

Ethnic Identity and Discrimination among Children

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Abstract

We engaged almost 400 Canadian children aged five through eight years in a series of activities that were designed to reveal their beliefs about, self-identification with, and discrimination towards three ethnically phenotypic categories (White, East Asian, and South Asian). Our experiments took place at the children's schools during their normal school day, allowing us to evaluate the salience and effects of ethnic identities on economically-relevant behavior in an important natural setting. We find that children from the dominant White category have a clear sense of White ethnic identity - they perceive themselves to be most similar to other (anonymous) White children. White children also discriminate in favour of Whites in the dictator game, and about one-third of this pro-White bias can be accounted for by their perceived similarity to the ethnic categories. Minority East Asian children reveal a more complex ethnic identity; they perceive themselves to be equally similar to White and East Asian children. Unlike Whites, perceived similarity does not explain East Asian children's allocations in the dictator game. If anything, East Asian children show out-group favoritism.

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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 groups and make comparisons across groups. 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 discussion). 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). 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).

A large empirical literature in social psychology and sociology has employed a variety of research methods to test a wide range of research questions that emerge from social identity theory. Much of the evidence for what has been referred to as the in-group bias effect (the preferential evaluation and treatment of in-group members over out-group members) has come from 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) and among Israeli subjects (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 almost 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. We over-sample from schools that serve the East Asian population, so that our sample is divided roughly evenly between White and East Asian students. We engaged our research subjects in a series of activities that draw from both social psychology and experimental economics, which 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

environments, allowing us to gauge the salience of ethnicity to their identity and assess their beliefs 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, East Asian subjects are only slightly more likely to identify with the East Asian category than the White category, while they are much less likely to identify 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 beliefs 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 East Asian 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.

The large literature on in-group bias would predict 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. Our measure of ethnic identity can account for about one-third of this pro-White bias. We find that East Asian children share equally with the two ethnic groups that they identify most strongly with (Whites and East Asians). However, we also find that East Asian children share equally with the South Asian targets, in spite of their weaker identification with that category. In other words, we see no clear evidence that East Asian children discriminate in any way among the three groups; if anything, East Asian children show out-group favoritism.

2 Experimental procedures

Our research subjects are Kindergarten, first and second grade students in the Vancouver School District in British Columbia, Canada. Teams of 3 to 4 testers 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 “sorting task” was designed to elicit participants’ beliefs about 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,

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).

and who like school. The extent to which children perceived the targets to be similar to his or her self 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.

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.”³ 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.⁴

Supplemental data

After testing was complete, each classroom teacher was asked to fill out an information sheet that included questions about each participant’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). Teachers’ assessments of children’s ethnicity may be based on the child’s phenotype, their parents’ phenotype, and the teachers’ beliefs about the family’s home language and culture. 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

³ Eckel and Petrie (2010) use photographs in laboratory trust games. The objective is to investigate whether seeing a counterpart’s photograph has an impact on trust and reciprocity.

⁴ 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.

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.⁵

3 Sample characteristics

We restrict our attention to the research subjects whose own ethnicity is represented among our target photos, that is, who were identified by their teachers as belonging to a single ethnic group and as White, East Asian (Chinese, Korean or Japanese) or South Asian (Indian, Pakistani, Sri Lankan). Of these, 214 subjects are White and 186 are East Asian. Only 39 subjects 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. Among the East Asians, over 94% were characterized by their teachers as Chinese,⁶ and the remainder as Japanese or Korean.⁷ The 400 White and East Asian 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%.

Table 1 reports sample characteristics by participant ethnicity. The age distributions of the two groups are quite similar; just under a third of subjects are five years old, slightly less than half are six years old, and about one-fifth are seven years old. A small fraction of subjects are eight years old. Given these similar age distributions, it is somewhat surprising that a substantially higher proportion of East Asian than White subjects are in Kindergarten. While White and East Asian five-year-olds are equally likely to be in Kindergarten, East Asian six-year-olds are almost twice as likely as White six-year-olds to be in Kindergarten.⁸ The response rate among East Asian females was lower than other groups; as a result the proportion of East Asian subjects who are female is only 42%, compared to 52% of White Europeans. Over 62% of East Asian subjects

⁵ Details of the linking of postal codes to DAs are provided in the Data Appendix.

⁶ Prior to 1997-98, the large majority of Chinese immigrants arriving in Vancouver came from Hong Kong. Since then, the vast majority have come from the People's Republic of China, with only very small numbers continuing to come from Hong Kong. A relatively small, and shrinking, proportion has also come from Taiwan during this period (Citizenship and Immigration Canada, 2004).

⁷ None of our results are sensitive to the exclusion of the Korean and Japanese subjects from the East Asian sample.

⁸ Since very few children repeat grades in British Columbia, this pattern suggests that East Asian parents may be systematically more likely to delay their child's school entry date.

were enrolled in “English as a Second Language” (ESL) programs, while only 4% of Whites were in ESL.

Table 2 reports the average, for each of our 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 subjects, 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.

4 Categories and identity

Several recent studies use measures of social identity that are based on survey questions about respondents’ affinities 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 residing in Germany 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 children who 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.

Table 3 shows that, on average, subjects selected 1.2 out of 4 (two male and two female) photos from each target ethnicity as being “like them”. White subjects selected about 50% more White photos than East Asian photos (.60), and about 70% more White photos than South Asian photos (.89). East Asian subjects selected about 45% more East Asian photos than South Asian photos (.55), but only about 16% more East Asian photos than White photos (-.20), and this latter difference is only marginally statistically significant. We interpret these results as indicating

that, for White subjects, White ethnicity is a salient component of their social identity in the context of their school environment. Among East Asian subjects, however, the social identity that is salient encompasses both the White and East Asian ethnic categories.

Social identity theory offers an explanation for this pattern of results. Social psychologists (Tajfel and Turner, 1979; 1986) hypothesize that individuals will seek to enhance their social identity by embracing a relatively positive evaluation of their own group compared to other groups, and economists have formalized this idea in the context of economic models (Akerlof and Kranton, 2002; Bodenhorn and Ruebeck, 2003). 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; Nessdale 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 continue to find evidence that some minority children will show favoritism towards the majority out-group (e.g. Corenblum and Annis, 1993; 1996; Aboud, 1987, 2003; Aboud and Doyle, 1995). If, as proposed by social identity theory, individuals define their in-group such that it will contribute to a positive sense of self, minority children might expand their in-group to include the higher status majority ethnic category (Blanz et al. 1998, Hornsey and Hogg 2000). This conjecture is supported by evidence showing that participants are more likely to endorse and identify with a larger superordinate category when the status of that category is experimentally manipulated to be higher (Hornsey and Hogg 2002). Majority children, on the other hand, might exclude the lower-status minority category from their in-group.

Further support for this interpretation of the difference between the patterns of ethnic identification of White and East Asian subjects is provided in Table 4, which presents subjects' evaluations of the sociability and competence of the three ethnic categories. These sociability and competence scales were constructed 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). The first row of Table 4 shows the mean number of photos selected from each target ethnicity in response to the

sociability and competence items by White and East Asian subjects respectively. The results 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 East Asian subjects chose the greatest number of White photos in response to questions about competence and sociability. The remaining rows of Table 3 show that only the difference between Whites and East Asians according to the sociability evaluations of East Asian subjects is not statistically significant. Among the two minority categories, East Asians are favoured over South Asians by both White and East Asian subjects, in both assessed dimensions.

Taken together with these results, our results for perceived similarity are consistent with children associating themselves with ethnic categories so as to enhance their social identities. White subjects tend to perceive themselves as relatively dissimilar to minority children. This tendency is greatest with respect to the South Asian targets, the least favorably evaluated category. East Asian subjects do not perceive a substantial difference in their similarity to the White and East Asian targets, but do perceive a substantial difference in their similarity to East Asian and South Asian targets. 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

We next examine the relationship between ethnic categories, ethnic identity and altruism in the dictator game.

5.1 Empirical framework

In each trial t , children choose to allocate an endowment of E stickers between themselves and one photo each of same-gender White, East Asian and South Asian children (three photos in total). Suppose that subject i has preferences over this allocation that are represented by the following utility function:

$$U_i = U(q_{0t}, q_{Wt}, q_{EAt}, q_{SAt}, x_i; \theta_i) \quad (1)$$

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 $j=W, EA, SA$ (White, East Asian and South Asian respectively) 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

$q_{0t}, q_{Wt}, q_{EAt}, q_{SAt}$ to maximize this utility function, subject to the endowment constraint. The allocations that maximize this utility function can be written:

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We aggregate each subject's allocation to target j across all T trials to generate an overall allocation to each target ethnicity q_{jt} .

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):

(2)

where β_j is a vector of parameters to be estimated and ϵ_{ijt} 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:

Here μ_i is a random person effect, μ_s is a random school effect that captures any additional unmeasured correlation across subjects' allocation behavior in a given school, and ϵ_{ijt} 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, subjects 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. 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 subjects chose a non-discriminatory allocation (including 5.2% of subjects who shared zero stickers). White subjects were substantially more likely (55%) than East Asian 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 5a 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. 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 subjects' 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. The results show directly that White children who identify more strongly with a particular target ethnicity, compared to other White children, also share more with that target ethnicity. The inclusion of perceived similarity in the sharing regression attenuates the coefficient on the White target indicator variable by about one-third; in other words, our measure of the strength of White children's ethnic identity accounts for about one-third of the observed in-group bias.

Table 5b presents our results for East Asian subjects. Their behavior differs substantially from White children. Beginning with our baseline specification we find that, compared to White children, East Asian children show a more pronounced age effect, sharing substantially more as they get older. Unlike Whites, we find no gender difference in sharing among East Asian children.

We also find that East Asian subjects share *more* stickers with each of the other targets than with the East Asian target. These differences are small, however, and not statistically significant. The absence of any evidence of favoritism among East Asian subjects towards the East Asian target relative to the White target is not surprising in the context of social identity theory, given East Asians strong sense of perceived similarity to Whites. However, the absence of pro-East Asian bias relative to South Asians demonstrates the absence of in-group bias. A similar result obtains

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 subjects, and they are statistically insignificant. This evidence suggests that East Asian subjects do not exhibit in-group bias; if anything, they exhibit out-group favoritism.

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 participants 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 investigate the possibility that the pattern of our findings is influenced by interactions between the ethnicity of the tester and the ethnicity of the subject influence by including in our specification a variable indicating that the participant and the experimenter belonged to the same ethnic category, and interact this variable with the own ethnic category dummy. The results, in the first column of Table 6, show that tester ethnicity effects are not important. Overall, subjects share more when the tester is from their own ethnic category, but show less in-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 East Asian subjects are also a potentially confounding influence. We create a variable indicating whether a participant lived in a neighborhood that was in the bottom half of the distribution of neighborhood poverty rates among same-ethnicity students in our sample. The specification reported in Table 7 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 East Asian subjects 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 East Asian subjects, children in higher income neighborhoods share more with the South Asian target than with either the East Asian or Caucasian target.

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 subjects' identification with ethnic categories and their economic behavior in relation to those categories, we are able to gauge the importance of ethnicity to children's social identities and determine whether they are reflected in discrimination towards other ethnic categories. By engaging children in the context of their own school during the regular school day, we believe that the identities and behavior we observe in our "games" are similar to those that prevail in this natural environment.

We find that White children, who are the dominant high-status group in this context, have a clear sense of White ethnic identity. However, our East Asian subjects 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.

We find that White's ethnic identities are expressed in economically meaningful behavior: our White subjects demonstrate pro-White bias in the dictator game, and are more altruistic towards ethnic categories when they perceive themselves to be more similar. However, we find no evidence of in-group bias in the dictator game among East Asian children, and no evidence that perceived similarity plays any role in their sharing decisions. 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 favoritism among East Asian subjects towards the East Asian target could arise if ethnic categories do not play an important role in the social identity of the East Asian subjects. This explanation is consistent with the weak differentiation between their perceived similarity with respect to White and East Asian targets. However, it is not consistent with their clear differentiation in perceived similarity between themselves and South Asian

targets. Moreover, East Asian subjects distinguish clearly between ethnic categories in their evaluations of sociability and competence. Alternatively, East Asian children may not express their in-group bias if some other factor, such as a norm of fairness, dominates their expressed social preferences. East Asian children do not appear to be more altruistic overall, and are less likely than Whites to share equally across target ethnicities, casting some doubt on this explanation. Whether the weak evidence of out-group favoritism among our East Asian subjects reflects a social norm in East Asian communities remains a question for future research.

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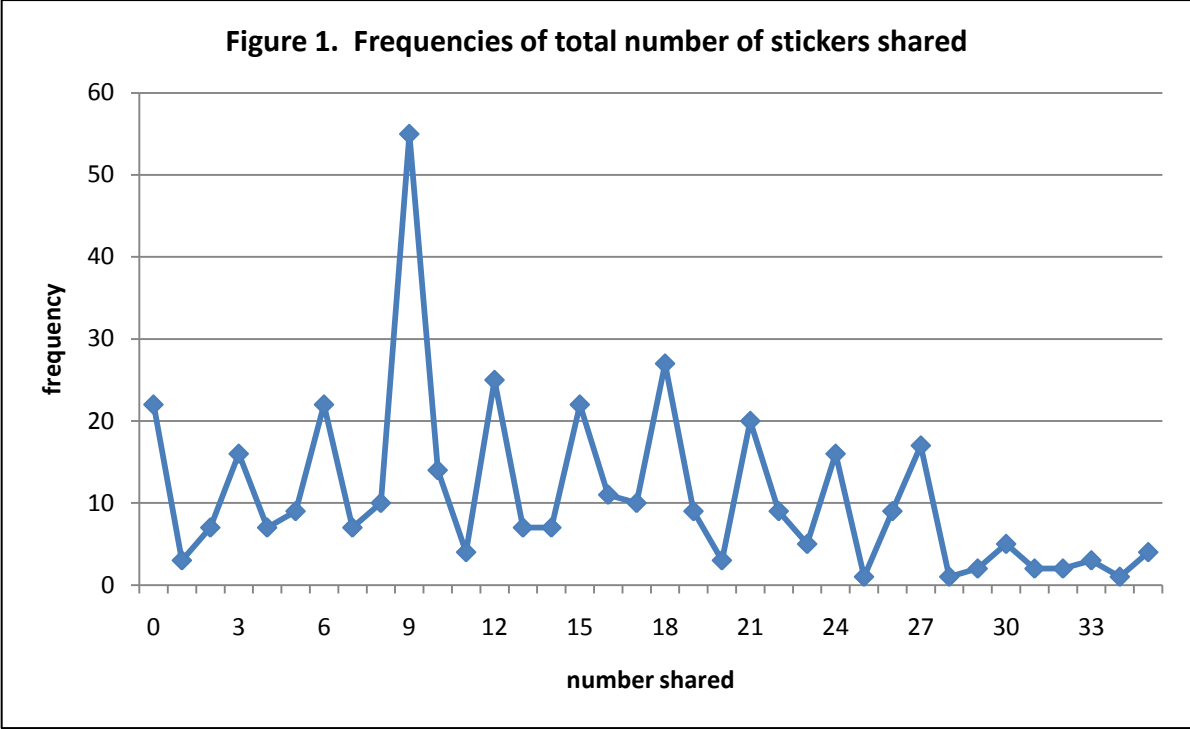
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Figures



Tables

Table 1. Frequencies of sample characteristics, by subject ethnicity

		Whites	East Asian
Age	5	0.30	0.32
	6	0.49	0.43
	7	0.20	0.21
	8	0.01	0.05
Grade	K	0.40	0.58
	1	0.47	0.26
	2	0.13	0.16
Female		0.52	0.42
ESL		0.04	0.62
Observations		214	186

Table 2. Census neighborhood characteristics, by subject ethnicity

	White	East Asian
%immigrants	38.6	56.0
%poverty	15.2	23.0
%high school or less	23.7	38.0
mean family income	105128	78034
Observations	214	186

Table 3. Perceived similarity to ethnic phenotypes,^a by subject ethnicity

	White	East Asian
Mean # of photos chosen per ethnic phenotype	1.21	1.21
standard deviation	1.25	1.25
Difference in means		
Whites-East Asians	.60***	-.20*
Whites-South Asians	.89***	.36***
East Asians-South Asians	.28***	.56***

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

^aNumber of photos chosen from each ethnic phenotype in response to request to “pick all of the photos of children that are like you”; range from 0 to 4.

Table 4. Evaluations of sociability^a and competence^b of ethnic phenotypes, by subject ethnicity

	White		East Asian	
	Sociability	Competence	Sociability	Competence
Mean	2.94	2.59	2.56	2.31
(standard deviation)	(.89)	(1.04)	(1.00)	(1.07)
Difference in means				
Whites-East Asians	0.22***	0.20**	0.14	0.20**
Whites-South Asians	0.44***	0.29***	0.45***	0.42***
East Asians-South Asians	0.22***	0.10	0.32***	0.22**

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

^aAverage number of photos chosen from each ethnic phenotype in response to requests to pick all of the photos of children that are “nice”, “happy”, “have lots of friends”, “helpful”; range from 0 to 4.

^bAverage number of photos chosen from each ethnic phenotype in response to requests to pick all of the photos of children that are “smart”, “works hard”, “reads well”, “likes school”; range from 0 to 4.

Table 5a. Allocations in the dictator game^a - White subjects

	(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 subjects	212	212	199	199

Robust standard errors in parentheses

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

Random person effects in all regressions

^aNumber of stickers shared with each of three target photos (one from each phenotype); range from 0 to 36.

Table 5b. Allocations in the dictator game^a - East Asian subjects

	(1)	(2)	(3)	(4)
age	0.80*** (0.19)	0.79*** (0.19)	0.68*** (0.19)	0.68*** (0.19)
female	0.11 (0.32)	0.11 (0.32)	0.05 (0.28)	0.05 (0.28)
White target		0.16 (0.16)		0.17 (0.18)
South Asian target		0.10 (0.14)		0.16 (0.17)
Perceived similarity to target ethnicity			0.07 (0.10)	0.09 (0.11)
Constant	3.74*** (0.23)	3.66*** (0.29)	3.87*** (0.30)	3.74*** (0.39)
Observations	548	548	493	493
Number of subjects	184	184	166	166

Robust standard errors in parentheses

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

Random person effects in all regressions

^aNumber of stickers shared with each of three target photos (one from each phenotype); range from 0 to 36.**Table 6. Allocations in the Dictator Game, with tester ethnicity effects, by subject ethnicity**

	White	East Asian
age	0.33* (0.19)	0.80*** (0.19)
female	0.67* (0.39)	0.12 (0.32)
White target	0.35 (0.24)	-0.04 (0.22)
South Asian target	0.03 (0.11)	0.04 (0.15)
Subject+tester same ethnicity	-0.15 (0.20)	0.25 (0.19)
Subject+tester+target same ethnicity	0.02 (0.41)	-0.70 (0.52)
Constant	3.86*** (0.22)	3.70*** (0.29)
Observations	635	548
Number of subjects	212	184

Robust standard errors in parentheses

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

Random person effects in all regressions

^aNumber of stickers shared with each of three target photos (one from each phenotype); range from 0 to 36.

Table 7. Allocations in the Dictator Game,^a by subject ethnicity

	White	East Asian
age	0.39 (0.25)	0.83*** (0.18)
Female	0.66* (0.34)	-0.02 (0.28)
White target	0.36** (0.17)	0.14 (0.11)
South Asian target	0.04 (0.17)	0.38** (0.17)
Low poverty	0.25 (0.36)	0.07 (0.55)
Low poverty * White target	-0.07 (0.16)	0.02 (0.19)
Low poverty * South Asian target	0.00 (0.15)	-0.58 (0.38)
Constant	3.71*** (0.31)	3.68*** (0.35)
Observations	605	515
Number of subjects	202	173

Robust standard errors in parentheses

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

Random person effects in all regressions

^aNumber of stickers shared with each of three target photos (one from each phenotype); range from 0 to 36.

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.