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# Children Intend to Teach Conventional but Not Moral Norms Selectively to Ingroup Members

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Several studies have investigated factors guiding children's decisions when learning from others, although less is known about factors that govern children's decisions when they transfer knowledge to others. Here we asked whether children would privilege ingroup members when teaching and, if so, whether this tendency would persist when transferring different kinds of information (conventional norms vs. moral norms). In Experiment 1 ($N$ = 24), we first replicated ingroup preference based on minimal group membership with 5- and 6-year-old Turkish children. In Experiment 2 ($N$ = 64), we examined whether children would consider group membership and the type of knowledge to be transferred in their teaching intentions. Children were introduced to two ignorant targets differing in their group membership and were asked to choose one or both of these targets to teach conventional or moral norms. Children were more likely to choose ingroup members for teaching conventional norms and both members when teaching moral norms. Further, this trend was particularly evident among girls. These results suggest that children make flexible teaching decisions considering the social attributes of the learners and raise interesting questions regarding the mechanisms underlying children's information transfer.

***Public Significance Statement***

Children consider various factors when choosing whom to learn from, although much less is known about children's selectivity when teaching others. We show that children intend to teach conventional norms selectively to ingroup members and moral norms to both ingroup and outgroup members. These results suggest that children make flexible teaching decisions taking both the nature of the information and the recipient's social attributes into account and provide further evidence for children's active role in cultural transmission.

*Keywords:* cultural knowledge, group membership, social norms, teaching

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Human social groups create their unique conventions, norms, rituals, artefacts, and skills and transmit these within their cultural groups, across generations (Boyd et al., 2011; Pagel & Mace, 2004; Whiten et al., 2011). Cultural transmission not only facilitates accumulation and refinement of knowledge over time (Boyd & Richerson, 1985; Tomasello, 2009) but is also argued to serve social functions such as increasing cohesion and affiliation among group members (e.g., Nielsen & Blank, 2011; Over & Carpenter, 2012; Tomasello, 2019). Thus, an early propensity to acquire relevant culture-specific knowledge and transmit it to appropriate parties would be adaptive (e.g., Herrmann et al., 2007). From an early age, children understand that social group membership and cultural knowledge are closely connected (e.g., Soley, 2019; also see Diesendruck & Markson, 2011), and this understanding guides children's expectations, actions, communication, and learning (e.g., Corriveau et al., 2018; Diesendruck, 2005; Goldvicht-Bacon

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& Diesendruck, 2016; Kinzler et al., 2011; Liberman et al., 2018; Liebal et al., 2013; Schmidt et al., 2012). Here, we explore whether children also consider this relationship in their explicit teaching intentions.

Even though, as cultural novices, children are primarily considered as social learners (Csibra & Gergely, 2006; Tomasello, 2009), they start transmitting knowledge to others surprisingly early in development (e.g., Strauss et al., 2002) and make nuanced teaching decisions (e.g., Bridgers et al., 2020; for a review, see Ronfard & Harris, 2017). Children are not just active learners, seeking information that is relevant and useful for them (Harris et al., 2017), but they also transmit information selectively to others considering various factors (Corriveau et al., 2018). For instance, children consider the type of knowledge when teaching others and are more likely to transmit information that is difficult to attain compared with information that is easy to acquire (Bridgers et al., 2020; Ronfard et al., 2016). The social context in which children acquire knowledge also plays a role in how they later transmit it to others. Specifically, children prefer to transmit information that was previously introduced to them using generic rather than specific (Gelman et al., 2013), and normative rather than descriptive language (Clegg & Legare, 2016), as well as information that was introduced using pedagogical, ostensive cues (Vredenburgh et al., 2015; but also see Bazhydai et al., 2020). Children also pay attention to the characteristics of the learners, when deciding what type of information to transmit to them. For instance, children choose to transmit generic information to naïve learners and specific information to somewhat knowledgeable learners (Baer & Friedman, 2018). Similarly, children transmit information selectively to others, considering to whom it would be most relevant, for instance, based on learners' occupations (Danovitch, 2020).

In addition to various situational and personal cues, children also consider individuals' social characteristics, when deciding whom to learn from. For instance, children selectively adopt conventional knowledge such as object functions or labels endorsed by individuals who are familiar or ingroup members (e.g., Elashi & Mills, 2014; Kinzler et al., 2011). Although children's selectivity in learning has been studied widely, their selectivity in teaching, especially with respect to social cues, has remained underexplored. Focusing on social norms, a central aspect of culture, we investigate children's selective teaching decisions based on learners' social group membership.

Conventional norms are mutually accepted practices that are created and imposed by members of a cultural group. From a very early age, children are sensitive to these norms that regulate their own and others' actions across different social contexts (Rakoczy & Schmidt, 2013; Schmidt et al., 2012). Children readily learn and follow conventional norms such as game rules (Rakoczy et al., 2008; Schmidt et al., 2012; for a review, see Rakoczy & Schmidt, 2013). Even when the existence of the rules is not made explicit, children, just by observing another individual performing an action, can reason that there must be agreed-on rules that regulate how these actions are performed (Schmidt et al., 2016). Likewise, children are normatively committed in their own actions by creating and enforcing norms using generic normative language (e.g., "This is how it is done," "You should do it like this"; Köymen et al., 2015). Children often contribute to the establishment of novel norms; they not only create rules about how to play a novel game, but they also communicate these newly created rules to the naïve players by using normative language (Göckeritz et al., 2014).

Children distinguish conventional norms from moral norms as early as 3 years of age (see Helwig & Turiel, 2002; Killen & Smetana, 2015) and conceptualize conventional acts as relating to the social order and organization, whereas they identify moral acts as those that might potentially influence other individual's welfare irrespective of the social context (i.e., whether any harm is done to others; Nucci & Turiel, 1978; Smetana, 2013). Although children expect others to adhere to both conventional and moral norms and enforce these norms on others (e.g., Hardecker et al., 2016; Köymen et al., 2015; Rakoczy et al., 2008; Vaish et al., 2011), they have different expectations in terms of the consequences of violation of conventional and moral norms. For instance, children expect that violation of moral norms, compared with conventional norms, would be more severe and have more serious consequences (e.g., Nucci & Nucci, 1982; Turiel, 1983). When they witness individuals violating moral norms, children exhibit heightened emotional and physiological arousal (Hardecker et al., 2016; Yucel et al., 2020), they object to and tattle on the rule-breakers (e.g., Hardecker et al., 2016; Ingram & Bering, 2010; Vaish et al., 2011; Yucel & Vaish, 2018), and they even lie to others to keep them away from breaking moral norms such as stealing someone's possessions (e.g., Harvey et al., 2018). Crucially, children have different expectations regarding to whom these different kinds of norms apply: They expect conventional norms to be applicable to only members of their community (Kalish, 2012; Liberman et al., 2018; Schmidt et al., 2012) whereas moral norms to be applicable to everyone (e.g., Josephs & Rakoczy, 2016; Liberman et al., 2018; Mammen et al., 2018). Children also show different reactions when either norm is violated depending on the violators' identity (e.g., Mulvey, 2016; Schmidt et al., 2012). For instance, they expect ingroup members to adhere to conventional norms such as game rules, and when this is not the case, they protest and enforce conventional norms selectively on ingroup members (Schmidt et al., 2012).

Building on these findings, the current experiments investigate children's intentions about whom to teach social norms. Specifically, we ask whether children would selectively teach conventional norms to others, who belong to the same social group as themselves and whether this selectivity would persist when teaching knowledge that is not arbitrary, such as moral norms. As mentioned earlier, from an early age, children expect group membership and social conventions to be linked: They attribute conformity to conventional norms selectively to ingroup members and selectively protest them when they do not (e.g., Liberman et al., 2018; Schmidt et al., 2012). This might be attributable to their expectation that outgroup individuals are ignorant of such norms (Liberman et al., 2018; Schmidt et al., 2012). In fact, research focusing on other culture-specific artifacts, such as songs and games, suggests that children expect members of the same social group to be more likely to share cultural knowledge than members of different groups (e.g., Soley, 2019; Soley & Aldan, 2020). Nevertheless, children might also assume that only ingroup members should be held responsible for conventional norms, regardless of the knowledge states of individuals. Children might consider both of these possibilities when deciding whom to teach conventional norms, as well. Consequently, in the current studies,

we introduced both targets as being ignorant of the norms, in an attempt to examine the role of social group membership of the targets, over and above the effects of their knowledge states.

Given that teaching is a costly activity (Burdett et al., 2018), children might have a propensity to prioritize teaching ingroup members regardless of the domain of the norms. Even though conventional norms might be especially binding within a group, members of a social group also have moral obligations toward each other. For instance, children expect no harm toward outgroup members only in the presence of external rules (Rhodes & Chalik, 2013), while they expect members of a social group not to behave in an immoral way (i.e., to harm) toward each other, even if there were no rules dictating that harming others is wrong (Rhodes & Chalik, 2013). Further, when novel behaviors such as "wugging" are framed as being moral (i.e., being binding even when there are no explicit rules and being valid universally), children reason that a positively-valenced behavior would target an ingroup member, whereas a negatively-valenced behavior would target an outgroup member (Chalik & Dunham, 2020). Alternatively, children's preference to transmit knowledge to ingroup members might be particularly evident, when transmitting conventional norms, given that they expect moral norms to apply to both ingroup and outgroup members, while conventional norms are generalized across ingroups (e.g., Liberman et al., 2018). In other words, when moral norm violations—that have the potential to cause harm to others—are concerned, the transmission of norms might be of great importance to prevent others who do not possess this knowledge from causing harm. Thus, children might choose not to be selective when teaching moral norms because everybody must abide by these norms, and to do so, one must first know these norms.

We used a minimal group paradigm to establish social group membership and introduced children to novel social groups based on clothing color (e.g., Dunham et al., 2011). Previous research suggest that children use novel social groups that are distinguished by similar cues to reason about social norms (e.g., Hetherington et al., 2014; Rhodes & Chalik, 2013). We conducted two experiments: An initial baseline experiment established that minimal group manipulation works in our sample, which was recruited from a non-WEIRD population. Building on Experiment 1, Experiment 2 asked whether children distinguish between conventional norms and moral norms when they intend to inform ingroup and outgroup individuals. In Experiment 1, children were assigned to groups based on a minimal cue (i.e., t-shirt color). Following this, they were presented with one ingroup and outgroup individual and asked to give liking ratings for each potential learner. We expected children to show a preference (indexed by liking ratings, e.g., Dunham et al., 2011; Yang & Dunham, 2019) for ingroup members. In Experiment 2, after the group assignment, children were presented with one ingroup and one outgroup individual both of whom were presented as being ignorant of either a moral or a conventional norm. Children were then asked whom they would rather inform about the norm: the ingroup target, the outgroup target, or both. Finally, children were also asked to give liking ratings for each target as in the baseline experiment.

## Experiment 1

Previous research has established that assignment to minimal groups elicits ingroup preference in children (e.g., Dunham et al., 2011; Jordan et al., 2014; Yang & Dunham, 2019). In addition to North American children, this effect has been shown in different cultures (e.g., Li et al., 2019; Wilks et al., 2019); however, it has not been previously tested with Turkish children. Despite its geographical and historical proximity to WEIRD cultures, Turkey is considered different from WEIRD societies on a variety of social, economic and cultural dimensions (Cemalcilar et al., 2021; Muthukrishna et al., 2020). Particularly over the last two decades, Turkey has become increasingly authoritarian (e.g., Tansel, 2018) and socioeconomically segregated (Chancel et al., 2022; Ozdogan, 2021). These factors have been linked to changes in societal dynamics (Borsuk & Levin, 2021). For instance, conflictual attitudes toward minority groups have become increasingly apparent in Turkish society in recent years (Balkan et al., 2018; Erdogan, 2014; Kınıklıoğlu, 2020). Although these social outcomes have mainly been studied in adults, culture-level differences have been shown to play an important role in determining intergroup attitudes in childhood as well (e.g., Segall et al., 2015). Thus, Turkey as a non-WEIRD context can provide valuable insights for studying children's group cognition and intergroup attitudes.

The aim of Experiment 1 was to establish that minimal group assignment would yield similar effects such that Turkish children would display higher levels of explicit liking toward ingroup members over outgroup members on the basis of minimal group membership.

### Method

#### *Participants*

Ethics approval was obtained from the university review board (SBB-EAK2018/52). Participants were recruited from public and private schools in two cities in Turkey in 2019. Participants were from predominantly White, Turkish-descent families that ranged between working class to upper middle class and spoke Turkish as their native language. Children whose parents gave consent were tested individually in their schools. The final sample included 24 (13 female), 5- and 6-year-old children (range = 5.04–6.58; $M_{age}$ = 5.59). This age range was determined based on previous research suggesting that around this age, children make attributions on the basis of minimal group affiliations (Baron & Dunham, 2015; Dunham & Emory, 2014; Dunham et al., 2011). The planned sample size was based on a power analysis, which aimed 80% power to detect a medium effect ($d$ = .50). Data of an additional eight children were not included in the final analyses, because these children either failed to correctly identify their assigned group ($n$ = 3) or did not pass the rating scale training ($n$ = 4), or because the child was not fluent in Turkish ($n$ = 1).

#### *Materials*

For creating the visual stimuli, photographs of 20 female and 20 male children between the ages of five and seven were chosen from the existing laboratory database. These photographs were rated by eight adults (age range = 21–31 years; $M_{age}$ = 24.87; four females) on the basis of perceived age, positivity, knowledgeability, and friendliness. For both gender groups, the photographs of eight children that received similar ratings from the adult raters were chosen. These photographs were edited in such a way that each appeared in front of a white background, they showed upper

half of children's bodies with the t-shirt color being visible. Next, the child photographs were arranged into PowerPoint slides. To eliminate gender as a factor in guiding children's decisions (e.g., Dunham et al., 2011), separate slides were created for each gender and children only saw child photographs that matched their own gender. A 5-point rating scale showing face drawings on a happy-to-sad continuum was adapted from previous studies (Dunham et al., 2011; Misch et al., 2016; Over et al., 2018) and used to measure children's social preferences.

One green and one orange t-shirt and along with one green and one orange wristband were used to mark participants' group membership.

### *Design and Procedure*

Children were tested individually in a quiet room in their school. The experimenter explained to each child that they were going to play a game; but the game was only played in groups, and she invited the child to look at the groups. The experimenter introduced the two groups by showing the child the first two slides, each depicting four members of the orange and the green groups. As the experimenter showed each slide, she said "Look, these children are wearing orange/green t-shirt, so they are members of the orange/green group." The order of the color presentation was counterbalanced across children.

Once the child was familiarized with the two groups, the experimenter explained to the child that one had to be in a group to play the game and asked him/her which color s/he liked more: green or orange (e.g., Gonzalez et al., 2020; Jordan et al., 2014; Yang et al., 2021). Once the child chose a color, the experimenter told that if s/he liked color green/orange, s/he should be in the green/orange group. Subsequently, the experimenter gave the child a t-shirt and a wristband in the chosen color and helped the child to wear them. Then the experimenter showed the third slide which featured members of both groups and asked the child to identify the group s/he belonged to and the group s/he did not belong to: "Which one is your group? Which one is not your group?" Although group assignment based on color preference might yield richer inferences than simply assigning children to groups based on color, given that color preference is not how natural groups are constructed, it is considered an arbitrary cue (e.g., Gonzalez et al., 2020; Jordan et al., 2014; Yang et al., 2021).

On group assignment, the experimenter introduced the 5-point rating scale with drawings of different facial expressions ranging from happy to sad (e.g., Misch et al., 2016; Over et al., 2018; Wilks et al., 2019). The experimenter first went over each face and told the child what each of their expressions meant (i.e., the very happy face meaning "I liked him/her," the happy face meaning "I liked him/her a little," the neutral face meaning "I neither liked nor disliked him/her," the sad face meaning "I disliked him/her a little" and the very sad face meaning "I disliked him/her"). Then the experimenter went over all expressions once more in a mixed order and this time asked the child which picture meant which expression, for instance by asking "Can you show me which one means 'I disliked him/her.'?" If the child accurately matched each expression with the corresponding picture, the experimenter proceeded to the experimental trials; if not, the experimenter repeated the whole procedure once more. Children who failed to correctly identify each facial expression on both trials still completed the testing phase, however, their data were later excluded.

In the experimental trials, the experimenter showed the child the photos of children that belonged to the orange or the green group one by one and asked him/her to rate how much s/he liked the child. Children's responses were recorded in the order that the expressions were presented on the rating scale (i.e., expression matched with "I liked him/her" = 1, expression matched with "I did not like him/her" = 5), these ratings were later reverse-coded and scored between 1 and 5, with higher scores indicating more liking.

For the liking ratings, the t-shirt color of the first child shown was counterbalanced across children. Additionally, the matching of the t-shirt colors to photographs of children was counterbalanced across children. Thus, each child saw a particular target in either an orange or a green t-shirt; however, whether that particular target wore an orange or a green t-shirt varied across children (e.g., if one of the targets wore a green t-shirt for one child, they wore an orange t-shirt for another child). Finally, to eliminate gender as a factor in guiding children's decisions (e.g., Dunham et al., 2011), children only saw child photographs that matched their own gender. Children received eight trials with the group membership of the target children varying in "ABBABAAB" order across trials.

In both studies, the experimental session was recorded with a portable camera. All children were tested by the first author. A second coder checked all recorded videos for potential mistakes in online coding as well as experimenter error. In all experiments, at the end of the experimental session, participants received stickers as thank-you gifts.

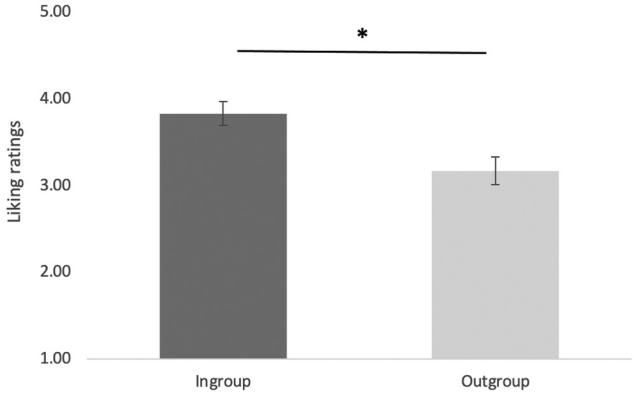
## Results

Participants' liking ratings were averaged across four trials, separately for trials with ingroup and outgroup members. Then, a mixed analysis of variance (ANOVA) was conducted on children's ratings with the group membership of the target (ingroup vs. outgroup) as the within-subjects variable and the participant gender (male vs. female) as the between-subjects variable. Results revealed a significant effect of targets' group membership such that participants gave significantly higher liking ratings for ingroup members ($M$ = 3.83, $SD$ = .66) compared with outgroup members ($M$ = 3.18, $SD$ = .758), $F(1, 22) = 7.36$, $p = .013$, $\eta_p^2 = .25$). There was no significant effect of participant gender, $F(1, 22) = .195$, $p = .663$, $\eta_p^2 = .009$) and no significant interaction between targets' group membership and gender, $F(1, 22) = .476$, $p = .50$, $\eta_p^2 = .02$ (see Figure 1).

Using a minimal group paradigm, Experiment 1 thus showed that children gave significantly higher liking ratings to individuals that belong to the same social group as themselves. Thus, the minimal group manipulation successfully led Turkish children to exhibit group preference in line with the previous research (e.g., Dunham et al., 2011).

Building on this finding, the next experiment explored whether children would selectively teach ingroup members, and whether such a tendency would differ depending on the nature of the information to be transferred. For this, knowledge of conventional and moral norms was contrasted. As mentioned earlier, the rationale behind this contrast was to understand whether children would

**Figure 1**
*Children's Average Liking Ratings for Ingroup and Outgroup Members in Experiment 1*




*Note.* Error bars represent standard error.
* $p < .05$.

choose to transfer knowledge to recipients depending on its relevance. If children perceive conventional but not moral norms as group-relevant (e.g., Liberman et al., 2018; Mulvey, 2016; Schmidt et al., 2012), they might decide to transmit conventional norms selectively to own-group members. Further, they might teach others indiscriminately—that is, regardless of what group they belong to, when the information to transfer is not group-relevant (e.g., moral norms). Alternatively, children's knowledge transfer might not be affected by the conventionality of knowledge. Given that children prefer ingroup individuals (e.g., Dunham et al., 2011), they might prefer to transfer both moral and social norms to individuals from their own group. These possibilities are probed in Experiment 2.

## Experiment 2

### Method

#### *Participants*

We recruited a novel sample comprising 64 children ($n$ = 32 per condition, 34 females) 5- and 6-year-old children (range = 5.08–6.58 $M_{age}$ = 5.88). Participants were from predominantly White, Turkish-descent families that ranged between working class to upper middle class and spoke Turkish as their native language. Because Experiment 2 assessed children's teaching decisions across four trials, in addition to their ingroup preferences across eight trials, the sample size was slightly increased following previous studies that tested children with similar designs (e.g., Dunham et al., 2011; Liberman et al., 2020). Data from an additional 12 children were not included in the final analyses, because these children either failed to correctly identify their assigned group ($n$ = 2) or did not pass the rating scale training (n = 9), or due to experimenter error ($n$ = 1).

#### *Material*

Materials used for introducing children to the groups, assigning them to one of them, as well as for measuring children's social preferences were identical to Experiment 1.

The photographs that were initially rated by adults Experiment 1 were used for the teaching task in Experiment 2. Photographs with the most similar ratings on perceived age and positivity were matched into eight same-gender pairs. The photos in these pairs were rated once more by seven adults (age range = 21–26 years; $M_{age}$ = 22.57; four females) on the same dimensions. The ratings remained similar, and these photograph pairs were retained as the final stimuli. These photographs were then arranged into four PowerPoint slides, separately for each gender and children only saw child photographs that matched their own gender. On each slide, photos of two children, one from the orange group and one from the green group, appeared side by side in the middle of the screen. Along with each slide, either a conventional or moral norm was presented to the children by using norm cards.

The norms used in this study were chosen from a pool of norms that were used in previous studies on children's understanding of moral and conventional norms (Josephs & Rakoczy, 2016; Lahat et al., 2012; Liberman et al., 2018; Nucci, 1977, as cited in Turiel, 1983, p. 59; Smetana, 1981, 2013). For each norm type, six norm cards were prepared, each with a black-and-white drawing depicting the norm written on the card. Before the study, the parents of the participating children were sent a list of these 12 norms and asked to indicate whether or not their child was familiar with each of these norms without asking their children. Their answers were later used to determine which norms to include in the teaching task (see the online supplemental materials).

#### *Design and Procedure*

The procedure was identical to the Experiment 1, except as follows: After children were assigned to groups, children were randomly assigned to conventional or moral norm condition for the teaching phase. During this phase, children were always presented with the norms that were familiar to them. All participating children were reported to be familiar with at least four of the norms in the condition they were assigned to (conventional or moral). The experimenter chose four of the norm cards, based on children's familiarity with the norms, as reported by their parents. In cases when the child was reported to be familiar with more than four norms, the four norm cards were chosen randomly.

As the experimenter showed each norm card, the child was asked: "You know that *one should be silent in the library*, don't you?" After the child's response, the experimenter showed the child the first pair of children, one from each group, pointed at them and said: "These children do not know that *one should be silent in the library.* Whom would you like to teach that *one should be silent in the library*? To the one from the orange group, to the one from the green group, or to both?" Once the child made a choice, the experimenter proceeded to the next trial featuring a different norm and a novel pair of children. Children's choices were coded as "Ingroup," "Outgroup" or "Both" by the experimenter as the experiment proceeded.

During the teaching phase, photograph pairs always remained together but appeared in different orders across children. The t-shirt color of the child on the left of the screen varied in "ABBA" order across trials. Additionally, the matching of the t-shirt colors to photos of children was counterbalanced across children, such that each child photo was presented wearing both

orange and green t-shirts. Children received four teaching trials, each featuring a different norm, presented in random order.

Following the teaching phase, children were presented with eight additional photos of children belonging to the orange and the green groups and asked to rate how much they liked them. The stimuli, procedure and the design of this phase were identical to Experiment 1.

## Results

### Teaching

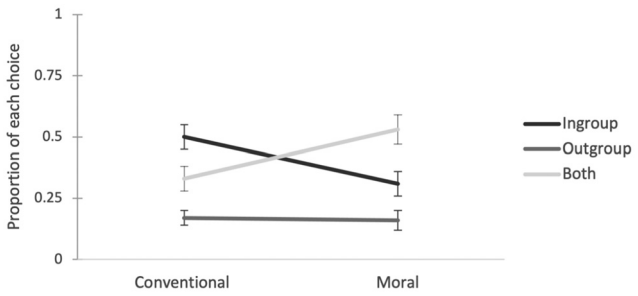
Children's categorical choices across four trials were recorded separately for each condition. A relationship between children's choices, the type of knowledge, and gender was modeled through GAMLj Version 2.6.1 (Gallucci, 2019) module in Jamovi (The Jamovi Project, 2021) by fitting a generalized linear model, using multinomial family with logit function, where Choice (Ingroup, Outgroup, Both) was predicted by Norm type (Conventional vs. Moral) and Gender (Male vs. Female; Choice $\sim 1 +$ 'Norm Type' $+$ 'Gender' $+$ 'Norm Type $*$ Gender'), P(Choice = Outgroup)/P(Choice = Both), P(Choice = Ingroup)/P(Choice = Both)). The model revealed that participants' choices were predicted by Norm type, $\chi^2 = 12.35$, $df = 2$, $p = .002$, and Gender, $\chi^2 = 7.76$, $df = 2$, $p = .021$, suggesting that children's choices differed depending on whether they were tested in the conventional or the moral norm condition, and whether the children were a male or a female. The analysis further revealed a significant interaction between Norm type and Gender, $\chi^2 = 6.96$, $df = 2$, $p = .031$.

Post hoc comparisons regarding Norm type showed that children were more likely to choose to inform ingroup members in the conventional norm condition ($M = 2.00$, $SD = 1.22$) compared with the moral norm condition ($M = 1.25$, $SD = 1.22$, $z = 3.001$, $p_{bonferroni} = .017$). Children's probability of choosing outgroup members did not differ across the conventional ($M = .69$, $SD = .74$) and the moral norm conditions ($M = .63$, $SD = .87$), $z = .304$, $p_{bonferroni} = .769$). Last, children were more likely to choose both group members in the moral norm condition ($M = 2.13$, $SD = 1.39$) compared with conventional norm condition ($M = 1.31$, $SD = 1.20$, $z = -3.240$, $p_{bonferroni} = .012$; see Figure 2).

Direct comparisons of children choices of ingroup, outgroup, and both in moral and conventional conditions are provided in the online supplemental materials.

**Figure 2**

*Children's Choices of Ingroup, Outgroup or Both Members*




*Note*. Error bars indicate standard error.

Post hoc comparisons regarding Gender revealed that there was no gender-based differences between choosing ingroup ($p = .087$) or outgroup members ($p = .850$). However, girls ($M = .21$, $SD = .41$) were overall more likely to choose outgroup members than boys ($M = .11$, $SD = .31$, $z = -2.326$, $p_{bonferroni} = .048$). Finally, post hoc comparisons revealed that girls' choices for both members differed across Conventional ($M = .21$, $SD = .41$) and Moral ($M = .54$, $SD = .50$) Norm Condition, $z = -4.348$, $p_{bonferroni} = .015$, while this trend was not significant for boys ($p = 1.00$). Similarly, girls' choices for ingroup members differed across Conventional ($M = .56$, $SD = .50$) and Moral ($M = .27$, $SD = .44$) Norm Conditions, $z = 3.651$, $p_{bonferroni} = .039$, and this trend was not significant for boys ($p = 1.00$). Choices of outgroup members across conditions did not differ for either gender ($ps > .05$; see Table 1 for means and standard deviations for each choice across Gender and Norm Type).

### Liking

Children's ratings of the photographs were averaged across trials separately for ingroup members and for outgroup members. Average liking ratings given to ingroup and outgroup members across conditions were analyzed using a 2-by-2-by-2 mixed ANOVA with group Membership (ingroup vs. outgroup) as the within-subject variable and Norm type (moral vs. conventional) and Gender (male vs. female) as the between-subjects variable. The results revealed a significant main effect of the group membership, $F(1, 62) = 4.96$, $p = .030$, $\eta_p^2 = .08$, suggesting that overall children gave higher liking ratings to ingroup members ($M = 3.91$, $SD = .89$) compared with outgroup members ($M = 3.58$, $SD = 1.15$). In addition, there was a significant main effect of Norm Type, $F(1, 62) = 5.90$, $p = .018$, $\eta_p^2 = .09$, suggesting that children in the moral norm condition gave overall higher liking ratings ($M = 3.98$, $SD = .14$) compared with children in the conventional norm condition ($M = 3.51$, $SD = 1.42$). There was no significant main effect of gender, no two-way interactions between group Membership and Norm Type, group Membership and Gender, and Norm type and Gender. Finally, there was no three-way interaction between group Membership, Norm type and Gender, all $ps > .05$ (see Figure 3).

### The Relationship Between Teaching and Liking

Finally, the relationship between children's teaching decisions and their social preferences was examined. A difference score for each child was calculated by subtracting the average score given to the outgroup members from the average score given to the ingroup members. A correlation matrix was created to examine whether or not children's liking scores were related to their teaching choices (i.e., average number of responses for each option). There was a significant positive correlation between children's decisions to teach ingroup members and their explicit liking for ingroup members over outgroup members, $r(64) = .47$, $p < .001$. Additionally, there was a significant negative correlation between children's decisions to teach to both members and their explicit liking for ingroup members over outgroup members, $r(64) = -.36$, $p = .003$ (see Table 2).

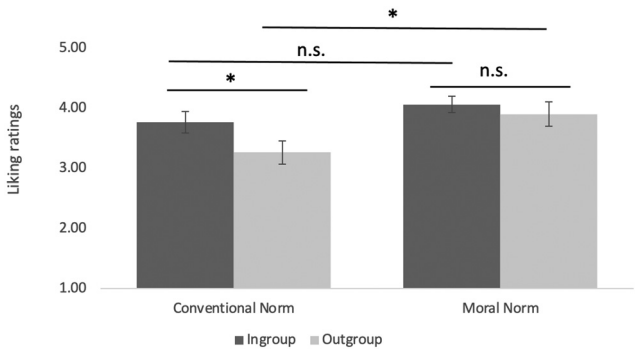
These findings suggest that children who chose to teach ingroup members showed a stronger ingroup over outgroup preference. Further, children who chose to teach both members, showed a

**Table 1**
*Mean Proportions (Ranging Between 0–1.00) and Standard Deviations for Choosing Ingroup, Outgroup, Both Across Gender and Norm Type*

| Gender | Norm type | Group membership | *M* | *SD* |
|---|---|---|---|---|
| Female | Conventional | Ingroup | 0.56 | 0.50 |
| Male | | | 0.43 | 0.50 |
| Female | | Outgroup | 0.24 | 0.43 |
| Male | | | 0.10 | 0.30 |
| Female | | Both | 0.21 | 0.41 |
| Male | | | 0.47 | 0.50 |
| Female | Moral | Ingroup | 0.27 | 0.44 |
| Male | | | 0.37 | 0.49 |
| Female | | Outgroup | 0.19 | 0.40 |
| Male | | | 0.12 | 0.32 |
| Female | | Both | 0.54 | 0.50 |
| Male | | | 0.52 | 0.50 |

weaker ingroup over outgroup preference. To follow up, we compared liking ratings given both ingroup and outgroup members in both experiments across three conditions: Baseline (i.e., where participants were asked to provide liking ratings but did not undertake teaching trials), Moral Norm condition (i.e., where participants were asked to transmit moral norms), and Conventional Norm condition (i.e., where participants were asked to transmit conventional norms). The results of a 2-by-3 mixed ANOVA with group Membership (ingroup vs. outgroup) as the within-subjects variable and condition (baseline, moral and conventional) as the between-subjects variable showed a significant effect of the group membership, $F(1, 85) = 11.50$, $p = .001$, $\eta_p^2 = .12$, with ingroup members being more positively rated ($M = 3.89$, $SD = .83$) than outgroup members ($M = 3.47$, $SD = 1.07$), and a significant effect of condition, $F(2, 85) = 4.48$, $p < .0141$; $\eta_p^2 = .96$. However, there was no interaction between group membership and condition, $F(2, 85) = 1.25$, $p < .291$, $\eta_p^2 = .03$. Post hoc analyses using the Bonferroni criterion for significance showed that liking ratings given in the baseline condition differed significantly from the liking ratings given in the moral condition ($p = .029$), whereas they did not differ

**Figure 3**
*Children's Average Liking Ratings for Ingroup and Outgroup Members in Experiment 2*




*Note* Error bars represent standard error. n.s. = nonsignificant.
* $p < .05$.

**Table 2**
*Correlations Between Children's Recipient Choices and Ingroup Liking Scores*

| Variable | Ingroup | Outgroup | Both | Liking rating |
|---|---|---|---|---|
| Ingroup | — | | | |
| Outgroup | −0.207 | — | | |
| Both | −0.814*** | −0.399** | — | |
| Liking rating | 0.475*** | −0.150 | −0.356** | — |

** $p < .01$. *** $p < .001$.

from the liking ratings given in the conventional condition, ($p = 1.00$). Similarly, liking ratings given in the conventional condition significantly differed from liking ratings given in the moral condition ($p = .047$), whereas they did not differ from the liking ratings given in the baseline condition ($p = 1.00$; see Figure 4).

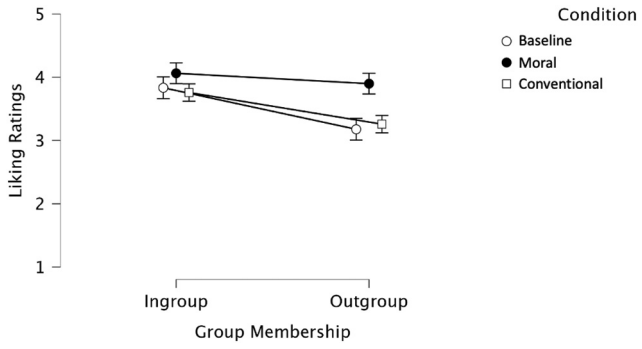
## General Discussion

Using a minimal group paradigm, the current research examined the role of social group membership in guiding children's intentions to inform others about conventional and moral norms. Paralleling previous findings (e.g., Bigler et al., 1997; Dunham et al., 2011; Jordan et al., 2014), Experiment 1 showed that 5- to 6-year-old Turkish children exhibit an ingroup preference, indicated by higher explicit liking ratings to own-group members compared with other-group members, after being assigned to a group based on t-shirt color.

Building on the results of Experiment 1, Experiment 2 examined how same age children's teaching intentions would change depending on the group membership of the recipients and the type of knowledge to be transferred. The results showed that when children were asked whom they would like to teach conventional norms, they were more likely to choose ingroup members over outgroup members. However, when children were asked whom they would like teach moral norms, they chose both targets. Thus, children considered both the conventionality of the information as well as group membership, in their teaching intentions.

Experiment 2 also revealed an interaction between gender and norm type on children's teaching intentions. Specifically, even though both girls' and boys' choices followed a similar trend, the differences we observed across moral and conventional norm conditions were significant only among girls. Given that we did not

**Figure 4**
*Children's Liking Ratings for In- and Out-Group Members in the Baseline, Moral Norm, and Conventional Norm Conditions*



observe any differences in ingroup preferences of girls and boys, these differences are unlikely to be driven by children's intergroup attitudes. On other hand, these results might have been partly driven by differences in boys' and girls' exposure to moral and conventional norm violations in their same-sex peer contexts (e.g., Miller et al., 1986; Tulviste & Koor, 2005). Specifically, research suggests that boys tend to be exposed to conflicts involving moral norm violations in their peer contexts, whereas girls tend to have nonconflictual peer relations and are more concerned with social conventions (Miller et al., 1986). Consequently, in their interactions with peers, girls refer more frequently to conventional norms, while boys usually refer to moral norms (Tulviste & Koor, 2005). This might have led boys to transmit moral norms also within groups and be less selective in their teaching when it comes to conventional norms. It is also possible that girls are held to more stringent conventional norms than boys and might be expected to be more compliant with such norms. To our knowledge, there is no direct evidence to support this interpretation. However, some indirect evidence suggests that compared with boys, girls tend to comply more with requests from adults (e.g., Feingold, 1994). Such gender differences in obligations might lead girls to have a more nuanced understanding of behavioral norms at an earlier age compared with boys. Thus, it will be important for future research to address this possibility by asking, for instance, whether this pattern would hold in older children as well.

The results of Experiment 2 also showed that, overall, children evaluated ingroup members as being more likeable compared with outgroup members. Interestingly, however, children gave higher liking ratings in the moral norm condition, compared with conventional norm and the baseline conditions. Although our study design does not allow us to clarify the underlying mechanism of this tendency, it is possible that being cued with moral events that tend to emphasize universal prosocial values, might have led children to give higher liking scores to the targets. We also observed that children who tended to choose to inform ingroup members, also tended to give higher ratings to ingroup members compared with outgroup members. Further, children who tended to choose to inform both, rated ingroup and outgroup members more similarly. This relationship could be explained in various ways. It is possible, for instance, that having chosen an individual to invest in teaching, might have led children to like that individual more. Alternatively, it could be related to individual differences in intergroup attitudes (e.g., Bigler et al., 1997). A future study could test whether children would give similar liking ratings, if the individuals shown to them were not the same ones as they have taught initially, but new members of the same groups.

These findings suggest that children pay attention to social group membership in their teaching intentions and demonstrate willingness to teach other-group members as well, when it comes to moral norms. It is important to note, however, that in the current experiments, children did not have to incur the cost of teaching but indicated their hypothetical teaching decisions with no actual teaching taking place. Past research has shown that children put similar effort into enforcing moral norms to in- and outgroup individuals (Schmidt et al., 2012), suggesting that children's actual teaching might yield similar results. Nevertheless, it will be informative for future studies to use a more interactive teaching setting that would be more similar to real-life teaching experience.

These findings raise interesting questions regarding the mechanisms underlying children's teaching intentions. Our study design allows us to rule out a number of possibilities. First, because the targets were introduced as ignorant of the norms to be transmitted, children's teaching decisions are unlikely to be driven by a motivation to close a potential knowledge gap between themselves and the learner, based on their assumptions about the learner's initial knowledge state (e.g., Ziv & Frye, 2004). Second, a general ingroup preference cannot explain children's teaching choices, given that children preferred to transmit moral norms to both ingroup and outgroup targets. There are, however, at least three possible mechanisms that future studies should probe.

First, children might prefer teaching conventional norms selectively to ingroup members because nonconformity to such norms by ingroup members would have crucial social implications. Social norms regulate social relations, and it is important that members of a group conform to such norms. In line with this, previous research suggests that children expect conformity to conventional norms selectively from ingroup members (e.g., Liberman et al., 2018), and they selectively intervene when they do not (Schmidt et al., 2012).

Second, children's intention to selectively transfer conventional norms to ingroup members might be driven by a general motivation to pass down group-specific knowledge selectively to group members. Human societies have invented their distinct cultural knowledge and used it to delineate their group identities (e.g., Durkheim, 1915; Rappaport, 1968; Stokes, 1994). Consequently, cultural knowledge serves as an important marker of group membership (e.g., Bourdieu, 1984; Ellis, 1985). In fact, starting at the age 4, children prioritize shared cultural knowledge over other shared attributes in their social choices (Soley & Spelke, 2016), by age the age of 5, they expect cultural knowledge to be exclusively shared among group members (Soley, 2019), and by the age of 8, children selectively use others' culture-specific knowledge to make diagnostic inferences about their social group membership (Soley & Köseler, 2021). Together, these findings raise the possibility that children might also be invested in retaining group-specific knowledge within group boundaries. In other words, children might be motivated to pass down conventional norms selectively to group members, not just because they expect them to conform to these norms as group members but also because of a general expectation that group-specific knowledge should be transmitted exclusively among group members and not with members of other groups. If so, children might selectively transmit other group-specific knowledge, that does not necessarily implicate social order, such as knowledge of cultural artefacts (e.g., songs, stories, dances etc.) also within their group.

Finally, in addition to having expectations regarding conformity of group members to group-specific rules and an exclusive link between shared culture and group membership, children might also assume that having group-specific knowledge is a fundamental aspect of what constitutes group membership. Because the targets were introduced as ignorant, children might have reasoned that having knowledge of, specifically, conventional norms, is a prerequisite to be a "real" member of the group. Thus, they might have preferred to transfer knowledge of conventional norms to members of their assigned groups because they wanted them to become true members.

The current findings also inform research on children's reasoning about social norms in an intergroup context. Our results show that even though children favor ingroup members, they prioritize the relevance of the information to be transmitted, in their teaching decisions. Specifically, when they make judgments about whom to inform about moral norms, they are able to distance themselves from exhibiting ingroup preference to some degree and teach others who do not belong to their social groups. These results are in line with past studies showing that children can flexibly use social group membership information and overcome intergroup biases when it comes to reasoning about moral norms (e.g., Gonzalez-Gadea et al., 2020; Hetherington et al., 2014; Schuhmacher & Kärtner, 2019; Wilks & Nielsen, 2018; Wilks et al., 2018, 2019). For instance, when ingroup members act in an immoral way, children's social preferences (e.g., explicit liking ratings) are attenuated (Hetherington et al., 2014; Wilks et al., 2018), but their epistemic trust (Hetherington et al., 2014) and imitation preferences (Wilks et al., 2018) remain unaffected. Similarly, although children exhibit ingroup preference, they still evaluate immoral actions of both ingroup and outgroup members equally unacceptable and reasoned that "bad" actions should face consequences regardless of the transgressor's identity (Schuhmacher & Kärtner, 2019). Having said this, our findings also indicate a relationship between children's teaching intentions and their subsequent ingroup preference. Future studies are needed to examine what drives this relationship and whether it is task-specific or generalizable.

It should also be noted that in the current study, we have tested a relatively restricted age range comprised of 5- and 6-year-old children. To have a better understanding of the developmental trajectory and the mechanisms behind this selectivity, future studies should test wider age groups. Because we used minimal groups as the group membership marker and we were concerned that the group manipulation might fail (Baron & Dunham, 2015; Dunham et al., 2011; Dunham & Emory, 2014), we did not test younger age groups. However, testing older children with the same paradigm can provide valuable insights. It is possible that the observed effect in this study might be more pronounced in older age groups for at least two reasons. First, 8-year-olds have shown to make more nuanced social inferences about others based on their cultural knowledge compared with 6-year-olds (Soley & Köseler, 2021). Second, children between the ages of 6 and 11 increasingly display negative attitudes toward ingroup members who violate groups norms (Abrams & Rutland, 2008; Abrams et al., 2003). This might further highlight the importance of selectively teaching conventional norms to ingroup members to prevent them from engaging in potential violations.

Children's tendency to selectively transfer group-specific knowledge to ingroup members can have potential social and educational ramifications. Children's selectivity in transferring knowledge of conventional norms to ingroup members might facilitate group affiliation by increasing similarity among group members as well as increasing social cohesion within groups by helping members to follow group-specific norms. On the other hand, this selectivity might also serve as a way to amplify differences between groups, thus further perpetuating group-based reasoning and stereotypes. These implications could also be relevant to socially diverse educational settings and in particular educational settings where peer tutoring or student-centered instructional practices are implemented (e.g., Bernard et al., 2019; Nath & Ross, 2001).

Several studies on children's selective learning have shown that children consider others' social attributes when choosing whom to learn from (see Tong et al., 2020). However, the role of social factors in guiding children's teaching decisions has been largely overlooked by past research. Here, we show that children take both the nature of the information and the recipient's social attributes into account in their teaching intentions. These findings add to a growing literature documenting how children take an active part in cultural transmission by showing that children are not only skilled cultural learners but they also make remarkably flexible teaching decisions from an early age.

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