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Contacts between locals and migrants among Chinese youth: Out-group bias and familial transmission

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July 27, 2023

Abstract

Conflicts between local and migrant populations have been ubiquitous in modern China. We examine the longer-term potentials for resolution through inter-group contact and persistence through the inter-generational transmission of preferences. Public schooling in Chinese cities provides one of the largest interventions for children with different group identities to interact extensively. We adopt the perspective that in- and out-group biased behavior structurally arises from group-conditional social preferences. By conducting experiments consisting of binary dictator allocation tasks in schools in a Chinese city, we can analyze how integrated schooling shapes the respective behavior. Surprisingly, we do not observe any negative out-group bias. In fact, local students exhibit a positive out-group bias by choosing sharing behavior more toward migrant than other local peers. This sharing behavior is most prevalent among primary school cohorts. We also do not find a higher prevalence of out-group bias among parents. However, parents make more envious choices, highlighting the potential for broader positive effects of schooling. In addition, we find strong evidence for the inter-generational transmission of preferences. Overall, these findings suggest that more directed efforts to establish contact between locals and migrants may be successful in overcoming the conflict.

Keywords: social preferences, group identity, out-group bias, Chinese youth, migration

JEL codes: C91, D92, M11

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1 Introduction

Integrated public schooling provides one of the largest interventions in having members of different groups interact extensively. According to a qualified version of the Allport contact hypothesis (Allport, 1954) such productive and pleasant activities break down negative out-group prejudice (Hewstone and Brown, 1986; Hewstone and Swart, 2011; Nieuwenhuis and Shen, 2023). Shanghai was the first municipality to open public schools for migrant children in 2008 and many others followed (Lan, 2014). In this paper, we adopt the perspective that in- and out-group biased behavior structurally arises from group-conditional social preferences. We ask how the inter-group contact from integrated schooling shapes the respective behavior. We report on an experiment measuring in- and out-group bias directly in Chinese urban schools, which we combine with a survey among parents. If schooling reduces behavioral biases against the out-group it may help to overcome the local-migrant conflict. Furthermore, if preferences are transmitted from parents to children there is the potential for longer term resolution of the conflict through successive generations.

What is the genesis of the local-migrant conflict? The Chinese economic reforms of 1978 spurred unprecedented migration from rural areas and small cities to larger urban areas (Liu et al., 2016; Ouyang et al., 2017). According to the World Bank, in 2022 already 11.3 percent of the world’s population was living in Chinese cities (World Bank, 2023). This exasperated social fissures arising from the modern Chinese household registration, or hukou, system. The hukou system has fostered distinct group identities within Chinese municipalities: Locals – those whose hukous are registered with the city – and migrants – those who relocated to the municipality, but whose hukous remain registered elsewhere (Zhang and Shunfeng, 2003). In the years immediately following the 1978 economic reforms, municipal governments fomented systemic prejudice toward migrants through widespread discriminatory access to services and civic benefits. Locals typically enjoyed relatively more civil privileges than migrants; some examples are better access to social insurance, education and healthcare (Chen and Liu, 2016). Despite another set of economic reforms in 2003, which reduced differential access to civil services, the history of institutional biases led to enduring preference-driven in- and out-group biases and associated conflicts (Cai, 2011; Yang and Guo, 2018; Chen et al., 2020).

A current hukou is a family-level document that identifies family members, their permanent

home addresses, and their national identification numbers.¹ A permanent home address resides within a specific municipality and determines eligibility for many of the public services and entitlements provided by that municipality. Changing one's permanent home address requires approval of the new municipality, of which many place strict limitations. As a consequence, most major Chinese cities have experienced a large influx of migrants who do not have the local hukou forming a new out-group within their population.

Locals' discrimination of migrants by locals is based on both material economic differences and psychological in-group and out-group biases. The preferred access to public services enjoyed by locals contributes to gaps in education, healthcare, public housing, and social insurance (Liu et al., 2016; Ouyang et al., 2017; Nielsen et al., 2005; Wu, 2004). Beyond these material asymmetries, or perhaps in part driven by them, attitudinal biases have emerged (Orum et al., 2009; Zavoretti, 2017). Locals often hold the negative belief that migrants are the cause of social ills such as crime, congestion, and excessive labor market competition (Solinger, 1999; Chen, 2013). They also have negative stereotypes of migrants about social behavior and presentation (Gan, 2014). In contrast, migrants often report feelings of alienation and scorn (Keung Wong et al., 2007). Li (2006) finds that these factors contribute to the resentment of the local group. Lan (2014) notes this discrimination may be a longer-term phenomenon, as second-generation migrants struggle against the uneven distribution of economic opportunities and hierarchical recognition of differences from locals.

We view these biases, particularly behavioral ones, as at least partially arising from group-conditional social preferences. Traditionally, social preferences measure one's welfare based upon one's own and others' material consumption. We take a revised perspective that one's social preference can be conditional upon the relative group identity of the others whose consumption is considered (Benjamin et al., 2010; Chen and Li, 2009). Our primary concern is the nature of these biases in urban Chinese youth.

In our analysis, we focus on a set of hypotheses that help us assess the impact of integrated schooling on these preferences. First, we hypothesize that children will discriminate against

¹An additional important hukou attribute is its distinction as either being rural or urban. Historically, rural and urban hukous provided different civil rights. For example, a rural hukou provides family access to an agricultural land plot while an urban hukou is typically associated with better-funded public resources. Since 2014, these differential rights have been gradually reformed (Chen et al., 2016; Bai et al., 2014; Andreas and Zhan, 2016). Many academic studies have focused on the social problems experienced by the two group identities forged by the rural-urban distinction (Chen and Liu, 2016; Hao and Tang, 2015; Zhu, 2007). In the current study, we focus on the local-migrant dichotomy as this distinction is more salient given the prevalence of a distinct local language and set of customs to our study location.

their respective out-group, manifesting as biased allocation decisions in favor of their in-group over the out-group. Second, we expect that the magnitude of any bias will decrease with age, as older children will have experienced more integrated schooling and therefore adjusted their group-conditional social preferences. Third, we hypothesize that children, on average, will discriminate more than their parents. This follows from the contact hypothesis if we assume that parents have had less contact with the out-group than their children. Lastly, we explore the inter-generational transmission of preferences. We hypothesize that parents' social preferences will influence those of their children, as suggested in recent literature on the transmission of social preferences (Cappelen et al., 2020; Kosse et al., 2020; Falk et al., 2021; Chowdhury et al., 2022). The tests of these hypotheses will provide insight into the persistence or resolution of the conflict in the long run. It may also shed more light on the effectiveness of integrated schooling in fostering social cohesion.

We test our hypotheses with an experiment that uses a set of three allocation tasks suitable for young children developed by Fehr et al. (2008). Every decision involves a pair of participants, one participant is the dictator and the other is the receiver. In each decision, the dictator chooses between a pair of payment profiles. A profile prescribes one payment for the dictator and one for the receiver. Such decision tasks are typically called 'dictator games' in the behavioral economics literature.² Each of the tasks is designed to test one of three preferences: (i) 'prosociality' (the aversion to costlessly reduce material consumption of others), (ii) 'envy' (the willingness to reduce the material consumption of those who have more) and (iii) 'sharing' (the willingness to transfer material consumption to those who have less).³ Our experiment assesses in- and out-group biases in allocation behavior by varying the hukou type of the recipients a dictator faces. We achieve this by forming roughly equal numbers of the four possible participant pairings: (local, local), (local, migrant), (migrant, local) and (migrant, migrant). The dictator knows the hukou status of the receiver, and vice versa. However, the pair has no further information about each other except that their counterpart attends a different class of the same grade. The decision maker selects a payment profile for each of the tasks, and then one of the tasks is selected randomly to determine the pair's payoff.

²The dictator game, introduced by Forsythe et al. (1994), is a well-established paradigm for measuring social preferences. Engel (2011) and Cochard et al. (2021) conduct meta-analyses on the results of dictator game experimental studies. They find that the majority of people share at least some money with the recipient.

³A participant's binary adherence to each of these preferences across the tasks also generates three behavioral types as defined Fehr et al. (2008), namely 'egalitarian', 'generous' and 'spiteful' preferences.

On the same day of participation, the students performing the dictator allocation tasks took home a survey for one of their parents to complete. The hypothetical dictator allocation tasks in the survey match the hukou profile type of the student’s decision task. Furthermore, we complemented our data set by collecting information on hukou status, gender and grades directly from the schools. The schools were a primary school (participants in grades 3 and 5), a middle school (grades 7 and 8) and a high school (grades 10 and 11), all of which are located in the municipality of Xiamen, China.

The results of our study can be summarized as follows. First, we find no evidence for a negative bias in behavior against the respective out-groups. Instead, local students discriminate in favor of migrants and are more likely to share with them than with other locals. This sharing behavior towards migrants is most prevalent in local primary students. We do not find any other differences in biases across the three schools. Third, we do not find parents to be more biased against the out-group than their children. However, parents make more envious choices in general. Fourth, we find strong evidence for the inter-generational transmission of preferences.

It is important to note that our results only cover a cross-section of pupils. In addition, our experimental treatments do not include a control group without integrated schooling. Nevertheless, one may interpret the overall lack of out-group biases as a success of integrated schooling. This would suggest that more directed efforts to establish contact between locals and migrants may be successful in overcoming the local-migrant conflict, as suggested in the studies of [Wang et al. \(2016\)](#); [Xue \(2018\)](#); [Gu et al. \(2016\)](#); [Liu et al. \(2020\)](#) and [Zhou et al. \(2022\)](#). Note that a child’s contact with the out-group may also influence parents’ attitudes: The so-called ‘extended contact hypothesis’ posits that mere knowledge about friendships between members of the in-group and the out-group can already reduce biases ([Wright et al., 1997](#)). This could explain the lack of out-group bias among parents in our sample. Furthermore, as preferences are transmitted from parents to children, social cohesion can be ameliorated through successive generations.

2 Hypotheses

Next, we formulate hypotheses concerning the in- and out-group biases in behavior. At the core of these differences is the assumption that locals enjoy a stronger set of social and institutional preferential standing. For example, outside of the Chinese youth context, experimental studies

have found a dearth of out-group biases and group-conditional social preferences in Austria (Fehr et al., 2013; Bindra et al., 2020) and Spain (Cobo-Reyes et al., 2020).

Thus, we formulate the first hypothesis as an expectation of out-group bias in the dictator allocation tasks, which locals and migrants choose in a way that discriminates against their respective out-group.

Hypothesis 1. (OUT-GROUP BIAS) *Children make fewer prosocial and sharing decisions and more envious decisions when interacting with their respective out-group compared to their in-group.*

The intervention of integrated public schooling allows members of the different groups to interact extensively. Based on the Allport contact hypothesis (Allport, 1954) it is often argued that such inter-group contact can positively shift attitudes not only towards the involved individual but also towards their group. Hewstone and Brown (1986) pioneered the hypothesis this contact effect must be both pleasant and productive. Schools that integrate pupils from different identity groups have long been studied to validate such interventions. These examples have considered racial desegregation (Binder et al., 2009; Carrell et al., 2019; Billings et al., 2021), gender (Martin et al., 2017; Halim et al., 2021; Dhar et al., 2022) and immigrant status (Vezzali et al., 2012; Schachner et al., 2019; Barron et al., 2023; Holmlund et al., 2023).

Several studies have examined the impact of local and migrant inter-group contact within urban Chinese schools. Nieuwenhuis and Shen (2023) find a positive correlation between school integration and contact with the attitudes of locals toward migrants, and this correlation increases with the intensity and duration of contact. On the contrary, Zhang (2018), found that, without interventions, migrant students' group identity solidified and grew as an obstacle to inter-group contact with local students. In a randomized control intervention within a middle school, Gu et al. (2016) study a similar population in Xiamen as we do. They find that pleasant and productive contact resulted in significantly improved out-group attitudes for both local and migrant students.

Based on these results that confirm the contact hypothesis, we propose the following hypothesis with respect to the dictator allocation tasks.

Hypothesis 2. (CONTACT CHILDREN) *The difference in the number of prosocial, envious and sharing decisions children make towards their in-group and out-group decreases with the duration*

of schooling.

Another implication of the contact hypothesis concerns the parents. If integrated schooling, starting in 2008, creates more extensive contact between locals and migrants, then parents in our sample have had less contact with the respective out-group than their children. Thus, *ceteris paribus*, they should exhibit a stronger out-group bias than their children manifesting in their choices across the three allocation tasks. We capture this in the following hypothesis.

Hypothesis 3. (CONTACT PARENTS) *The difference in the number of prosocial, envious and sharing decisions parents make towards their in-group and out-group is larger than the difference observed in children’s decisions.*

There is widespread experimental evidence that regardless of culture, there is a familial transmission of economic preferences such as risk and intertemporal consumption between generations (Heinrich and Shachat, 2020; Andreoni et al., 2019; Zumbuehl et al., 2021; Samek et al., 2021; Brenøe and Epper, 2022).⁴ Concerning social preferences, there is evidence that prosocial and sharing behavior is transmitted from parent to child. Cappelen et al. (2020) demonstrate this by introducing a one-year compensated parenting program in early childhood that increases the likelihood of their children to exhibit sharing behaviors. In a study that examines the correlations between child and parent preferences as they relate to socioeconomic status and other household factors, Falk et al. (2021) find a greater transmission for those with higher socioeconomic status. In a longitudinal study within Germany, Kosse et al. (2020) find a strong transmission of prosocial behavior between mothers and their children that is enhanced by socioeconomic status and intensity of mother-child interaction. Chowdhury et al. (2022) study a sample from communities in rural Bangladesh. In contrast to the Western samples of previous studies, they find transmission of prosocial and spiteful preferences. However, these are not correlated with socioeconomic status.

Our study will allow for an assessment of inter-generational transmission conditional on being a local or a migrant, which is indicative of socioeconomic status. Based on the evidence summarized above, we expect evidence for the transmission of preferences from parents to their children for locals and migrants.

Hypothesis 4. (TRANSMISSION) *There is a positive correlation between the number of proso-*

⁴The positive correlation between parent and child risk preferences in Heinrich and Shachat (2020) is particularly relevant as that study was conducted together with the data we report here.

cial, envious and sharing decisions children make and the corresponding decisions their parents make.

3 Study design

We conducted all experimental sessions at primary, middle and high schools in Xiamen, China. We selected three schools from urban districts: a primary school from the Huli district, a middle school from the Haicang district and a high school from the Siming district. These are three similarly urbanized districts, consisting mainly of upper- and middle class households. In Xiamen, and largely across school districts in China, primary and middle school enrollment is based solely upon catchment areas defined by the registered household address. However, high school admission is determined by a student’s performance on a Xiamen-wide entrance exam. The high school in our experiment typically ranks around 10th out of 35 in terms of entrance exam score threshold.⁵

For our choice experiment, there were 266 student participants in the three schools: 131 boys and 135 girls enrolled in grades three and five in primary school, grades seven and eight in middle school, and grades ten and eleven in high school. We ran all experimental sessions during normal class times, in their usual classrooms or school libraries, allowing us to rule out self-selection into the experiment. All sessions were conducted by the same lead experimenter, who was supported by six extensively trained assistants. Across schools, we used the same experimental procedures. We provide an English translation of the protocol, the instructions and the questions from the parent questionnaire in the appendix.

The core task in our experiment was the sequence of three binary dictator allocation tasks ‘prosocial’, ‘envy’ and ‘sharing’ developed by [Fehr et al. \(2008\)](#). [Table 1](#) summarizes the potential payoff profiles for each task. Each tuple first gives the decision maker’s payment and then the counterpart’s payment in units of an experimental currency. In all three tasks, the first payment profile (‘Profile A’) provides equal payments of (20,20) while the second profile (‘Profile B’) provides some form of unequal payments.

The choice of the first payment profile is always indicative of the preference the task name refers to. In the prosocial task, a choice of the first profile is consistent with a prosocial preference,

⁵In [Heinrich and Shachat \(2020\)](#) we also report findings from another primary school located in the Huli district of Xiamen. However, we did not collect data for the dictator allocation task in this school.

Table 1: Dictator allocation tasks

Allocation task	Profile A	Profile B
Prosocial	(20, 20)	(20, 0)
Envy	(20, 20)	(20, 40)
Sharing	(20, 20)	(40, 0)

Payments are given in experimental currency units. The first payment in each tuple goes to the decision maker.

a decision maker is opting not to impose a costless penalty on their counterpart. In the envy task, by choosing the first profile the decision maker prevents their counterpart from having a larger payment than their own. In the sharing task, a choice of the first profile demonstrates positive regard for their counterpart’s payment to the extent that they prefer a 50-50 share to taking the whole reward for themselves.

Our key treatment variable is the hukou status of the respective receiver. By presenting the task to locals and migrants it allows us to assess whether their social preferences are conditional upon the in-group and out-group status of the receiver. We implemented this 2×2 design of in- and out-group conditions across subjects by implementing four (dictator, receiver) pairings: (local, local), (local, migrant), (migrant, local) and (migrant, migrant). The first two pairs allow assessment of the in- or out-group biases for local dictators; the latter two pairs allow the same for migrant ones.

In all experimental sessions, the lead experimenter read the experimental instructions aloud. She stressed that we wanted participants to understand all procedures and encouraged questions. The lead experimenter and her assistants then made sure to thoroughly answer all arising questions. She also made clear that choices had to be made individually and that talking to other students was forbidden. To check participants’ understanding of the instructions, all had to successfully answer two control questions to demonstrate their comprehension. Their answers were checked by the assistants before the experiment continued. One participant from grade 8 was excluded from our analysis because they could not correctly answer the control questions.

Students then made their choices by noting them in a paper booklet that contained the different dictator tasks. To control for potential effects on the ordering of the dictator tasks we adopted two randomly assigned sequences of tasks. The normal sequence is prosocial, envy and then sharing, which we reversed for approximately half of the subjects. We provided no feedback on the decision outcomes until all tasks were completed. A grade 3 and a grade 11 participant

Table 2: Experiment details

School	Exchange rate	Hukou status	Children (N)	Parents (N)
Primary	1x	Local	47	-
	1x	Migrant	48	-
Middle	2x	Local	40	32
	2x	Migrant	48	39
High	3x	Local	34	34
	3x	Migrant	45	44

The exchange rate gives the multiplier to convert experimental currency units to RMB. Hukou status refers to the decision maker’s hukou as provided by the schools.

were excluded because they did not complete all tasks.

Students’ payments were determined at the end of the experiment by randomly selecting one of the tasks for payment. The selected task was the same for all participants in a session and was determined by a draw from a bingo cage. The assistants approached the students one by one and determined their payment. Based on consultations with several teachers, we decided to pay all students in cash (see, e.g., [Brosig-Koch et al. \(2015\)](#) and [Geng et al. \(2015\)](#) for similar approaches). Based on these consultations, we also used the same incentives within different grades of each school, but we doubled the primary school’s pay for the middle school and tripled it for the high school. We did this by varying the exchange rates between the experimental currency and Chinese RMB payments.

In this study, we incorporate two other data sources. First, the school administrators provided the students’ hukou statuses, grades in math, and sex. One subject from grade 10 had to be excluded because the data was not complete. Second, we collected information by administering a survey to parents that included a parent’s choices in the dictator allocation tasks with hypothetical payoffs. For parents, we multiplied hypothetical payoffs by one thousand relative to those of primary school children to make payoffs more salient. Their treatment matched that of their child. The survey also asked for additional household information. In the appendix, we provide an English translation of the main survey questions.

Each child received a questionnaire with instructions that one of their parents complete it. The questionnaire then had to be placed in an envelope, sealed and signed by the parent. The teachers then collected the sealed envelopes from their students. For returning the questionnaire parents received RMB 40 (approximately US-Dollars 6.45 at the time). Note that we did not control which parent (or other adult family member) completed a survey, but we asked the

respondent to provide their relationship to the child.⁶ Unfortunately, we are not including the survey responses from the parents of primary school participants because of a critical data recording error. In total, we received 150 questionnaires from the children in our data set. However, we excluded one of these questionnaires as they did not contain answers to all of the dictator tasks. Overall, there are 83 mothers, and 58 fathers, and 8 non-parent relationships. In total, we are left with 262 students and 149 parents. [Table 2](#) shows the resulting number of subjects across schools and treatments as well as the respective exchange rates.

4 Results

4.1 Children

The data set we analyze comprises 121 local and 141 migrant children. Approximately half of the children in both groups are girls and their shares do not differ between schools ($p > 0.147$, Chi-square tests). [Figure 1](#) shows the share of 'Profile A' choices in the three dictator allocation tasks (i.e. choices indicating prosocial, envious and sharing behavior). On the left, it shows the decisions by locals facing a local or a migrant receiver. On the right, it shows the decisions by migrants in the two treatments. For both groups, the majority of choices are prosocial and envious. Sharing decisions, however, appear to be mediated by the group and the respective treatment. Local children appear to favor migrant children in the sharing task. Importantly, there appears to be no discrimination against the respective out-groups.

Our Hypothesis 1, however, suggests that we should observe discrimination by locals and migrants against the respective out-group. A simple Chi-square test finds no significant out-group bias by locals for the prosocial and the envy task ($p > 0.335$). However, the test confirms that locals are more likely to share with migrants than with other locals ($p = 0.037$). For the migrants, we do not find any evidence for discrimination based on the Chi-square tests ($p > 0.353$).

We also analyze out-group bias using logit regressions presented separately for locals and migrants in [Table 3](#) and [Table 4](#). These regressions allow us to control for differences between

⁶To not discriminate in favor of two-parent households, we did not fix who had to answer the questionnaire. Therefore, we cannot exclude self-selection effects in parents' answers. Of course, we can also not exclude the possibility that parents talked to their children about the responses to the survey. This means we may *underestimate* the differences in preferences between children and parents (making it difficult to support Hypothesis 3 and *overestimate* the correlation between their preferences (making it difficult to reject Hypothesis 4).

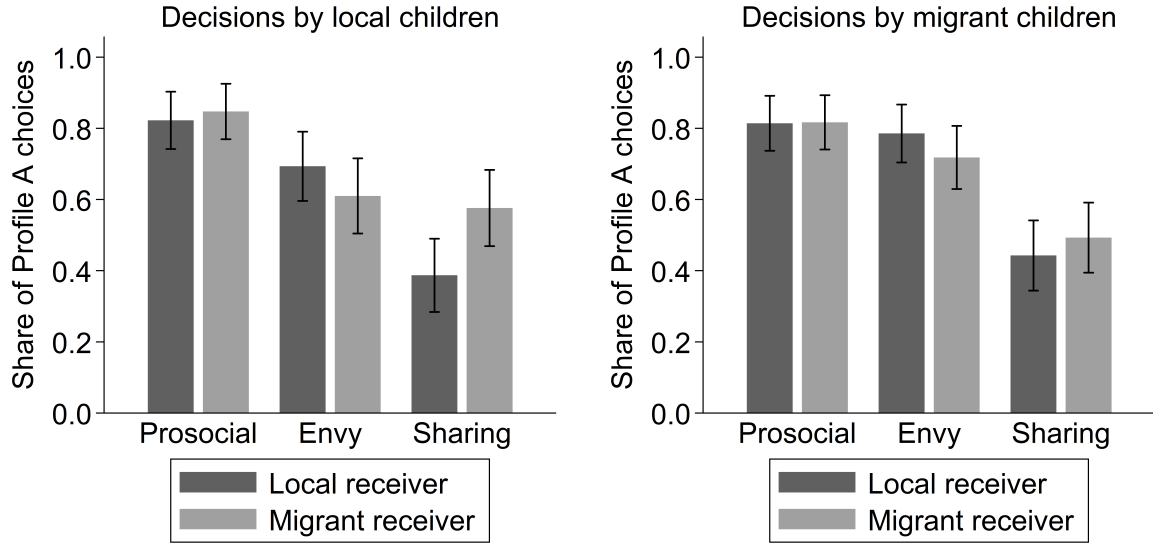


Figure 1: Average decisions by children (90% confidence intervals)

samples in our treatment variations. They take a dummy for the choice of Profile A in the respective task as the dependent variable. As independent variables, the regressions include dummies for the decisions made by children in middle school and high school (so that children in primary school form the baseline category). The regressions also include controls for gender, math grade and the order in which the tasks were presented. The main independent variable of interest for the regressions in columns (1), (3) and (5), however, is a dummy variable for facing a migrant receiver. The respective coefficient only reveals significant discrimination in favor of migrants by local children in the sharing task ($p = 0.049$, two-sided Wald test). Confirming the results above, none of the other regressions shows a significant difference ($p > 0.199$).

Together, we find that locals are more likely to share with migrants than with other locals. Contrary to previous results found using Western samples (Fehr et al., 2013; Bindra et al., 2020; Cobo-Reyes et al., 2020), there is no evidence to support the hypothesis of out-group bias based on the Chi-square tests and logit regressions.

Result 1. (OUT-GROUP BIAS) *Contrary to Hypothesis 1, there is no evidence for an out-group bias. Instead, local children make more sharing decisions when interacting with their out-group compared to their in-group.*

As we do not observe any negative discrimination on aggregate, we now turn to the school-specific analysis. Note that evidence of out-group bias may be masked by our aggregation across schools when considering discrimination in the regressions of columns (1), (3) and (5).

Table 3: Decisions by local children

	(1)	(2)	(3)	(4)	(5)	(6)
	Prosocial	Prosocial	Envy	Envy	Sharing	Sharing
Migrant receiver	0.107 (0.489)	0.355 (0.714)	-0.324 (0.402)	-0.780 (0.741)	0.756** (0.384)	1.252** (0.627)
Middle school	-0.244 (0.664)	-0.397 (0.757)	-0.458 (0.500)	-0.941 (0.718)	-0.403 (0.490)	0.127 (0.642)
High school	0.668 (0.768)	-0.220 (0.942)	-0.359 (0.500)	-0.579 (0.749)	-0.872* (0.503)	-0.711 (0.719)
Migrant receiver × middle school		0.532 (1.231)		0.904 (0.987)		-1.129 (0.890)
Migrant receiver × high school		-		0.367 (1.018)		-0.368 (0.982)
Constant	1.212* (0.668)	1.016 (0.633)	1.455*** (0.534)	1.700** (0.670)	-0.466 (0.483)	-0.686 (0.566)
N	121	104	121	121	121	121
Pseudo R-squared	0.078	0.067	0.060	0.066	0.054	0.064

Dependent variable: Choice of Profile A in the respective task. For all 17 migrant receivers in high school, the prosocial choice was made. Includes controls for gender, math grade and order of tasks (not shown). Robust standard errors are given in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Decisions by migrant children

	(1)	(2)	(3)	(4)	(5)	(6)
	Prosocial	Prosocial	Envy	Envy	Sharing	Sharing
Migrant receiver	-0.016 (0.453)	0.391 (0.626)	-0.569 (0.444)	-1.647 (1.099)	0.191 (0.347)	0.353 (0.586)
Middle school	0.463 (0.520)	0.753 (0.792)	-1.371** (0.629)	-2.152* (1.117)	-0.060 (0.454)	-0.053 (0.635)
High school	0.741 (0.631)	1.265 (0.912)	-1.325* (0.724)	-2.260** (1.135)	-0.333 (0.476)	-0.105 (0.632)
Migrant receiver × middle school		-0.599 (1.080)		1.171 (1.324)		-0.025 (0.852)
Migrant receiver × high school		-1.050 (1.178)		1.490 (1.304)		-0.480 (0.839)
Constant	0.701 (0.644)	0.510 (0.638)	2.259*** (0.650)	2.996*** (0.967)	-0.894* (0.472)	-0.971* (0.536)
N	141	141	141	141	141	141
Pseudo R-squared	0.067	0.074	0.208	0.216	0.028	0.030

Dependent variable: Choice of Profile A in the respective task. Includes controls for gender, math grade and order of tasks (not shown). Robust standard errors are given in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Our second hypothesis suggests that prolonged integrated schooling should lead to less negative discrimination against the out-group, as suggested by Allport's contact hypothesis (Allport, 1954). Obviously, the school level can only serve as a proxy for the duration of integrated schooling a child has experienced. Children within a school differ in their age and children may have changed schools before entering the schools we sample from. Unfortunately, we do not have data on when children entered their respective schools or on when they migrated but we know their grade and age. Nevertheless, we opt to compare decisions between different schools to increase the statistical power of our analyses.

For locals, chi-square tests reveal that local children in primary school are significantly more likely to share with migrants than with other locals ($p = 0.028$). The test results for all other comparisons are insignificant ($p > 0.153$) with the exception of local children in high school. They are weakly significantly less likely to behave prosocially towards migrants ($p = 0.070$). For migrant decision-makers, no significant differences are found ($p > 0.155$).

In our regressions presented in Table 3 and Table 4, we condition on the school type by including interaction terms between facing a migrant receiver and the school type. The respective results are shown in columns (2), (4) and (6) of both tables. The baseline category in this case is formed by primary school children facing a local receiver.

The results in Table 3 show that local primary school children make more sharing decisions when faced with a migrant receiver, as indicated by the significant coefficient on the respective dummy variable ($p = 0.046$, two-sided Wald test). We also find that the coefficients of the two interaction terms are negative but insignificant ($p > 0.203$). Thus, the discrimination of locals in favor of migrants in middle and high school does not differ significantly from that in primary school. Nevertheless, overall positive discrimination in the sharing task is driven by those in primary school: The joint tests of the school dummy and the respective interaction term do not show significant discrimination in middle school or high school ($p > 0.244$). Furthermore, we do not observe significant differences for the prosocial or envy task ($p > 0.291$).

For migrant decision makers, the results in Table 4 do not reveal evidence of discrimination as none of the relevant coefficients is significantly different from zero ($p > 0.132$). However, we observe that migrants in middle school and high school make fewer envious decisions than those in primary school. This difference is found in the specification without interaction term in column (3) ($p < 0.068$) and with interaction term in column (4) ($p < 0.055$).

Overall, we also do not find any out-group bias when taking into account the different school levels. But the analysis reveals that the positive discrimination of migrants found above is driven by local primary school children. This could also be interpreted as an effect of longer integrated schooling in middle and high schools in favor of the contact hypothesis.

Result 2. (CONTACT CHILDREN) *Contrary to Hypothesis 2, there is no evidence for diminishing outgroup bias. However, positive discrimination of the out-group diminishes as it is driven by local children in primary school.*

4.2 Children and parents

We now also consider the decisions made by the parents in the questionnaire. That means, we also analyze the data from 66 local and 83 migrant parents.⁷ Figure 2 shows the share of 'Profile A' choices in the three tasks. The pattern of decisions resembles that of the children: The majority of choices across groups and treatments are prosocial and envious. Only around half of the decisions are sharing decisions, and local parents appear to share much less with fellow locals than with migrants. Importantly, there does not appear to be any out-group bias in their decisions.

Our Hypothesis 3 suggests that we should observe a stronger out-group bias among parents as they are likely to have less contact with the respective out-group. However, Chi-square tests confirm the pattern apparent in Figure 2. Local parents share significantly more often when facing a migrant receiver ($p = 0.033$) while all the other comparisons reveal no evidence for discrimination, neither in favor nor against the out-group ($p > 0.303$).

For our regression analyses shown in Table 5 and Table 6, we merge the data sets of children's and parents' decisions. Because we have at most two observations per household, we do not use a panel model but include both as individual observations while clustering standard errors on the household level. As before, we use the choice of Profile A as our dependent variable and we include the same control variables. In columns (1), (3) and (5) of both tables we include a parent dummy indicating choices made by parents. Additionally, we interact this dummy with a treatment dummy for facing a migrant receiver in columns (2), (4) and (6) of both tables.⁸

⁷We also include the 8 questionnaires that were not filled out by the mother or the father, assuming that they were filled out by another close relative. Excluding these observations does not alter our main findings.

⁸Note that these analyses compare the decisions of *all* children to those of parents who returned their questionnaire in order to leverage the largest potential data set. Regressions that only include the children of the respective parents produce mostly similar results.

For locals, the logit regressions in [Table 5](#) confirm the finding of positive discrimination of migrant receivers by children and parents in the sharing task. This is shown by the significantly positive coefficients for the dummies indicating migrant receivers in columns (5) and (6) ($p < 0.044$, two-sided Wald tests). They also reveal that local parents are less likely to make prosocial decisions than children and more likely to make envious decisions. This is shown by the significant coefficient of the dummy for parents' decisions in columns (1) to (4) ($p < 0.035$). For the sharing task shown in columns (5) and (6), the respective coefficients are insignificant ($p > 0.149$). Most importantly with respect to Hypothesis 3, the coefficients on the interaction terms in columns (2), (4) and (6) allow us to test whether parents exhibit a stronger out-group bias. However, none of the three coefficients in [Table 5](#) turns out to be significant ($p > 0.364$).

For migrants, the regression results in [Table 6](#) reveal neither evidence for discrimination against the out-group nor in favor of the out-group. The coefficients on the migrant receiver dummy are insignificant across tasks and specifications ($p > 0.168$). The decisions of migrant parents only differ from those of migrant children in the envy game. In the specification without interaction term in column (3), the coefficient of the parent dummy indicates significantly more envious decisions ($p = 0.022$). This coefficient is insignificant when including the interaction term in column (4), conditioning on the migrant receiver ($p = 0.141$). It is also insignificant in the remaining regression models of [Table 6](#) ($p > 0.182$). Interestingly, the analysis of the joint sample confirms the finding of less envious decisions in middle school and high school observed for migrant children in [Table 4](#). The coefficients for the school dummy variables are negative and significantly different from zero in the two specifications in columns (3) and (4), analyzing the envy game ($p < 0.042$). Does discrimination by parents differ from that of children? Also for migrants, we find no such evidence, as suggested by Hypothesis 3. The coefficients on the interaction terms for facing a migrant receiver and being a parent in columns (2), (4) and (6) are insignificant ($p > 0.277$).

To sum up, our findings do not support Hypothesis 3, as we observe no differences in out-group bias between children and parents. Nevertheless, the decisions of children and parents differ. In particular, local and migrant parents make more envious decisions. We summarize these as our main findings.

Result 3. (CONTACT PARENTS) *Contrary to Hypothesis 3, there is no evidence for a stronger out-group bias among parents. However, parents make more envious choices than children.*

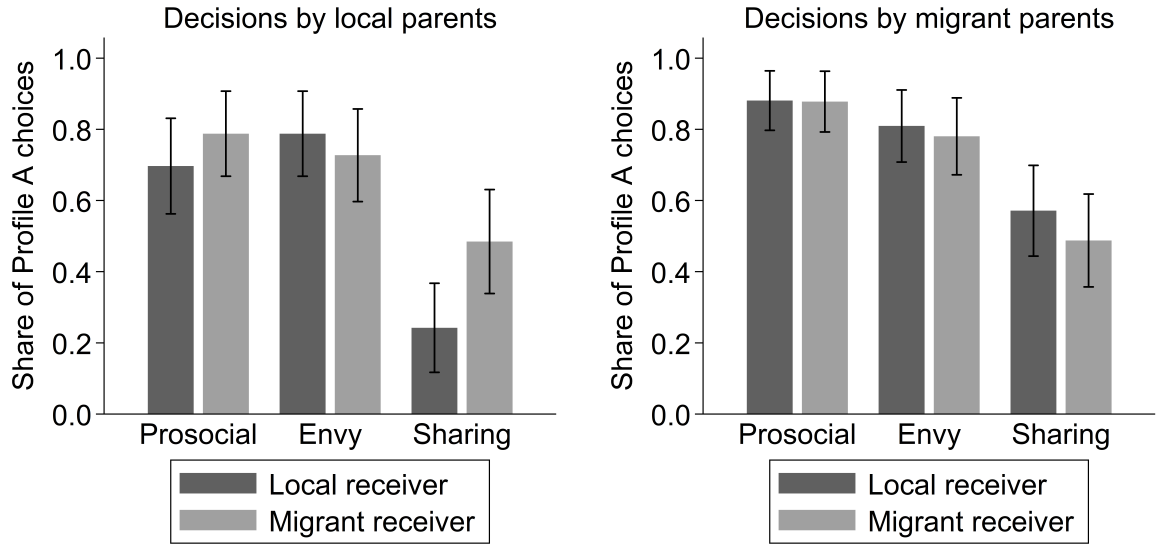


Figure 2: Average decisions by parents (90% confidence intervals)

Table 5: Decisions by local children and parents

	(1) Prosocial	(2) Prosocial	(3) Envy	(4) Envy	(5) Sharing	(6) Sharing
Migrant receiver	0.369 (0.429)	0.105 (0.496)	-0.345 (0.348)	-0.292 (0.416)	0.916*** (0.343)	0.773** (0.383)
Parent	-0.954*** (0.370)	-1.229*** (0.469)	0.817** (0.356)	0.905** (0.428)	-0.380 (0.298)	-0.613 (0.427)
Migrant receiver × parent		0.603 (0.666)		-0.167 (0.665)		0.429 (0.573)
Middle school	-0.125 (0.665)	-0.132 (0.663)	-0.392 (0.495)	-0.387 (0.496)	-0.305 (0.461)	-0.307 (0.458)
High school	0.349 (0.620)	0.348 (0.617)	-0.235 (0.485)	-0.232 (0.485)	-0.810 (0.497)	-0.813 (0.495)
Constant	1.302** (0.609)	1.418** (0.628)	1.721*** (0.541)	1.694*** (0.542)	-0.311 (0.450)	-0.248 (0.447)
N	188	188	188	188	188	188
Pseudo R-squared	0.080	0.083	0.082	0.083	0.065	0.067

Dependent variable: Choice of Profile A in the respective task. Includes choices by all children and parents. Includes controls with respect to the child for gender, math grade and order of tasks (not shown). Standard errors are given in parentheses and are clustered on the household level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6: Decisions by migrant children and parents

	(1)	(2)	(3)	(4)	(5)	(6)
	Prosocial	Prosocial	Envy	Envy	Sharing	Sharing
Migrant receiver	-0.056 (0.403)	-0.024 (0.450)	-0.556 (0.420)	-0.637 (0.463)	-0.021 (0.289)	0.195 (0.348)
Parent	0.082 (0.415)	0.135 (0.511)	0.676** (0.295)	0.556 (0.377)	0.210 (0.289)	0.498 (0.374)
Migrant receiver \times parent		-0.106 (0.770)		0.222 (0.588)		-0.584 (0.537)
Middle school	0.603 (0.502)	0.601 (0.502)	-1.363** (0.638)	-1.365** (0.639)	-0.000 (0.427)	-0.009 (0.426)
High school	0.673 (0.578)	0.672 (0.578)	-1.467** (0.719)	-1.472** (0.721)	-0.420 (0.445)	-0.425 (0.444)
Constant	0.779 (0.566)	0.762 (0.592)	2.253*** (0.652)	2.302*** (0.655)	-0.831* (0.430)	-0.948** (0.448)
N	224	224	224	224	224	224
Pseudo R-squared	0.059	0.059	0.229	0.229	0.029	0.032

Dependent variable: Choice of Profile A in the respective task. Includes choices by all children and parents. Includes controls for gender, math grade and order of tasks of the child (not shown). Standard errors are given in parentheses and are clustered on the household level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 7: Cross-tabulation for local children and parents (N = 66)

Prosocial			
Children	Parents		
	0	1	Total
0	71%	29%	100%
1	20%	80%	100%
Total	26%	74%	100%
Envy			
Children	Parents		
	0	1	Total
0	33%	67%	100%
1	18%	82%	100%
Total	24%	76%	100%
Sharing			
Children	Parents		
	0	1	Total
0	78%	22%	100%
1	45%	55%	100%
Total	64%	36%	100%

Last but not least, we focus on Hypothesis 4. It suggests that we should observe a correlation between the decisions made by parents and their children due to the transmission of preferences. Instead of considering all children, we now only include the 66 local and 83 migrant children whose parents have returned a complete questionnaire.

Table 7 and Table 8 show the cross-tabulation of children’s and parents’ decisions. The values ‘0’ and ‘1’ indicate whether the parent or child chooses Profile A in the respective task (i.e. ‘1’ indicates choices that were prosocial, envious or sharing). The tables show the share of children whose parents choose Profile A in column ‘1’ or Profile B in column ‘0’. In the same way, the rows condition on the choice of the child. Thus, choices that coincide within a household are placed on the diagonal.

As shown in Table 7, for local households the majority of choices coincide in the prosocial and the sharing task. In the envy task, however, 67% of the children making non-envious choices have a parent who does the opposite. Accordingly, a Chi-square test rejects the independence of choices for the prosocial and sharing task ($p < 0.006$) but not for the envy task ($p = 0.152$). The respective Phi coefficients reveal moderate correlations of $\phi = 0.360$ for the prosocial task and $\phi = 0.346$ for the sharing task. With $\phi = 0.177$, the correlation in the envy task is weak.

For migrant households, Table 8 reveals that the majority of choices coincide in the envy task and the sharing task, but not in the prosocial task. However, the statistical results are more nuanced for migrants. Because most children make prosocial choices, in total they mostly coincide with their parents. Accordingly, a Chi-square test rejects independence with weak significance ($p = 0.063$). For the envy task, independence is rejected at all conventional significance levels ($p < 0.001$). For the sharing task, independence between the choices of children and parents can not be rejected ($p = 0.143$). The respective Phi coefficients reveal a similar pattern. The correlations of $\phi = 0.204$ for the prosocial task and of $\phi = 0.161$ for the sharing task are weak while the correlation of $\phi = 0.604$ is strong for the envy task.

Overall, we find evidence for the transmission of social preferences as previously reported in the literature (Cappelen et al., 2020; Falk et al., 2021; Kosse et al., 2020; Chowdhury et al., 2022). Transmission appears to differ between the two groups: We find moderate correlations for prosocial and sharing decisions by locals. For migrants, who are typically of lower socio-economic status, we find a strong correlation for envious decisions.

Table 8: Cross-tabulation for migrant children and parents (N = 83)

Prosocial			
Children	Parents		Total
	0	1	
0	30%	70%	100%
1	10%	90%	100%
Total	12%	88%	100%

Envy			
Children	Parents		Total
	0	1	
0	56%	44%	100%
1	4%	96%	100%
Total	20%	80%	100%

Sharing			
Children	Parents		Total
	0	1	
0	55%	45%	100%
1	38%	62%	100%
Total	47%	53%	100%

Result 4. (TRANSMISSION) *In line with Hypothesis 4, prosocial and sharing decisions are moderately correlated between local children and their parents. Envious decisions are strongly correlated between migrant children and their parents.*

5 Discussion of results

Several issues are important for interpreting our results. We sampled participants from three schools in the sub-provincial city of Xiamen. Based on discussions with local teachers, we aimed to pick schools that are representative of the approximately 300 primary, 60 middle and 35 high schools in the city. Unfortunately, due to limited data availability, we do not know whether the student body at these schools is representative of children in Xiamen or other urban areas. However, the household data we collected as part of our parent survey is largely in line with official statistics for mainland China. Also, because the experiments were carried out during normal class time, we can rule out self-selection by children within schools.

It may be surprising that we do not observe any negative discrimination of the respective out-group (Result 1). This result may be interpreted as a success of integrated schooling in accordance with the contact hypothesis (Allport, 1954). If primary school children have already

had sustained pleasant and productive contact with the out-group in grades 1 and 2, any prejudice towards the out-group may have disappeared by grade 3 (in which we start sampling). Of course, as we do not observe a control group of students without integrated schooling, we cannot determine any causal effect of integrated schooling on discrimination. However, the positive discrimination observed by locals appears to diminish after primary school (Result 2). This can also be interpreted in favor of the contact hypothesis.

We observe another age effect in our data, namely that migrant children make more envious decisions in primary school than in middle school and high school (see [Table 4](#)). A large literature studying the development of social preferences in children started with the introduction of the trio of dictator allocations tasks by [Fehr et al. \(2008\)](#) we use in this study (see [Sutter et al., 2019](#) and [Schunk and Zipperle, 2023](#) for recent surveys). Egalitarian preferences in the three allocation tasks are characterized by choosing the prosocial, envious and sharing options. Generous preferences differ in that they do include the non-envious choice instead. In line with our findings on envy, [Fehr et al. \(2013\)](#) find that with age egalitarian social preferences diminish and generous social preferences grow in our common age bracket. [Almås et al. \(2010\)](#) find that a Norwegian cohort between the ages of 10 and 18 has consistently high egalitarian social preferences, but the trend is towards a weaker form of this preference as sharing behavior decreases for older children. These findings are highly similar in an Austrian sample ([Sutter, 2007](#)).⁹

Interestingly, we do not find differences in out-group bias between children and parents, as may be expected based on the contact hypothesis. The original contact hypothesis focuses on a person's direct contact with the out-group. However, there may also be an indirect effect of increased interaction, which could explain our finding: Those who merely learn about others' contacts with the out-group may also be less biased. The so-called 'extended contact hypothesis' states that knowing about friendships between in-group and out-group members also shifts the attitudes in favor of the out-group ([Wright et al., 1997](#)). A meta-analysis by [Zhou et al. \(2019\)](#) finds a small-to-medium effect size and concludes that the positive influence of knowing about these friendships holds in various settings. [Nieuwenhuis and Shen \(2023\)](#) also find that parents' prejudice about how migrant students affect educational quality and the atmosphere at schools

⁹Note that the predominance of the literature exploring the development of social preferences samples from the United States and Europe. Two recent studies highlight comparative results for Chinese youth. [Zhang and Benozio \(2021\)](#) observe that seven-year-old Chinese children exhibit less envious behavior than found in studies of American children of the same age (just below the youngest participants in our samples). However, [Li et al. \(2022\)](#) find in their sub-sample of seven to twelve-year-old Chinese that they exhibit similar levels of envy as the same-age children in the West.

are reduced if their children have more migrant friends. These effects, however, only hold for parents who are involved in the school or who do not know the other parents. We could assume that parents in our data know about friendships between in-group and out-group members among their children and that these effects also hold for them. Then, based on the extended contact hypothesis, this knowledge may have shifted their attitudes in favor of the out-group.

It is also important to note that the dictator allocation tasks in our survey for parents were not incentivized. Thus, the larger share of envious choices among parents is especially surprising (Result 3). Already the classic study by [Forsythe et al. \(1994\)](#) has found sharing in the dictator game to be much more prevalent when decisions are not incentivized. Thus, in reality, these differences between children and parents are likely to be even greater. We may also be overestimating the similarity between children and parents because we did not determine who in the family has to complete the questionnaire. For example, children may be inclined to give the questionnaire to a parent who has similar preferences. In this case, we would also expect the differences in envious choices between children and the average parent to be larger in reality. However, also the discrimination against the out-group by parents could in fact be larger (Result 3). This would be evidence against the extended contact hypothesis ([Hewstone and Brown, 1986](#)). Another implication of this caveat would be that preference transmission is less pronounced (Result 4). However, it is important to note that our findings are in line with recent evidence, in particular with the results on preference transmission found in the non-Western sample by [Chowdhury et al. \(2022\)](#).

Our results can be compared with two recent experimental studies among Chinese youth that also reveal hukou identities to decision makers. [Luo et al. \(2019\)](#) study behavior in the ultimatum game of children in grades four to six. Participants were sampled from two primary schools located in a major city and a city suburb in Zhejiang Province. Like us, they vary whether decision-makers are informed about the hukou of the participant they are matched with (rural or urban in their case). They find that responders with a rural hukou expect higher offers from proposers with an urban hukou. [Luo and Wang \(2020\)](#) study behavior in the trust game in grades three to six. These participants were sampled from two primary schools in the same district of Hangzhou City (also located in Zhejiang Province). When revealing the hukou types of players (local or migrant), they find that as first-movers, children trust local responders more than migrants. Furthermore, as responders, they behave more trustworthy towards first-movers

from their in-group. The findings of both studies are in line with the high levels of envy we observe for migrants in primary schools. Due to this preference, they will expect to receive higher shares of the pie in the ultimatum game than locals and they may be perceived as less trustworthy in the trust game.

6 Conclusion

In this study, we explore the local-migrant conflict in modern China, investigating its potential resolution through inter-group contact and inter-generational transmission of preferences, with a focus on public schooling. We assess the in- and out-group biases of children in the eight to seventeen age bracket and of their parents. The participants were from Xiamen, a second-tier Chinese City. Our experimental treatments are the four possible dictator-receiver combinations of local and migrant hukou holders. This allows us to assess the in- and out-group biases of both, the higher-status locals and the lower-status migrants.

As previously noted, school integration facilitates inter-group contact and has long been a fertile ground to study whether the generated contact was successful in ameliorating group prejudices. Our study addresses the issue of local and migrant strife in urban China, a narrow context but one that is large in the size of impact to humanity. Surprisingly, our findings challenge prevailing assumptions, as we do not find evidence of discrimination by locals or migrants towards their respective out-groups. This absence of prejudice may indicate a shift towards more inclusive attitudes as integrated schooling fosters more positive inter-group interactions. We also find that locals, particularly in primary school, exhibit more sharing behavior towards the out-group. Furthermore, older migrant children make less envious decisions.

One may also ask whether the contacts between local and migrant students have an influence on the biases of their parents. In line with this idea, we also do not find any evidence for negative discrimination of the respective out-group by parents. We observe, however, differences in the preferences of children and parents more generally. Parents make more envious decisions than their children highlighting the potential for broader positive effects of schooling.

Beyond the hypotheses we have formulated, we can also contribute to the small but important literature on the transmission of social preferences, particularly group-conditional ones in the Chinese. The degree to which generations share preferences within a household is an important

channel by which the local migrant conflict can be resolved. We find that prosocial and sharing decisions are correlated within local households while envious decisions are correlated within migrant households.

Finally, our age range and non-WEIRD (Western, Educated, Industrialized, Rich and Democratic) country also allow for assessment of development patterns of preferences compared to other studies. With respect to the development of social preferences in the eight to seventeen age bracket, the stylized fact from WEIRD country samples is that egalitarianism has already emerged at that age range. Part of the distribution then gives way to less envious and more efficient allocations. In our experiment, we find a similar pattern of envy development as found in WEIRD samples. We contribute evidence that this pattern of social preference development is more universal than thought.

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A Primary school decision booklet (translated from Mandarin)

Task 1: Please choose <u>one</u> option		Task 2: Please choose <u>one</u> option		Task 3: Please choose <u>one</u> option	
You will be matched with someone from a different class in your school.		You will be matched with someone from a different class in your school.		You will be matched with someone from a different class in your school.	
This person has a <u>local hukou</u> .		This person has a <u>local hukou</u> .		This person has a <u>local hukou</u> .	
Reward	Option	Reward	Option	Reward	Option
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">Your payoff: 20 Other's payoff: 20</div>	1: <input type="checkbox"/>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">Your payoff: 20 Other's payoff: 20</div>	1: <input type="checkbox"/>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">Your payoff: 20 Other's payoff: 20</div>	1: <input type="checkbox"/>
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">Your payoff: 20 Other's payoff: 0</div>	2: <input type="checkbox"/>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">Your payoff: 20 Other's payoff: 40</div>	2: <input type="checkbox"/>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">Your payoff: 40 Other's payoff: 0</div>	2: <input type="checkbox"/>

Figure A1: Booklet with local receiver

Task 1: Please choose <u>one</u> option		Task 2: Please choose <u>one</u> option		Task 3: Please choose <u>one</u> option	
You will be matched with someone from a different class in your school.		You will be matched with someone from a different class in your school.		You will be matched with someone from a different class in your school.	
This person has a <u>non-local hukou</u> .		This person has a <u>non-local hukou</u> .		This person has a <u>non-local hukou</u> .	
Reward	Option	Reward	Option	Reward	Option
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">Your payoff: 20 Other's payoff: 20</div>	1: <input type="checkbox"/>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">Your payoff: 20 Other's payoff: 20</div>	1: <input type="checkbox"/>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">Your payoff: 20 Other's payoff: 20</div>	1: <input type="checkbox"/>
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">Your payoff: 20 Other's payoff: 0</div>	2: <input type="checkbox"/>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">Your payoff: 20 Other's payoff: 40</div>	2: <input type="checkbox"/>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">Your payoff: 40 Other's payoff: 0</div>	2: <input type="checkbox"/>

Figure A2: Booklet with migrant receiver

B Experimental Protocol (translated from Chinese)

Materials

- Participant lists with seat numbers, sender's hukou status and receiver's hukou status
- Booklets (normal and reverse)
- One bingo cage with 9 balls numbered 1 to 9
- Big envelopes for the questionnaire("To the parents - Please answer before [date two schools days after the experiment]; Student name: -----; Student ID: -----)
- One receipt per class
- Pens
- Session sheet to note the selected task, duration, special occurrences etc. in each session.
- Money for subject payments

Experiment

PREPARATION

- Create a random matching scheme based on the student lists.

- There are eight booklet types (player's hukou type * coplayer's hukou type * booklet type).
- Lead experimenter and assistants fills the envelopes with questionnaires for parents and place them at each desk.
- Lead experimenter and assistants place a pen and the two workbooks at each desk.
- Lead experimenter fills in session parameters (school, grade, date) into the session sheet
- Lead experimenter assigns a group of seats to each assistant. Each assistant is responsible for the subjects in their group.
- Teachers brings students to the lab, lead experimenter notes arrival time on session sheet
- Lead experimenter counts the participants and notes on session sheet

INTRODUCTION

Once everyone takes a seat, the lead experimenter explains the experiment:

Hello and welcome!

Thank you for participating in today's experiment. Today you are taking part in an experiment in which you will be able to earn money. How much money you will earn depends on your decisions. We will tell you in a moment what the experiment is about. First of all, there are two important rules:

1. If you do not understand something raise your hand.
2. Do no talk with other students.

If don't follow these rule you will be excluded from this experiment, and earn no money. This also means: do not use your phone. If you have one with you, please turn it off now and put it away.

In front of you there is a workbook, one envelope and a pen. Please write your name and student ID on the envelope. Now also check your seat number on the workbook and write your name on the workbook. Then leave these three things on your desk in front of you. If you need help with this, just raise your hand and one of my assistants will come to help you.

Now let's return to the experiment. Today's experiment will consist of two parts: experiments and payoff. In the first part you will complete 3 decision tasks. In each of these tasks you will choose one from a pair of profiles, each profile determines the real rewards and the co-player's rewards who are from the same school and grade. All profiles are real Chinese dollars. After we select the task, then an assistant will visit each of you individually to determine your individual prize and pay you. We will choose one of these 3 tasks from part one by spinning this bingo cage containing balls numbered 1 through 9 [spin the cage while saying this]. Your teacher will help me do this. Then selecting one of the balls at random [stop and catch one ball at random, now state the number of the ball] like this. If the ball numbered 1 through 3, our selected task is task 1; if the ball numbered 4 through 6, the selected task is task 2; if the ball numbered 7 through 9, the selected task is task 3. The number of the selected ball 1 and 2 will be the number of the task 1. After we select the task, then an assistant will visit each of you individually to determine your individual prize and pay you.

- lead experimenter explain:

Before we start part one, let me explain how you will earn money during this study. We will pay you a RMB prize that is based on your selection of different balls. For each of the tasks

in the workbooks in front of you, you will see how much any ball is worth from the numbers on them.

Before we start part one, do not forget to keep quiet and to raise your hand whenever you have a question. Also, we will hand around a list during the experiment. On this list we will need the name and signature of everyone participating. Only if we have your signature, we can pay you in the end. [Hold up the receipt and show it to the subjects.]

PART1

- lead experimenter explains the task of part one:

Now, let's start part one. Please take out the workbook with the label 'Part 1.' Do not start completing task sheets inside until we finish explaining the task, and we give you the order to start. In this part, each page in the workbook has a single decision task. There will be a choice of two profiles. Please select the one you would like to draw a profile from if this task is selected in the end. To do this, you mark the profile you prefer with a check. You must choose one of the two bags. Suppose this task had been selected to determine your prize. For each of you, you will match with other player based on you hukou status. We will not give your information to the other player, and you will not get the other player's information. But the other player will get a card with your selected profile, which card contains your hukou status. Open your workbook to the first page with "QUIZ" written at the top to see an example. Please answer the two questions at the bottom of this page, and raise your hand when you are done. An assistant will come and check your answers. Also, you can raise your hand if you have a question and the assistant will come to answer your question. When everyone is done with the quiz, we will start part one.

- Lead experimenter checks with the assistants that all subjects have gotten through the quiz correctly. If somebody did not answer correctly ask them to explain their answer. Listen, and then clarify any misunderstandings. Note the student ID of any subject did not understand the task even after explanation on the session sheet.

We are now ready to complete the decision tasks in the workbook, this should take you no more than 10 minutes. When you are done, or if you have a question, raise your hand, and your assistant will come to check your work or answer your question. Once everyone is done is we will move to part two. Now complete your decision tasks in workbook 1.

PART2

- Lead experimenter determines the payoff:

As I explained, in the beginning, we will select one of the tasks you just did by selecting a ball from this bingo cage with the help of your teacher. Please stay at your seat while I select a ball. [Let the teacher select a Ball, announce the number on it, and hold it up] The selected task is _____. Please open workbook _____ to the task _____page. Please remain seated as the assistants will come up to you one at a time, to determine your pay-offs, pay them to you, and collect your workbooks. Please be patient, remain quiet, and do not discuss your prize amount with others during this activity as you will take turns getting visited by the assistant.

- Assistants write the determined payment on the respective pages of the workbook and pay the subjects accordingly.
- Assistants check that each student wrote his or her student ID correctly on the two workbooks and on the envelope.
- Assistants collect the workbook. Then they ask the students to leave the envelope open and to give it to his or her parents after school.

- Lead experimenter looks for the receipt list and compare the number of signatures to the number of students. Note number of signatures on the session sheet.

[If there is one or more signatures missing:] *Please raise your hand if you have not signed the receipt yet.* [Then pass the receipt to the respective participants and collect their signatures.]

You all have an envelope in front of you. It is very important that you look carefully after this envelope and hand it to your parents after school! Just like you, your parents can earn some money if they receive the envelope from you today. Inside the envelope is a questionnaire they have to fill it out by [DATE] The finished questionnaire should be put back into the envelope and returned to your teacher.

The experiment is now over. Thank you for participating!

- Note the time the class left on the session sheet
- Count the workbooks and note the numbers on the session sheet
- Copy the payoff amounts from the workbooks to the receipt

C Excerpt from parent questionnaire (translated from Chinese)

What is your relationship to the child?

Mother Father Other

How old are you?

---- Years

How many people live in your household?

---- People

How many people in your household have a high school degree or higher?

None One Two or more

How many people in your household have a university degree or higher?

None One Two or more

How many houses or apartments do the members of your household own altogether?

None One Two or more

Please think about this year. How much income do the members of your household earn altogether per month from working or from asset returns (before taxes and other deductions)?

----RMB per month

Task

In each of the three tasks below imagine that you can choose between two distributions of money that you and another person receive. Imagine that this other person has a local (non-local) hukou. This person is anonymous to you and will not learn about your identity. Please select the profile that you would prefer in each task.

Task 1: Please choose <u>one</u> option	Task 2: Please choose <u>one</u> option	Task 3: Please choose <u>one</u> option																		
This person has a <u>local hukou</u> .	This person has a <u>local hukou</u> .	This person has a <u>local hukou</u> .																		
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<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Your payoff: 2000 Other's payoff: 0 </div>	2: <input type="checkbox"/>																			

Figure C3: Booklet with local receiver

Task 1: Please choose <u>one</u> option	Task 2: Please choose <u>one</u> option	Task 3: Please choose <u>one</u> option																		
This person has a <u>non-local hukou</u> .	This person has a <u>non-local hukou</u> .	This person has a <u>non-local hukou</u> .																		
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Figure C4: Booklet with migrant receiver