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Ethnic Identity and Discrimination among Children

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Abstract

Social identity theory is garnering increasing attention in economics. A number of experimental studies that compare economic behavior across neutral conditions and conditions where identity is made more salient, either by inducing artificial identities or priming natural identities, have shown that social identity can have important effects. The salience of social identities in natural (non-experimental) environments is an important and understudied question. We engaged almost 400 children aged five through nine years in a series of activities that draw from both social psychology and experimental economics, and are designed to reveal patterns of ethnic stereotyping, self-identification and discrimination with respect to three ethnically phenotypic categories (White, East Asian, and South Asian). We find that children from the dominant White group have the most favourable evaluations of and identify most strongly with the White ethnic category. Minority Chinese children tend to associate themselves with the dominant White category as well as with East Asians. These social identities are expressed in children's allocations in the dictator game – White children show clear pro-White bias, but Chinese children do not discriminate.

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1 Introduction

The concept of identity has received a great deal of attention from social scientists since the development of social identity theory by psychologists Tajfel and Turner (1979; 1986). Social identity theory posits that individuals place themselves and others in categories, identify themselves with certain categories and make comparisons across categories. This theory provides a conceptual framework for understanding intergroup relations and, particularly, the tendency for individuals to favour members of “in-groups” with whom they identify, and has spawned a large literature in social psychology (see Chen and Li, 2009 for a recent summary). Serious interest in social identity among economists began with Akerlof and Kranton (2000), and has since been applied to a diverse set of issues (e.g. Akerlof and Kranton, 2002, 2005; Bodenhorn and Ruebeck, 2003). Related theoretical models include Benabou and Tirole (2006). A growing number of studies document the economic consequences of social identities associated with race and ethnicity (e.g. Battu et al., 2007; Battu and Zenou, 2010; Manning and Sanchari, 2010; Casey and Dustmann, 2010).

Empirical support for social identity theory comes primarily in the form of experiments in which behavior is compared across neutral conditions and conditions where identity is made more salient, either by inducing artificial identities in the “minimal group paradigm” (Tajfel and Turner, 1986) or by priming natural identities. Examples of minimal group studies involving economic games include Chen and Li (2009), who find greater charity towards and less envy of in-group members, a stronger tendency to forgive and weaker tendency to punish bad intentions of in-group members, and a greater likelihood of choosing social-welfare-maximizing actions when participants are matched with an in-group member. Gummerum et al. (2009) find similar behavior among sixth-grade children, but find no evidence that second-grade children behave more altruistically towards artificially-induced in-groups. The experimental control afforded by priming natural identities has also proven useful - researchers have demonstrated the influence of primed social identities on intergroup attitudes and behavior in the context of a variety of experiments (e.g. Shih et al., 1999; Benjamin, Choi and Strickland, 2009; Benjamin, Choi and Fisher, 2010; and many studies in social psychology).

Understanding the role that social identity may play in “real world” behaviour, however, requires a different approach. Several studies find in-group bias in the context of real, unprimed social groupings, including college fraternities (Kollock, 1998), tribes in Papua New Guinea (Bernhard, Fehr and Fischbacher, 2006), Swiss Army platoons (Goette et al., 2006), schools (Fehr et al., 2008), and groups defined by a variety of personal characteristics (Ben-Ner et al., 2009). Racial and ethnic bias has also been found in dictator games among South African subjects (Burns, 2009), but not among Israeli subjects (Dremen and Greenbaum, 1973; Fershtman and Gneezy, 2001). Each of these studies tests a joint hypothesis: that the boundaries of in-groups and out-groups coincide with the measured categories (platoon, tribe, school, ethnic category), and that individuals behave differently towards in-group and out-group members. However, economic models of social identity emphasize the endogeneity of social groups (Akerlof and Kranton, 2002; Bodenhorn and Ruebeck, 2003). Greater insight into the relationship between social identity and behavior in natural environments can be gained by separately testing each component of this joint hypothesis. Doing so requires that researchers measure subjects’ identities, rather than assuming that they coincide with predetermined categories. Fong and Luttmer (2009), for example, find that measured identification with one’s own racial group, rather than race *per se*, is a key determinant of discrimination by blacks and whites in charitable giving.

We explore the relationship between ethnic categories, identity and altruism among young children. The formation and effects of ethnic identity among immigrant children and youth is an issue of growing concern in some multi-ethnic societies (Casey and Dustmann, 2009), along with ongoing concern about discrimination against immigrants and members of visible minorities (e.g. Carlsson and Rooth 2007; Oreopoulos 2009). Our research subjects consist of over 400 children aged five to nine years who attend school in Vancouver, Canada, an extremely diverse multicultural setting in which Whites form the dominant group. Our sample is divided roughly evenly between White and Chinese students. We engaged our research subjects in a series of activities that draw from both social psychology and experimental economics that measure (rather than manipulate) the ethnic categories that participants self-identify with, and measure their tendency to discriminate between these self-defined ethnic in-groups and out-groups. These activities were conducted as a series of games during the regular school day in children’s

normal school environment, allowing us to gauge the salience of ethnicity to their identity, attitudes and behavior in an important natural setting.

We measure the strength of children's self-identification with three ethnically phenotypic categories (White, East Asian, and South Asian) by eliciting their "perceived similarity to self" in response to photographs of children from these categories. We find that White subjects, who share phenotypic characteristics with the photos of children in the White category, have a stronger tendency to self-identify with Whites than with East or South Asians. However, in spite of phenotypic similarity to the photos of East Asian children, Chinese subjects self-identify equally with the White category and the East Asian category, and less so with the South Asian category. We use a similar photo selection strategy to measure children's evaluations of each of these ethnic categories with respect to sociability and competence, and find that our subjects have strong stereotypic evaluations of the three ethnic categories that reveal a clear ranking among them from Whites (highest) to South Asians (lowest). In this context, the self-identification of Chinese students with both White and East Asian categories is consistent with Akerlof and Kranton's (2000) hypothesis that individuals will enhance their social identities by assigning themselves to higher status categories when they are able to.

Social identity theory predicts that children will favour members of their in-group. We measure discrimination and in-group bias in a dictator game in which proposers make offers to three hypothetical others, represented by photos of children from each of the three ethnic categories. As predicted, we find that White participants do indeed share more with the White target photo than with either of the two self-defined out-groups. Moreover, we find that Chinese children share equally with the two ethnic groups that they identify equally with (Whites and East Asians). However, we also find that Chinese children share equally with the South Asian targets, in spite of their weaker identification with that category. In other words, we see no evidence that Chinese children discriminate in any way among the three groups.

2 Experimental procedures

Our research subjects are primary school children in the Vancouver School District in British Columbia, Canada. Teams of 3 to 4 researchers were formed to test the children in each

participating classroom. Each child was individually engaged in two sets of activities, which were introduced in random order as a series of games. The the “sorting task” was designed to elicit participants’ attitudes towards different ethnic groups, and the “sharing task” or dictator game was designed to assess ethnic discrimination in children’s altruistic behavior.

The Sorting Task

At the beginning of each session, the researcher took a digital photograph of the child, which was immediately printed. This photo was added to a testing pack consisting of four sets of three matched photos (that were not used in the dictator game), two for each gender.¹ All 13 photos (2 males and 2 females from each of the ethnic groups, plus the child’s own photograph) were shuffled and placed randomly in front of the child. The researcher asked the child to sort the 13 photographs using the following standard request format: “Pick all the children who are ___ and, leave all the children who are not ___ on the table.” The child was informed that she/he was free to pick all, some or none of the 13 photographs. The photographs were shuffled and were placed randomly in front of the child before each question. In order to make sure that the child understood the nature of the task, in the first two trials, the child was asked to pick the “girls” and the “boys”.²

The sorting task was used to assess children’s evaluations of others’ competency and sociability, and their perceived similarity to others. The sociability trials required children to pick those who are nice to other children, who are happy, who have lots of friends, and who are helpful. The competence trials require children to pick those who are smart, who work hard, who read well, and who like school. The extent to which children perceived the targets to be similar to themselves was assessed by asking them to pick those who “are like you.” For each trial, the total number of selected targets from each of the three ethnic groups ranges from 0 to 4.

¹ Approximately 350 head-and-shoulder photographs of 5-7 year old White, East Asian and South Asian children were pretested for clarity of the photograph, physical attractiveness, facial expression, gender, age, and ethnicity of the child. Nine adults from four different ethnic backgrounds rated the photographs on each of these dimensions on a 7-point Likert scale. First, only photographs that received unanimous agreement on ethnicity and gender of the child were retained. These photographs were then matched on the remaining criteria (age, physical attractiveness, facial expression, and the clarity of the photograph) to create sets of three same gender children one from each of the three ethnic groups.

² The procedure and materials for this task were adopted from Wright and Taylor (1995).

The Dictator Game

Each child was given an initial endowment of 12 stickers. They were then shown three photos simultaneously from a matched set of same-gender children (one child from each ethnic group), and asked if they wanted to keep all of their stickers or share them with any children who were “like the children in the photos.” This procedure was repeated three times, with slight variations across treatments in the degree of anonymity. Our set-up differs from the standard two-person dictator game in that subjects are confronted with an allocation decision between themselves and three others, rather than between themselves and one other. By allowing children to view the three target photos simultaneously, our intention is to increase the salience of phenotypic differences among them. At the same time, however, this approach may increase the salience of fairness.³

Supplemental data

After testing was complete, each classroom teacher was asked to complete an information sheet that included questions about each child’s characteristics, including their ethnicity, gender, home language, and English language proficiency, and to provide aggregate information about the overall composition of the classroom (including children who did not participate in the study). Finally, we collected subjects’ residential postal codes on the Parent Permission Form required for all participants, and linked these postal codes to 2001 Census information about the characteristics of the population residing in the same Dissemination Area (DA). DAs are geographic areas designated for the collection of Census data, and are composed of one or more neighboring blocks with a population of 400 to 700 persons.⁴

3 Sample characteristics

We restrict our attention to the research participants whose own ethnicity is represented among our target photos, that is, who are White, East Asian or South Asian. Of these, 214 participants

³ We engaged a smaller number of subjects in a “sequential” version of our procedure, in which children played a series of two-person games against the targets. This method produced very noisy responses. Details of this procedure and a comparison of the results across the “simultaneous” and “sequential” versions of the dictator game can be found in a companion paper.

⁴ Details of the linking of postal codes to DAs are provided in the Data Appendix.

are White and 174 are Chinese. Only 38 participants were South Asian; this number proved to be too small to yield any kind of precise estimates of the relationships of interest, and we do not report them.

The almost 400 White and Chinese children in our estimation sample are drawn from 28 different Vancouver public schools. Parents of 72% of children in participating classrooms gave consent for their child to take part in the study. With absences, the overall participation rate was 69%. The mean age of the White participants is 5.9 years and of the Chinese children is 6.0 years. The response rate among Chinese females was lower than other groups; as a result the proportion of Chinese participants who are female is only 42%, compared to 51.9% of White Europeans. Over 62% of Chinese participants were enrolled in “English as a Second Language” (ESL) programs, while only 4% of Whites were in ESL.

We were able to match non-missing postal codes to Census Dissemination Area data in 380 of 400 cases. Table 1 reports the average, for each of our target ethnic groups, of four DA-level variables: the proportion of household heads who immigrated to Canada in the previous five years, the proportion whose education level is high school completion or less, the proportion whose incomes are below the low-income cutoff defined by Statistics Canada, and mean family income from all sources. Among our participants, Whites on average are drawn from relatively high socioeconomic status neighborhoods, with the lowest immigrant density, the lowest poverty rate, the fewest household heads who had not gone beyond high school, and highest mean family income. Our Chinese participants are drawn from higher status neighborhoods than the South Asians in all respects; the differences between the neighborhood characteristics of East and South Asians is relatively small, however, compared to the difference between the neighborhood characteristics of Whites and the others.

4 Categories, evaluations and identity

4.1 Categories and group evaluations

According to social identity theory (Tajfel and Turner, 1979; 1986), individuals enhance their social identity by embracing a relatively positive evaluation of their own group compared to other groups. Research involving children from dominant majority groups has shown that from

the age of three, they evaluate their own gender and ethnic groups more positively, like them more and feel more similar to them (e.g. Aboud, 1988; Martin, Ruble, and Szkrybalo, 2002; Nesselrode et al., 2003). However, beginning with classic studies of children's preferences over dolls (Clark and Clark, 1939, 1947; Clark and Cook, 1988; Katz and Braly, 1933), researchers have found consistent evidence that minority children show favoritism towards the majority group (e.g. Corenblum and Annis, 1993; 1996; Aboud, 2003, 1987; Aboud and Doyle, 1995).

We begin by investigating whether the phenotypic categories represented by our target photos are salient to the children in our sample, and the consistency of children's evaluations of others with the predictions of social identity theory. We construct sociability and competence scales by averaging the number of photos chosen from each ethnic category in response to the four sociability items (nice, happy, has lots of friends, helpful) and the four competence items (smart, works hard, reads well, and likes school). We regress each of these measures on indicator variables corresponding to two of the ethnic categories. The subject's age and gender are included as controls. Since each participant contributes three observations to our estimation sample (one for each target ethnic category), we use a random effects estimator to account for individual heterogeneity. Standard errors are clustered at the school level.

The results in Table 2 show a clear hierarchical ordering of the three ethnic categories according to subjects' evaluations of their sociability and competence. In line with previous research, targets from the dominant White category receive the most positive evaluations - both White and Chinese participants chose the greatest number of White photos in response to questions about competence and sociability. Among the two minority categories, East Asians are clearly favoured over South Asians by both White and Chinese participants, in all assessed dimensions.

We also see evidence consistent with individuals enhancing their social identity by evaluating their own category relatively positively. In a study involving three ethnic groups, Alexandre et al. (2007) find that minority children favour members of the high-status majority groups, and attempt to distance themselves from members of other low-status minorities by evaluating their own group favourably relative to the other minority. While our Chinese subjects' assessments do not overturn the prevailing social ranking, the difference between their assessments of East

Asian and White photos is smaller, and the difference between their assessments of East Asian and South Asian photos larger, compared to the assessments of the White subjects.

4.2 Ethnic self-categorization

Economic theory emphasizes the endogeneity of the second component of social identity - the process of identifying with particular groups (Akerlof and Kranton, 2002; Bodenhorn and Ruebeck, 2003). If individuals define their in-group in order to create a positive social identity, minority children might expand their in-group to include the majority ethnic category. Majority children, on the other hand, might restrict their in-group to their own ethnic category.

Several recent studies use measures of social identity that are based on survey questions about respondents' affinity to particular groups. For example, Fong and Luttmer (2009) use survey responses to the question: "How close do you feel to your ethnic or racial group? Very close, close, not very close, not close at all." Casey and Dustmann (2010) define ethnic identity with respect to responses on a five point scale about how strongly "German" foreign-born individuals feel, and how strongly they feel connected to their country of origin. We take a different approach, and assess children's ethnic identities using their responses to the request to "pick all the photos that are like you." We measure an individual's perceived similarity to each ethnic category by counting the number of photos chosen in each case, ranging from 0 to 4. This approach allows children to associate themselves with multiple ethnic categories, and to indicate the strength of their identification by selecting more or fewer photos.

We pool these data across ethnic categories and estimate a regression model with our measure of perceived similarity as the dependent variable. Again we include age and gender as covariates, use a random effects estimator, and cluster standard errors at the school level. The results in Table 3 show that, on average, White male five-year-olds select 1.8 out of 4 (two male and two female) White photos as being "like them". They select about 38% fewer East Asian photos (-.69), and only half as many South Asian photos (-.92). Comparable Chinese participants chose 1.8 out of 4 East Asian photos as being like them and, about 30% fewer South Asian photos (-.50). However, Chinese participants choose only about 9% fewer White photos than East Asian photos (-.16), and this difference is not statistically significant.

These results are consistent with children placing themselves in ethnic categories in order to enhance their social identities. White subjects tend to exclude minority children from those they identify with, who they evaluate less favourably. This tendency is greatest with respect to the South Asian targets, the least favourably evaluated category. Chinese subjects are more likely to embrace an ethnic identity that includes the majority ethnic category, but excludes the lower status ethnic category. Like Fong and Luttmer's (2009) findings, these results suggest that ethnic identities may not coincide strictly with ethnic categories.

5 Categories, identity and altruism

5.1 Empirical framework

We next examine the relationship between ethnic categories, ethnic identity and altruism in a dictator game. In each trial t , children choose how to allocate an endowment of E stickers between themselves and three photos of different ethnicity children, indexed by $j=CA, EA, SA$ (Caucasian, East Asian and South Asian respectively). Suppose that subject i has preferences over this allocation that are represented by the following utility function:

$$U_i = U(q_{0t}, q_{CAt}, q_{EA t}, q_{SA t}, x_i; \theta) \quad (1)$$

where q_{0t} is the number of stickers kept by the subject for their own use in trial t , q_{jt} is the number of stickers allocated to target photo j in trial t , x_i is a vector of individual characteristics that influence preferences (including ethnic identity), and θ is a parameter vector. Subjects choose the allocation $\{q_{0t}, q_{CA t}, q_{EA t}, q_{SA t}\}$ to maximize this utility function, subject to the endowment constraint. The allocations that maximize this utility function can be written:

$$q_{ijt}^* = f_j(x_i; \theta)$$

$$q_{i0t}^* = E - (q_{iCA t}^* + q_{iEA t}^* + q_{iSA t}^*)$$

where E denotes the total endowment of stickers. We aggregate each subject's allocation to target j across all T trials to generate an overall allocation to each target ethnicity ($q_{ij} = \sum_{t=1}^T q_{ij,t}$).

We specify a linear model for each of these target ethnicity-level allocation decisions. In keeping with the above choice framework, these regression models depend on individual characteristics (x_i):

$$q_{ij} = x_i' \beta_j + \mu_{ij} \quad (2)$$

where β_j is a vector of parameters to be estimated and μ_{ij} is a stochastic error term. The vector of individual characteristics x_i includes age, gender and the individual's own ethnic category.

Each observation in our data set corresponds to a participant's allocation (over all trials) to one of the three ethnic categories. We pool these observations, and assume the following specification for the stochastic error term:

$$\mu_{ij} = \delta_i + \omega_s + \varepsilon_{ij}$$

Here δ_i is a random person effect, ω_s is a random school effect that captures any additional unmeasured correlation across subjects' allocation behavior in a given school, and ε_{ij} is an idiosyncratic error term.

We estimated equation (2) using a random effects model, accounting for clustering in the standard errors at the school level.

5.2 Results

Before turning to the issue of in-group bias, we investigate the general patterns of sharing in the data. Overall, participants shared on average 13.8 stickers or 38% of their endowment. This

result is similar to Gummerum et al.'s (2008) study of German children, who allocated on average between 35% and 40% of their endowment to anonymous others in a dictator game. As those authors note, these allocations are higher than both the 20% that is typically offered by adults (e.g. Camerer 2003), and the offers made by young children in two U.S. studies (Harbaugh et al. 2000; Bettinger and Slonim 2006).

The frequency distribution of the total number of stickers shared across all targets and trials, in Figure 1, shows pronounced spikes at multiples of three in the data. The modal response was 9 stickers, chosen by 14.0% of subjects. The second highest frequency was 18 stickers, chosen by 6.9% of subjects. These spikes are suggestive of non-discriminatory sharing, i.e. sharing the same number of stickers with each of the three targets. Overall, 50% of participants chose a non-discriminatory allocation (including 5.2% of subjects who shared zero stickers). White participants were substantially more likely (55%) than Chinese subjects (45%) to choose a non-discriminatory allocation. Non-discriminatory sharing may be chosen frequently because it provides a cognitively undemanding rule of thumb (Messick 1993), or it may reflect children's developing egalitarianism (Fehr et al., 2008).

To investigate the determinants and patterns of discriminatory sharing, we turn to our regression framework. We begin with our analysis of the sharing behavior of White children. The results in the first column of Table 4a correspond to our baseline specification, which includes only controls for age and gender. As found in previous studies (e.g. Harbaugh, et al. 2003; Benenson, et al. 2007; Bettinger and Slonim, 2006; Fehr et al., 2008), children share more as they grow older. Our results also confirm previous results that White girls are more generous than White boys when playing the dictator game (Harbaugh et al., 2003; Gummerum et al., 2009).

In the second specification, we add variables that indicate the ethnic phenotype of the target photo. As predicted by social identity theory, the results show that White subjects share more stickers with White targets than with East Asian or South Asian targets, and this difference is statistically significant. The numbers of stickers they share with East Asian and South Asian targets is very similar, and the difference between them is statistically insignificant. This result is consistent with Brewer's (1999) conclusion that in-group attachment is psychologically primary, and attitudes towards out-groups are not.

In the third column, we replace target ethnicity indicators with our measure of participants' perceived similarity to target ethnicities. Given our previous results that White children identify strongly with White targets, and share more with them, it is unsurprising that perceived similarity has explanatory power in this regression. The specification in column 4 includes both the target ethnicity variables and perceived similarity. This “within” estimator of the effect of perceived similarity shows that White children who identify more strongly with a particular target ethnicity, compared to other White children, also share more with that target ethnicity.

Table 4b presents our results for Chinese participants. Their behavior differs substantially from White children. Beginning with our baseline specification we find that, compared to White children, Chinese children show a more pronounced age effect, sharing substantially more as they get older. Unlike whites, we find no gender difference in sharing among Chinese children.

We also find that Chinese participants share *more* stickers with each of the other targets than with the East Asian target. These differences are very small, however, and not statistically significant either separately in specification 2 or when the two groups are pooled in specification 2a. The absence of any evidence of favoritism among Chinese participants towards the East Asian target is consistent with their lack of a strong ethnic identity as revealed by our perceived similarity measure. When we include perceived similarity in the regression model, either alone or alongside the target ethnicity indicators, the point estimates are positive but smaller in magnitude than in the case of White participants, and they are statistically insignificant.

5.3 Robustness checks

We next investigate the possibility of heterogeneous demand effects that vary with the ethnicity of the tester who administered the experimental procedures. Over 58% of students interacted with a White/European tester, 12% with an East Asian tester, 6% with a South Asian tester, and 25% with a Hispanic, Middle Eastern or mixed White/Korean tester. We are concerned that there may be interactions between the ethnicity of the tester and the ethnicity of the subject that could influence the pattern of our finding. To test this hypothesis, we include in our specification a variable indicating that the participant and the experimenter belonged to the same

ethnic group, and interact this variable with the own ethnic group dummy. The results, in the first column of Table 5, show that tester ethnicity effects are not important. Overall, subjects share more when the tester is from their own ethnic group, but show less own-group bias. Neither of these effects is statistically significant. More importantly, the inclusion of these variables does not affect the pattern of our results with respect to ethnic differences in in-group bias, although it does reduce the precision of our estimates.

Differences in socioeconomic status between White and Chinese participants are also a potentially confounding influence. We create a variable indicating whether a participant was in the bottom half of the distribution of same-ethnicity students according to neighborhood poverty rates. The specification reported in Table 6 allows the pattern of sharing across target ethnicities to differ for students living in neighborhoods in the top and bottom halves of this distribution. The results show that both White and Chinese participants in neighborhoods with lower poverty rates share more on average, although this difference is not statistically significant. There is no evidence that neighborhood poverty rates affect in-group bias among Whites. Among Chinese participants, children in higher income neighborhoods appear to favour the South Asian target in their sticker allocation.

6 Conclusion

To our knowledge, ours is the first study of the role of social identity in children's economic behavior that examines the role of ethnic identities. By directly measuring participants' attitudes towards other groups, their identification with those groups and their economic behavior, we are able to gauge the importance of ethnicity to children's social identities, shed light on some of the contextual factors shaping those identities, and determine whether they are reflected in discrimination towards other ethnic groups. By engaging children in the context of their own school during the regular school day, we believe that the attitudes and behavior we observe in our "games" are similar to those that prevail in this natural environment.

We find that, even at a young age, White children have a clear sense of White ethnic identity. However, our Chinese participants appear to have formed a more complex ethnic identity in response to their minority status. This identity is constructed so as to emphasize their similarity

to White children as well as other East Asians. These results show that ethnic identity can be multi-faceted; in particular, individuals do not always identify exclusively with the phenotypic category to which they belong.

As in previous research, we find that White participants, who are the dominant high-status group in this context, favour their own in-group in their evaluations of competence and sociability. We show further that this in-group favoritism extends to economically meaningful behavior; our White participants are also more altruistic towards White children than minority children. We also confirm previous studies that find minority children enhance their evaluations of their own category's competence and sociability relative to the other two groups. However, we find no evidence of in-group bias in the dictator game among Chinese children. Although we are dealing with different groups in a very different cultural context, our results from the dictator game echo those of Burns (2009), who finds that Whites in South Africa discriminate against Blacks in the dictator game, but Blacks do not discriminate between White and Black recipients.

The absence of any evidence of favouritism among Chinese participants towards the East Asian target could arise if ethnic categories do not play an important role in the social identity of the Chinese participants. This explanation is consistent with the weak differentiation between their self-categorization with respect to White and East Asian targets. However, it is not consistent with their clear differentiation between themselves and South Asian targets. Alternatively, Chinese children may not express their in-group bias if some other factor, such as a norm of fairness, dominates their expressed social preferences. Chinese children do not appear to be more altruistic overall, casting some doubt on this explanation.

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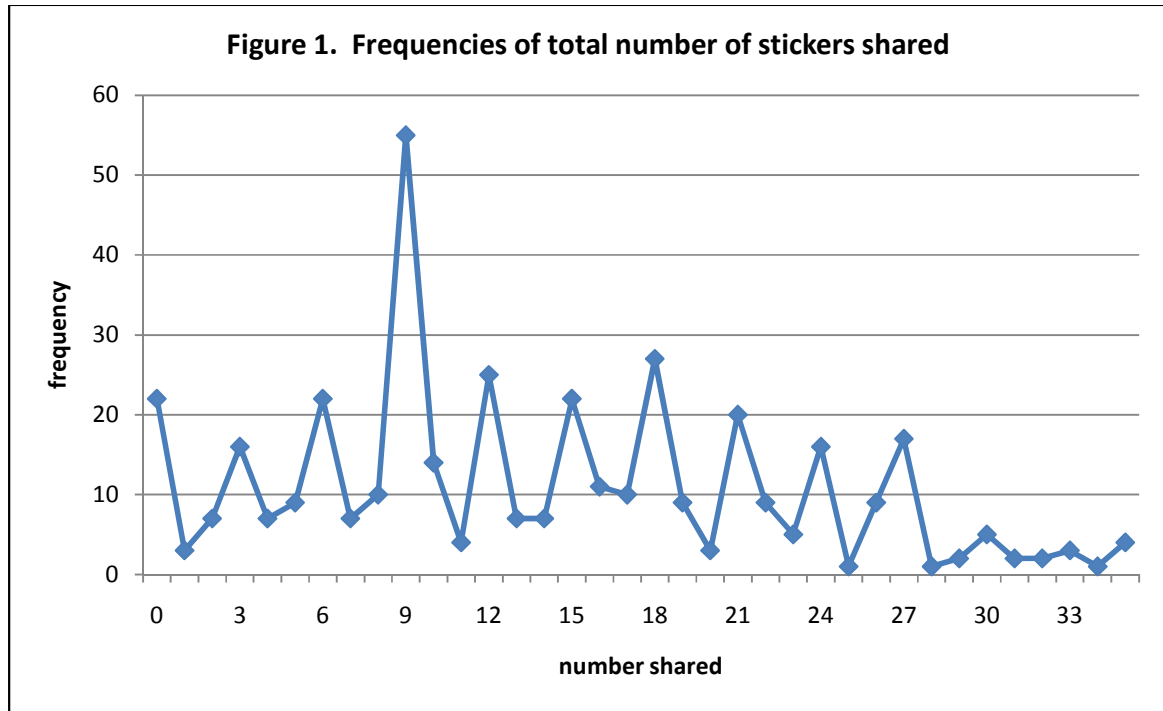
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Figures



Tables

Table 1. Census neighborhood characteristics, by ethnic phenotype of participant

	White	East Asian	South Asian	All
%immigrants	0.38	0.56	0.60	0.48
%poverty	15.21	23.11	23.31	19.27
%high school or less	0.24	0.38	0.42	0.31
mean family income	104742	77959	71495	90442
N	204	176	38	418

Table 2. Evaluations of sociability and competence of ethnic categories

	(1)	(2)	(1)	(2)
	Whites		Chinese	
	social	Competent	Social	competent_
age	0.17*** (0.06)	0.26*** (0.08)	0.06 (0.10)	-0.09 (0.11)
female	0.07 (0.08)	0.08 (0.12)	0.04 (0.13)	0.11 (0.15)
White target	0.23*** (0.04)	0.22*** (0.03)	0.17*** (0.04)	0.22*** (0.06)
South Asian target	-0.23*** (0.05)	-0.11* (0.06)	-0.23*** (0.08)	-0.17** (0.09)
Constant	2.76*** (0.11)	2.32*** (0.08)	2.58*** (0.09)	2.37*** (0.09)
Observations	596	596	469	469
Number of participants	199	199	158	158

Robust standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1
 Random person effects in all regressions

Table 3. Perceived similarity to ethnic categories

	(1)	(2)
	Whites	Chinese
Age	-0.05 (0.06)	-0.36*** (0.09)
Female	0.03 (0.11)	0.09 (0.14)
White target	0.69*** (0.10)	-0.16 (0.12)
SouthAsian target	-0.23*** (0.07)	-0.49*** (0.10)
Constant	1.09*** (0.15)	1.82*** (0.13)
Observations	596	466
Number of participants	199	157

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Random person effects in all regressions

Table 4a. Allocations in the dictator game - White participants

	(1)	(2)	(3)	(4)
age	0.34*	0.34*	0.29*	0.28*
	(0.18)	(0.18)	(0.16)	(0.16)
female	0.68*	0.68*	0.67	0.67*
	(0.39)	(0.39)	(0.41)	(0.41)
White target		0.30***		0.19***
		(0.09)		(0.06)
South Asian target		0.04		0.06
		(0.12)		(0.12)
Perceived similarity to target ethnicity			0.23***	0.19**
			(0.09)	(0.09)
Constant	3.94***	3.84***	3.72***	3.69***
	(0.22)	(0.22)	(0.24)	(0.24)
Observations	635	635	596	596
Number of participants	212	212	199	199

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Random person effects in all regressions

Table 4b. Allocations in the dictator game - Chinese participants

	(1)	(2)	(3)	(4)
age	0.81***	0.80***	0.81***	0.71***
	(0.22)	(0.22)	(0.22)	(0.22)
female	0.25	0.25	0.25	0.22
	(0.35)	(0.35)	(0.35)	(0.32)
White target		0.16		
		(0.17)		
South Asian target		0.08		
		(0.16)		
Perceived similarity to target ethnicity			-0.12	
			(0.15)	
Constant				0.10
				(0.10)
Observations	3.63***	3.56***	3.68***	3.68***
Number of participants	(0.22)	(0.27)	(0.21)	(0.29)

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Random person effects in all regressions

Table 5. Allocations in the Dictator Game, with tester ethnicity effects

	(1) Whites	(2) EastAsians
age	0.33* (0.19)	0.82*** (0.22)
female	0.67* (0.39)	0.25 (0.35)
White target	0.35 (0.24)	-0.05 (0.23)
South Asian target	0.03 (0.11)	0.03 (0.16)
Subject+tester same ethnicity	-0.15 (0.20)	0.28 (0.20)
Subject+tester+target same ethnicity	0.02 (0.41)	-0.75 (0.56)
Constant	3.86*** (0.22)	3.59*** (0.27)
Observations	635	519
Number of participants	212	174

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Random person effects in all regressions

Table 6. Allocations in the Dictator Game, by high- and low-poverty rate neighborhoods

	(1) Whites	(2) EastAsians
Age	0.39 (0.25)	0.80*** (0.22)
female	0.66* (0.34)	0.11 (0.31)
White target	0.36** (0.17)	0.18 (0.12)
South Asian target	0.04 (0.17)	0.36** (0.17)
Low poverty	0.25 (0.36)	0.33 (0.60)
Low poverty * White target	-0.07 (0.16)	-0.06 (0.20)
Low poverty * South Asian target	0.00 (0.15)	-0.58 (0.39)
Constant	3.71*** (0.31)	3.51*** (0.35)
Observations	605	489
Number of participants	202	164

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Random person effects in all regressions

DATA APPENDIX

Coding of Neighborhood Characteristics

Neighborhood characteristics are based on public-use aggregates of the Census of Population “long form,” administered by Statistics Canada to one in five households in 1996 and 2001. The lowest level of geography for which Statistics Canada produced aggregate statistics based on the 2001 Census is a Dissemination Area (DA). DAs are geographic areas designated for the collection of Census data. DAs are composed of one or more neighboring blocks with a population of 400 to 700 persons.

We link postal codes to DAs using Statistics Canada’s Postal Code Conversion File (PCCF). The PCCF contains a complete longitudinal correspondence between postal codes and DAs (postal codes are occasionally retired and subsequently recycled). Postal codes are smaller than DAs and usually lie entirely within a DA. In cases where postal code boundaries span multiple DAs, we use the PCCF’s Single Link Indicator (which identifies the best link to an DA) to link to a unique DA.

We were unable to assign DA-level characteristics to residential postal codes in 20 cases. This arose when residential postal codes did not appear in the PCCF (most likely due to mis-reported postal codes), or when DA-level characteristics were suppressed by Statistics Canada for confidentiality reasons.