FAIRNESS AND DISTRIBUTIVE JUSTICE BY 3-5 YEAR-OLD TIBETAN CHILDREN

Abstract

We asked whether young children raised in an environment strongly promoting compassion for others, as in the case of Tibetan Buddhism, would show less proclivity towards self-maximizing in sharing. We replicated the procedure of Rochat et al. (2009) with a group of three- and five-year-old Tibetan children living in exile and attending a traditional Buddhist school where the Dalai Lama resides. We report that Tibetan children, like children of seven other cultures start from a marked self-maximizing propensity at three years of age, becoming significantly more fair by five years. These data confirm that the developing sense of equity by young children is comparable in the context of a compassion-based culture.

Introduction

In a previous study using a simple dictator game, we reported a universal development toward more egalitarian sharing in three- to five-year-old children of seven cultures (Rochat et al., 2009). Across cultures, by five years children tended to become significantly more fair in their resource distribution. However, three-year-olds of smaller, rural, and traditional cultures like Peru and Fiji appeared to be less self-maximizing compared to same-age children of other urban cultures (China, United States, and three locations in Brazil). These results indicate that small scale communal and traditional living environments are linked to reduced self-maximizing propensities by young children. However, the question remains as to what might cause such difference. A likely possibility is that certain cultural practices attached to small scale communal living might impact children (Keller, 2007), fostering an earlier sense of equity. Here we ask whether certain cultural practices might influence urban children to make them less self-

maximizing and therefore more alike children growing up in communal, small scale rural environments like Peru and Fiji.

In particular, in the present study we probed whether young children raised in an urban environment strongly promoting compassion for others, as in the case of Tibetan Buddhism, would show less proclivity towards self-maximizing in sharing.[1] In an attempt to address this issue, we replicated the procedure of Rochat et al. (2009) with a group of same-age three- and five-year-old Tibetan children living in the Tibetan exile community where the Dalai Lama resides. Research suggests that, based on a Western sample, this particular period of development is marked by emerging inequity aversion and egalitarianism (Fehr et al., 2008).

We hypothesized that the Tibetan children would show a comparable developmental trend toward increasing fairness in their resource distribution. Like most children, Tibetan children would start from a marked self-maximizing propensity at three years of age, becoming significantly more fair by five years. However, because of the compassion practice and teaching surrounding Tibetan children in their urban environment, we expected to find more resemblance between them and the rural children of Peru and Fiji of Rochat et al. (2009).

Method

Participants

We tested a total of 29 Tibetan children divided in two age groups: 14 three-year olds (*M*=41.36, *SD*=1.59, 35-51 months, seven males) and 15 five-year olds (*M*= 60.47, *SD*=0.93, 51-65 months, eight males)**.** All children attended the Tibetan Children's Village (TCV) school in Upper Dharamsala, India.

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[1] The issue was raised in a recent public exchange between the Dalai Lama and one of the authors (PR) (https://www.youtube.com/watch?v=jYARLAlqNnQ - from 29:30 – 44:35).

Cultural context

Dharamsala is a city in northeast India situated in the foothills of the Himalayas with a mixed Tibetan and Indian population of about 11,000 people. The greatest concentration of Tibetans in Dharamsala is in the upper region of the city in the community of McLeod Ganj. McLeod Ganj is considered part of the Tibetan exile community and is home to the Dalai Lama and the Tibetan exile government. Although Tibet is mostly rural, the main occupations for most of the Tibetans in the urban region of McLeod Ganj is hospitality retail and handicraft business keeping (Tsering, 2012).

The Tibetan Children's Village (TCV) school in Upper Dharamsala was established in 1960 as a nursery to look after the children of the first wave of Tibetan refugees. Over the years as more and more Tibetans fled their homeland, the nursery expanded to become a school within the larger Tibetan Children's Village school system spanning all India. By practice, TCV is a Montessori-style school. Its curriculum balances traditional Tibetan teachings (i.e., Buddhism, language, history, and cultural heritage) with modern subjects (i.e., writing, reading, mathematics; Rigzin, 2003). The mission of the school is to "provide parental care and love, develop character and moral values, and provide suitable and effective life and career guidance for social and citizenship skills" (TCV, 2015). Overall, the school is driven by Tibetan standards promoting compassion, interdependence, and selflessness, exemplified by the school's official motto of "Others Before Self."

The three- and five-year olds included in this study were part of the 'infant section' of the school. Each morning, classes start with an approximately 40 minute routine session of reciting Buddhist prayers calling to mind compassion and insight into the Buddha's teachings, mind-

calming and compassion-training meditations, and yoga-like body scan exercises. Approximately 90% of the children board, living in separate homes on campus. Each home hosts about 30 children supervised by two house directors referred by children as *Amala,* or mother. Along with studying and play, children are involved in communal duties and chores such as cooking, cleaning, and washing clothes. Each Director (all female) was trained to become surrogate parents to the child (Pema, 2003). Compared to most Western educational contexts, the TCV environment emphasizes from the preschool years communal values and concern for others.

Design

Based on a simple dictator game, each child was tested in seven successive trials in which they were asked to split small collections of more or less valuable food items between themselves and an adult Experimenter, or between two puppets (control condition of third party distribution). In all but two control conditions, the child was one of the recipients of the split. s

Table 1

Description of the seven successive distribution trials as a function of the child's role in the distribution, number of items, and kinds of items split.

Trial	Child's role in distribution	Number of Items		
		Plain	Special	Total
1	Chooser and recipient	6	0	6
2	Chooser and recipient	4	2	6
3	Chooser and recipient	7	0	7
4	Chooser and recipient	6	1	7
5	Chooser but not recipient	6	0	6
6	Chooser but not recipient	6	1	7
7	Not chooser but recipient	4	2	6

Note: Plain items consisted of raisins whereas special items were large dried apricots, the latter agreed to be more valuable in terms of desirability.

The design replicated Rochat et al. (2009), except for the kinds of items used, which were adapted to the particular culture. In each successive trial, the number of items was either odd or even and consisted of either "plain" items (raisins), or plain items plus some "special" items (apricots). Based on a preliminary preference choice test, apricots were reliably determined as more desirable than raisins, hence more valuable for all tested children.

The order of the seven trials was identical for all children in the sequence described in Table 1. As summarized in the table, the trials varied depending on the even or odd number of items shared (i.e., six versus seven) as well as the relative value of the items (plain versus special items). In all but control trials (Trials 5 and 6), the child was a recipient of the distribution. In all trials but the last, the child was the "chooser" who decided what each recipient should receive from the split. Finally, in Trial 7 (perfect share), the child split the items but the rule was for the Experimenter to then choose between the two collections the child created.

During test, each child sat at a table across from an unfamiliar Tibetan female Experimenter fluent in Tibetan. For each trial, the child distributed items from a tray placed in the middle of the table into adjacent trays designated for each recipient. The location of the child's cup was counterbalanced across trials.

In summary, in the first four trials, the child chose how to split the items and was one of the recipients of the distribution. In Trials 5 and 6, the child once again chose how to distribute the items but was not a recipient (third party control conditions). In these control conditions, the child distributed items between two identical toys (plastic yellow bears about three inches in height). In a seventh and last trial (perfect share condition), the child was again a recipient who could propose how to distribute the items, but the experimenter ultimately chose the pile she kept. As in Rochat et al. (2009), the game concluded after the child completed a simple change-in-location false belief task analogous to the cross-cultural study by Callaghan et al. (2005). The false belief theory of mind task involved the experimenter and another unfamiliar adult person. The child and the other adult witnessed the hiding of a ball under one of two cups with distinct colors. The adult person then excused herself saying that she will be right back, disappearing into another room. The experimenter then suggested that the child play a trick on the person, secretly

changing the hiding location of the ball from one cup to the other. The Experimenter helped the child to do so then asked the child: "when she returns, where do you think she is going to look for the ball?" After the child guessed, the Experimenter called the other person to come back, who upon return, looked for the ball where she last saw it being hidden. The child passed the test if he (or she) guessed right, suspending his (or her) own knowledge and attributing a false belief to the person they tricked.

<div align="center">Results</div>

Replicating the analysis strategy of the original paper, we present first the results of the Tibetan cohort and then compare them to the other cultures tested in Rochat et al. (2009).

In a first set of analyses, we compared the propensity of children to self-maximize in Trials 1-4 (i.e., average percent to self across trials) as function of age. Examining only the Tibetan children, an independent samples t-test yielded a significant age effect, $t(27) = 2.726, p =.017$. On average, Tibetan three-year-olds gave themselves significantly more items ($M=.730, SD=.301$) than did five-year-olds ($M=.506, SD=.034$). As a follow up, we tallied for each child the frequency of hoarding all the items to the self (i.e., proportion of times child self-hoarded by keeping all the items in Trials 1-4). A Pearson chi-square test yielded a significant effect of age, $\chi^2_{(3)} = 10.78, p = .013$ (two-tailed), Cramer's V = .610. Three-year-olds tended to self-hoard significantly more than five-year-olds. Fifty-percent of all three-year-olds engaged in self-hoarding in *all* four of the trials. In contrast, no Tibetan five-year-olds hoarded in all four trials.

We repeated these analyses, this time factoring culture (8) as well as age (2) on the propensity to self-maximize in Trials 1-4 (measured as average percent to self across trials). A univariate ANOVA yielded a significant main effect of age ($F(1,215) = 10.42, p = .001$,

η^2=.046) as well as a marginal effect of culture ($F(1,215) = 1.92$, $p = .067$, $\eta^2 = .059$). Across culture, three-year-olds are significantly more likely to self-maximize ($M= .660$, $SD=.022$) than five-year-olds ($M=.563$, $SD=.020$). Bonferroni-adjusted pairwise comparisons demonstrate that Tibetan children did not differ from their counterparts in any culture. Consistent with findings reported in the Rochat (2009) paper, this effect is driven by children in Peru, Fiji, and China, who tended to give themselves significantly less than children in the remaining cultures (Figure 1). With regard to the frequency of self-hoarding, results yielded a significant effect of culture only amongst five-year-olds , $\chi^2_{(28)} = 54.03$, $p = .002$ (two-tail), Cramer's V = .337. Tibetan five-year-olds, none of whom kept everything for themselves in all four trials, were directly comparable to what we observed in same-age children of Peru, Rio-Favela, and Rio-middle class (see Rochat et al., 2009). In contrast, Tibetan five-year-olds were significantly less self-hoarding compared to same age children in the U.S. and Recife who kept everything for themselves approximately 30% of the time (Fisher's exact test, p <.05). Analyses show that they only marginally differed from children in Fiji and China, who self-hoarded 10-20% of the time.
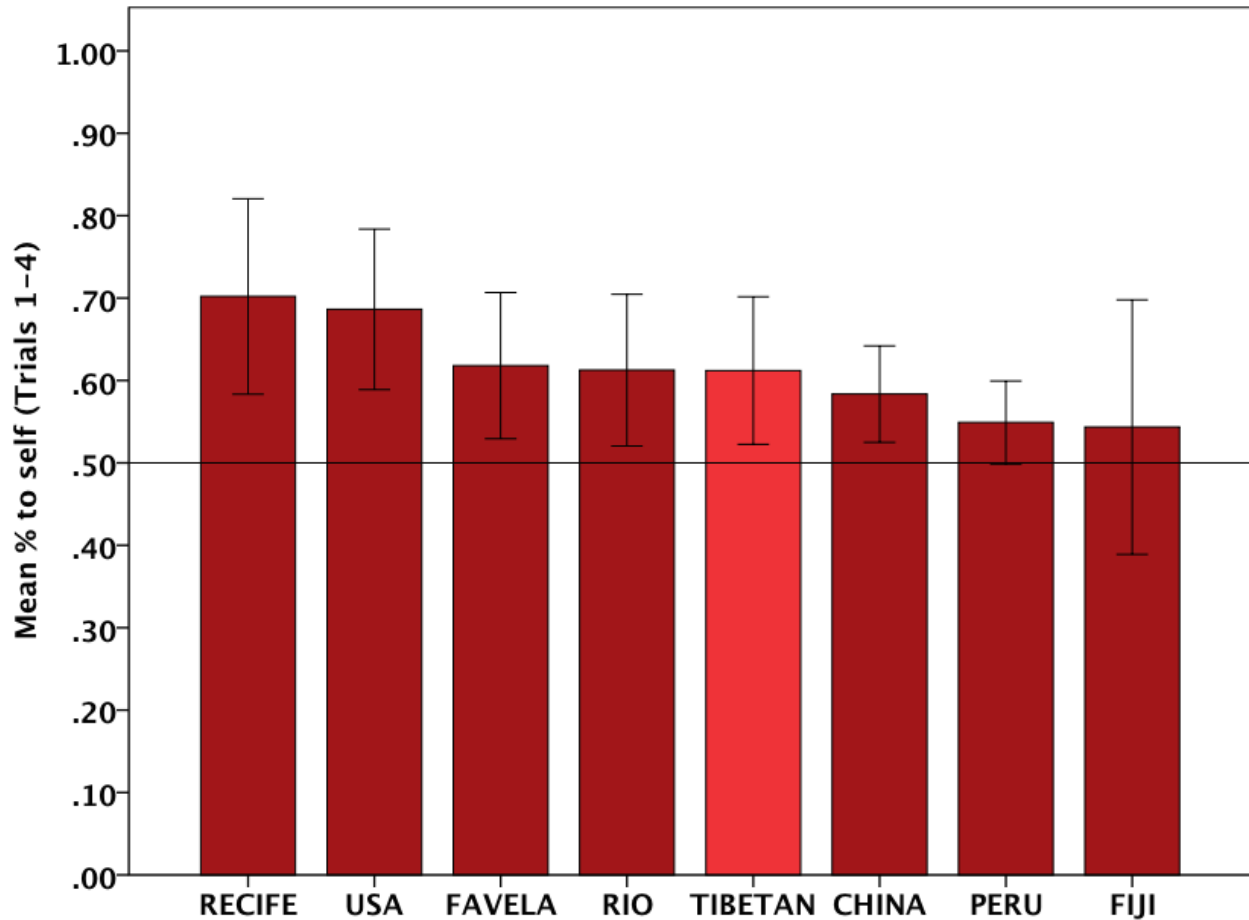
Figure 1. Mean proportion of items distributed to self across Trials 1-4 as a function of culture.
Bars denote 95% confidence interval.

In a second set of analyses we compared the distribution of special items in Trials 2 and 4
(measured as average percent to self across trials). Considering the Tibetan children
independently, we noted a significant effect of age, $t(27) = 2.11$, $p = .049$. On average, three-
year-olds kept significantly more of the special items for themselves ($M= .762$, $SD=.331$) than
did five-year-olds ($M=.555$, $SD=.163$). In our cross-cultural analyses of this same dependent
measure, a univariate ANOVA factoring culture (8) and age (2) yielded a significant main effect
of culture ($F(7, 214) = 2.883$, $p = .007$, $\eta^2 = .086$) and no interactions. In Bonferroni-adjusted

follow-up tests, Tibetan children did not significantly differ in from any other cultures in their sharing of the special items. Consistent with the findings of the Rochat et al. (2009) report, the effect is driven by children in rural Peru, who are more inclined to share these items equitably.

In a third set of analyses we asked whether the child's role in the game influenced their sharing (e.g., acting as recipient and chooser versus recipient but not chooser). As a dependent measure we analyzed the proportion of items distributed in Trials 2 and 7 (perfect share). Examining first the Tibetan children, a mixed design ANOVA with trial type as a within-subjects factor and age as a between-subjects factor yielded a significant interaction of trial and age, $F(1,27) = 5.60$, $p=.025$, $\eta^2 = .172$. Follow-up tests demonstrate that Tibetan three-year-olds significantly reduce their inequity between Trial 7 (perfect share, where they are recipients but not choosers, $M=.480$, $SD=.077$) and Trial 2 (where they are both recipients and choosers, $M=.726$, $SD=.065$; $p = .006$ based on Bonferroni-adjusted pairwise comparisons). In contrast, Tibetan five-year-olds did not change their sharing between these two conditions and instead demonstrated a propensity to be equitable both when recipient and chooser ($M=.511$, $SD=.063$ in Trial 2) and when recipient but not chooser ($M = .533$, $SD=.075$ in Trial 7).

In the cross-cultural analysis of this same dependent measure we compared the proportion of items to self in a mixed-design ANOVA with trial (2) as a within-subjects factor and culture (8) and age (2) as between-subjects variables. This analysis yielded a significant main effect of age ($F(2,215) = 4.928$, $p = .027$, $\eta^2 = .022$) and a marginal interaction of age and trial ($F(1,215) = 2.81$, $p = .095$, $\eta^2 = .013$). Only three-year-olds tended to show a significant decrease in their tendency to self-maximize between the two trials ($M=.655$, $SD=.027$ in Trial 2 and $M =.525$, $SD=.026$ in Trial 7). In contrast, across cultures five-year-olds tended to be equitable in both trials ($M=.556$, $SD=.025$ for Trial 2 and $M=.504$, $SD=.024$ for Trial 7,

respectively). Results also yielded a significant interaction of condition and culture ($F(7,215) =$ 3.241, $p = .003$, $\eta^2 = .095$). Bonferroni-adjusted pairwise tests demonstrate that Tibetan children did not differ in their sharing from children of other cultures in either trial. This interaction is instead driven by children in Recife, Peru, and China who tended to modulate their sharing based on whether or not they were the chooser (all $p < .05$ based on Bonferroni-adjusted pairwise comparisons; see Rochat et al., 2009).

In a fourth set of analyses we assessed whether children change their distribution of items when acting as recipient (averaged across Trials 1 through 4) versus non-recipient splitting items between third parties (averaged across control Trials 5 and 6). For the Tibetan children we compared the percentage of items distributed to the child or left doll as the dependent variable in a mixed-design ANOVA with the child's role (2) as a within-subjects factor and age (2) as a between-subjects factor. Analysis yielded only a significant main effect of age, $F(1,27)= 9.05$, $p=.006$, $\eta^2 =.251$). Three-year-olds tend to either self-maximize when recipients or show a significant side bias when not recipients, displaying an overall propensity toward inequity ($M=.714$, $SD=.053$). In contrast, five-year-olds distribute items equitably independent of their role as recipient or non-recipient ($M=.491$, $SD=.052$).

In the cross-cultural comparison of this dependent measure, a mixed-design ANOVA with child's role (2) as a within-subjects factor and culture (8) and age (2) as between-subjects variables yielded a significant main effect of age ($F(1,215) = 21.396$, $p < .001$, $\eta^2 = .091$) as well as a significant interaction of role and culture ($F(7, 215) = 2.06$, $p = .004$, $\eta^2 = .063$). Collapsed across culture and independent of their role in the game, three-year-olds ($M=.635$, $SD=.017$) tended to give to themselves or the left-side puppet proportionately more items than did five-year-olds ($M =.527$, $SD=.016$). Regarding the significant interaction of role and culture, Tibetan

children did not differ from children of other cultures in their sharing as recipients versus non-recipients. Collapsed across age, they tended to split equitably in both conditions. Instead, the contrast between recipient and non-recipient (control) trials was most contrasted for children in Recife, USA, and Fiji, all $p < .01$ based on Bonferroni-adjusted pairwise tests. Children in these cultures gave proportionally more to themselves when recipients and were more equitable in their distribution when splitting items between third parties. The significant side bias in three year-olds in the control third party conditions (Trials 5 & 6) points to a general insensitivity to inequity. This significant bias, however, is different from the self-maximizing propensity of these children in the conditions (Trials 1 & 3) where they are recipients. As recipients, across cultures, three-year-olds tend on average to engage in more self-hoarding (28.6% against 17.9% who gave all items to one puppet in the control conditions, Fisher's exact test: p=.081). For Tibetan three-year-old children who self-hoarded, the results were 28.5% (N=4) in the control conditions 5 & 6, and 50% (N=7) in conditions 1 &3 where they are recipients.

In a final set of analyses, we examined children's overall self-maximizing tendency (measured as average percent to self) in Trials 1-4 as a function of performance on a change in location false belief task. Amongst Tibetan children, self-maximizing is significantly reduced in the few children that pass the false belief understanding task (N=5 or 17% of Tibetan sample, including four five-year-olds and one three-year-old). An independent samples *t*-test yielded a significant difference between the few children that passed the false belief test and those that did not, $t(27)=2.53$, $p=.018$. Children who passed kept on average significantly less of the items for themselves (*M*=.498, *SD*=.037)) than did children who failed the task (*M* =.636, *SD*=.252). In a cross-cultural comparison of this relationship, across the eight populations, 23.1% of three-year-olds passed the false belief task (N=25) against 77.4% of five-year-olds (N=89). To partial out

age as a confounding variable, we examined the relationship between false belief performance and self-maximizing for each age group separately. A univarirate ANOVA including culture (8) and false belief performance (2) on self-maximizing (average percent to self in Trials 1-4) yielded only a marginally significant trend of culture for the five-year-olds, $F(7, 101)=1.89$, p=0.80, $\eta^2=.116$. However the same analysis yielded a significant main effect of false belief performance for three-year-olds, $F(1,92)=6.85$, p=0.010, $\eta^2=.069$. Across cultures, three-year-olds who passed the false belief task tended also to be less inclined in self-maximizing ($M=.589$, $SD=.250$ versus $M=.690$, $SD=.264$ for those who failed). Overall, Tibetan children passing the test show the same tendency toward equitable sharing as the three-year-olds in the original seven cultures (Rochat et al., 2009).

Discussion

The aim of the study was to gauge the impact of a cultural environment strongly promoting compassion for others on the early development of fairness and distributive justice in children growing up in an urban environment. We compared three- to five-year-olds growing up in a traditional Tibetan Buddhist school of Dharamsala, a large Northern India city, with same-age children of seven cultures using the same procedure, design, and method utilized by Rochat et al. (2009). We found that Tibetan children demonstrate the same development from marked self-maximizing tendencies at three years to greater fairness and egalitarian propensities in sharing by five years of age. Like children of all other cultures, Tibetan three-year-olds are more egalitarian when they are recipients of the distribution but not chooser of the split (perfect share). Contrary to what we hypothesized, cultural practices and teaching of compassion does not appear to impact young children propensity to self-maximize. The data indicate that like children of

other Western and Eastern, non-Buddhist cultures, Tibetan children manifest strategic self-maximizing from three years of age.

We confirm the universal, transcultural developmental trend toward egalitarianism and fairness emerging by five years and beyond (Fehr et al., 2008; Moore et al., 2009; Robbins & Rochat, 2011). Note that this trend remains, no matter what items are shared. Indeed, different items were used across cultures (i.e., candies, stickers, cookies, fruits, and even money; see Rochat, 2014). We conclude that early self-maximizing tendencies are deeply rooted, above and beyond socio-cultural emphasis and strong attempts at the enculturation of concern and compassion for others. From this apparently universal starting state, children develop more egalitarian tendencies that appear to correlate with their understanding of others' mind (i.e., the passing of false belief test). Note, however, that the capture of such general developmental tendencies in early childhood depends on the kind of assessment procedure used, here a straight dictature game. House et al. (2013) report seemingly opposite findings based on a modified version of the dictator game in which children are faced with a force choice between two sharing options, one egalitarian and one that comes at a cost, either to the child or her partner (see Fehr et al., 2008). Based on this procedure, House et al. report a steady decrease of pro-social choices between three to seven years in children across six highly contrasted populations, and a diverging increase by middle childhood that depends on culture. We would caution against drawing a direct analogy between methodologies, particularly in light of the fact that the sharing situations were construed in very different ways (spontaneous and open-ended distributive act versus forced choice with explicitly marked sharing outcomes, some of which were costly). sMore research should elucidate these apparent differences and what might be specific to what is captured by each experimental procedure.

Contrary to what was expected, compared to the other cultures tested in the original Rochat et al. (2009) study, Tibetan children resemble more the children of urban cultures, including China, USA and Brazil. The largest cross-cultural variations in terms of developmental trajectory were noted in children of rural and traditional cultures (i.e., Peru and Fiji, see Rochat et al., 2009). It remains an open question how Tibetan children living in rural areas of Tibet would compare to the children of the present sample (i.e., exiled children living in the populous city of Dharamsala, India). Further research is warranted to capture what might be specifically attached to rural small scale communal environment. We can conclude, however, that within an urban environment, strong compassionate practices surrounding children do not seem to affect their developmental trajectory toward fairness and inequity aversion.

Based on these results, we propose that prior to five years, cultural practices seem to have limited impact on urban children's developing sense of fairness, at least as measured by distributive justice type-tasks like the dictator game utilized here. However, such experimental paradigms might be more revealing of children's relative inequity aversion, rather than their reasoning about fairness norms per se. Children might indeed simply focus on and react to unequal distribution, independently of their concern for others. In future studies, tasks directly taping into fairness sensitivity such as restorative justice should be used. For example, recent cross-cultural works on restorative justice by preschool age children point to marked cultural differences regarding how children from five years tend to punish others who violated fairness norms (e.g., self-hoarding), even if such punishment comes at a personal cost (Robbins & Rochat, 2011). From five years of age, and particularly by middle childhood (House, Silk, Henrich, et al., 2013), adult norms might thus become an important factor in how fairness should

be maintained and restored within a particular population context. How these norms are learned and implemented remain an important open question for future developmental investigations.

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