power to form beliefs and make judgements about the characteristics of individuals and groups. Perhaps more importantly, it is unclear when children begin to use their beliefs about individuals and their affiliations to predict how people will behave. In this paper, we will investigate how the power dynamics of a group influences children’s predictions about how group members will behave. In particular, we will explore whether children believe that subordinate group members will be loyal to other subordinates or to a group authority, and with whom children believe group members would prefer to socialize.

Although relatively little is known about children’s understanding of the relationship between loyalty and behavior, prior research has demonstrated that children use group membership as a marker of social obligations and allegiances (Chalik & Rhodes, 2014; Rhodes, 2012), expecting members of a group to act in a way that benefits in-group members, often at the cost of out-group members (Chalik & Rhodes, 2018; Rhodes, 2013). Evidence of in-group bias appears surprisingly early in development. Before babies are able to speak, they show preferences for those who are similar to them (Mahajan & Wynn, 2012). These biases grow stronger in early childhood as children enter preschool (Aboud, 2003). Similarly biased thinking has been shown in many contexts, including trust in testimony (MacDonald, 2013), resource allocation, and positive trait attribution (Falk et al., 2014). These biases are exhibited even when group membership is minimally and arbitrarily defined (for review, see Dunham, 2018).

As mentioned above, group members commonly vary in status and authority. Often, groups have complex hierarchical structures that can influence the relationships between individuals in the group. In order to appropriately navigate these social situations, children must not only recognize the relevant groups, but they must also understand the composition of the group and the relative social status of different group members. Children are attentive to indicators of social status at an early age, and their sensitivity to social power and status develops over time. As early as age 3, children begin to judge high-status individuals as “in-charge” and they prefer people who are in high-status positions to those in low-status positions (Enright et al., 2020). Gulgoz and Gelman (2017) found that children ages 3 to 9 consider control of resources, achievement of goals, and giving permission to others (e.g., telling someone they can or cannot play with them) to be indicators of social power. By age 5, children recognize that establishing group norms is a sign of power, and by age 7, children view giving orders as a sign of social power as well.

In the current study, we are interested in how children think about the varying degrees of status and power within a group. Laupa (1994) demonstrated that elementary age children are capable of discerning who has more authority within the larger group. In their study, children were presented individuals in the context of a school, and the relevant individuals were teachers (adults with authority), students (subordinate children), and hall monitors (children with authority). Children judged that individuals should comply with the commands of both teachers and hall monitors, giving slight preference to the adult teacher relative to hall monitors. Children also judged that obedience should be given to individuals with authority within the group, and not just to adults (e.g., students should listen to teachers, but not necessarily adults who were not teachers; Laupa, 1994). More generally, even preschoolers understand that there may be negative consequences for disobeying authorities such as police officers and teachers (Powell et al., 2008).

Young children use group loyalty to evaluate others. For example, they tend to prefer group members who do not associate with out-group members (Castelli et al., 2007). Such findings are interpreted as evidence that children value loyalty in others, and that children use loyalty to infer group membership. Children also treat loyalty as a cue that signals friendship. For example, 3- to 5-year-olds use loyalty to predict friendship and, as they enter adolescence, they believe loyalty to be a better indicator of friendship than spending time together or personality similarities (Lieberman & Shaw, 2019). Furthermore, children are more likely to keep a group member’s secret than the secrets of an out-group member. Children will even keep an in-group member’s secrets when faced with a personal cost for their silence (Misch et al., 2016), and they will refrain from common prosocial behaviors when those behaviors might result in a bad outcome for a group member. For example, children are prone to tattling when others engage in harmful behaviors,

but they are less likely to ‘whistleblow’ on in-group members than outgroup members. (Misch et al., 2018).

Much of the literature pertaining to children’s loyalty focuses on understanding when and how children privilege fellow group members. The work of Misch et al. (2014) represents an important exception. Misch and colleagues conducted a study where they separately manipulated in-group bias and loyalty judgments by situating the participant as a neutral party. In their study, 4- and 5-year-olds were presented with a vignette where two teams competed in a tower building contest. The goal of the contest was to quickly build a tall tower. One team was successful (e.g., they built a tall tower quickly), and the other team struggled (e.g., they built a short tower slowly). Children were then told about a loyal person on the struggling team who wanted to continue helping their team and a disloyal team member who wanted to switch to the successful team. Children were asked to evaluate the loyal and disloyal group members on trustworthiness, niceness, morality, and deservingness of a reward from a third-party perspective. They found that both 4- and 5-year-olds rated the loyal group member more positively than the disloyal one, an effect that was stronger in older children than younger children. Interestingly, Misch and colleagues also found that loyalty was expected by preschool children. They rated team members who were neutral similarly to the loyal individual. However, disloyalty was rated unfavorably.

The current study integrates these prior findings but focuses more directly on the how children might use variability in power and authority *within a group* to make predictions about how group members will behave. In focusing on intragroup power dynamics, we hope to characterize the development of children’s understanding of social power. In order to accomplish this goal, we presented 3- to 10-year-olds and adults with a character who was described as a ‘worker’ and then two other characters: a second ‘worker’ and a ‘boss.’ Participants then judged whether a worker would be loyal to another worker or to the boss. It is possible that children may predict that workers will privilege the high-status, powerful boss simply because the boss is inherently more likable than a fellow worker. In order to address this possible confound, we also asked participants to judge with whom the target worker would prefer to spend their time. If these judgements parallel one another, then additional work will be required to decouple loyalty from preferences. However, if participants’ predictions about loyalty and preference diverge, then we can conclude that the two constructs are somewhat independent, and that children do not use similarity or preference alone to predict the behaviors of others.

We were also interested in characterizing developmental differences across age groups. We selected our target age group, ages 3 to 10, because group-based judgments and biases become increasingly apparent across this age range (Aboud, 2003), and children are increasingly sensitive to social power from age 3 to 9 (Gulgoz & Gelman, 2017). We are particularly interested in whom children of different ages

will predict that a subordinate group member will be loyal to, and whether these loyalty judgements will differ from whom the child will think the subordinate group member will prefer to spend time with when they must choose between another subordinate group member and a high-status group member. We may find that children predict that the worker will be loyal to and want to spend time with a fellow subordinate, or that the worker will be loyal to and prefer a high-status authority. Alternatively, children may predict that a subordinate would be loyal to an authority while preferring to spend time with other subordinate group members, or vice versa. The design of the current study will allow us to characterize at what age children begin to notice intragroup power dynamics and to use those dynamics to predict individuals' behavior.

Method

Participants

We conducted an a priori power analysis using an effect size of 0.3 and power of .8 for 4 age groups to calculate that a total sample size of 128 was sufficient to support our planned analyses. Participants included 154 individuals split into four age groups: 40 3- to 5-year-olds ($M = 4.64$, $SD = 0.58$; 22 females and 18 males), 39 6- to 8-year-olds ($M = 7.54$, $SD = 0.88$; 20 females and 19 males), 41 9- to 10-year-olds ($M = 9.93$, $SD = 0.53$; 20 females and 21 males), and 34 undergraduate adults (22 females, 12 males). Children participated in person in a lab or school setting ($N = 58$) or online via synchronous video calls on Zoom ($N = 67$). Adult data was collected online via Microsoft Teams ($N = 34$). Data from four additional children were excluded from analysis due to technical issues (3 children) and experimenter error (1 child), and data from an additional 6 adults whose data were collected in person were excluded because preliminary analyses revealed that they responded differently than the adults participating online (see preliminary analyses below). In person data were collected at a university in the Southeastern United States, and online data collection was restricted to the United States. Children received a \$5 Amazon gift card or small gift for participating, and adults received course credit.

Materials and Design

Presentation software was used to show participants three stick figures. All figures were described as male and were differentiated by the type of hat they were wearing. The target character was shown wearing a hardhat and was placed at the bottom center of the screen. Above the target character, there were two characters shown equidistant from each other. One character wore a hardhat and the other wore a top hat, see Figure 1. The characters in the hardhats were labeled, 'workers' and the character in the top hat was labeled 'the boss.' The direction the target character faced (toward the boss or toward the other worker) and side of screen that the worker and the boss appeared on were counterbalanced across trials.

Participants were asked two questions: Loyalty Questions and Preference Questions. The Loyalty Questions were adapted from Liberman and Shaw (2019). Loyalty Questions asked participants to judge who the target worker would share resources with and whose side the target worker would take in a disagreement. Preference Questions asked participants to predict with whom the worker would spend their free time (e.g., with whom would the target worker want to go to lunch with?). Children were asked 4 Loyalty Questions (2 about sharing and 2 about side-taking) and 4 Preference Questions (going to lunch, a party, the movies, and the park). The presentation order of each block of questions was counterbalanced so that some participants heard Loyalty Questions before Preference Questions and vice versa, and within each block, the questions were counterbalanced to be presented in forward and reverse orders.

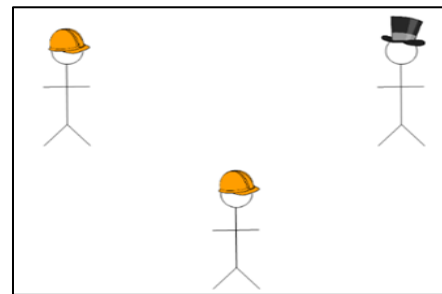


Figure 1. Stimuli with the target character at the bottom of the screen and the 'worker' and 'boss' at the top of the screen.

Procedure

Each experimental session began with the presentation of a worker and boss character. The researcher pointed to and labeled each character. The worker was introduced as someone who, "works in a company, follows the rules, and gets money from the boss." The boss was introduced as someone who, "runs a company, makes the rules, and gives the workers money."

Participants were then shown an image with all three characters, as shown in Figure 1. Participants were asked 4 Loyalty Questions (e.g., "This worker and the boss both need scissors to do their work but forgot them at home. This worker [target character] has an extra pair of scissors and can only lend them to one person. Who will the worker lend their scissors to?") and 4 Preference Questions (e.g., "This worker and the boss are going to lunch at different places. Who will this worker [target character] go to lunch with?"). When participants were tested in person, the experimenter pointed to each character as they were mentioned. When participants were tested online, the presentation was designed so that the image of each character slowly shook back and forth as it was being discussed to orient the child to the correct figure and to hold their attention. At the conclusion of the study, participants were thanked and compensated for their time.

Results

Participants received a score of 1 for each selection of the boss and a score of 0 for each selection of the worker. To score participants' responses, we generated a composite score by summing participants' responses to each question, yielding composite scores that ranged from 0 to 4 for each question.

Two preliminary mixed factorial ANOVAs were conducted to measure the effect of Gender, Presentation Order, and Format (Online vs. In-Person) on participants' responses to each question. We found no significant effect of Gender or Presentation Order, $ps > .30$, on Loyalty Questions, so these variables were excluded from our primary analysis of these data. Adults who participated in person selected the boss at significantly greater rates than adults participating online, contributing to a significant Age Group X Format interaction, $p = .029$. To simplify the presentation of our Loyalty results, which were consistent whether these in person participants were included or not. Thus, data from adults participating in person were excluded from our primary analysis, allowing for the exclusion of Format from our primary analysis of Loyalty Questions as well. Gender and Format did not affect participants' responses, $p > .80$, on Preference Questions. Thus, these variables were removed from further analyses of Preference Questions. However, there was a significant main effect of Presentation Order on participants' responses to Preference Questions. Thus, we included Presentation Order as a factor in our primary analyses of Preference Questions.

Loyalty Questions. We conducted a one-way ANOVA with Age Group (3-5, 6-8, 9-10-year-olds, and adults) as the independent variable and Loyalty Question Score as the dependent variable to test for age-based differences in participant responses. We found a significant main effect of Age, $F(3, 153) = 10.54, p < .001, partial\ eta^2 = 0.17$, see Figure 2. Bonferroni-corrected post-hoc analyses indicated that 3- to 5-year-olds ($M = 1.50, SD = 0.99$) selected the boss less than 9- to 10-year-olds ($M = 2.41, SD = 0.87$), $p < .001$ and adults ($M = 2.50, SD = 0.87$), $p < .001$. Additionally, 6- to 8-year-olds ($M = 1.90, SD = 0.85$) inferred loyalty for the boss less than adults did, $p = .028$. There were no significant differences between 3- to 5-year-olds and 6- to 8-year-olds ($p = .301$), 6- to 8-year-olds and 9- to 10-year-olds ($p = .064$), or 9- to 10-year-olds and adults ($p = 1.00$).

Although we found that children of different ages and adults responded in ways that differed from each other statistically, it is possible that these responses largely reflected quantitative, rather than qualitative, differences in judgments made by participants in different Age Groups. In order to further characterize these data, we conducted one-sample t -tests to determine whether participants' responses to Loyalty Questions deviated meaningfully from chance (chance = 2) in each Age Group. Three- to 5-year-olds selected the boss at rates that were significantly below chance, $t(39) = -3.20, p = .003, d = -.51$, and 6- to 8-year-olds made selections that reflected no strong preferences, $t(38) = -0.75, p = .457, d = -.12$. Interestingly, 9- to 10-year-olds,

$t(40) = 3.07, p = .004, d = 0.48$, and adults, $t(33) = 3.38, p = .002, d = 0.58$, selected the boss at rates significantly greater than would be expected by chance, see Figure 2.

We also conducted a linear regression to test whether Child Age ($M = 7.39, SD = 2.28, range = 3.65 - 10.83$) predicted children's Loyalty Question Score. Age significantly predicted children's judgements, $F(1, 118) = 21.32, p < .001$, see Figure 3. Child Age ($\beta = .17, t = 4.61, p < .001$) accounted for 15.3% of the variance in children's Loyalty Question Score. Adults were excluded from this analysis because the adult version of this protocol was approved as exempt, a status that disallowed collection of identifying demographic information, including age.

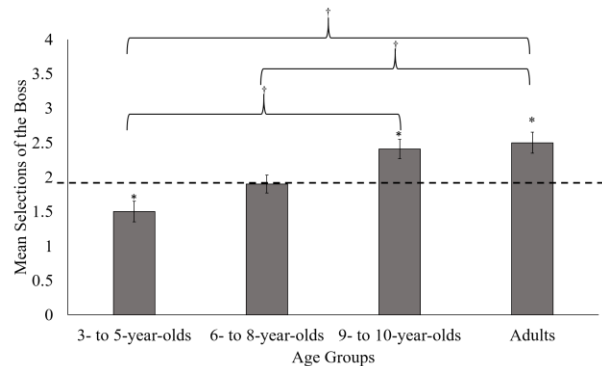


Figure 2. Average responding to the Loyalty Questions by Age Group. Asterisks indicate differences from chance and crosses with brackets indicate age differences, $\alpha = .05$.

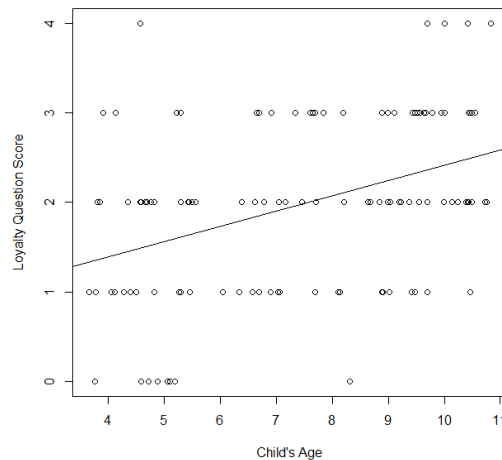


Figure 3. Loyalty Score Regression Graph with higher loyalty scores indicating more selections of the boss.

Preference Questions. Our preliminary analysis indicated that Presentation Order influenced participants' responses to the Preference Questions. Thus, we conducted a 4 (Age Group: 3-5, 6-8, 9-10-year-olds, and adults) X 2 (Presentation Order: Preference Questions First and Loyalty Questions First) factorial ANOVA. We found significant main effects of Age Group, $F(3, 146) = 5.23, p = .002, partial\ eta^2 = 0.10$, and Presentation Order, $F(1, 146) = 11.80, p < .001, partial$

$\eta^2 = 0.06$, but no significant interaction between these two factors, $F(3, 146) = 0.62, p = .605$.

In order to further characterize these effects, we conducted additional targeted analyses. Bonferroni-corrected post-hoc analyses revealed that the main effect of Age Group primarily reflected a difference in responding between 6- to 8-year-olds and adults. The 6- to 8-year-olds ($M = 1.86, SD = 0.98$) selected the boss significantly more often than adults ($M = 0.91, SD = 1.08$), $p < .001$. No other Age Group differed from another, $ps > .12$. We further explored this finding by conducting one-sample t -tests to determine whether participants' tendencies to select the boss versus the worker diverged from chance (chance = 2). Three- to 5-year-olds ($M = 1.40, SD = 1.08$), 9- to 10-year-olds ($M = 1.41, SD = 1.25$), and adults judged that the target worker would prefer the other worker significantly more often than would be predicted by chance, $ps < .005$. In contrast, 6- to 8-year-olds' responses did not significantly differ from random responding, $p = .418$, indicating that they did not – on average – think that the target worker would prefer spending time with either the boss or the other worker, see Figure 4.

We conducted the same analyses in order to better characterize the main effect of Presentation Order as well. We found that participants inferred that the worker would prefer the boss more when they were asked to answer the Preference Questions first ($M = 1.70, SD = 1.06$) compared to when participants heard the Loyalty Questions first ($M = 1.13, SD = 1.18$), $p < .001$, see Figure 5.

Comparisons to chance revealed that participants who heard the Loyalty Questions first ($M = 1.13, SD = 1.16$) predicted that the target worker would prefer to spend time with the boss at rates that were significantly lower than chance, $t(76) = -6.56, p < .001, d = -.75$. Participants who heard Preference Questions first ($M = 1.70, SD = 1.05$) also predicted that the target worker would prefer to spend time with the boss at rates that were significantly lower than chance, $t(76) = -2.49, p = .015, d = -.28$. Although the two presentation orders differed quantitatively (i.e., one group selected more bosses than the other), the two groups both reflected the same overall response pattern: participants believed that workers would prefer to spend time with other workers.

We also conducted a regression analysis to test whether Child Age predicted Preference Question Scores. Child Age was not a significant predictor of Preference Question Score, $F(1, 118) = .001, p = .971$, see Figure 6. Child Age ($\beta = -.003, t = -.036$) accounted for 0% of the variance in selections of the boss for the Preference Questions. Again, adults were excluded from this analysis because adult demographic information was not collected.

Discussion

The current study investigated individuals' predictions about who a subordinate group member would be loyal to and who they would prefer to spend time with when presented with another subordinate worker and a 'boss' within a hierarchically structured group.

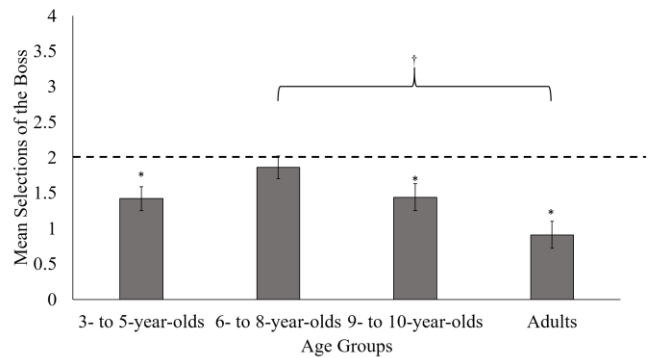


Figure 4. Average responding to the Preference Questions by Age Group. Asterisks indicate differences from chance and crosses with brackets indicate age differences, $\alpha = .05$

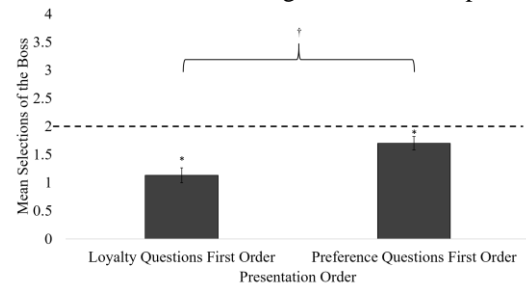


Figure 5. Average responding to the Preference Questions by Presentation Order. Asterisks indicate differences from chance and crosses with brackets indicate Presentation Order differences, $\alpha = .05$

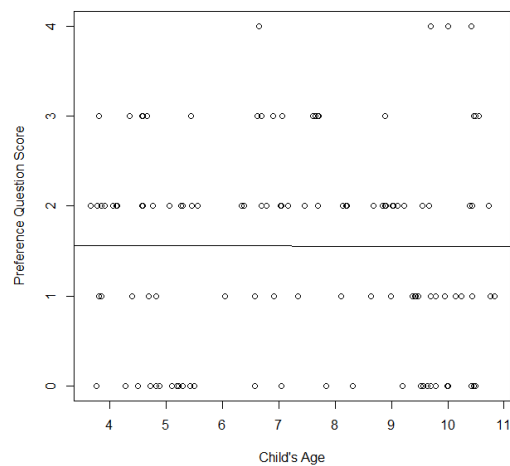


Figure 6. Preference Score Regression Graph with higher preference scores indicating more selections of the boss.

The purpose of this study was to determine at what age children are sensitive to group power dynamics, and when they begin to use these dynamics to predict the behavior of others.

When presented with questions about loyalty, participants made predictions that varied by participant age. Three- to 5-year-old participants predicted that subordinate group members would be loyal to fellow subordinates. Six- to 8-year-olds' predictions of loyalty were inconsistent, favoring neither the authority, nor the fellow subordinate.

Nine- to 10-year-olds and adults predicted that subordinates would be loyal to authorities. This pattern of responses reflects a developmental shift, confirmed by a regression analysis, indicating that age was a significant predictor of children's loyalty judgments.

When presented with questions about who a subordinate group member would prefer to spend their time with, participants exhibited an over-arching tendency to predict that subordinates would prefer to spend time with fellow subordinates.

However, we also found that participants tended to make significantly more predictions that the worker would prefer to spend time with other workers when they responded to the Loyalty Questions before the Preference Questions. Because children never exhibited a preference for the boss, we believe that this result is consistent with our conclusion that children believe that workers would spend time with other workers. There is also another possible explanation for this finding. It is well documented (e.g., Shaw & Olson, 2012; 2013) that children dislike inequality and partiality. Thus, their selections of the worker may have been inflated by a small, but significant, amount when Loyalty Questions were presented first compared to when Preference Questions were presented first, as they attempted to make their selections more equitable by selecting the boss more when they responded to Preference Questions first.

These findings indicate that 3- to 5-year-olds predict that behaviors reflecting loyalty and preferences will travel together, but that the degree to which these two concepts support similar predictions decreases by ages 6 to 8. By age 9, children's predictions about whom a subordinate worker will be loyal to and with whom they would prefer to spend time significantly diverge, and these predictions do not differ from those generated by adults. These findings indicate that children's inferences about the behaviors of others gradually become more sensitive to intragroup power dynamics in the period between preschool and elementary school.

Previous literature has found that children prefer loyal members of a group from a young age (Misch et al., 2014), and the current study is consistent with these findings. Expanding on the work conducted by Misch and colleagues, we found that older children, but not younger children, differentiate between these two concepts, predicting loyalty to authorities and preference for in-group members with a similar status. Similarly, Liberman & Shaw's (2019) found that children consider loyalty increasingly important with age, a finding that was replicated in the current study with more complex groups.

When responding to questions about preferences, participants answered similarly regardless of age. Children predicted the worker would prefer someone who is both in

the same group and of the same status. These findings may reflect an intragroup bias, a finding that would be consistent with, but more nuanced than, the results reported by Aboud (2003). The only exception to this case was with the 6- to 8-year-old group who differed from adults, suggesting that this age range may represent a transitional period when children's intuitions about intragroup dynamics may be undergoing important changes.

Overall, these results suggest that both age and experience are needed for children to exhibit adult-like intuitions that subordinate category members would prefer spending time with someone of similar status while also being loyal to a high-status authority in a group, and these results appear earlier than research on children's peer groups might suggest (Cillessen & Rose, 2005). However, this study assessed children's beliefs from a third-party context, and not as a member of either group. Although this design decision gave us more control over the scenarios presented to the child and smoothed out individual differences in children's experience with complex groups, this design also required the child to keep up with more characters and make predictions about others' behavior.

Ostensibly, keeping up with fewer characters and/or asking the child to make predictions about their own behavior would be less cognitively taxing than making judgements about ambiguous others. Thus, it may be important to investigate children's predictions about their own behavior in complex groups. Children's ability to think about group dynamics may follow a common developmental trajectory wherein cognition about the self outstrips their ability to think about others (e.g., in Theory of Mind, Wellman et al., 2001, and ownership, Noles & Keil, 2019). However, it is also possible that situating the child within the group may increase younger children's feelings of loyalty toward the authority because the advantages that result from loyalty to an authority may be more salient in a first-person context.

Future studies should probe children's responses when evaluating intragroup power differences when group members are more similar. Would children find differences in power similarly salient if they were not marked by perceptual cues? It would also be valuable for future work to directly study the development of children's intergroup versus intragroup judgements. Lastly, future studies should focus on consequences of in-group loyalty and allegiance to in-group leaders. Do children believe that people are loyal to leaders in order to avoid punishment or to gain favor from someone who is powerful?

The current study shows that children think about social groups in a nuanced manner, taking into account that members of these groups behave in a manner that is sensitive to power differentials between group members. These results replicate previous findings in suggesting that what are often considered "mature" decisions about whom to spend time with and to whom individuals should be loyal are based on relatively early emerging, intuitive understandings of group dynamics.

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