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Autoría ditelliana: Gattei, Carolina (*Escuela de Gobierno. Universidad Torcuato Di Tella*)

Otras autorías: González Gadea, María Luz (*Universidad de San Andrés*); Schlotthauer, Joaquín (*Universidad de Buenos Aires*)

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Do social descriptive norms about generosity change children's sharing decisions and beliefs?

María Luz González Gadea[1], Joaquin Schlotthauer[2], Alexia Aquino[3], and Carolina Gattei[4]

[1]Universidad de San Andres
[2]Universidad de Buenos Aires
[3]Universidad Torcuato Di Tella
[4]CONICET

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Abstract

Children construct their social preferences and behaviors based on their social interactions and beliefs about other's behavior. Most studies that evaluate the influence of social norms on children's sharing behavior has focused on sharing decisions, while no previous study has evaluated whether norms about generosity could change beliefs about other's sharing behavior. In the current study, 4–10-year-old children (N = 101) played two dictator games; one as baseline and the other after being exposed to either a generous or a selfish descriptive norm. Our results showed that, after being exposed to descriptive norms, all children changed their beliefs about others' sharing behavior. However, these norms did not influence children's sharing decisions. These results suggest that children´s beliefs about sharing behavior could be more malleable than their actual sharing decisions. These insights might help to design interventions aimed to change beliefs and, in turn, to model prosocial behaviors in children.

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Highlights

- We evaluated whether descriptive norms about generosity could change both sharing decisions and beliefs in 4–10-year-old children.
- Children played two dictator games, before and after descriptive norms. After norms, children changed sharing beliefs but not decisions.
- Beliefs regarding others' behavior seem to be malleable and this could be used to boost prosocial behaviors in children.

Keywords: moral development, altruism, prosocial behavior, dictator game, social norms.

Introduction

The foundations of sharing behavior are present early in development. Infants as young as 10 and 12 months look longer when resources are divided unequally [1,2], and by the second year of life, infants exhibit the early roots of sharing behavior by spontaneously sharing valuable resources, such as food or toys, with adult strangers expressing need [3,4]. The task most widely used to study sharing behavior in children is the Dictator Game (DG), in which a participant (i.e., dictator) receives a sum of valuable resources (i.e., stickers or pieces of candy) and is given the opportunity to share them with another child (i.e., recipient). Although dictators are not obligated to share their own resources, most children are willing to share them with an unknown recipient[4,5] with the amount of resources shared increasing with age [6–13]. It has been suggested that children's sharing behavior develops on a selfish-generous continuum, with children of 7-9 years old being more likely to make an equal split of the resources [9,11,14–16] than younger children. This developmental shift toward the preference for equal distributions in middle childhood is commonly explained by a more flexible understanding of fairness norms and an internalization of social norms [7,17–20]. In this line, cross-cultural studies have shown that children's sharing behavior looks similar across cultures until middle childhood, at which point it starts to align with the social norms exemplified by adults and peers[7,21–24]. Therefore, social norms about generosity only influence [6,25], or the influence is higher [8,12], on sharing decisions of children older than 7-9 years old. Children younger than 7 years old, although they understand social norms [26–28], and even enforce them as third parties [27,29], they behave selfishly during resource distribution tasks. This phenomenon is known as the "knowledge-behavior gap" and depicts a mismatch between what young children know to be a desirable sharing behavior and their actual behavior [30,31].

However, an intriguing question that has not been assessed by previous studies is whether young and middle-aged children understand/believe that social norms could model others' sharing behavior. From a constructivist perspective[32], children's interpretations about the behavior of others build their social mental models and, in turn, guide how they think and behave toward others. Thus, it is important to understand, not only whether social norms model children's sharing behavior, but also if such norms could influence children's beliefs about other's sharing behavior. A previous study[8] has found that children between 6 and 12 years old have strong beliefs about others' sharing behavior which do not seem to be affected by norms stating that other participants would be forced to behave generously or selfishly. However, to our knowledge, no study has assessed if norms describing the typical sharing behavior of peers, (i.e., social descriptive norms) could influence children's beliefs about the sharing behavior of others.

In the current study, we evaluated whether children between 4 to 10 years of age would change their sharing decisions and their beliefs about others' sharing behavior after being exposed to descriptive norms about generosity. For this aim, children participated in two DGs. In the first one (baseline), each participant had the opportunity to share up to 10 stickers with an anonymous child. In the second game (post-test), before they played the same DG, children were randomly assigned to one of two conditions: (i) generous condition, where participants were told that previous children had shared an average of eight stickers; or (ii) selfish condition, where participants were told that children had shared an average of two stickers. In both games, we evaluated how many stickers the participants shared (i.e., sharing decisions), and their beliefs about others' sharing behavior by asking them how many stickers they thought the next participant would share when playing the same game (i.e., sharing beliefs). Given that children from 4 to 10 years old are capable of understanding norms[30,31], we expected that all children would be more likely to change their beliefs about other's sharing behavior according to the nature of the social descriptive norm exposed. Regarding their sharing decisions, and following previous studies[8,12,15,25], we expected only children older than 9 years old to modify their sharing decisions in response to the descriptive norms.

Materials and Methods

Participants

The minimum sample size required for this study was calculated based on the results of a similar previous study [8]. We estimated an $N = 90$ and 30 participants in each age group to find significant differences

between generous and selfish conditions, with a power of 0.80.

One hundred and sixteen children between 3 and 10 years old were recruited from a private school *(n* = 79) and at the Science Cultural Center (*n* = 37) in (*city* ,*country*)11Details in this version have been hidden in order to comply with the double anonymized review policy.. The school and the Science Cultural Center were located in urban areas and featured children from middle to high socioeconomic status. From the initial sample, 15 participants were excluded: 10 of them because they did not complete the second phase of the game (six boys, four girls), one because of a history of neurological disorder (a girl) and two for not being able to comprehend the task's rules (one boy, one girl).

The final sample included three age groups: 4-5 (*n* = 38), 6-8 (*n* = 34), and 9-10 (*n* = 29) year-old children. Children from each age group were randomly assigned to the generous or to the selfish condition. Participants in both conditions were matched according to age and gender, while no significant differences in these variables were found between conditions (age: $U = 1145$, $p = .409$; gender: $x^2_{(1)} = 1.13, p = .288$; see Table 1).

All participants provided a verbally informed assent, and a parent or caregiver gave written informed consent on behalf of the child enrolled in the study. These written informed consents follow the norms of the declaration of Helsinki22Details about further Ethics Committees have been hidden in this version in order to comply with the double anonymized review policy..

Table 1

Age and gender distribution across conditions

	Generous Condition n	Generous Condition Gender (boys:girls)	Generous Condition Mean age (SD)	Selfish Condition n	Selfish Condition Gender (boys:girls)
4 to 5 yrs.	15	11:4	4.53 (0.51)	23	6:17
6 to 8 yrs.	16	3:13	6.56 (0.81)	18	4:14
9 to 10 yrs.	15	4:11	9.40 (0.50)	14	6:8

Task

We used a modified version of the DG in which children were given a certain amount of stickers and offered to share all or part of them with another child. This game is widely used as a measure of fairness and sharing behavior in children [8,12,25,33], while stickers have been shown to be a valuable resource for early and middle childhood children [9].

All participants played two DGs. In the first one (baseline), the experimenter laid out 25 stickers on a table and told the participant that he/she could select 10 of their favorite ones to keep as a gift. After that, the participant was told that the stickers were running out and asked if he/she could share his/her stickers with an unknown child from another school/museum (gender matched). Then, the experimenter displayed two opaque envelopes, assigning one for the participant by writing his/her name on it and leaving the other one with a blank space for the unknown child. It was explained to the participant that he/she could keep in their envelope as many stickers as he/she wanted and that he/she could share stickers or not by putting them into the other child's envelope. Then, the participant responded to control questions that aimed to ensure the understanding of the task's rules. Next, the experimenter turned around and waited until the allocation was completed to turn back. Afterwards, the experimenter took away the recipient's envelope and asked the participant how many stickers this girl/boy would share when playing the same game. The answer was registered and used as a measure of the sharing beliefs. After the participant left the room, the experimenter counted the number of stickers shared with the unknown recipient and used this number as a measure of the sharing decisions.

In the second game (post-test), participants were assessed with the same DG used in the baseline, with the only difference that before to play, they were informed about the descriptive norm. Participants assigned

to the generous condition, were told that children from this school/museum generally shared eight stickers and kept two for themselves. Participants assigned to the selfish condition, were informed that children from this school/museum generally shared two stickers and kept eight to themselves. Participants were randomly assigned to one of these conditions and played the same DG as in the baseline. During control questions, they were asked whether they remembered how many stickers shared the majority of the children of this school/museum (descriptive norm) and in case that the participant did not remember the norm, the experimenter repeated it. No significant differences in both dependent measures were observed between participants who remembered the descriptive norm and those who did not remember it (see Table S1 in Supplementary Data). Each phase of the task lasted approximately five minutes. A detailed description of the instructions is included in Supplementary Data.

Data analysis

Following the method employed by previous studies[25], we first used *t*- test to evaluate whether children would differ between generous and selfish conditions in both baseline measures of sharing decisions and beliefs. Subsequently, we tested the influence of descriptive norms in the post-test measures. To this aim, we used two different linear mixed-effects models in which post-test measures of sharing decisions and beliefs were included as dependent measures. Fixed effects in each model were: (i) Condition (generous vs. selfish; reference level = generous), (ii) Age group (4-5 yrs. vs. 6-8 yrs.; 9-10 yrs.; reference level = 9-10 yrs.), and (iii) baseline measures of sharing decisions (model that included post-test sharing decisions as dependent measure) or sharing beliefs (model that included post-test sharing beliefs as dependent measure). As random effects, we included: (i) Institution (School; Science Cultural Center) and (ii) Subject (ID). We contrasted interactions between Condition and Age Group using *Tukey's HSD* corrections. Both linear mixed-effects models were fit to the data using the package *lme4*[34,35] from the R programming environment[36]. In order to obtain *p* -values for the different effects and interactions, we used the package *lmerTest,*which applies the *Satterthwaite's* method for approximating degrees of freedom for the *t* and *F* tests[37]. Lastly, in each model we included Sex as a fixed effect and performed model comparisons using the ANOVA function of the *lme4* package to establish whether there were significant differences between models with and without this variable. While no significant differences were found between models ($p > 0.05$), Akaike Information Criterion (AIC) values indicated that the relative amount of information lost was lower (and hence the quality of the model was better) in the model where Sex was not included. Thus, in the following section we introduce results without taking this variable into account, but we present models including Sex as fixed factor in Tables S2 and S3 of Supplementary Data.

Results

Sharing decisions and beliefs in the first DG (baseline)

Given that children were randomly assigned to the generous and selfish conditions, we expected to find no significant differences in the number of stickers shared and their beliefs about other's sharing decisions in both baseline measures. As we expected, children from both conditions did not differ in both sharing decisions (t (30) = -1.24,p = .22; see Figure 1A) and beliefs (t (30) = -1.30,p = .20; see Figure 2B) and no significant differences between conditions were observed in each age group (see details in Table S4 of Supplementary Data).

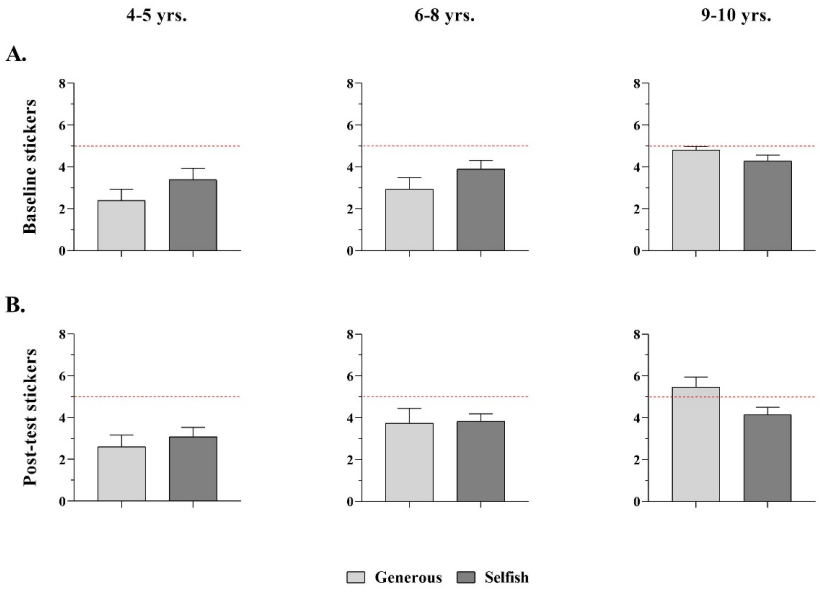

Figure 1: Comparison of sharing decisions in generous and selfish conditions, according to baseline (A) and post-test (B) DGs, in each age group. Bars represent the mean and error bars the standard error of the mean (SEM). The dotted red line represents the egalitarian decision in the game.

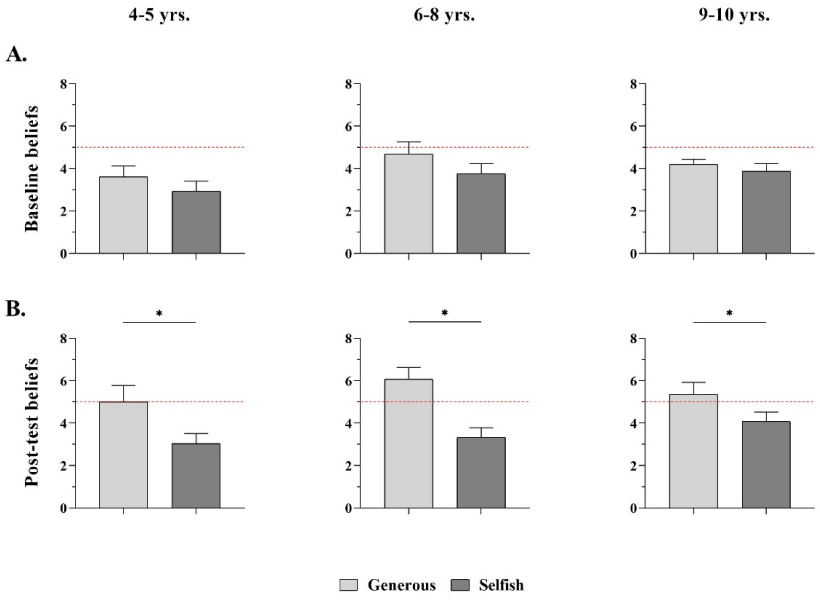

Figure 2: Comparison of sharing beliefs in generous and selfish conditions, according to baseline (A) and post-test (B) DGs, in each age group. Bars represent the mean and error bars the standard error of the mean (SEM). The dotted red line represents the egalitarian decision in the game.

Sharing decisions and beliefs in the second DG (post-test)

In the second DG, children were exposed to either a generous or a selfish descriptive norm before start playing. Regarding sharing decisions, we expected that only children older than 9 years old would differ in the number of stickers shared between generous and selfish conditions. However, against our predictions, we did not find a significant interaction between Condition and Age group in the linear mixed-effect model that included sharing decisions as dependent measure (see Table 2). Instead, we found a significant main effect of Age group: the 9-10 year-old age group shared significantly more than the 4-5 year-old age group (β = -1.162, SE = .483, t = -2.400, p = .018, see more results in Table 2). Although we observed no significant main effect of Condition (β = 0.576, SE = .337, t = 1.706,p = .091), there was a tendency towards significance showing that children in the generous condition shared slightly more than children in the selfish condition (see Figure 1B). Lastly, we found that the number of stickers shared during the first game was a significant predictor of decisions in the second DG (β = 0.465, SE = .099, t = 4.711, $p < .001$).

Table 2

Results from the linear mixed-effects model for sharing decisions

	β	*SE*	t	p
Intercept	2.659	.559	4.751	$< .001$
Baseline sharing beliefs	.464	.099	4.711	$< .001$
Condition	.576	.337	1.706	.0912
Age group (4-5 yrs.)	-1.162	.483	-2.408	.018
Age group (6-8 yrs.)	-.428	.478	-.896	.373
Condition x Age group (4-5 yrs.)	-.589	.461	-1.278	.204
Condition x Age group (6-8 yrs.)	-.423	.471	-.898	.372

Regarding sharing beliefs, given that even young children could understand fairness norms, we expected that all children would differ between conditions in their beliefs about other's sharing behavior. As we expected, we found a significant main effect of Condition (β = 3.393, SE = 1.294, t = 2.622, p = .010). Figure 2B shows that participants exposed to the generous norm thought that other children would share more compared to participants informed about the selfish norm. Although we did not find a significant main effect of Age group, we observed a tendency toward significance that shows that the older group thought that other children would share more stickers compared to both the young (β = -3.293, SE = 1.705, t = -1.931, p = .057) and middle-aged groups (β = -3.081, SE = 1.705, t = -1.849, p = .068). However, as we expected, no significant interaction between Age group and Condition was found (see Table 3), indicating that the effect of condition on sharing beliefs was similar among age groups. Lastly, unlike sharing decisions, we did not find that baseline sharing beliefs were a significant predictor of beliefs in the second DG (β = 0.420, SE = .357, t = 1.176, p = .243).

Table 3

Results from the linear mixed-effects model for sharing beliefs

	β	*SE*	t	p
Intercept	6.027	1.938	3.11	.003
Baseline sharing beliefs	.42	.357	1.176	.243
Condition	3.393	1.294	2.622	.010
Age group (4-5 yrs.)	-3.293	1.705	-1.931	.057
Age group (6-8 yrs.)	-3.082	1.666	-1.849	.068
Condition x Age group (4-5 yrs.)	-2.598	1.679	-1.547	.126
Condition x Age group (6-8 yrs.)	-2.246	1.667	-1.348	.182

Discussion

In the current study, we tested the influence of descriptive norms about generosity on sharing decisions and beliefs in children between 4 and 10 years of age. As we expected, we found that all children change their beliefs about others' sharing behavior in response to the descriptive norms. However, against our predictions, children older than 9 years old did not change their sharing decisions accordingly to the norms. These results suggest that sharing beliefs are more influenced by descriptive norms than sharing decisions.

To our knowledge, this is the first study that tested whether descriptive norms about generosity could change beliefs about others' sharing behavior. Only one previous study [8] has compared sharing beliefs between children that were informed that the recipient would be forced to share and children that were told that the recipient would be forced not to share. In that study, participants were asked how they imagined that the recipient would behave if he/she was able to behave freely (i.e., was not obligated to share or not to share). The authors found that injunctive norms about sharing did not curve children's beliefs about others' real desires and motivations to share. In our study, we found that after acknowledging a descriptive norm, children aligned their beliefs about other's sharing behavior according to the norm. This result suggests that, unlike injunctive norms, descriptive norms could model children's beliefs about generosity. Given that social behavior is implicitly shaped by beliefs about the social world [8,32,38], these beliefs might influence how children think and act toward others. A previous study [8] showed that children who initially think that other children are generous, share more resources than those who think that children typically do not share. In our study, despite all children aligned their beliefs about other's sharing behavior according to the descriptive norm, they did not to adjust their sharing decisions in consonance with such norms. Therefore, we did not observe that beliefs about other's sharing behavior guided children's sharing decisions. Future studies should investigate whether changes in beliefs about generosity could guide other social behaviors such as helping, cooperation or altruistic punishment.

Regarding sharing decisions, our results show that descriptive norms did not significantly impact on children's willingness to share. We only observed a borderline significant effect of condition whereby all age groups shared slightly more after the generous norm in comparison with the selfish norm (see Figure 1B). Following previous studies[8,12,25] we expected this effect to be significant in 9–10-year-old children, but on the contrary, we did not find a significant interaction between condition and age group. One possible explanation is that older children followed an equality norm[7,17–20], which made them fix their baseline and post-test decisions close to the equal split of resources (see Figures 1A and 1B). Therefore, the equality norm might have been taken as a stronger rule for their sharing decisions than the descriptive norms introduced during the game. Another possible explanation of why descriptive norms were not effective enough to curve older children's sharing decisions is because children may prefer to be consistent in their sharing decisions during both games. Thus, we observed that baseline sharing decisions were strong predictors of sharing decisions in the post-test. In other words, children shared similarly during both DGs. This was not the case for sharing beliefs, where initial beliefs about other's sharing behavior did not predict sharing beliefs in the post-test. In sum, it is possible that children's decisions were not sufficiently influenced by the descriptive norms because children wanted to be consistent with their first decision. Lastly, it is also possible that the study was underpowered to detect existing differences between conditions. Although we have performed power estimation analysis to calculate the sample size, most studies that manipulate social norms have included a bigger sample size [6,8,12,15,25]. Future replication studies with higher sample sizes could confirm whether or not descriptive norms about generosity could modify children's sharing decisions.

Conclusion

Taken together, our results showed that descriptive norms about generosity change children's beliefs about the sharing behavior of others, while such change might not be enough to impact on their actual sharing decisions. These results suggest that beliefs about other's social behavior that children use to construct their social-cognitive mental models, could be malleable through introducing social descriptive norms. This insights could help to design interventions aimed to change beliefs and, in turn, promote more prosocial behaviors in children.

References

1. Meristo, M., Strid, K., & Surian, L. (2016). Preverbal Infants' Ability to Encode the Outcome of Distributive Actions. *Infancy* ,*21* (3), 353–372. https://doi.org/10.1111/infa.12124

2. Ziv, T., & Sommerville, J. A. (2017). Developmental Differences in Infants' Fairness Expectations From 6 to 15 Months of Age. *Child Development* , *88* (6), 1930–1951. https://doi.org/10.1111/cdev.12674

3. Brownell, C. A., Svetlova, M., & Nichols, S. (2009). To Share or Not to Share: When Do Toddlers Respond to Another's Needs? *Infancy* ,*14* (1), 117–130. https://doi.org/10.1080/15250000802569868

4. Dunfield, K., Kuhlmeier, V. A., O'Connell, L., & Kelley, E. (2011). Examining the Diversity of Prosocial Behavior: Helping, Sharing, and Comforting in Infancy: PROSOCIAL BEHAVIOR IN EARLY DEVELOPMENT.*Infancy* , *16* (3), 227–247. https://doi.org/10.1111/j.1532-7078.2010.00041.x

5. Ulber, J., Hamann, K., & Tomasello, M. (2016). Extrinsic Rewards Diminish Costly Sharing in 3-Year-Olds. *Child Development* ,*87* (4), 1192–1203. https://doi.org/10.1111/cdev.12534

6. House, B. R., & Tomasello, M. (2018). Modeling social norms increasingly influences costly sharing in middle childhood.*Journal of Experimental Child Psychology* , *171* , 84–98. https://doi.org/10.1016/j.jecp.2017.12.014

7. Ibbotson, P. (2014). Little Dictators: A Developmental Meta-analysis of Prosocial Behavior. *Current Anthropology* , *55* (6), 814–821. https://doi.org/10.1086/679254

8. Santamaría-García, H., González-Gadea, M. L., Di Tella, R., Ibáñez, A., & Sigman, M. (2018). The interplay between sharing behavior and beliefs about others in children during dictator games. *Journal of Experimental Child Psychology* , *166* , 451–464. https://doi.org/10.1016/j.jecp.2017.08.016

9. Benenson, J. F., Pascoe, J., & Radmore, N. (2007). Children's altruistic behavior in the dictator game. *Evolution and Human Behavior* , *28* (3), 168–175. https://doi.org/10.1016/j.evolhumbehav.2006.10.003

10. Blake, P. R., & Rand, D. G. (2010). Currency value moderates equity preference among young children. *Evolution and Human Behavior* ,*31* (3), 210–218. https://doi.org/10.1016/j.evolhumbehav.2009.06.012

11. Fehr, E., Bernhard, H., & Rockenbach, B. (2008). Egalitarianism in young children. *Nature* , *454* (7208), 1079–1083. https://doi.org/10.1038/nature07155

12. McAuliffe, K., Raihani, N. J., & Dunham, Y. (2017). Children are sensitive to norms of giving. *Cognition* , *167* , 151–159. https://doi.org/10.1016/j.cognition.2017.01.006

13. Rochat, P., Dias, M. D. G., Guo Liping, Broesch, T., Passos-Ferreira, C., Winning, A., & Berg, B. (2009). Fairness in Distributive Justice by 3- and 5-Year-Olds Across Seven Cultures.*Journal of Cross-Cultural Psychology* , *40* (3), 416–442. https://doi.org/10.1177/0022022109332844

14. Cowell, J. M., Lee, K., Malcolm-Smith, S., Selcuk, B., Zhou, X., & Decety, J. (2017). The development of generosity and moral cognition across five cultures. *Developmental Science* , *20* (4), e12403. https://doi.org/10.1111/desc.12403

15. Messer, E. J. E., Lumsden, A., Burgess, V., & McGuigan, N. (2021). Young children selectively adopt sharing norms according to norm content and donor age. *Cognitive Development* , *59* , 101088. https://doi.org/10.1016/j.cogdev.2021.101088

16. Smith, C. E., Blake, P. R., & Harris, P. L. (2013). I Should but I Won't: Why Young Children Endorse Norms of Fair Sharing but Do Not Follow Them. *PLoS ONE* , *8* (3), e59510. https://doi.org/10.1371/journal.pone.0059510

17. Chudek, M., & Henrich, J. (2011). Culture–gene coevolution, norm-psychology and the emergence of human prosociality. *Trends in Cognitive Sciences* , *15* (5), 218–226. https://doi.org/10.1016/j.tics.2011.03.003

18. House, B. R., Kanngiesser, P., Barrett, H. C., Broesch, T., Cebioglu, S., Crittenden, A. N., Erut, A., Lew-Levy, S., Sebastian-Enesco, C., Smith, A. M., Yilmaz, S., & Silk, J. B. (2020). Universal norm psychology leads to societal diversity in prosocial behaviour and development. *Nature Human Behaviour* , *4* (1), 36–44. https://doi.org/10.1038/s41562-019-0734-z

19. Köster, M., Schuhmacher, N., & Kärtner, J. (2015). A CULTURAL PERSPECTIVE ON PROSOCIAL DEVELOPMENT. *Human Ethology Bulletin* , 12.

20. Tomasello, M., & Vaish, A. (2013). Origins of Human Cooperation and Morality. *Annual Review of Psychology* , *64* (1), 231–255. https://doi.org/10.1146/annurev-psych-113011-143812

21. Blake, P. R., McAuliffe, K., Corbit, J., Callaghan, T. C., Barry, O., Bowie, A., Kleutsch, L., Kramer, K. L., Ross, E., Vongsachang, H., Wrangham, R., & Warneken, F. (2015). The ontogeny of fairness in seven societies. *Nature* , *528* (7581), 258–261. https://doi.org/10.1038/nature15703

22. Blake, P. R., Corbit, J., Callaghan, T. C., & Warneken, F. (2016). Give as I give: Adult influence on children's giving in two cultures.*Journal of Experimental Child Psychology* , *152* , 149–160. https://doi.org/10.1016/j.jecp.2016.07.010

23. Callaghan, T., & Corbit, J. (2018). Early prosocial development across cultures. *Current Opinion in Psychology* , *20* , 102–106. https://doi.org/10.1016/j.copsyc.2017.07.039

24. House, B. R., Silk, J. B., Henrich, J., Barrett, H. C., Scelza, B. A., Boyette, A. H., Hewlett, B. S., McElreath, R., & Laurence, S. (2013). Ontogeny of prosocial behavior across diverse societies.*Proceedings of the National Academy of Sciences* , *110* (36), 14586–14591. https://doi.org/10.1073/pnas.1221217110

25. Samek, A., Cowell, J. M., Cappelen, A. W., Cheng, Y., Contreras-Ibáñez, C., Gomez-Sicard, N., Gonzalez-Gadea, M. L., Huepe, D., Ibáñez, A., Lee, K., Malcolm-Smith, S., Salas, N., Selcuk, B., Tungodden, B., Wong, A., Zhou, X., & Decety, J. (2020). The development of social comparisons and sharing behavior across 12 countries.*Journal of Experimental Child Psychology* , *192* , 104778. https://doi.org/10.1016/j.jecp.2019.104778

26. Li, L., Britvan, B., & Tomasello, M. (2021). Young children conform more to norms than to preferences. *PLOS ONE* , *16* (5), e0251228. https://doi.org/10.1371/journal.pone.0251228

27. Rakoczy, H., & Schmidt, M. F. H. (2013). The Early Ontogeny of Social Norms. *Child Development Perspectives* , *7* (1), 17–21. https://doi.org/10.1111/cdep.12010

28. Schmidt, M. F. H., Butler, L. P., Heinz, J., & Tomasello, M. (2016). Young Children See a Single Action and Infer a Social Norm: Promiscuous Normativity in 3-Year-Olds. *Psychological Science* ,*27* (10), 1360–1370. https://doi.org/10.1177/0956797616661182

29. Marshall, J., & McAuliffe, K. (2022). Children as assessors and agents of third-party punishment. *Nature Reviews Psychology* ,*1* (6), 334–344. https://doi.org/10.1038/s44159-022-00046-y

30. Blake, P. R. (2018). Giving what one should: Explanations for the knowledge-behavior gap for altruistic giving. *Current Opinion in Psychology* , *20* , 1–5. https://doi.org/10.1016/j.copsyc.2017.07.041

31. Blake, P. R., McAuliffe, K., & Warneken, F. (2014). The developmental origins of fairness: The knowledge–behavior gap.*Trends in Cognitive Sciences* , *18* (11), 559–561. https://doi.org/10.1016/j.tics.2014.08.003

32. Gopnik, A., & Wellman, H. M. (2012). Reconstructing constructivism: Causal models, Bayesian learning mechanisms, and the theory theory.*Psychological Bulletin* , *138* , 1085–1108. https://doi.org/10.1037/a0028044

33. Sutter, M., Zoller, C., & Glätzle-Rützler, D. (2019). Economic behavior of children and adolescents – A first survey of experimental economics results. *European Economic Review* , *111* , 98–121. https://doi.org/10.1016/j.euroecorev.2018.09.004

34. Bates, D., Mächler, M., Bolker, B., & Walker, S. (2015). Fitting Linear Mixed-Effects Models Using lme4. *Journal of Statistical Software* , *67* (1). https://doi.org/10.18637/jss.v067.i01

35. Bates, D. M. (n.d.). *Mixcd-Effects Models in S and S-PLUS* . 8.

36. R Core Team (2022). R: A language and environment for statistical computing. *R Foundation for Statistical Computing* , Vienna, Austria. URL https://www.R project.org/.

37. Kuznetsova, A., Brockhoff, P. B., & Christensen, R. H. B. (2017). lmerTest Package: Tests in Linear Mixed Effects Models. *Journal of Statistical Software* , *82* (13). https://doi.org/10.18637/jss.v082.i13

38. Huesmann, L. R., & Guerra, N. G. (1997). Children's normative beliefs about aggression and aggressive behavior. *Journal of Personality and Social Psychology* , *72* , 408–419. https://doi.org/10.1037/0022-3514.72.2.408