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Cross-ethnic Friendships and Intergroup Attitudes among Asian American Adolescents

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Cross-ethnic Friendships and Intergroup Attitudes
among Asian American Adolescents

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Education

by

Xiaochen Chen

2013
ABSTRACT OF THE DISSERTATION

Cross-ethnic Friendships and Intergroup Attitudes
among Asian American Adolescents

by

Xiaochen Chen
Doctor of Philosophy in Education
University of California, Los Angeles, 2013
Professor Sandra Graham, Chair

This study examined Asian American adolescents’ cross-ethnic friendship choices and their intergroup attitudes with a sample of 762 sixth grade Asian students in 19 middle schools varying in ethnic composition. Multiple measures of friendship (quantity and quality) and intergroup attitudes (affective, behavioral, and cognitive attitudes) were included. The results showed that Asian American students had distinctive relations with peers from different ethnic groups. They had a strong in-group preference when choosing friends, and when there was a lack of own-group peers at school, they over-selected White students as friends. However, they never over-selected other ethnic minority peers as their friends when school availability was accounted for. Similarity in academic achievement was important for Asian students to form friendships with Latinos and Blacks. Asian students also reported worse attitudes toward Latinos and Blacks.
than their attitudes toward Whites. Significant within-group differences in cross-ethnic peer relations were also found: South Asian students nominated more cross-ethnic friends than East and Southeast Asians, and South Asian students also reported better intergroup attitudes than students from other regions of Asia. Cross-ethnic friendships were related to better intergroup attitudes, especially the behavioral dimension of attitudes. A doing-feeling-thinking mediation model suggested that a cross-ethnic friendship first promotes behavioral closeness toward the whole out-group, and behavioral closeness leads to more positive feelings, which in turn generates better cognitive evaluations of the out-group. Implications for future research, educational practice, and attitude intervention programs were discussed.
The dissertation of Xiaochen Chen is approved.

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2013
To my grandma
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PUBLICATIONS AND PRESENTATIONS


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Cross-ethnic Friendships and Intergroup Attitudes among Asian American Adolescents

Introduction

The Asian-ancestry population constitutes the fastest growing group in the United States during the past decade, growing by 43% from 10.2 million in 2000 to 14.7 million in 2010. California has the largest number of Asian population. About 4.8 million Asian Americans live in California, which makes up 13% of the state’s population (Census, 2010). As to school-age children, Asian Americans make up 5% of the student body enrolled in public elementary and secondary schools in the United States (Snyder & Dillow, 2011). In California, Asian Americans make up 8.5% of the students enrolled in public schools during school year 2010-2011 (California Department of Education statistics, 2011).

Existing studies about Asian American adolescents have primarily focused on their academic performance and mental health adjustment. In their classical work about “being well vs. doing well”, Bankston and Zhou (2002) found that Asians’ academic performance is similar to, and even better than that of White students. However, Asians are more likely to suffer from anxiety, depression, and lower self-esteem despite their high achievement. On average, Asians’ mental health status is most close to that of Latinos, the other major immigrant group.

A notable gap in the literature is that little is known about Asian students’ peer relations at school. How do they get along with peers from ethnically diverse backgrounds? Are they more likely to befriend Whites, who are still the numerical majority group in this society and with whom they share similar academic status? Or, are they more likely to choose friends from other ethnic minority groups? What is the role of school factors in shaping Asian students’ friendship choices? And, how do they think and feel about people from different ethnic groups?
In my dissertation, I attempted to answer these questions by exploring (1) how individual and school factors (i.e., school ethnic composition, academic teaming, and group discrepancy in achievement) influenced Asian students’ friendship choices, and (2) the link between cross-ethnic friendships and intergroup attitudes. Previous research emerging from the contact hypothesis (Allport, 1954) has suggested that friendships with peers from different racial/ethnic groups should promote better attitudes about those groups (Pettigrew, 1998). In reviewing the relevant research on cross-ethnic friendship-attitude relations in the following sections, I highlighted some of the methodological limitations in previous research that my dissertation was designed to address.

**Institutional and Individual Factors influencing Cross-ethnic Friendships**

**School ethnic composition.** In order to examine Asian students’ cross-ethnic friendships at school, we must first understand the principles that govern the formation of friendships in general. Two central principles identified in the friendship literature are *homophily*---the tendency to form friendships with similar others (McPherson, Smith-Lovin & Cook, 2001), and *propinquity*---the tendency to form friendships with others who are readily available (Mouw & Entwisle, 2006).

Studies of friendships in racially integrated settings reveal that both homophily and propinquity are important. Supporting homophily, a strong in-group preference in friend choice has been documented among all ethnic groups in both earlier work with Black-White schools (Hallinan & Williams, 1989) and more recent studies that include multiple ethnic groups (e.g., Hamm, Brown, & Heck, 2005). Supporting propinquity, Hallinan and colleagues (Hallinan & Smith 1985; Hillinan & Teixeira, 1987) found that as the proportion of minority group (White or Black) students increased in a classroom, majority group students were more likely to befriend
them. Consistent with Black-White studies, more recent studies using ethnically diverse national samples also report that increasing racial diversity at the school level does lead to more cross-ethnic friendships (e.g., Moody, 2001; Joyner & Kao, 2000; Quillian & Campbell, 2003). However, most of these studies employed the racial categories of same-race and other-race; thus we still do not know how changes in school ethnic composition influence parings of particular ethnic groups (e.g., White-Asian, Black-Asian, etc.).

Previous research has also suggested that ethnic composition differentially affects social integration patterns of students from different ethnic groups. In their study with 3rd- and 4th-grade children, Wilson and Rodkin (2011) found that African American children had more segregated relationships when they had fewer same-ethnicity classmates. However, for European American children, the segregation ratios remained similar across classrooms of different ethnic composition. Inspired by these findings, it is reasonable to expect that the impact of relative group size on Asian students’ cross-ethnic friendship depends on particular racial combinations. For example, in an Asian-White school (50% Asian vs. 50% White) and an Asian-Latino school (50% Asian vs. 50% Latino), are Asian students in the two schools equally likely to befriend other ethnic peers? In their study based on data from the National Longitudinal Study of Adolescent Health (Add Health), Quillian and Campbell (2003) found that when a third-plus generation Asian student nominated an other-race friend, Whites were the most preferred choice. However, since Asian students in that study were usually a small minority at their schools, it is still unclear how Asian students’ friendship choices vary systematically as a function of school ethnic composition.

**Academic teaming.** Although ethnically diverse environments provide mixing opportunities for students, the increased diversity at the school level may not necessarily
translate into cross-ethnic contact. In some schools, academic teaming results in many children spending the majority of their school day with the same peers, and teaming can distribute students from various ethnic groups unevenly. For example, an academically high-performing student is most likely to share the same class schedule (teamed together) with another high-performing student (i.e., both of them are in the honor classes). It is well documented that in general, Asians and Whites show better academic performance than Black and Latino students (e.g., Oakes, 1995; Bankston & Zhou, 2002). I expected that in schools with higher levels of academic teaming, Asian students are more likely to be teamed together with Whites, and thus more likely to form cross-ethnic friendships with White students. Following the same logic, in schools with higher levels of academic teaming, Asian students are less likely to befriend Blacks and Latinos.

**Unequal status of groups.** Beyond physical availability, the relative status difference between different groups also influences cross-ethnic friendship. Contact theory (Allport, 1954) posits that contact is necessary, but not sufficient, to generate a positive relationship between individuals of different backgrounds. Unequal status of groups can lead to intergroup tension, thereby reducing the likelihood of cross-ethnic friendship formation. Studies with White and African American adolescents revealed that the greater the disparity in socioeconomic status between African American and White youth in a setting, the less frequently members of these groups embrace cross-ethnic friendships (e.g., Miller, 1990). It is probably true that the same principle applies to Asian students’ cross-ethnic friendships. Besides SES status, disparity in academic performance can also influence Asian students’ friendship with peers of different races. Specifically, I hypothesized that greater disparity in achievement between Asians and other ethnic groups should be associated with fewer cross-ethnic friend nominations from that group.
To summarize, school factors would influence Asian students’ friendship choices. Specifically, I hypothesized that Asian students would show own-group friendship preference. However, as the proportion of other ethnic groups in the school population increased, Asian students would be more likely to befriend peers of those other groups. Academic teaming could lead to more Asian-White friendships, and less friendships with Blacks and Latinos. The larger the achievement disparity between Asians and other ethnic groups at the school level, the less likely for an Asian student to have friends from that particular group.

**Individual-level variables.** Individual-level characteristics of students must be taken into account when examining the effects of school characteristics on Asian students’ cross-ethnic friendships.

**Different Asian sub-groups.** Asian-American as a pan-ethnic racial category is now commonly used in cross-race peer relation literature (e.g., Joyner & Kao, 1990; Quillian & Campbell, 2003) and government education statistics (e.g., California department of education statistics). The pan-ethnic label represents numerous groups as if they are a homogenous category and masks the heterogeneity of Asian Americans (Hune, 2002). Different Asian American groups vary considerably in features such as geographic origin, immigration history, culture, language proficiency, educational attainment and occupational characteristics (Zhou, 2004). For example, South Asians (e.g., Indian ancestry) are phenotypically different from East and Southeast Asians and South-Asian countries are not Confucian-based societies as are other countries in Asia (Kibria, 1996). These differences may lead to distinctive patterns of friendship choices and attitudes toward other ethnic groups among adolescents from different Asian sub-groups.

**Gender.** An early study at a desegregated urban middle school revealed that African
American and White adolescent males were more likely than females to nominate cross-ethnic friends (Schofield, 1989). However, little is known about possible gender differences between Asian boys and girls in their cross-ethnic friendships. Given the negative stereotypes of Asian males which characterize them as high achievers but also effeminate (Lee, 2004), Asian boys might seem less attractive to other-ethnic peers, thus less likely to have cross-ethnic friends than Asian girls.

**SES.** Family SES can also influence Asian students’ cross-ethnic friendship patterns. In their discussion about adaptation of immigrants, Portes and Zhou (1993) proposed that there is no single “core group” with which immigrants merge, and family resources influence which group immigrant children assimilate to. Middle-class Asian-decent youth, in particular, are encouraged by parents to form relationships with White peers (Lee, 2009).

**Generational status.** In addition, Asian students’ cross-ethnic friendship patterns may also differ across generations. Existing studies showed a mixed picture on this issue. Some research suggests that longer residence in the United States is related to more cross-ethnic friend nominations among Asian adolescents (Hamm et al., 2005), whereas other findings report that generational status matters little (Quillian & Campbell, 2003).

**Ethnic identity.** Another individual level variable that could affect cross-ethnic friendship is ethnic identity. On one hand, for Asian adolescents who consider their ethnic identity as really important may seek to maintain an ethnically homogeneous friend circle as a mean of affirming their identity as Asian American (Yip, Seaton, & Sellers, 2010). On the other hand, scholars have argued that a well-developed ethnic identity serves as a secure position which allows people to be more open and accepting of people from other ethnic groups (Phinney, Ferguson, & Tate, 1997; Phinney, Jacoby, & Silva, 2007). Based on this rationale, stronger ethnic identity is
expected to be associated with more cross-ethnic friendships. Little is known about how Asian students’ ethnic identity influences their friendships with Whites and with other ethnic minorities.

**Cross-ethnic Friendships and Intergroup Attitudes**

One reason for psychological researchers’ interests in cross-ethnic friendships lies in the presumed role of cross-ethnic friendships in promoting better intergroup attitudes. In classical intergroup-contact theory, Allport (1954) posits that contact between members of different groups can promote positive attitudes and reduce prejudice. He also outlined four optimal conditions for intergroup contact to improve attitudes: equal group status within the situation, cooperation, working toward common goals, and institutional support. In his reformulation of contact theory, Pettigrew (1998) pointed out that in a friendship context, at least the first three optimal contact conditions are met, and cross-group friendships provide rich opportunities for extensive and repeated contact between members from different groups. Extensive research has examined the role of friendships in improving intergroup attitudes with diverse measures of friendships and attitudes. The strength of friendship effect varies from study to study (Davies, Tropp, Aron, Pettigrew & Wright, 2011). Factors influencing friendship-attitude association are briefly reviewed below.

**Dimensions of intergroup-attitudes.** Intergroup attitude is a multi-dimensional concept (Tropp & Pettigrew, 2005). Specifically, the *affective* dimension denotes affective ties with out-group members, such as liking and feelings of intergroup comfort. The *cognitive* component of intergroup attitudes focuses on cognitive evaluations of the out-group. A widely used measure of cognitive attitudes is stereotyped trait typicality (e.g., Brown & Bigler, 2002; Wolsko, Park, Judd, & Bachelor, 2003), which assesses people’s beliefs about the extent to which stereotypical traits apply to an out-group (e.g., how many Asians are smart?). Another distinct dimension of
intergroup attitude is desire for social distance (Bogardus, 1933), which taps the behavioral avoidance of another group.

In recent meta-analyses, contact theorists (Tropp & Pettigrew, 2005; Davies et al., 2011) found that affective indicators of intergroup attitudes yielded significantly stronger relations with cross-group friendships than did cognitive indicators such as beliefs and stereotypes. The researchers explained that when rating out-groups on emotions and feelings, respondents are more likely to think of their own personal experiences and relationships; thus affective ties established with close out-group friends are easier to generalize to the whole out-group. In contrast, the cognitive dimension of intergroup attitudes bears different relationships with cross-group friendships. As people interact and learn more individuating information about each other, members of different groups may become less likely to see each other as good representatives (exemplars) of their groups. Thus, although intergroup contact may lead group members to view each other in a positive light, such personalized experiences may not be powerful enough to bring about generalized stereotype change (Rothbart, 1996; Rothbart & John, 1985).

**Inner linkage between different dimensions of attitudes.** Literature on different dimensions of intergroup attitudes also hints at the possibility that affective ties might mediate the link between intergroup friendships and cognitive evaluations of the friend’s ethnic group. In his reformulation of intergroup contact theory, Pettigrew (1998) highlighted the pivotal role of positive emotions aroused by cross-group friendship. He argued that intimate contact could generate empathy, which can improve attitudes toward the out-group. However, no empirical study has directly examined the relationship between affective and cognitive dimensions of intergroup attitudes.
**Operationalizations of friendships.** Another key factor affecting friendship-attitude association lies in different assessments of friendship. In their meta-analytic review, Davies and colleagues (2011) summarized six categories of friendship assessment that are most commonly found in the intergroup contact literature. They are (a) time spent with out-group friends or engaging in activities with out-group friends, (b) one’s self-disclosure to out-group friends, (c) felt closeness to out-group friends, (d) perceived inclusion of out-group friends in one’s sense of self, (e) number of out-group friends, and (f) percentage of friendship circle who are out-group members. All types of friendship assessment yielded significant associations with intergroup attitudes in the meta-analysis. Behavioral measures (i.e. spending time together and self-disclosure) tended to yield the largest effects.

Despite this general trend, meta-analysis which aggregates contact effects across multiple studies cannot tell us about the unique link between different aspects of friendship and different dimensions of intergroup attitudes. For example, spending time together with out-group friends might be particularly effective in reducing desire for social distance toward the out-group. In contrast, emotional closeness experienced in a friendship dyad might be particularly influential in promoting more positive feelings toward the out-group as a whole. It is therefore important that studies of the relations between cross-ethnic friendships and intergroup attitudes assess friendship quality as well as quantity and different types of intergroup attitudes, including those that capture affective, cognitive, and behavioral components.

Another unanswered question in the literature is the role of friendship *stability* in promoting better intergroup attitudes. Since stereotyped beliefs about ethnic groups are inherently hard to change (Clark, 2009), sustainable friendships with out-group members might be important for better cognitive evaluations of the out-group.
Summary and Limitations of Previous Research

A robust finding in the interracial friendship literature is that students show a preference for same-ethnicity friends. More ethnic diversity in schools increases the opportunity for cross-ethnic friendships. However, school instructional practices, such as academic teaming, can limit the mixing opportunities of students from different ethnic groups. Cross-ethnic friendships are related to improved intergroup attitudes, but the strength of friendship-attitude association depends on operational definitions of friendship and specific aspect of intergroup attitudes.

Several major limitations in previous research are noteworthy. First, relatively few peer relations studies include multiple ethnic groups in their samples (see review in Graham, Taylor, & Ho, 2009). It is historically understandable that most social developmental research on children of color emerged from the school desegregation literature that was almost exclusively concerned with the school experiences of Black and White children. However, more studies with “new immigrants” are needed in response to the increasingly diverse U.S. population. According to National Center for Educational Statistics (2010), there are about 2.4 million Asian students enrolled in U.S. public schools. Little is known about their relationships with peers of other major ethnic groups. For complex social and historical reasons, Asian students may have distinctive patterns of friendships with White, Black and Latino peers. The commonly used in/out-group dichotomization of friendship cannot fully capture the complexity of cross-ethnic peer relations in ethnically diverse school settings. In limited available studies looking at specific ethnic composition of friend dyads (e.g., Quillian & Campbell, 2003), Asian students are usually a small minority in their schools. Thus, we still do not know how school and individual level factors systematically influence Asian students’ cross-ethnic friendships. Possible differences in
cross-ethnic peer relations among different Asian sub-groups are an even more uncharted territory.

Secondly, despite the burgeoning body of friendship-intergroup attitudes literature, a relatively small number of studies targets multiple racial/ethnic groups, and even fewer have been carried out with children and adolescents. In addition, there are few studies that include multiple measures of friendships and intergroup attitudes; thus the specific link between different aspects of friendship and different dimensions of attitudes is not clear. Moreover, there is not much research examining the sequence of attitude change (e.g., do affects influence cognitions?) which could inform both theory development and design of intervention programs.

Focusing on Asian students in this dissertation, I intended to address limitations of the available research on cross-ethnic friendships and intergroup attitudes by answering the following questions:

1. How do individual- and school-level factors influence Asian students’ friendships with peers from different ethnic groups?

2. What are the specific linkages between different aspects of cross-ethnic friendships (i.e., both quantity and quality) and different dimensions of intergroup attitudes (i.e., affective, behavioral and cognitive attitudes)?

3. Does the affective component of intergroup attitudes mediate the link between cross-ethnic friendship and changes in cognitive attitudes? (Exploratory analysis)

**Method**

**Sample and Participant Selection**

The data for my dissertation come from the UCLA Middle School Diversity Project (MSDP), an ongoing longitudinal study which examines the associations between school ethnic
diversity and social-emotional and academic outcomes in a large sample of middle school students attending public schools throughout California. In the fall of 2009, six middle schools in the Los Angeles area were recruited to participate as Cohort 1. In the fall of 2010, an additional 14 middle schools (8 schools in Los Angeles and 6 schools in Northern California) joined the study as Cohort 2. Because this project focuses on the relations between school ethnic diversity and students’ social and academic outcomes, schools recruited for participation varied in their ethnic composition. For example, some schools have one dominant ethnic group (e.g., Asian) and several smaller minority groups, with the particular ethnic majority group varying from school to school. Other schools have two majority ethnic groups about the same size (e.g., Asian-White, Asian-Latino). Still other schools have several equally represented groups with no numerical majority group. To reduce confounds of ethnic diversity with socioeconomic status (SES), schools at the extremes of the SES continuum were avoided; only schools within a 20-80% range of free and/or reduced price lunch eligibility were recruited for the study. More detailed narrative descriptions of participating schools are included in the result section.

As part of the research protocol, students were asked to select their ethnicity from the following options: American Indian, Black/African-American, Black/other country of origin, East Asian (e.g., Chinese, Korean, Japanese), Latino/other country of origin, Mexican/Mexican-American, Middle Eastern, Pacific Islander, South Asian (e.g., Indian, Pakistani), Southeast Asian (e.g., Vietnamese, Cambodian, Thai, Laotian), White/Caucasian, Multiethnic/Biracial, and Other. For this study, I combined some ethnic categories to get the major ethnic groups: Black/African-American and Black/other country of origin were combined and labeled as Black; Mexican/Mexican-American and Latino/other country of origin were combined and labeled as
Latino; and East Asian, Southeast Asian, and South Asian were combined to generate the Asian group\(^1\).

One Black-Latino school with no Asian student at 6\(^{th}\) grade was excluded from my study, which resulted in a final sample of 4923 students from 19 schools (48% boys, 52% girls). The ethnic breakdown of the sample is 15.5% Asian, 16.0% White, 10.3% Black, 30.9% Latino, 17.0% multiethnic/biracial and 6.0% other ethnic groups.

**The Asian sub-sample.** Among the 762 Asian students, 59.8% were East Asian (\(N=456\)), 25.5% were Southeast Asian (\(N=194\)), 11.4% were South Asian (\(N=87\)), and another 25 Asian students were East-Southeast Asian biracial. The East Asian students were primarily Chinese and Korean, the majority of Southeast Asian students were Vietnamese, and most South Asian students were Indian and Pakistani. Almost all of the Asian students were recent immigrants or children of immigrants (30.4% first generation, 63.8% second generation, and only 5.8% third-plus generation). As shown in Table 1, the generation distribution was similar across different Asian sub-groups, with slightly more 2\(^{nd}\) generation among Southeast Asians. As to parent education level, 54.6% of the Asian students’ parents had college or graduate degree, 20.1% of the parents had some college, 12.7% parents had high school diploma or GED, and 12.7% of Asian parents had education level below high school. Parent education level was most skewed among the South Asian group, about half of the South Asian parents had graduate degree, and 21% had college degree. Among the East Asian students, 23% and 24% of their parents had college and graduate degree respectively. The Southeast Asian group was relatively low in parent

\(^{1}\) Since I relied on statistics from California Department of Education (CDE) for school ethnic composition, I used the CDE definition of Asian, “Asian is the ethnic group of a person who has origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent”. Filipinos were not included in my Asian sample.
education level comparing to the other two Asian groups, about one-third of Southeast Asian students’ parents had college or graduate degree.

Procedure

Students with both parental consent and student assent completed confidential surveys during the fall and the spring semesters of 6th grade (Waves 1 and 2). The survey was administered during class time. Students were instructed to answer survey questions on their own as a trained research assistant read the survey items aloud. A second research assistant circulated around the classroom to help students as needed. Students were given an honorarium of $5 in fall and spring of 6th grade for completing each questionnaire. My major analyses were conducted with Wave 2 data, because I assume that by spring semester of 6th grade students have had enough time to form friendships in middle school.

Measures

Friendship. At each wave of data collection, students were asked to list the names of their good friends in their grade at their school. They could list as many names as they wanted. Since my major interest was how individual and school factors influenced Asian students’ choice of friends, I focused on Asian students’ self-report friendships, regardless of whether or not the friendship was reciprocated. The ethnicity of nominated friends who were in the sample was determined by their self-report ethnic identification.

Friendship quality. For each nominated friend, students answered five questions about the quality of that friendship. Two questions asked about spending time together outside of school (“We go to each other’s houses”; “We text…”). Three questions asked about the degree of emotional support provided by the friend (e.g., “This friend helps me feel better when I’m upset”). Each item was rated on a 3-point frequency scale (1 = No/Hardly Ever, 2 = Sometimes,
and 3 = Yes/Almost all the Time.) Friendship quality was based on the mean score of responses to questions about out-of-school interactions with and emotional supportiveness of nominated friends (αs = .49 and .77 for time spent together and emotional support respectively). The friendship measure is included in Appendix A.

**Intergroup attitudes.** Three aspects of intergroup attitudes were assessed by different measures as described below (Appendix B1-B3).

**Affective evaluation.** The affective dimension of intergroup attitudes was assessed by asking students to rate on how they feel (i.e., like, trust, respect, comfortable being around…) about kids from each of the four major ethnic groups: Asian, White, African American, and Latino. An example item is, “I like kids who are Latino” (1=No way, 5=For sure yes). Alpha coefficients were .87, .87, .88, and .88 for feelings of Asians, Whites, Blacks and Latinos respectively.

**Cognitive representation of groups.** Cognitive measure of intergroup attitudes examines perceptions of the typicality of particular traits in specific groups (e.g., Brown & Bigler, 2002). Participants were presented with four positive traits (kind, honest, smart, friendly) and four negative traits (selfish, mean, bossy, lazy). Participants were asked to determine how many people from each of the major ethnic groups possess that trait (e.g., How many Latino kids are ____?) Response options create a 5-point scale: 1=hardly any, 2=a few, 3=some, 4=a few, 5=almost all. Alpha coefficients ranged from .82 to .87 for positive and negative trait evaluations of each ethnic group.

**Desire for social distance.** Social distance captures the behavioral intention aspect of intergroup attitudes (Bogardus, 1933). Adapted from Bogardus’ (1933) original social distance scale, in this study, participants were asked to rate the likelihood that they would engage in
certain activities (each lunch together, visit each others’ homes, dance together at a school dance, sit on a school bus ) with peers from different ethnic groups. An example item is “Would you want to eat lunch together with kids who are Latino (White etc.)”. The 5-point response scale ranged from 1=for sure yes to 5=no way, with higher score indicating more desired social distance (αs = .85, .86, .87, and .88 for desired social distance toward Asians, Whites, Blacks and Latinos respectively).

**School Characteristics**

School availability. Proportions of each ethnic group in the student body at school were used as indicators of school availability for friendship choices. The information about school ethnic composition was retrieved from the website of California Department Education (CDE). Since my study focused on 6th graders’ friend nominations within the same grade, I used 6th grade ethnic composition for my analyses.

Academic teaming. To my knowledge, previous research studying the effect of instructional practices on cross-ethnic friendships primarily focused on academic tracking, and treated tracking as a binary categorical variable. In the MSDP sample, every school adopted certain types of academic tracking, and the meaning of tracking varied from school to school. The dichotomized tracking variable cannot tell us the extent to which students are grouped together in academic classes. For this reason, I used a newly developed “academic teaming” index (Echols, Simmos, & Van Slyke, 2012) as shown below.

$$\sum \frac{\sum p[C_x, C_y]}{k(k - 1)} S_g$$

For each student, the proportion (p) of classmates in each academic class (C_x) who were also in every other academic class (C_y) was calculated. In the above formula, the sum of these
proportions for all possible class combinations ($\sum p[Cx,Cy]$) was divided by the total number of possible class combinations (represented by $k(k-1)$ where $k$=the total number of academic classes in a student’s schedule) to create a mean proportion of similar classmates across the core academic curriculum (i.e. math, science, reading, social studies). For example, consider a student who was in a Math class with 30 students, and he/she was also enrolled in a Science class with 35 students. The student had 29 classmates in his/her Math class and 34 classmates in the Science class. Among all these classmates, 20 of them were in both classes. In this case, the proportion of classmates in Math who were also in Science is 20/29, or approximately .69. Following the same logic, I calculated the overlap of classmates for each class combination. Then, I took the average of the proportion of shared classmates for all paired classes to get the teaming score for the student. Possible teaming scores ranged between 0 and 1, with scores closer to 1 representing a higher probability that every student in one of the participant’s classes would also be in each of the participant’s other classes (i.e. high teaming). Next, the sum of teaming scores for all students in the sample at a given school were divided by the number of students (S) enrolled in each school (g) to create a school level teaming index. The teaming score of schools in my analytic sample ranged from .21 to 1.00 ($M=.80, SD=.21$).

**Group disparity in achievement.** The mean CST math score was used as indicator of academic achievement for each ethnic group. Disparity scores between Asian and the other major ethnic groups were calculated for each school. For example, at one school, Asian students’ mean CST math score was 426, and Latino students’ mean CST math score was 358. The disparity score between Asians and Latinos at this school was 426-358=68.

**Individual level variables.**
**Generational status.** Students’ generational status was determined by a question in which students indicated whether they, and their parents were born in the United States. First-generation students are those born outside the United States. Second-generation students are born in the United States, and at least one of their parents was foreign born. The third-plus generation consists of native-born students whose parents were also born in the United States.

**SES.** Student SES was indicated by parent education level reported in the short parent questionnaire. The response options ranged from 1 (elementary/junior high school) to 6 (graduate degree).

**Ethnic identity.** Ethnic identity was assessed by a 6-item scale adapted from the Multiplegroup Ethnic Identity Measures (MEIM, Phinney, 1992). An example item is “I am proud that I am a member of my ethnic group”. The 5-point options ranged from 1 = definitely no to 5 = definitely yes (α=.79 for the Asian sample).

**Academic grade-point average (GPA).** Students’ grade report of Spring semester at 6th grade were used to calculate GPA using 5-point scales, with A, B, C, D and F worth 4, 3, 2, 1 and 0 points respectively. I included students’ grades for four major academic courses (i.e., Math, science, English, social studies) to calculate their academic GPA.

**Results**

The results are presented in four main sections. First, I will provide a rich description of the participating schools to provide the context for my study. Then, I focus on Asian students’ friendship choice patterns (Research Question 1). Next, the question whether cross-ethnic friendships influence intergroup attitudes is addressed (Research Question 2). Finally, I report the results of an exploratory meditational analyses testing whether affective attitudes mediate the relationship between cross-ethnic friendships and cognitive attitudes (Research Question 3).
Characteristics of Participating Schools

In the following section, I will provide a narrative description of participating schools as well as the neighborhoods in which those schools are located (see appendix D1-3 for maps of MSDP schools). School demographic data were drawn from the California Department of Education (CDE) website. I relied on statistics for the year when the school was recruited (i.e., 2009-2010 statistics for Cohort 1 schools, and 2010-2011 statistics for Cohort 2 schools). The most recent census data (Census 2010) for the neighborhoods (i.e., census track) of participating schools were drawn from American FactFinder. The section is organized by school type based on percent Asian in the school population.

Asian Majority Schools

Two Asian-majority schools in my sample are located in the San Francisco/Bay area. One school (School 216) is in an Asian-majority neighborhood in Santa Clara. The median household income of the neighborhood was $89,205. Most of the Asian students at school 216 are Chinese and Vietnamese, and they are primarily 2nd generation immigrants. School 216 is a relatively high SES school in my sample. The average parent education level of that school was 3.39 on a 5-point CDE scale (1=not a high school graduate, 2= high school graduate, 3=some college, 4= college graduate, 5=graduate school); 30.5% students were eligible for free/reduced price lunch. The school’s API at year 2011 was 860 (out of 1000), which is relatively high.

In contrast, another Asian majority school (school 219) is located in a more affluent White majority neighborhood (median household income was $103,000) in San Francisco. Interestingly, the school characteristics do not reflect the neighborhood characteristics. At school 219, Asian Americans made up 64.1% of the student body, though there were only 10.9% Asians in the neighborhood population. School 219 also has relatively low SES compared to the other Asian
majority school. The average parent education level was 2.33, and 76.6% students were eligible for free/reduced price lunch. The school API at year 2011 was 798. Among the Asian students at school 219, Chinese and Vietnamese are the biggest ethnic groups. About half (45%) of the Asian students are 1st generation (i.e., foreign born).

The following pie charts show the ethnic composition of Asian-majority schools:

Asian-White School

The only Asian-White school (school 220) in my sample is located in a relatively affluent White majority neighborhood in Albany in the Bay area (ethnic composition of the neighborhood: 69.2% White, 13.9% Asian, 8.9% Latino, and 0.9% Black; median household income: $117,000). School 220 has the highest SES among the 20 MSDP schools. The average parent education level was 3.90, and only 20.7% students were eligible for free/reduced price lunch. The school API at year 2011 was 887. Among the Asian students at school 220, about three-fourths were East Asian (mostly Chinese), and there were also a few Southeast and South Asian students. 44% of the Asian students are first generation. The following pie chart shows the ethnic composition of the Asian-White school:
Asian-Latino Schools

Both Asian-Latino schools are located in southern California (see map of MSDP schools in greater Los Angeles). One Asian-Latino school (school 210) is located in an Asian-majority neighborhood (57.4% Asian in the population) in Westminster, Orange County. The second biggest ethnic group in the census track was Latino (23.5% Latino). The neighborhood was less affluent compared to others in my study. The median household income was $45,101. School 210 is also a relatively low SES school among the MSDP schools. The average parent education level was 2.31, and 80% students were eligible for free/reduced price lunch. The school API at year 2011 was 846. About 80% of the Asian students at school 210 are Vietnamese, and most of them are second generation.

In contrast, the second Asian-Latino school (school 104) is in a more affluent White-majority neighborhood in Los Angeles (ethnic composition of the neighborhood: 63.7% White, 25.6% Asian, 4.3% Latino, and 2.9% Black; median household income: $118,527). At school 104, the average parent education level was 2.99, and 66.7% of students were eligible for free/reduced price lunch. Most Asian students at the school are Korean, and half (49%) of the Asian kids are foreign-born.

The following pie charts show the ethnic composition of Asian-Latino schools:
Diverse Schools

There are also six diverse schools which have 8%-16% Asian Americans in their student body. Three diverse schools (schools 215, 102, & 105) are from ethnically diverse neighborhoods with median household income ranged from $80,306 to $118,264. School 215 is located in Santa Clara, school 102 is in Los Angeles, and school 105 is in Culver City. As shown in the pie charts below, these three schools were similar in ethnic composition with the exception that school 215 had a smaller share of Blacks and a larger share of multi-ethnic students. School 102 and school 105 were very similar in terms of school SES and academic achievement (school 102: average parent education level=3.16, %free/reduced price lunch=43%, API=847; school 105: average parent education level=3.39, %free/reduced price lunch=42%, API=829). In contrast, school 215 had lower SES and achievement (average parent education level=2.45, % free/reduced price lunch=57%, API=756).

The other three diverse schools (schools 218, 213, & 106) are from White-majority neighborhoods. School 218 is located in Berkeley, schools 213 & 106 are located in greater Los Angeles (school 106 is in Los Angeles city; school 213 is in Woodland Hills, in the southwestern area of the San Fernando Valley). And the two Los Angeles schools are in more affluent neighborhoods compared to the one in Berkeley (neighborhood median household income was $162,045, $102,240, and $82,917 for school 106, 213 and 218 respectively). As shown in the pie charts below, the three schools are similar in ethnic composition with the exception that school 218 had a smaller share of Whites and a larger share of multi-ethnic students. In addition, the three schools were similar in school SES (average parent education level ranged from 3.33 to 3.63; % free/reduced price lunch ranged from 29% to 45%) and academic achievement (API range from 838-855).
The ethnically diverse schools have Asian students from different regions of Asia, and the majority of Asian students (60%-90%) in diverse schools are U.S. born.

Following pie charts show ethnic composition of diverse schools:

Other Schools

In addition, there are another nine schools with a small number of Asian Americans in their student body. They are two Black majority schools, four Latino majority schools, two Latino-White schools, and one Latino-Black school. Below is a brief description of each type of schools.

**Black majority schools.** One Black majority school (school 212) is in Los Angeles, the other one (school 221) is in Oakland, Northern California. Very interestingly, both of the Black majority schools are located in relatively affluent White-majority neighborhoods. The neighborhood median household income was $132,500 and $111,667 for school 212 and 221 respectively. The two Black majority schools are in the lower-achieving end among the 20
MSDP schools (school 212 API=737; school 221 API=720). At school 212, the average parent education level was 3.30, and 50% students were eligible for free/reduced price lunch. The SES of school 221 is lower: the average parent education level was 2.79, and 68% students were eligible for free/reduced price lunch. There were only nine Asian students in the two Black majority schools: two were at school 221 (one Thailand and one Vietnamese); seven were at school 212 (four Indian and three Bengalis).

**Latino majority schools.** All of the four Latino majority schools are in Greater Los Angeles area. Three of them (i.e., school 103, 208 & 214) are located in White majority neighborhoods with median household income ranged from $78,198 to $99,519. The other Latino majority school (school 209) is located in a less affluent (median household income $48,397) Asian majority neighborhood in Gardena. School 103, school 208, and school 209 are low achieving (API ranged from 687-716), low SES schools (average parent education level ranged from 2.23 to 2.89; %free/reduced price lunch ranged from 54% to 71%). School 214 has higher school level SES (38% free/reduced price lunch) and achievement (API=838) compared to the other three Latino majority schools. There were 44 Asian students in total in the four Latino majority schools. Country of origin of these Asian students included China, Japan, Korean, Vietnam, and Pakistan.

**Latino-White schools.** One Latino-White school (school 211) is in Burbank, the other one (school 101) is Redondo Beach. Both of the schools are located in White majority neighborhoods with Latinos as the second largest ethnic group (about 60% White, 20% Latino in the neighborhood population). The neighborhood median household income was $76,194 for school 211 and $110,033 for school 101. The two Latino-White schools are relatively high in achievement (API=827, 859 for school 211 and school 101 respectively) and SES (average
parent education level = 3.27, 3.36; and % free/reduced price lunch = 38%, 25% for school 211 and school 101 respectively) among the MSDP schools. There were 26 Asian students in total in the two Latino-White schools. Country of origin of these Asian students included China, Japan, Korean, Vietnam, Thailand and Pakistan.

**Black-Latino school.** The Black-Latino school (school 207) is located in a Black majority neighborhood in Carson, at greater Los Angeles. The median household income of the neighborhood was $83,882. School 207 is a low-achieving (API=706), low SES school (72% students were eligible for free/reduced price lunch, and average parent education level was 2.60). There was only 0.4% Asian Americans at this school and no Asian student in 6th grade, so this school was excluded from my analyses.

In summary, the Asian students in my study were from schools and neighborhoods varying in ethnic composition, SES, and academic achievement. The five schools with a large number of Asian students (i.e., Asian majority, Asian-White, and Asian-Latino schools) had higher school level achievement (API) compared to most Latino majority schools and all Black majority and Black-Latino schools. These five schools also covered a wide range of SES. It is interesting to see pairs of schools with similar ethnic composition differ in school SES. The Asian majority school in Santa Clara (school 216) had an average parent education level of 3.39, and 30.5% of their students were eligible for free/reduced price lunch. In contrast, the other Asian majority school located in San Francisco (school 219) had much lower school level SES (average parent education level was 2.33, and 76.6% of students were eligible for free/reduced price lunch). Similar contrast can also be found between the two Asian-Latino schools. Another interesting pattern revealed from the narrative description is that at some schools, the school characteristics do not reflect the characteristics of the neighborhood where it is located. For example, we have
relatively low SES Asian majority and Black majority schools which are located in affluent, White majority neighborhoods. One plausible explanation could be that White parents in the neighborhood do not send their children to local public schools anymore when there is an influx of ethnic minority students from adjacent areas to the school.

As to distribution of different Asian sub-groups, most Asian students from Northern California schools in my sample are Chinese and Vietnamese. The largest Asian groups from schools in greater Los Angeles are Vietnamese and Korean. There were only 87 South Asian students (mostly Indian and Pakistani) in my sample, and there was no clear pattern of geographic distribution of these South Asian students. Schools with a small number of Asians include Asian students from different regions of Asia.

Research Question 1: Asian Students’ Friendship Choices

Asian Students’ Friendship Nomination Patterns

Asian students’ friend nomination patterns. The 762 Asian students in the sample made a total of 2521 friend nominations at Wave 2. Among all the nominations, 91% (N=2293) were same gender friends. The friendship question did not make it possible to distinguish between other-gender friendships and romantic relationships. Because I believe that the dynamics of romantic relationships are probably different than friendships, my analyses only focused on same-gender friendships.

Among these friend nominations, 55% are Asian (i.e., same-ethnic friends, N=1256), 10.1% are White (N=231), 12.0% are Latino (N=276), 3.9% are Black (N=90), 12.6% are multiethnic/biracial, and 5.8% are from other ethnic groups. On average, 46.7% of the friendship nominations were reciprocated by the nominees. The rate of reciprocation was relatively high among same-ethnic and White friends (50.0% of the Asian and 48.5% of the White nominated
friends also listed the Asian nominators as their good friends), compared to friendships with Blacks and Latinos (39.9% and 40.0% of Latino and Black nominees reciprocated their friendships with the Asian nominators). Among the same-ethnic reciprocal friendship dyads, the majority of them (73.2%) were from the same region of Asia.

Table 2 shows the cross-ethnic friendship patterns of Asian students as a function of geographic region. South Asian students were more likely to report having at least one cross-ethnic friend than students from the other two Asian groups ($X^2 (2, N=762) = 23.78, p<.001; X^2 (2, N=762) = 29.76, p<.001; X^2 (2, N=762) = 7.53, p<.05$ for White, Black and Latino friends respectively). The percentage of Asian students who had cross-ethnic friends did not differ by gender or generational status.

**School by School Analysis.** Table 3 presents school-by-school analysis of friendship nomination patterns with the ethnic composition of the 6th grade students in the school accounted for. If students’ friend choice was merely based on availability, then the share of friends from each ethnic group should mirror school ethnic composition. To test whether or not observed nomination patterns were equivalent to expected nomination patterns based on school ethnic composition, I calculated a $z$-score (Hamm et. al., 2005) for each ethnic group within each school. The formula for the $z$-score is:

$$z = \frac{p-\pi}{\sqrt{\pi(1-\pi)/n}},$$

where $p$ is the total number of friend nominations of members of the target group divided by the total number of nominations; $\pi$ is the total number of students in the target group divided by the total number of students in the school; and $n$ is the total number of nominations. For example, at School 101, Asian students made up 10.2% of the student body. If Asian students were choosing their friends merely based on availability, they should have 10.2% same-ethnic friends among all
of their friends. In fact, 41.2% among all the 51 chosen friends were Asian. In that case, the $z$-score for Asian friends was $z = \frac{41.2\% - 10.2\%}{\sqrt{10.2\% (1-10.2\%) / 51}} = 7.34$. The $z$-score was greater than 1.96 (i.e., the upper cutoff point of the 95% confidence interval containing zero under $z$ distribution), so in that school, same-ethnic friends were significantly over nominated by Asian students.

As shown in Table 3, Asian students at 14 of the 19 schools over-nominated same-ethnic friends. Black and Latino students were significantly under-nominated by Asian students at 12 and 11 schools respectively, and Black and Latino students were never over-nominated. At two schools where Asian was a numerically small group (schools 221 and 103), Asian students over-nominated Whites as their friends. As shown in the bottom part of the table, when there are sufficient number of same-ethnic peers at school, Asian students did not over-nominate friends from any other ethnic groups.

**Student and School Factors in Cross-ethnic Friend Nomination**

To explore student and school factors influencing Asian students’ cross-ethnic friend nominations, I carried out a set of multilevel logistic regression analyses. At level 1 (student level), the log-odds of having at least one cross-ethnic friend was regressed on student’s gender (0=male, 1=female), generational status (0=first generation, 1=second or third-plus generation), region of Asia (East Asian was use as the reference group, two dummy codes created for South Asian and Southeast Asian respectively), parent education level, student GPA and ethnic identity. I also included students’ total number of friends as a level 1 predictor, which was an indicator of the person’s general tendency to make friends with peers. All level 1 predictors were group-mean centered, thus the intercept of level 1 ($\beta_0$) was the unadjusted school mean log-odds of having at least one cross-ethnic friend. Although I did not expect that the effects of the predictors on friend nominations would vary across schools, I first examined whether these associations
vary by allowing the slopes to vary randomly. The results indicated that the association between student level predictors and friend nominations did not vary significantly across schools. In models reported here, I presented the simplified case in which only the intercept varies across schools.

At school level, I first established a base model (Model 1 in Tables 4 and 5) with no school level predictors. Next, I added school level predictors (i.e., % out-group, % Asian, teaming, and discrepancy in achievement) one by one to the base model (Models 2-5). Information about 6th grade ethnic composition at each school was retrieved from CDE website. Academic teaming was indicated by the school-level teaming index described in above method section. The teaming index reflected the extent to which students at one school were grouped together in academic classes (i.e., the extent to which students had the same set of classmates throughout different academic classes). Discrepancy in achievement was indicated by difference in CST Math scores between Asians and other ethnic groups. Separate analyses were carried out for nominations of White and Latino friends (Appendix C shows the Equations for each model).

**Asian-White friendships.** As shown in Model 1 in Table 4, after controlling for the total number of friends a student had, South Asian was a marginally significant predictor of having at least one White friend. None of the other student level predictors was significant. In Model 2, percentage of White students was a significant school level predictor. The likelihood that Asian students nominated as least one White friend was higher in schools with a larger share of Whites in the student body. After taking into account percent White, the estimated variance component across schools dropped from 3.102 to 0.644 (79.2%), which suggested that the variance in log-odds of having a White friend across schools was largely due to the availability of White students in the school. In Model 3, percent Asian was added. The results showed that in schools
with more percent Asian, Asian students were significantly less likely to nominate a White friend. After taking into account both percent White and percent Asian, the school mean variance in log-odds of having at least one White friend was reduced to 0.067 (reduced by 97.8% comparing to the base model). Neither extent of teaming (Model 4) nor the discrepancy in achievement between Whites and Asians (Model 5) was a significant school level predictor.

Asian-Latino friendships. As to Asian-Latino friendships, GPA was a significant student level predictor in each model (see Table 5). Asian students with a lower GPA were more likely to nominate at least one Latino friend. As shown in Models 2 and 3, both percent Latino and percent Asian at school were significant school level predictors. Asian students were more likely to have a Latino friend when there was a larger share of Latinos and a smaller percentage of Asian at their school. The availability effect explained most of the cross-school variance in log-odds of having at least one Latino friend. After entering percent Latino and percent Asian as school level predictors, the variance component dropped from 0.559 (in base model) to 0.128 (77.1%). In Model 4, extent of teaming was not a significant school level predictor. In Model 5, the discrepancy in achievement between Asians and Latinos was a significant level 2 predictor---the likelihood that Asian students nominated at least one Latino friend was lower in schools in which Asian students’ academic achievement was comparatively better relative to that of their Latino peers.

Asian-Black friendships. Due to the small number of Black friends nominated by Asian students (there are only 90 Black friend nominations in total, and at 13 schools the number of Asian students who had at least one Black friend was less than 5), multilevel modeling technique was not appropriate to explore Asian-Black friendships. Instead, I explored achievement differences between Black students who were nominated by Asians as friends compared to Black
non-friends. Academic achievement was indicated by 6th grade spring semester GPA. All Black students’ GPA was standardized within school within ethnic group, thus the standardized scores indicated students’ relative standing of academic achievement among same ethnic peers in their school. Among the Black students who were nominated by Asians as their friends, 61.2% had an above mean GPA (i.e., $z$-GPA $> 0$), whereas among the other Black students, 38.8% had an above mean GPA ($\chi^2 (1) = 4.74, p < .05$). This result suggested that Asian students were more likely to befriend higher-achieving Blacks.

Research Question 2: Cross-ethnic Friendships and Intergroup Attitudes

Research Question 2 explored the relationship between cross-ethnic friendships and intergroup attitudes. I first examined Asian students’ attitudes toward different groups. Then, I explored the effect of existence of an out-group friend on intergroup attitudes. Next, I studied the specific linkage between different aspects of friendship qualities and different dimensions of intergroup attitudes. Lastly, I examined the role of friendship stability on attitude change.

Asian students’ attitudes toward different ethnic groups.

To explore Asian students’ attitudes toward different ethnic groups, independent of friendships, I carried out a set of ethnic group $\times$ generation status mixed ANOVA tests (ethnic group is a within subject factor, and generational status is a between subject factor). Four types of intergroup attitude scores (i.e., feelings, desire for social distance, positive (kind, honest, smart friendly) and negative (selfish, mean bossy, lazy) cognitive evaluations) were examined separately. As shown in Table 6, Asian students held the most positive attitudes toward their own group, followed by attitudes toward Whites, and they showed the worst attitudes toward Blacks and Latinos on each attitude measure. No significant ethnic group by generational status interaction was found in any of the ANOVA tests, which indicated that the ranking pattern in
Asian students’ attitudes toward different groups was consistent across generations. However, there was a significant generation effect on cognitive dimensions of attitudes. Later generation Asians had higher positive trait and lower negative trait evaluations toward both in and out groups ($F (1,679) = 4.27, p < .05$; and $F (1,684) = 5.83, p < .05$ for positive and negative cognitive evaluations respectively).

**Friendship Effects on Attitudes**

**Existence of out-group friend(s).** Table 7 and figures 1-3 show Asian students’ attitudes toward the other three major ethnic groups when they have vs. do not have at least one friend from that group. As shown in the top part of Table 6 and in Figure 1, compared to those who did not have any White friends, Asian students who had at least one White friend showed significantly better attitudes toward Whites on all attitude measures (i.e., more positive feelings, less desired for social distance, more positive cognitive evaluations, and less negative cognitive evaluations). A similar friendship effect on attitudes was also found for Asian-Latino friendships. For Asian-Black friendships, however, the relationships between friendships and intergroup attitudes were much weaker. A significant group mean difference was only documented on the behavioral measure ($t (726)= -3.58, p <.001$), while there was a marginally significant effect on the affective measure ($t (482) = 1.94, p = .052$). Students who had at least one Black friend and those who did not have any Black friends did not differ on trait evaluations of Blacks.

To test whether the friendship effect was consistent across generations, and across different Asian sub-groups, a 2 (Friendship: have vs. don’t have at least one cross-ethnic friend) × 2 (Generational status: 1st generation, 2nd and beyond generation) ×3(Geographic region: East Asian, Southeast Asian, South Asian) MANOVA analysis was performed. The dependent variables were four dimensions of attitudes: feelings, desire for social distance, positive and
negative cognitive evaluations. Separate MANOVA tests were carried out for attitudes toward Whites, Latinos and Blacks. As expected, there was a significant multivariate friendship effect on attitudes toward each out group ($F(4, 429) = 3.92, p < .01; F(4, 429) = 3.27, p < .01; F(4, 427) = 3.63, p < .01$ for attitudes toward Whites, Latinos and Blacks respectively). In addition, a significant multivariate *region effect* was found on attitudes toward Whites ($F(8, 858) = 3.32, p < .001$) and Latinos ($F(8, 858) = 4.31, p < .001$). Follow-up ANOVAs revealed that the region effect was significant on affective, behavioral and positive cognitive evaluation dimensions of attitudes (see Table 8). The general pattern revealed from pairwise comparisons suggested that South Asian students reported the most positive attitudes toward Whites and Latinos among the three Asian sub-groups, East Asians had the worst attitudes, and Southeast Asians had attitude scores in between. Neither the multivariate main effect of generational status or interactions involving region and generational status were significant.

**Multilevel analysis.** Next, multilevel analysis (Raudenbush & Bryk, 2002) was performed to examine the friendship effect in a more rigorous way. Due to the small number of Black friend nominations, multilevel analyses were carried out only for Asian-White and Asian-Latino friendships. Different aspects of attitudes (i.e., feelings, desire for social distance, positive and negative cognitive evaluations) were examined in separate models. As shown in Equation 1, at the student level (level 1), attitude score was regressed on demographic variables (gender, generation, parent education level, and region of Asia) and existence of a cross-ethnic friendship. All level 1 predictors were group-mean centered, thus $\beta_{0j}$ represented the unadjusted school mean attitude score. At the school level (level 2), I fixed the slopes of demographic variables, and I first allowed the slope of friendship ($\beta_{6j}$) to vary to check if friendship effects differ across schools. In all cases, analyses revealed little variation in the friendship slope across schools. In
other words, the friendship effect on intergroup attitude was constant for every school. In the section below, I only reported the coefficients from the most parsimonious models (shown in Equation 1 below) in which only the intercept varied randomly.

Equation 1:

Level 1: \( \text{Attitude}_{ij} = \beta_0 + \beta_1 \text{ (GENGER)}_{ij} + \beta_2 \text{ (GENERATION)}_{ij} + \beta_3 \text{ (ParentEd)}_{ij} + \beta_4 \text{ (SouthAsian)}_{ij} + \beta_5 \text{ (SoutheastAsian)}_{ij} + \beta_6 \text{ (Friend)}_{ij} + e_{ij} \)

Level 2: \( \beta_0 = \gamma_{00} + \mu_0, \)

\( \beta_p = \gamma_{p0}, \) for \( p > 0. \)

As shown in Table 9, after controlling for demographic variables, having an out-group friend was associated with more positive feelings, less behavioral avoidance, more positive trait evaluations, and less negative trait evaluations toward the out-group as a whole. This was true for both Asian-White and Asian-Latino friendships. Comparing to boys, girls showed significantly less desire for social distance toward Whites and Latinos, and girls also reported significantly more positive feelings toward Latinos. No generational difference was found on any attitude measure. An interesting region difference in intergroup attitudes emerged here: compared to East Asian students, South Asians showed significantly better attitudes toward both Latinos and Whites on affective, behavioral and positive trait evaluation aspects of attitudes. In addition, Southeast Asians had significantly better affective and behavioral attitudes toward Latinos and Whites than East Asians. The three Asian sub-groups did not differ on negative trait evaluations of Whites or Latinos.

**Friendship qualities.** Next, similar procedures were carried out to examine the effect of each friendship quality measure (i.e., spending time together and emotional support) with the trimmed sample of students who have White or Latino friend(s). Different aspects of friendship
qualities revealed distinctive relations with different dimensions of intergroup attitudes. As shown in Table 10, for both Asian-White and Asian-Latino friendships, *spending time together* with out-group friend(s) was a significant predictor of less behavioral avoidance toward the out-group. There was no significant linkage between *spending time together* and affective attitudes or trait evaluations.

As shown in Table 11, for Asian-White friendships, *emotional support* was a significant predictor of less behavioral avoidance toward Whites. For Asian-Latino friendships, emotional *support* significantly predicted every dimension of attitudes. This pattern of findings suggested that *spending time together* with out-group friends was sufficient for Asian students to reduce desire for social distance toward Whites and Latinos; and *emotional support* from cross-ethnic friendships was important to promote better affective and cognitive attitudes toward Latinos.

**Stability of friendship.** After documenting concurrent effects of cross-ethnic friendships on intergroup attitudes, I further explored whether stability of cross-ethnic friendship affected the friend-attitude linkage. In analyses described below, Time1 (T1) referred to Wave 1 data which were collected at the fall semester of 6th grade, and Time2 (T2) referred to Wave 2 data which were collected at the spring semester of 6th grade. Based on friendship status at both time points, I categorized students into four groups: (1) stable: had out-group friend(s) at both T1 and T2 (not necessarily befriended the same person); (2) T1only out-group friend; (3) T2only out-group friend; and (4) No out-group friend at either wave. I created three dummy variables (T1only, T2only, and none) to indicate friendship status, and stable out-group friend (T1 and T2) was used as the reference group. Since the friendship effect did not differ across schools in above multilevel analyses, multiple *OLS* regression was used to test the effect of friendship stability. A stability effect would be documented if the T1only or T2only group differed significantly in
intergroup attitudes from the stable friendship group---those who had out-group friend(s) at both waves (i.e., the reference group). Separate analyses were carried out for each attitude dimension toward Whites and Latinos.

As shown in Table 12, the regression coefficients of T1only and T2only were not significant in any model. The findings suggested that the effect of having a White friend on the attitudes toward Whites was similar, regardless of the stability of friendships with Whites. Since Asian students had positive attitudes toward Whites in general, there might be a “ceiling effect” in attitudes toward Whites, thus no stability of friendship effect was shown here.

As shown in Table 13, the regression coefficients of T1only and T2only were not significant in models predicting feelings and desire for social distance. However, the regression coefficients of T1only were significant in the models predicting positive and negative trait evaluations of Latinos ($\beta = -.147, p < .01; \beta = .099, p < .05$ for positive and negative traits respectively). These findings suggested friendship stability did not matter for friendship effect on affective and behavioral dimension of attitudes toward Latinos, whereas having Latino friend(s) at both time points had a significantly larger impact on trait evaluations of Latinos than having Latino friend(s) at T1 only. Thus stability of friendships mattered in cognitive attitude change.

To summarize, results from analyses of the first two research questions showed that Asian students had a strong in-group preference in choosing friends. As to cross-ethnic friendships, the larger the share one ethnic group was in the student body, the more likely Asian students had a friend from that particular group. Similarity in academic achievement was important for Asian students to form friendships with Latinos and Blacks. Cross-ethnic friendships were related to better intergroup attitudes, especially the behavioral dimension of attitudes. Both spending time
together with and emotional support from a cross-ethnic friend were related to less behavioral avoidance toward the entire out group, and emotional support from the cross-ethnic friendship was particularly important to promote better affective and cognitive attitudes toward the out-group.

Asian students had distinctive relations with peers who are White, Black and Latino. They tend to over-chose Whites as their friends when the number of own-group peers was very small; whereas they never over chose Latinos or Blacks as their friends, and they often significantly under chose other ethnic minority peers when school availability was accounted for. Asian students also showed worse attitudes toward Latinos and Blacks than their attitudes toward Whites, and cognitive evaluations of minority groups were less susceptible to the influence of cross-ethnic friendships. Significant within-group differences in cross-ethnic peer relations were also found among Asian American students. South Asian students nominated more cross-ethnic friends than their East Asian and Southeast Asian peers. And South Asian students also reported better intergroup attitudes than students from other regions of Asia.

**Research Question 3: Mediation Analysis about Cognitive Attitudes Change**

Next, I presented the results from my third research question that examined the mechanism under which cross-ethnic friendships lead to cognitive attitudes change.

**Affect Mediation Model**

As described above, for Asian students, having a White or Latino friend was shown to affect both feelings toward and cognitive evaluations of the friend’s ethnic group as a whole, and affective attitudes were more susceptible to the influences of friendships (Tropp & Pettigrew, 2005; Davies et al., 2011). Based on these findings, I further explored the possible mediation role of the affective component in changing cognitive attitudes (see Figure 4 for the affect-mediated
model). Given the nested structure of the data, a multi-level mediation modeling technique (Krull & Mackinnon, 2001) was used to test the proposed mediation effect. Since the predictor (cross-ethnic friendship), mediator (feelings) and the dependent variables (cognitive evaluations) were all individual level variables, a 1→1→1 multilevel mediation model was tested. Following Krull and Mackinnon’s (2001) procedure, two separate multilevel models were fit: (a) regression of the mediator (feeling) on the independent variable (friendship) (Equation 2), and (b) regression of the dependent variable (cognitive evaluation) on both the independent variable and the mediator (Equation 3). In both models, I fixed the slopes of demographic variables, and I first allowed the slopes of friendship ($\beta_{aj}$) and feelings ($\beta_{bj}$) to vary randomly. Results indicated little variation in the slopes of friendship and slopes of feelings across schools, so I simplified each model by allowing only the intercept to vary randomly. Equations below showed the most parsimonious models.

Equation 2:

Level 1: $\text{Feel}_{ij} = \beta_0 + (\text{demographic variables}) + \beta_{aj}(\text{Friend})_{ij} + e_{ij}$

Level 2: $\beta_0 = \gamma_{00} + u_{0j}$.

Equation 3:

Level 1: $\text{Trait}_{ij} = \beta_0 + (\text{demographic variables}) + \beta_{cj}(\text{Friend})_{ij} + \beta_{bj}(\text{Feel})_{ij} + e_{ij}$

Level 2: $\beta_0 = \gamma_{00} + u_{0j}$.

In the case that only the intercept varies randomly, point estimate of the mediated effect of feelings, $\beta^*_{ab}$, was obtained based on coefficient estimates from Equations 1 and 2, an estimate for the standard error of the mediated effect for both mediators was obtained using the following formula (Krull & MacKinnon, 2001):
I tested the mediation effect on positive traits and negative traits separately for both Asian-White and Asian-Latino friendships. Thus, four sets of mediation analyses were carried out. To examine the mediation effect over time, Wave1 friendship was used to predict Wave 2 feelings toward the out-group, which in turn predicted Wave2 cognitive evaluations of the out-group. As shown in the left section of Table 14, friendship with Whites was a significant predictor of better feelings toward Whites (i.e., the $\beta_a$ path was significant), and feelings significantly predicted more positive cognitive evaluations and less negative evaluations of Whites (i.e., the $\beta_b$ paths were significant). More pertinent to my hypothesis, the mediation effects of feelings on both positive and negative cognitive evaluations were significant ($z = 2.00, p < .05$ for both positive and negative cognitive evaluations). A very similar pattern of mediation effect was also documented for Asian-Latino friendships ($z = 2.25, p < .05$, and $z = 2.00, p < .05$ for positive and negative cognitive evaluations respectively).

**Full Mediation Model**

The above affect-mediation model was basically derived from intergroup attitude literature (Tropp & Pettigrew, 2005; Davies et al., 2011), however, results from my analyses suggested that the behavioral attitude was most susceptible to the influence of friendship among the three dimensions of intergroup attitudes. Recall that it was only on the behavioral avoidance dimension of attitudes that I found significant friendship effects for all out-groups (Whites, Latinos and Blacks, see Table 7), and for both Asian-White and Asian-Latino friendships, two friendship quality measures (i.e., spending time together and emotional support) were significantly related to behavioral attitudes (see Tables 10 & 11). Based on these findings, I
further proposed a full mediation model that includes all three components of attitudes (shown in figure 5). I hypothesized that friendship with an out-group member first promotes behavioral closeness toward the out-group, and behavioral closeness leads to more positive feelings, which in turn generates better cognitive evaluations of the out-group.

I conducted path analysis in a structural equation modeling (SEM) framework to test the proposed mediation model. The “TYPE IS COMPLEX” code and CLUSTER command were used in Mplus version 6.0 (Muthen & Muthen, 1998-2010) to adjust for the nested structure of the data.

To make a better argument that cross-ethnic friendships lead to improved intergroup attitudes instead of the other way around (i.e., better attitudes cause more friendships), I used Wave 1 friendship to predict Wave 2 attitudes in the model. Three attitude scores (behavioral, affective and cognitive attitudes) were modeled as latent variables to allow for more precise modeling of measurement error, which in turn led to more accurate estimation of indirect effects (MaKinnon, 2008). To ease the interpretation of the model, I reverse-coded the behavioral attitude items in the way that higher scores indicated more behavioral closeness. Separate analyses were carried out for positive and negative cognitive evaluations for Asian-White and Asian-Latino friendships (four models in total).

As shown in Figures 6-9, all models including friendships and three different dimensions of attitudes fit the data well (CFI ranged from .961 to .969; RMSEA ranged from .044 to .050). As hypothesized, path coefficients in the models revealed that Asian students who had at least one White/Latino friend showed more behavioral closeness toward the out-group, and behavioral closeness was linked with better feelings of the out-group, which in turn led to more positive and less negative trait evaluations. More pertinent to my concern, results from of the tests of indirect
effects (Muthen & Muthen, 1998-2010) suggested that the proposed mediation path—friendship-behaviors-feelings-cognitions—was significant in each model (Asian-White positive traits: $\beta = .16$, $p < .001$; Asian-White negative traits: $\beta = -.15$, $p < .01$; Asian-Latino positive traits: $\beta = .13$, $p < .01$; Asian-Latino negative traits: $\beta = -.11$, $p < .01$).

**Discussion**

With recent immigration, the demographics of U.S. schools have been changing dramatically. The percentage of White students is decreasing while there are a lot more Latino and Asian students sitting in U.S. classrooms today (Fry, 2007). Given the large number of studies about immigrant students, there is a surprisingly lack of research which focuses on Asian Americans students’ peer relations. My dissertation study attempted to explore this issue by examining Asian students’ friendships with peers from the other three major ethnic groups (Whites, Blacks, and Latinos) and their intergroup attitudes. Three lines of findings which make original contributions to the peer relation literature are discussed below.

**Asian Students’ Relations with Whites, Latinos, and Blacks**

First, my study demonstrated for the first time that Asian American students had distinctive relations with peers from different ethnic groups. Asian students showed strong in-group preference when choosing friends, and when there was a lack of own-group peers at school, they over-selected White students as friends, compared to what would be expected based on the number of White students in the school. However, they never over-selected other ethnic minority peers as their friends; more often than not, Latinos and Blacks were significantly under chosen by Asians students. Asian students also reported worse attitudes toward Latinos and Blacks than their attitudes toward Whites, and trait evaluations of minority groups were less susceptible to the influences of cross-ethnic friendships. Specifically, having a White or Latino
friend was related to better attitudes toward the out-group on all attitudes dimensions. However, having a Black friend was only related to significantly less behavioral avoidance toward and more positive feelings of Blacks, not better cognitive evaluations. In addition, analyses about friendship stability revealed that a sustainable cross-ethnic friendship was particularly important for better cognitive evaluations of Latinos, but not for that of Whites. It seems that the general racial hierarchy in U.S. society is entrenched in Asian adolescents’ friendship preferences and their intergroup attitudes, though most of the Asian students in the sample are immigrants or children of immigrants. This line of findings underscores the importance of attending to the specific ethnic composition of the friend dyads when studying cross-ethnic friendships, which has been largely ignored in previous research.

Another original finding from my dissertation was that relations with out-group peers differ across different Asian-sub groups. South Asian students (e.g., Indian, Pakistani) reported more cross-ethnic friendships and better intergroup attitudes than did their East Asian (e.g., Chinese, Korean) and Southeast Asian (e.g., Vietnamese, Thai) peers. To my knowledge, no study has explored this issue before. One possible explanation for this pattern could be relatively close cultural distance (Babiker, Cox, & Miller, 1980) between South Asian and Western countries due to the long history of colonization in the Indian subcontinent. Literature on immigration and acculturation suggested that larger cultural distance may trigger more negative intergroup attitudes (Berry, 1997). I acknowledge that the Asian American population is diverse in multiple aspects. In my study, I was only able to address this issue to a limited extent, distinguishing Asian adolescents from different geographic regions of Asia. Additional research with larger samples is needed to further our understanding of the variation in intergroup relations among different Asian sub-groups.
Individual and School Factors Influencing Friendship Choices

A second contribution of my dissertation is that it supported and extended the cross-ethnic friendship literature by exploring new variables important for friendship nominations. Consistent with the homophily hypothesis, Asian students showed strong in-group preference in friendship choices; and the more own-group peers were available at school, the less likely an Asian student nominated a cross-ethnic friend. Consistent with the propinquity hypothesis, Asian students were more likely to nominate at least one White or Latino friend as the share of the out-group increased in the student body. The propinquity effect could also explain why Asian-Black friendships were so rare in my sample. Geographic racial segregation is not uncommon in the U.S. (e.g., Charles, 2003). There are so few Asian-Black schools in California, and we could not recruit one for our study. In schools with a large number of Black students (Black-majority and Black-Latino schools), there were few to no Asians. Lack of contact could be one key reason for the rarity of Asian-Black friendships and more negative attitudes toward Blacks. Reasons for persisting residential segregation are far beyond the scope of my study. Given the barriers to intergroup contact at the societal level, ethnic diversity at school may play a pivotal role in promoting cross-ethnic friendships among members of different minority groups.

Exploratory in nature, my study examined the effect of academic teaming on cross-ethnic friendship nominations. I hypothesized that Asian students in schools with higher level of teaming would be more likely to have a White friend and less likely to have a Latino friend due to possible racial re-segregation in academic teams. The teaming hypothesis was not supported. One possible explanation is that the teaming index used in my study only reflected the extent to which students have the same set of classmates across different academic classes. It does not tell us who Asian students actually travel with in school. Variables indicating classroom ethnic
composition, and ethnic composition at extra-curriculum activities can be good contextual variables to study in future research.

Another variable that yielded a significant effect on friendship nominations was academic achievement. In general, Asian students have higher academic achievement than Blacks and Latinos (Bankston & Zhou, 2002). My study showed that when Asian students chose friends from other ethnic minority groups, they tended to befriend those who had similar academic performance. Specifically, lower Asian GPA was associated with higher likelihood of having at least one Latino friend; and when Asian students had friendships with Blacks, they befriended those who were relatively high-achieving compared to other Black students in the school. Similarity in academic achievement may lead to more contact opportunities between Asians and other ethnic minority students in achievement-grouped classes, which then fosters formation of cross-ethnic friendships. In addition to individual level GPA, relative achievement status at the group level was also a significant predictor of Asian students’ friendships with Latinos. Asian students were more likely to have a Latino friend when the discrepancy in average academic achievement between Asians and Latinos at the school was smaller. This finding is consistent with previous research (Hamm et al., 2005). From the vein of contact theory (Allport, 1954), similarity in group level achievement is a sign of “equal status” between groups, which is an optimal condition for intergroup contact. In addition, minimized achievement differences could serve to eliminate Asian students’ negative images of their minority peers as low in academic ability (Lee, 2009), therefore increasing the chance for cross-ethnic friend nomination.

Cross-ethnic Friendships and Intergroup Attitudes

A third contribution is that the present study is one of the first studies to include multiple measures of friendships (both number and quality) and intergroup attitudes (see Binder et al.,
2009 for another example). The results demonstrated unique linkages between different aspects of friendships and different dimensions of attitudes, which were not fully specified in previous research. *Spending time together* with a White or Latino friend was only related to significantly less behavioral avoidance toward the out-group. There was no significant linkage between spending time together and affective attitudes or trait evaluations. It appears that the behavioral component of intergroup attitude is relatively easy to change. Spending time together with a cross-ethnic friend provides opportunity for repeated contact with the out-group member, and a cross-ethnic friend might also serve as a broker who could introduce the student to more out-group members. Repetition makes intergroup encounters comfortable and “right” (Pettigrew, 1998). Another plausible explanation is that spending time together with an out-group friend could help reduce intergroup anxiety (Stephan & Stephan, 1985; Paolini, Hewstone, Carrins, & Voci, 2004), which results in less behavioral avoidance toward the entire out-group.

*Emotional support* from cross-ethnic friendships showed stronger effects on intergroup attitudes. For Asian-White friendships, emotional support was linked to significantly less behavioral avoidance toward Whites. For Asian-Latino friendships, perceived emotional support was significantly related to all dimensions of attitudes toward Latinos. This finding is consistent with Pettigrew’s (1998) argument about the critical role of emotions in intergroup contact, and it highlights the importance of affective ties in changing attitudes toward ethnic minority groups. Emotional support from the friendship reflects partner responsiveness to the student’s psychological need, which is important in enhancing intimacy levels in close friendships (Shelton, Trail, West, & Bergsieker, 2010). And greater feelings of intimacy with individual out-group members lead to less prejudice toward the out-group as a whole (Tropp & Pettigrew 2005).
Mechanisms underlying attitude change. Another original contribution of the present study is that it reveals the inner linkages among different dimensions of intergroup attitudes. On one hand, social psychology has suggested that affective attitudes are more inclined to change compared to cognitive attitudes (Tropp & Pettigrew, 2005), and strategies that emphasize affective dimensions, such as asking people to imagine how out-group members feel, have been particularly effective in reducing intergroup prejudice (e.g., Finlay & Stephan, 2000). On the other hand, results from my analyses suggested that the behavioral component of intergroup attitudes was the easiest one to change. Guided by existing literature and my own findings, I proposed a full model which includes all three components of attitudes. Specifically, I hypothesized that friendship with one out-group member first leads to behavioral closeness toward the out-group as a whole. Repeated contact with out-group members, preferably in varied settings (Jackman & Crane, 1986), then promotes better feelings toward the out-group, which in turn generates cognitive change. The proposed temporal sequence received empirical support in the current study. This finding furthers our understanding of the process through which cross-ethnic friendships leads to re-appraisal of the out-group.

Limitations

Although I believe my dissertation study makes a significant contribution to the peer relations literature, I acknowledge its limitations. One possible limitation in my study was the definition of friendship. One-way friendship nominations were used as an index of friendship, which may not necessarily reflect a friendship relationship. A practical reason to use one-way friendship nominations was that the number of reciprocal friendships was too small (about half of the one-way friendships) when I examined Asian students’ friendships with Whites, Latinos and Blacks separately, so it was not appropriate for multilevel analyses. Future research with a
larger sample size can complement the present findings by examining mutual friendship nominations.

Another limitation involves the directionality issue between friendships and attitudes. In my study, the friendship indicator was a dichotomous variable, whereas all attitude indicators were continuous. Incongruency in variable type did not allow me to compare the strength of the paths for both directions in a cross-lagged model (i.e., predicting attitude, OLS regression should be used; predicting friendship, logistic regression should be employed; therefore, regression coefficients from the two models would be in different units). In my analyses about the relation between cross-ethnic friendships and intergroup attitudes, cross-sectional data were used, thus we should be cautious in making any causal inferences. The mediation models had a similar directionality issue. I tested the temporal sequence that friendship promotes behavioral closeness, and behavioral closeness leads to better feelings, which in turn generates cognitive attitude change. It is possible, however, that there may be bidirectional and even cyclical influences (Pettigrew, 1998). For example, Asian students who hold negatively stereotyped beliefs about other ethnic groups tend to feel worse about the out-group members, and aversive feelings lead to behavioral avoidance, which hinders the formation of cross-ethnic friendships. The sequence could be cognitive- to affective- to behavioral attitudes rather than the reverse sequence, which is the one I tested. Studies that test alternative models of directionality are a good topic for future research. My model is promising in the way that it indicates the behavioral component of attitude is the easiest one to change, which attitude intervention programs should start with.

A final limitation relates to generalizability. The Asian adolescents in my sample were recruited from Los Angeles and the Bay area in California and therefore were urban residents of the most ethnically diverse and Asian-dense state in the nation. Whether similar findings would
emerge for Asian adolescents residing in less ethnically diverse settings or in other regions of the country with less Asian immigrants remains to be seen. In addition, my study focused on early adolescence. Studies with both younger children and older adolescents are needed to fully capture the developmental process of Asian American students’ relations with other-ethnic peers. We could explore questions such as, does congruency between elementary and middle school ethnic composition affect Asian students’ friendship choices? Or, do Asian students have more segregated peer relations and deteriorated intergroup attitudes in high school when math and science tracking become more common? More nuanced developmental analysis of cross-ethnic peer relations is a goal for future research.

Implications

These limitations notwithstanding, I believe that my dissertation has important implications for both cross-ethnic friendship research and educational practice. Results from my study revealed that Asian students had distinctive patterns of friendships with peers who are White, Latino and Black when school availability was accounted for. This finding suggests that it is important to pay attention to specific ethnic composition of friend dyads when studying the effect of ethnic diversity on cross-ethnic friendship formation.

My study also showed that similarity in academic achievement is important for Asian students’ friendships with other ethnic minority peers. Though academic achievement is of central importance in almost all classrooms, teachers can stress different aspects of achievement (Hallinan & Teixeira, 1987). Classroom climate which focuses on curriculum mastery and cooperation and deemphasizes achievement hierarchy based on grades and test scores may serve to promote Asian-Black and Asian-Latino friendships.
Results of my study could provide implications for attitude interventions as well. Existing stereotype-change programs tend to be cognitively-orientated. That is, they focus on changing the stereotyped beliefs directly by increasing knowledge of the out-group (see review in Hill & Augoustin, 2001). My doing-feeling-thinking model could explain why these information-based programs have achieved limited success—they tackle the most stubborn aspect of attitudes directly. Instead, my model suggests that inter-group attitude interventions should start with promoting behavioral closeness between members of different groups, which is the easiest one to work on and which might generate a sequential process of attitude change.

In addition, my dissertation work could also be extended to Chinese settings where I will continue my research career after graduation. Adaptation of left-behind children (i.e., rural Chinese children who have been left to fend largely for themselves after their parent(s) go to cities for work) is a prominent social issue in China today. For the left-behind children whose parents are not available in their daily life, peers may play a special role in their social, psychological and academic development. Left-behind children often attend schools together with students whose parents are at home, and in some cases, schools provide accommodation for the left-behind kids. With the experiences from my dissertation project, I could carry out research exploring questions such as, what is the relation between left-behind and non-left-behind children? Are the left-behind children discriminated against by other students? Are cross-group friendships related to better intergroup attitudes? Hopefully, my solid training at UCLA could enable me to conduct novel research in my home country.
Table 1
*Characteristics of different Asian sub-groups*

<table>
<thead>
<tr>
<th></th>
<th>East Asian (n=456)</th>
<th>Southeast Asian (n=194)</th>
<th>South Asian (n=87)</th>
<th>Total (n=762)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern California</td>
<td>42.5%</td>
<td>49.0%</td>
<td>34.5%</td>
<td>43.6%</td>
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<tr>
<td>Southern California</td>
<td>57.5%</td>
<td>51.0%</td>
<td>65.5%</td>
<td>56.4%</td>
</tr>
<tr>
<td>Generation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st generation</td>
<td>37.1%</td>
<td>15.7%</td>
<td>34.9%</td>
<td>30.4%</td>
</tr>
<tr>
<td>2nd generation</td>
<td>54.8%</td>
<td>82.2%</td>
<td>63.9%</td>
<td>63.8%</td>
</tr>
<tr>
<td>3rd-plus generation</td>
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<td>2.2%</td>
<td>1.2%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Parent education level</td>
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<td></td>
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<tr>
<td>Not a high school graduate</td>
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<td>18.5%</td>
<td>11.1%</td>
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</tr>
<tr>
<td>high school diploma/GED</td>
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<td>20.2%</td>
<td>6.2%</td>
<td>12.7%</td>
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<tr>
<td>Some college</td>
<td>20.1%</td>
<td>22.6%</td>
<td>12.3%</td>
<td>20.1%</td>
</tr>
<tr>
<td>College degree</td>
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<td>23.8%</td>
<td>21.0%</td>
<td>26.0%</td>
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<tr>
<td>Graduate degree</td>
<td>31.6%</td>
<td>14.9%</td>
<td>49.4%</td>
<td>28.6%</td>
</tr>
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</table>
Table 2
Percentage of Asian students Nominating at Least One Cross-ethnic Friend

by Region of Asia

<table>
<thead>
<tr>
<th>Region of Asia</th>
<th>White friend</th>
<th>Latino friend</th>
<th>Black friend</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Asian (e.g., Chinese, Korean, Japanese)</td>
<td>23%</td>
<td>24%</td>
<td>8%</td>
</tr>
<tr>
<td>Southeast Asian (e.g., Vietnamese, Thai)</td>
<td>14%</td>
<td>29%</td>
<td>7%</td>
</tr>
<tr>
<td>South Asian (e.g., India, Pakistani)</td>
<td>40%</td>
<td>38%</td>
<td>26%</td>
</tr>
<tr>
<td>Total</td>
<td>23%</td>
<td>27%</td>
<td>10%</td>
</tr>
</tbody>
</table>
### Table 3

School ethnic composition and distribution of Asian students’ friends’ ethnicity

<table>
<thead>
<tr>
<th>School ID</th>
<th>6th grade ethnic composition</th>
<th>Ethnic distribution of Friends</th>
<th>z-score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Asian</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>208</td>
<td>1.1%</td>
<td>5.9%</td>
<td>25.4%</td>
</tr>
<tr>
<td>221</td>
<td>1.7%</td>
<td>12.2%</td>
<td>67.4%</td>
</tr>
<tr>
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<td>2.4%</td>
<td>12.2%</td>
<td>61.7%</td>
</tr>
<tr>
<td>211</td>
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<td>3.2%</td>
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<td>1.2%</td>
<td>22.3%</td>
</tr>
<tr>
<td>214</td>
<td>5.9%</td>
<td>14.9%</td>
<td>12.7%</td>
</tr>
<tr>
<td>103</td>
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<td>18.6%</td>
<td>21.3%</td>
</tr>
<tr>
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<td>8.9%</td>
<td>38.4%</td>
<td>18.4%</td>
</tr>
<tr>
<td>213</td>
<td>9.0%</td>
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<tr>
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<td>47.8%</td>
<td>17.0%</td>
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<tr>
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<td>10.2%</td>
<td>38.7%</td>
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<tr>
<td>215</td>
<td>14.6%</td>
<td>19.3%</td>
<td>3.9%</td>
</tr>
<tr>
<td>102</td>
<td>14.8%</td>
<td>17.1%</td>
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<tr>
<td>104</td>
<td>30.2%</td>
<td>7.1%</td>
<td>10.6%</td>
</tr>
<tr>
<td>220</td>
<td>34.4%</td>
<td>42.2%</td>
<td>7.8%</td>
</tr>
<tr>
<td>210</td>
<td>52.8%</td>
<td>1.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>216</td>
<td>55.4%</td>
<td>8.0%</td>
<td>1.9%</td>
</tr>
<tr>
<td>219</td>
<td>58.9%</td>
<td>5.9%</td>
<td>9.3%</td>
</tr>
</tbody>
</table>

**Note.** Significant z-scores (in bold) indicate nomination patterns beyond chance. Positive z-scores indicate over nomination; negative z-scores indicate under nomination.
Table 4
Results from Multilevel Logistic Regression Analysis Predicting Asian Students’ Nomination of at Least One White Friend

<table>
<thead>
<tr>
<th></th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student-level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-0.16 (0.27)</td>
<td>-0.17 (0.27)</td>
<td>-0.18 (0.27)</td>
<td>-0.18 (0.27)</td>
<td>-0.19 (0.27)</td>
</tr>
<tr>
<td>Generation</td>
<td>-0.30 (0.30)</td>
<td>-0.306 (0.30)</td>
<td>-0.32 (0.28)</td>
<td>-0.33 (0.30)</td>
<td>-0.33 (0.30)</td>
</tr>
<tr>
<td>ParentEd</td>
<td>-0.03 (0.10)</td>
<td>-0.03 (0.10)</td>
<td>-0.03 (0.10)</td>
<td>-0.03 (0.10)</td>
<td>-0.04 (0.10)</td>
</tr>
<tr>
<td>SouthAsian</td>
<td>0.61 (0.36)*</td>
<td>0.62 (0.36)*</td>
<td>0.63 (0.36)*</td>
<td>0.63 (0.36)*</td>
<td>0.59 (0.35)*</td>
</tr>
<tr>
<td>SoutheastAsian</td>
<td>0.74 (0.48)</td>
<td>0.76 (0.48)</td>
<td>0.79 (0.49)</td>
<td>0.78 (0.49)</td>
<td>0.83 (0.51)</td>
</tr>
<tr>
<td>Num. of friend</td>
<td>0.31 (0.08)**</td>
<td>0.32 (0.09)**</td>
<td>0.32 (0.08)**</td>
<td>0.32 (0.08)**</td>
<td>0.30 (0.08)***</td>
</tr>
<tr>
<td>GPA</td>
<td>0.18 (0.21)</td>
<td>0.18 (0.21)</td>
<td>0.19 (0.21)</td>
<td>0.20 (0.21)</td>
<td>0.18 (0.20)</td>
</tr>
<tr>
<td>Ethnic identity</td>
<td>0.12 (0.21)</td>
<td>0.12 (0.21)</td>
<td>0.12 (0.21)</td>
<td>0.12 (0.22)</td>
<td>0.13 (0.21)</td>
</tr>
<tr>
<td><strong>School-level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% White</td>
<td>9.18 (1.58)**</td>
<td>6.68 (1.00)**</td>
<td>6.84 (0.97)**</td>
<td>5.52 (0.92)**</td>
<td>5.52 (0.92)**</td>
</tr>
<tr>
<td>% Asian</td>
<td>-4.37 (0.97)**</td>
<td>-4.58 (0.94)**</td>
<td>-4.75 (0.96)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaming</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dis. ach.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.02 (0.06)</td>
</tr>
<tr>
<td>Variance component</td>
<td>3.102</td>
<td>0.644</td>
<td>0.067</td>
<td>0.040</td>
<td>0.050</td>
</tr>
</tbody>
</table>

Note. Num. of friend=total number of friends nominated by the student;
Dis. ach. = discrepancy in academic achievement between Asians and Whites at school;
* p < .10, ** p < .05, *** p < .01, **** p < .001.
Table 5
Results from Multilevel Logistic Regression Analysis Predicting Asian Students' Nomination of at Least One Latino Friend

<table>
<thead>
<tr>
<th></th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student-level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-0.38 (0.22)</td>
<td>-0.37 (0.21)</td>
<td>-0.37 (0.22)</td>
<td>-0.37 (0.22)</td>
<td>-0.36 (0.22)</td>
</tr>
<tr>
<td>Generation</td>
<td>0.05 (0.24)</td>
<td>0.05 (0.23)</td>
<td>0.05 (0.23)</td>
<td>0.05 (0.24)</td>
<td>0.04 (0.24)</td>
</tr>
<tr>
<td>Parent Ed.</td>
<td>0.10 (0.08)</td>
<td>0.10 (0.08)</td>
<td>0.10 (0.08)</td>
<td>0.10 (0.08)</td>
<td>0.10 (0.08)</td>
</tr>
<tr>
<td>South Asian</td>
<td>0.43 (0.32)</td>
<td>0.43 (0.31)</td>
<td>0.43 (0.31)</td>
<td>0.43 (0.31)</td>
<td>0.48 (0.31)</td>
</tr>
<tr>
<td>Southeast Asian</td>
<td>0.49 (0.36)</td>
<td>0.49 (0.35)</td>
<td>0.48 (0.36)</td>
<td>0.49 (0.36)</td>
<td>0.43 (0.36)</td>
</tr>
<tr>
<td>Num. of friend</td>
<td>0.30 (0.07)**</td>
<td>0.30 (0.07)**</td>
<td>0.30 (0.07)**</td>
<td>0.30 (0.07)**</td>
<td>0.31 (0.07)**</td>
</tr>
<tr>
<td>GPA</td>
<td>-0.30 (0.15)*</td>
<td>-0.33 (0.16)*</td>
<td>-0.32 (0.16)*</td>
<td>-0.32 (0.16)*</td>
<td>-0.32 (0.16)*</td>
</tr>
<tr>
<td>Ethnic identity</td>
<td>-0.20 (0.17)</td>
<td>-0.20 (0.17)</td>
<td>-0.19 (0.17)</td>
<td>-0.19 (0.17)</td>
<td>-0.21 (0.17)</td>
</tr>
<tr>
<td><strong>School-level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Latino</td>
<td>3.25 (1.15)**</td>
<td>2.23 (0.99)*</td>
<td>2.26 (1.00)*</td>
<td>2.50 (0.94)**</td>
<td></td>
</tr>
<tr>
<td>% Asian</td>
<td>-2.10 (0.77)**</td>
<td>-2.02 (1.85)*</td>
<td>-2.18 (0.69)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaming</td>
<td>0.12 (0.55)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dis. ach.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.02 (0.01)**</td>
</tr>
<tr>
<td>Variance</td>
<td>0.559</td>
<td>0.305</td>
<td>0.128</td>
<td>0.128</td>
<td>0.046</td>
</tr>
</tbody>
</table>

Note. Num. of friend=total number of friends nominated by the student;
Dis. ach. = discrepancy in academic achievement between Asians and Latinos at school;
* $p < .10$, ** $p < .05$, *** $p < .01$, **** $p < .001$. 

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Table 6  
*Asian students’ attitudes toward different groups*

<table>
<thead>
<tr>
<th>Attitude measure</th>
<th>Asian</th>
<th>White</th>
<th>Black</th>
<th>Latino</th>
<th>$F$-value</th>
<th>$\omega^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pos. feeling</td>
<td>4.17 (.03)</td>
<td>3.62 (.04)</td>
<td>3.47 (.04)</td>
<td>3.43 (.04)</td>
<td>$F$ (3,1389) = 162.92***, $\omega^2 = .54$</td>
<td></td>
</tr>
<tr>
<td>Social distance</td>
<td>2.05 (.03)</td>
<td>2.60 (.04)</td>
<td>2.92 (.04)</td>
<td>2.87 (.04)</td>
<td>$F$ (3,2082) = 284.39***, $\omega^2 = .47$</td>
<td></td>
</tr>
<tr>
<td>Pos. cog. evaluation</td>
<td>3.90 (.03)</td>
<td>3.50 (.03)</td>
<td>3.22 (.03)</td>
<td>3.15 (.03)</td>
<td>$F$ (3,2040) = 216.81***, $\omega^2 = .52$</td>
<td></td>
</tr>
<tr>
<td>Neg. cog. evaluation</td>
<td>2.53 (.03)</td>
<td>2.72 (.03)</td>
<td>2.86 (.03)</td>
<td>2.82 (.03)</td>
<td>$F$ (3,2055) = 39.13***, $\omega^2 = .11$</td>
<td></td>
</tr>
</tbody>
</table>

*Pos. cog. evaluation* = positive cognitive evaluations; *Neg. cog. evaluation* = negative cognitive evaluations.

*** $p < .001.$
Table 7
*Mean and standard deviation of Asian students’ attitudes toward other ethnic groups when they have and don’t have friend(s) in the particular group*

<table>
<thead>
<tr>
<th>Attitude measure</th>
<th>have friend(s)</th>
<th>no friend</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes toward Whites</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pos. feeling</td>
<td>3.86 (.65)</td>
<td>3.56 (.75)</td>
<td><em>t</em>(485) = 3.97, <em>p</em> &lt; .001</td>
</tr>
<tr>
<td>Social distance</td>
<td>2.31 (.80)</td>
<td>2.68 (.87)</td>
<td><em>t</em>(724) = -5.00, <em>p</em> &lt; .001</td>
</tr>
<tr>
<td>Pos. cog. evaluation</td>
<td>3.67 (.69)</td>
<td>3.47 (.72)</td>
<td><em>t</em>(717) = 3.10, <em>p</em> &lt; .01</td>
</tr>
<tr>
<td>Neg. cog. evaluation</td>
<td>2.57 (.70)</td>
<td>2.75 (.76)</td>
<td><em>t</em>(682) = -2.74, <em>p</em> &lt; .05</td>
</tr>
<tr>
<td>Pos. feeling</td>
<td>3.61 (.83)</td>
<td>3.37 (.78)</td>
<td><em>t</em>(480) = 2.96, <em>p</em> &lt; .01</td>
</tr>
<tr>
<td>Social distance</td>
<td>2.67 (.92)</td>
<td>2.92 (.95)</td>
<td><em>t</em>(728) = -3.30, <em>p</em> &lt; .01</td>
</tr>
<tr>
<td>Pos. cog. evaluation</td>
<td>3.35 (.80)</td>
<td>3.11 (.80)</td>
<td><em>t</em>(718) = 3.69, <em>p</em> &lt; .01</td>
</tr>
<tr>
<td>Neg. cog. evaluation</td>
<td>2.73 (.72)</td>
<td>2.88 (.79)</td>
<td><em>t</em>(719) = -2.36, <em>p</em> &lt; .05</td>
</tr>
<tr>
<td>Pos. feeling</td>
<td>3.66 (.85)</td>
<td>3.44 (.77)</td>
<td><em>t</em>(482) = 1.94, <em>p</em>&lt;.10.</td>
</tr>
<tr>
<td>Social distance</td>
<td>2.54 (.99)</td>
<td>2.95 (.92)</td>
<td><em>t</em>(726) = -3.58, <em>p</em>&lt;.001</td>
</tr>
<tr>
<td>Pos. cog. evaluation</td>
<td>3.21 (.83)</td>
<td>3.22 (.81)</td>
<td><em>t</em>(721) = .19, n.s.</td>
</tr>
<tr>
<td>Neg. cog. evaluation</td>
<td>2.70 (.83)</td>
<td>2.80 (.80)</td>
<td><em>t</em>(726) = -1.14, n.s.</td>
</tr>
</tbody>
</table>

Pos. cog. evaluation= positive cognitive evaluation; Neg. cog. evaluation= negative cognitive evaluation.
Table 8
*Univariate Geographic Region Effects on Attitudes toward Whites and Latinos*

<table>
<thead>
<tr>
<th>Attitude measure</th>
<th>East Asian</th>
<th>Southeast Asian</th>
<th>South Asian</th>
<th>F-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pos. feeling</td>
<td>3.61 (.05)</td>
<td>3.78 (.12)</td>
<td>4.13 (.11)</td>
<td>( F(2,432)=9.44, p &lt; .001 )</td>
</tr>
<tr>
<td>Social distance</td>
<td>2.53 (.06)</td>
<td>2.62 (.14)</td>
<td>2.13 (.13)</td>
<td>( F(2,432)=5.38, p &lt; .01 )</td>
</tr>
<tr>
<td>Pos. cog. evaluation</td>
<td>3.46 (.06)</td>
<td>3.54 (.12)</td>
<td>3.91 (.11)</td>
<td>( F(2,432)=6.24, p &lt; .01 )</td>
</tr>
<tr>
<td>Neg. cog. evaluation</td>
<td>2.68 (.06)</td>
<td>2.65 (.13)</td>
<td>2.56 (.12)</td>
<td>( F(2,432)=.42, n.s. )</td>
</tr>
</tbody>
</table>

| Pos. feeling         | 3.32 (.06) | 3.62 (.10)      | 4.05 (.13)  | \( F(2,432)=14.42, p < .001 \) |
| Social distance      | 2.98 (.06) | 2.71 (.11)      | 2.21 (.16)  | \( F(2,432)=11.24, p < .001 \) |
| Pos. cog. evaluation | 3.06 (.06) | 3.31 (.10)      | 3.55 (.13)  | \( F(2,432)=7.24, p < .01 \) |
| Neg. cog. evaluation | 2.89 (.05) | 2.86 (.09)      | 2.65 (.13)  | \( F(2,432)=1.07, n.s. \) |

Pos. cog. evaluation= positive cognitive evaluation; Neg. cog. evaluation= negative cognitive evaluation.
Table 9

Coefficient Estimates of Cross-ethnic Friendship Effect on Intergroup Attitudes

<table>
<thead>
<tr>
<th>Out-group</th>
<th>Feelings</th>
<th>Desire for social distance</th>
<th>Positive traits</th>
<th>Negative traits</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.66 (0.06)***</td>
<td>2.50 (0.07)***</td>
<td>3.56 (0.05)***</td>
<td>2.69 (0.04)***</td>
</tr>
<tr>
<td>Gender</td>
<td>0.11 (0.10)</td>
<td>-0.32 (0.06)***</td>
<td>-0.03 (0.07)</td>
<td>-0.13 (0.08)</td>
</tr>
<tr>
<td>Generation</td>
<td>-0.03 (0.08)</td>
<td>0.11 (0.12)</td>
<td>0.01 (0.10)</td>
<td>-0.04 (0.05)</td>
</tr>
<tr>
<td>ParentEd</td>
<td>0.01 (0.02)</td>
<td>-0.02 (0.02)</td>
<td>-0.03 (0.01)**</td>
<td>0.01 (0.02)</td>
</tr>
<tr>
<td>SouthAsian</td>
<td>0.52 (0.09)***</td>
<td>-0.30 (0.14)*</td>
<td>0.39 (0.07)**</td>
<td>0.03 (0.11)</td>
</tr>
<tr>
<td>SoutheastAsian</td>
<td>0.22 (0.08)**</td>
<td>-0.26 (0.11)*</td>
<td>0.05 (0.07)</td>
<td>-0.03 (0.09)</td>
</tr>
<tr>
<td>Friend</td>
<td>0.24 (0.10)*</td>
<td>-0.21 (0.08)*</td>
<td>0.14 (0.06)*</td>
<td>-0.16 (0.08)*</td>
</tr>
<tr>
<td>Variance</td>
<td>0.021</td>
<td>0.043</td>
<td>0.024</td>
<td>0.010</td>
</tr>
<tr>
<td>component†</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latino</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.43 (0.05)***</td>
<td>2.77 (0.06)***</td>
<td>3.20 (0.05)***</td>
<td>2.80 (0.04)***</td>
</tr>
<tr>
<td>Gender</td>
<td>0.18 (0.06)**</td>
<td>-0.37 (0.06)***</td>
<td>0.05 (0.06)</td>
<td>-0.16 (0.06)**</td>
</tr>
<tr>
<td>Generation</td>
<td>0.03 (0.07)</td>
<td>0.02 (0.14)</td>
<td>0.07 (0.07)</td>
<td>-0.10 (0.08)</td>
</tr>
<tr>
<td>ParentEd</td>
<td>-0.02 (0.02)</td>
<td>-0.01 (0.02)</td>
<td>-0.02 (0.02)</td>
<td>0.01 (0.02)</td>
</tr>
<tr>
<td>SouthAsian</td>
<td>0.56 (0.09)***</td>
<td>-0.35 (0.14)**</td>
<td>0.32 (0.12)**</td>
<td>0.01 (0.12)</td>
</tr>
<tr>
<td>SoutheastAsian</td>
<td>0.37 (0.13)**</td>
<td>-0.37 (0.10)**</td>
<td>0.18 (0.11)</td>
<td>0.03 (0.10)</td>
</tr>
<tr>
<td>Friend</td>
<td>0.22 (0.10)*</td>
<td>-0.19 (0.08)*</td>
<td>0.26 (0.07)**</td>
<td>-0.16 (0.07)*</td>
</tr>
<tr>
<td>Variance</td>
<td>0.006</td>
<td>0.024</td>
<td>0.017</td>
<td>0.011</td>
</tr>
<tr>
<td>component†</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

† The amount of the variance in school mean attitude score
*p < .05, **p < .01, ***p < .001.
Table 10

*Spending Time Together with Out-group Friend(s) and Intergroup Attitudes*

<table>
<thead>
<tr>
<th>Out-group</th>
<th>Feelings</th>
<th>Desire for social distance</th>
<th>Positive traits</th>
<th>Negative traits</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.84 (0.08)**</td>
<td>2.35 (0.07)**</td>
<td>3.66 (0.06)**</td>
<td>2.58 (0.06)**</td>
</tr>
<tr>
<td>Gender</td>
<td>0.24 (0.13)</td>
<td>-0.28 (0.12)**</td>
<td>0.04 (0.09)</td>
<td>-0.10 (0.16)</td>
</tr>
<tr>
<td>Generation</td>
<td>-0.24 (0.14)</td>
<td>0.69 (0.09)**</td>
<td>-0.08 (0.16)</td>
<td>0.15 (0.11)</td>
</tr>
<tr>
<td>ParentEd</td>
<td>-0.06 (0.06)</td>
<td>0.05 (0.03)</td>
<td>-0.07 (0.05)</td>
<td>0.08 (0.04)*</td>
</tr>
<tr>
<td>SouthAsian</td>
<td>0.37 (0.20)</td>
<td>-0.14 (0.17)</td>
<td>0.20 (0.13)</td>
<td>0.06 (0.17)</td>
</tr>
<tr>
<td>SoutheastAsian</td>
<td>0.11 (0.19)</td>
<td>-0.03 (0.19)</td>
<td>-0.05 (0.15)</td>
<td>-0.01 (0.17)</td>
</tr>
<tr>
<td>Timetogether</td>
<td>0.12 (0.14)</td>
<td>-0.37 (0.13)**</td>
<td>0.07 (0.15)</td>
<td>-0.03 (0.09)</td>
</tr>
<tr>
<td>Latino</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.62 (0.09)**</td>
<td>2.60 (0.09)**</td>
<td>3.40 (0.07)**</td>
<td>2.69 (0.05)**</td>
</tr>
<tr>
<td>Gender</td>
<td>0.38 (0.13)**</td>
<td>-0.36 (0.12)**</td>
<td>0.18 (0.12)</td>
<td>-0.12 (0.11)</td>
</tr>
<tr>
<td>Generation</td>
<td>-0.26 (0.12)*</td>
<td>0.01 (0.15)</td>
<td>0.08 (0.05)</td>
<td>0.02 (0.10)</td>
</tr>
<tr>
<td>ParentEd</td>
<td>-0.08 (0.05)</td>
<td>0.04 (0.03)</td>
<td>-0.08 (0.03)*</td>
<td>0.09 (0.05)</td>
</tr>
<tr>
<td>SouthAsian</td>
<td>0.42 (0.11)**</td>
<td>-0.28 (0.22)</td>
<td>0.19 (0.11)*</td>
<td>-0.08 (0.23)</td>
</tr>
<tr>
<td>SoutheastAsian</td>
<td>0.65 (0.18)**</td>
<td>-0.49 (0.19)*</td>
<td>0.47 (0.18)*</td>
<td>0.04 (0.19)</td>
</tr>
<tr>
<td>Timetogether</td>
<td>0.03 (0.15)</td>
<td>-0.32 (0.11)*</td>
<td>0.01 (0.08)</td>
<td>0.01 (0.11)</td>
</tr>
</tbody>
</table>

Variance component: 0.023  0.032  0.001  0.001

Variance component: 0.028  0.013  0.024  0.005

1The amount of the variance in school mean attitude score

\[ p < .10, * p < .05, ** p < .01, *** p < .001. \]
Table 11
Emotional Support from Cross-ethnic Friendship and Intergroup Attitudes

<table>
<thead>
<tr>
<th>Out-group</th>
<th>Feelings</th>
<th>Desire for social distance</th>
<th>Positive traits</th>
<th>Negative traits</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.83 (0.83)***</td>
<td>2.35 (0.07)***</td>
<td>3.66 (0.06)***</td>
<td>2.58 (0.06)***</td>
</tr>
<tr>
<td>Gender</td>
<td>0.27 (0.13)*</td>
<td>-0.38 (0.13)**</td>
<td>0.04 (0.10)</td>
<td>-0.08 (0.16)</td>
</tr>
<tr>
<td>Generation</td>
<td>-0.11 (0.12)</td>
<td>0.67 (0.10)***</td>
<td>-0.07 (0.17)</td>
<td>0.14 (0.12)</td>
</tr>
<tr>
<td>ParentEd</td>
<td>-0.05 (0.05)</td>
<td>-0.05 (0.04)</td>
<td>-0.08 (0.05)</td>
<td>0.08 (0.05)</td>
</tr>
<tr>
<td>SouthAsian</td>
<td>0.39 (0.18)**</td>
<td>-0.12 (0.18)</td>
<td>0.23 (0.14)</td>
<td>0.05 (0.16)</td>
</tr>
<tr>
<td>SoutheastAsian</td>
<td>0.17 (0.18)</td>
<td>-0.13 (0.19)</td>
<td>-0.05 (0.14)</td>
<td>-0.01 (0.17)</td>
</tr>
<tr>
<td>Emotional</td>
<td>0.12 (0.17)</td>
<td>-0.30 (0.14)*</td>
<td>0.04 (0.09)</td>
<td>0.02 (0.15)</td>
</tr>
<tr>
<td>Variance component†</td>
<td>0.022</td>
<td>0.030</td>
<td>0.002</td>
<td>0.001</td>
</tr>
<tr>
<td>Latino</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.62 (0.09)***</td>
<td>2.61 (0.08)***</td>
<td>3.39 (0.07)***</td>
<td>2.68 (0.06)***</td>
</tr>
<tr>
<td>Gender</td>
<td>0.21 (0.13)</td>
<td>-0.31 (0.12)**</td>
<td>0.06 (0.09)</td>
<td>-0.10 (0.09)</td>
</tr>
<tr>
<td>Generation</td>
<td>-0.26 (0.13)*</td>
<td>0.06 (0.13)</td>
<td>0.06 (0.06)</td>
<td>-0.02 (0.12)</td>
</tr>
<tr>
<td>ParentEd</td>
<td>-0.07 (0.04)</td>
<td>0.04 (0.03)</td>
<td>-0.07 (0.04)</td>
<td>0.08 (0.04)*</td>
</tr>
<tr>
<td>SouthAsian</td>
<td>0.31 (0.14)*</td>
<td>-0.32 (0.23)</td>
<td>0.14 (0.12)</td>
<td>-0.03 (0.24)</td>
</tr>
<tr>
<td>SoutheastAsian</td>
<td>0.53 (0.17)***</td>
<td>-0.32 (0.19)*</td>
<td>0.39 (0.19)*</td>
<td>-0.01 (0.18)</td>
</tr>
<tr>
<td>Emotional</td>
<td>0.68(0.11)***</td>
<td>-0.55 (0.11)***</td>
<td>0.54 (0.09)***</td>
<td>-0.22 (0.09)*</td>
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<tr>
<td>Variance component†</td>
<td>0.040</td>
<td>0.042</td>
<td>0.030</td>
<td>0.009</td>
</tr>
</tbody>
</table>

†The amount of the variance in school mean attitude score
*p < .05, **p < .01, ***p < .001.
Table 12
*Multiple Regression Analyses Predicting Asians' Attitudes toward Whites from Stability of Asian-White Friendship*

<table>
<thead>
<tr>
<th></th>
<th>Feelings</th>
<th>Desire for social distance</th>
<th>Positive traits</th>
<th>Negative traits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Step 1</td>
<td>0.06</td>
<td>0.07</td>
<td>0.05</td>
<td>0.01</td>
</tr>
<tr>
<td>Control variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>0.04</td>
<td>0.03</td>
<td>0.03</td>
<td>0.01</td>
</tr>
<tr>
<td>T1 only</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T2 only</td>
<td>0.04</td>
<td>-0.03</td>
<td>0.03</td>
<td>-0.05</td>
</tr>
<tr>
<td>Never</td>
<td>-0.18**</td>
<td>0.16**</td>
<td>-0.13*</td>
<td>0.09*</td>
</tr>
<tr>
<td>Total $R^2$</td>
<td>0.10</td>
<td>0.10</td>
<td>0.08</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Note. Control variables included gender, generational status, parent education level and region of Asia.

*p < .10, *p < .05, **p < .01, ***p < .001.
Table 13
Multiple Regression Analyses Predicting Asians' Attitudes toward Latinos from Stability of Asian-Latino Friendship

<table>
<thead>
<tr>
<th></th>
<th>Feelings</th>
<th></th>
<th>Desire for social distance</th>
<th></th>
<th>Positive traits</th>
<th></th>
<th>Negative traits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
</tr>
<tr>
<td>Step 1</td>
<td>0.07</td>
<td>0.07</td>
<td>0.04</td>
<td>0.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>0.02</td>
<td>0.02</td>
<td>0.06</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1 only</td>
<td>-0.09</td>
<td>0.07</td>
<td>-0.15**</td>
<td>0.10*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T2 only</td>
<td>-0.02</td>
<td>0.09</td>
<td>-0.05</td>
<td>-0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>-0.16*</td>
<td>0.19**</td>
<td>-0.18**</td>
<td>0.11*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total $R^2$</td>
<td>0.10</td>
<td>0.09</td>
<td>0.10</td>
<td>0.03</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note.\textsuperscript{1}Control variables included gender, generational status, parent education level and region of Asia. * $p < .05$, ** $p < .01$, *** $p < .001$. 

1
Table 14
*Multilevel Estimates (and Standard Errors) of $\beta_a$, $\beta_b$, and the Mediation Effect of Affective Attitudes*

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>$\beta_a$</th>
<th>$\beta_b$</th>
<th>Mediated Effect</th>
<th>$\beta_a$</th>
<th>$\beta_b$</th>
<th>Mediated Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pos. trait</td>
<td>0.24 (0.11)*</td>
<td>0.59 (0.05) ***</td>
<td>0.14 (0.07)*</td>
<td>0.14 (0.06) **</td>
<td>0.64 (0.04) ***</td>
<td>0.09 (0.04)*</td>
</tr>
<tr>
<td>Neg. trait</td>
<td>0.24 (0.11)*</td>
<td>-0.34 (0.07) ***</td>
<td>-0.08 (0.04)*</td>
<td>0.14 (0.06) **</td>
<td>-0.41 (0.05) ***</td>
<td>-0.06 (0.03)*</td>
</tr>
</tbody>
</table>

Note. Pos. trait=positive trait; Neg. trait=negative trait.

* $p < .05$, ** $p < .01$, *** $p < .001$. 
Figure 1. Existence of at least one White friend and Attitudes toward Whites. * $p < .05$, ** $p < .01$, *** $p < .001$. 
Figure 2. Existence of at least one Latino friend and Attitudes toward Latinos. * $p < .05$, ** $p < .01$. 
Figure 3. Existence of at least one Black friend and Attitudes toward Blacks.
*p < .10, ***p < .001.
Figure 4. Mediation model of affective component of intergroup attitudes.
Figure 5. Conceptual model of cross-ethnic friendships and different dimensions of intergroup attitudes.
Figure 6. Standardized coefficients for model of Asian-White friendship effect (Wave 1) on behaviors towards, feelings of and positive trait evaluations of Whites (Wave 2).

Note. Pos. trait = positive trait evaluations. \( n = 762, \chi^2 (105) = 257.09, p < .001; \) CFI = .965; RMSEA = .050

Model includes demographic variables (i.e., gender, generational status, parent education level, region of Asia) as covariates.

* \( p < .05. \)  ** \( p < .01. \)  *** \( p < .001. \)
Figure 7. Standardized coefficients for model of Asian-White friendship effect (Wave1) on behaviors towards, feelings of and negative trait evaluations of Whites (Wave 2).

Note. Neg. trait = Negative trait evaluations. \( n=762, \chi^2 (105) =221.77, p<.001; CFI = .965; RMSEA=.044. \)

Model includes demographic variables (i.e., gender, generational status, parent education level, region of Asia) as covariates.

* \( p < .05. \) ** \( p < .01. \) *** \( p < .001. \)
Figure 8. Standardized coefficients for model of Asian-Latino friendship effect (Wave1) on behaviors towards, feelings of and positive trait evaluations of Latinos (Wave 2).

Note. Pos. trait = positive trait evaluations. $n=762$, $\chi^2 (105) = 223.02, p < .001$; CFI = .969; RMSEA = .044. Model includes demographic variables (i.e., gender, generational status, parent education level, region of Asia) as covariates.

* $p < .05$. ** $p < .01$. *** $p < .001$. 

![Diagram](image-url)
Figure 9. Standardized coefficients for model of Asian-Latino friendship effect (Wave1) on behaviors towards, feelings of and negative trait evaluations of Latinos (Wave 2).

Note. Neg. trait = Negative trait evaluations. $n=762$, $\chi^2 (105) =227.96$, $p<.001$; CFI =.961; RMSEA =.045. Model includes demographic variables (i.e., gender, generational status, parent education level, region of Asia) as covariates.

* $p < .05$. ** $p < .01$. *** $p < .001$. 

*Friendship* 

Behaviors $\rightarrow$ Feelings

$\rightarrow$ Neg. trait

.27**

.73***

.10

-.12

.06

-55**

Appendix A
Friendship measure

About My Friends at School

List the names of your GOOD FRIENDS in the 6th grade at this school. For each friend you list, answer the set of questions about that friend by filling in the bubbles. You can list as many names as you want. Let the researcher know if you need another sheet.

Please use the following scale to answer items 1 – 5 about your friend:

**A** = No/Hardly ever
**B** = Sometimes
**C** = Yes/Almost all the time

<table>
<thead>
<tr>
<th>Write First and Last Name of Friend (&quot;John Doe&quot;)</th>
<th>1. We go to each other's houses after school or on weekends</th>
<th>2. We talk on the phone, text, email, video chat or IM each other</th>
<th>3. This friend can be trusted</th>
<th>4. This friend helps me feel better when I'm upset</th>
<th>5. This friend sticks up for me/has my back</th>
<th>6. Do you have the same math teacher</th>
<th>7. This friend is the same ethnic group as me</th>
<th>8. This friend is a:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td></td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
</tbody>
</table>
Appendix B1
Intergroup Attitude Measure-Affective Evaluation

YOUR FEELINGS ABOUT DIFFERENT GROUPS

1. Think about kids who are ______.

<table>
<thead>
<tr>
<th>Statement</th>
<th>For sure yes!</th>
<th>Yes</th>
<th>Sort of</th>
<th>No</th>
<th>No way!</th>
</tr>
</thead>
<tbody>
<tr>
<td>I like kids who are ______</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>I trust them.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>I respect them.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>I am comfortable being around ______ kids.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>


Appendix B2
Intergroup Attitude Measure-Cognitive Evaluation

WHAT DO YOU THINK ABOUT DIFFERENT GROUPS?

I. Think about kids who are _________. In your opinion, how many ________ kids are...

<table>
<thead>
<tr>
<th></th>
<th>Almost All</th>
<th>Most</th>
<th>Some</th>
<th>A few</th>
<th>Hardly Any</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kind</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Honest</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Selfish</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Smart</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bossy</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Friendly</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Appendix B3
Intergroup Attitude Measure-Desire for Social Distance

**WHAT DO YOU LIKE TO DO WITH KIDS FROM DIFFERENT GROUPS?**

1. Now think about doing these things with kids who are __________. Would you want to...

<table>
<thead>
<tr>
<th>Activity</th>
<th>For sure yes!</th>
<th>Yes</th>
<th>Sort of</th>
<th>No</th>
<th>No way!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eat lunch together?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Get together at your house?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Dance together at a party?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Sit together on a school bus?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Appendix C

HLM Models Used to Examine Student and School Level Factors in Cross-ethnic Friendship Nomination

Models predicting having at least one White friend

Model 1:

Level 1: \( \eta_{ij} = \beta_{j0} + \beta_{ij}(\text{GENGER})_j + \beta_{2j}(\text{GENERATION})_j + \beta_{3j}(\text{ParentEd})_j + \beta_{4j}(\text{SouthAsian})_j \)

\[ + \beta_{5j}(\text{SoutheastAsian})_j + \beta_{6j}(\text{NFriend})_j + \beta_{7j}(\text{GPA})_j + \beta_{8j}(\text{EthID})_j + \epsilon_{ij}, \]

Level 2: \( \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{% White}) + u_{0j}, \)

\( \beta_{pj} = \gamma_{p0}, \text{ for } p \geq 0. \)

Model 2:

Level 1: \( \eta_{ij} = \beta_{j0} + \beta_{ij}(\text{GENGER})_j + \beta_{2j}(\text{GENERATION})_j + \beta_{3j}(\text{ParentEd})_j + \beta_{4j}(\text{SouthAsian})_j \)

\[ + \beta_{5j}(\text{SoutheastAsian})_j + \beta_{6j}(\text{NFriend})_j + \beta_{7j}(\text{GPA})_j + \beta_{8j}(\text{EthID})_j + \epsilon_{ij}, \]

Level 2: \( \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{% White}) + \gamma_{02}(\text{% Asian}) + u_{0j}, \)

\( \beta_{pj} = \gamma_{p0}, \text{ for } p \geq 0. \)

Model 3:

Level 1: \( \eta_{ij} = \beta_{j0} + \beta_{ij}(\text{GENGER})_j + \beta_{2j}(\text{GENERATION})_j + \beta_{3j}(\text{ParentEd})_j + \beta_{4j}(\text{SouthAsian})_j \)

\[ + \beta_{5j}(\text{SoutheastAsian})_j + \beta_{6j}(\text{NFriend})_j + \beta_{7j}(\text{GPA})_j + \beta_{8j}(\text{EthID})_j + \epsilon_{ij}, \]

Level 2: \( \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{% White}) + \gamma_{02}(\text{% Asian}) + \gamma_{03}(\text{Teaming}) + u_{0j}, \)

\( \beta_{pj} = \gamma_{p0}, \text{ for } p \geq 0. \)

Model 4:

Level 1: \( \eta_{ij} = \beta_{j0} + \beta_{ij}(\text{GENGER})_j + \beta_{2j}(\text{GENERATION})_j + \beta_{3j}(\text{ParentEd})_j + \beta_{4j}(\text{SouthAsian})_j \)

\[ + \beta_{5j}(\text{SoutheastAsian})_j + \beta_{6j}(\text{NFriend})_j + \beta_{7j}(\text{GPA})_j + \beta_{8j}(\text{EthID})_j + \epsilon_{ij}, \]

Level 2: \( \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{% White}) + \gamma_{02}(\text{% Asian}) + \gamma_{03}(\text{Teaming}) + u_{0j}, \)
\[ \beta_{pj} = \gamma_{p0}, \text{ for } p>0. \]

Model 5:

Level 1: \[ \eta_{ij} = \beta_{0j} + \beta_{1j} \text{(GENGER)}_{ij} + \beta_{2j} \text{(GENERATION)}_{ij} + \beta_{3j} \text{(ParentEd)}_{ij} + \beta_{4j} \text{(SouthAsian)}_{ij} \]
\[ + \beta_{5j} \text{(SoutheastAsian)}_{ij} + \beta_{6j} \text{(NFriend)}_{ij} + \beta_{7j} \text{(GPA)}_{ij} + \beta_{8j} \text{(EthID)}_{ij} + e_{ij}, \]

Level 2: \[ \beta_{0j} = \gamma_{00} + \gamma_{01} \text{(% White)}_{j} + \gamma_{02} \text{(%Asian)}_{j} + \gamma_{03} \text{(Discrepancy)}_{j} + u_{0j}, \]
\[ \beta_{pj} = \gamma_{p0}, \text{ for } p>0. \]

Models predicting having at least one Latino friend

Model 1:

Level 1: \[ \eta_{ij} = \beta_{0j} + \beta_{1j} \text{(GENGER)}_{ij} + \beta_{2j} \text{(GENERATION)}_{ij} + \beta_{3j} \text{(ParentEd)}_{ij} + \beta_{4j} \text{(SouthAsian)}_{ij} \]
\[ + \beta_{5j} \text{(SoutheastAsian)}_{ij} + \beta_{6j} \text{(NFriend)}_{ij} + \beta_{7j} \text{(GPA)}_{ij} + \beta_{8j} \text{(EthID)}_{ij} + e_{ij}, \]

Level 2: \[ \beta_{0j} = \gamma_{00} + u_{0j}, \]
\[ \beta_{pj} = \gamma_{p0}, \text{ for } p>0. \]

Model 2:

Level 1: \[ \eta_{ij} = \beta_{0j} + \beta_{1j} \text{(GENGER)}_{ij} + \beta_{2j} \text{(GENERATION)}_{ij} + \beta_{3j} \text{(ParentEd)}_{ij} + \beta_{4j} \text{(SouthAsian)}_{ij} \]
\[ + \beta_{5j} \text{(SoutheastAsian)}_{ij} + \beta_{6j} \text{(NFriend)}_{ij} + \beta_{7j} \text{(GPA)}_{ij} + \beta_{8j} \text{(EthID)}_{ij} + e_{ij}, \]

Level 2: \[ \beta_{0j} = \gamma_{00} + \gamma_{01} \text{(% Latino)}_{j} + u_{0j}, \]
\[ \beta_{pj} = \gamma_{p0}, \text{ for } p>0. \]

Model 3:

Level 1: \[ \eta_{ij} = \beta_{0j} + \beta_{1j} \text{(GENGER)}_{ij} + \beta_{2j} \text{(GENERATION)}_{ij} + \beta_{3j} \text{(ParentEd)}_{ij} + \beta_{4j} \text{(SouthAsian)}_{ij} \]
\[ + \beta_{5j} \text{(SoutheastAsian)}_{ij} + \beta_{6j} \text{(NFriend)}_{ij} + \beta_{7j} \text{(GPA)}_{ij} + \beta_{8j} \text{(EthID)}_{ij} + e_{ij}, \]

Level 2: \[ \beta_{0j} = \gamma_{00} + \gamma_{01} \text{(% Latino)}_{j} + \gamma_{02} \text{(%Asian)}_{j} + u_{0j}, \]
\[ \beta_{pj} = \gamma_{p0}, \text{ for } p>0. \]
Model 4:

Level 1: \( \eta_{ij} = \beta_{0j} + \beta_{1j} (\text{GENGER})_{ij} + \beta_{2j} (\text{GENERATION})_{ij} + \beta_{3j} (\text{ParentEd})_{ij} + \beta_{4j} (\text{SouthAsian})_{ij} \)

\[ + \beta_{5j} (\text{SoutheastAsian})_{ij} + \beta_{6j} (\text{NFriend})_{ij} + \beta_{7j} (\text{GPA})_{ij} + \beta_{8j} (\text{EthID})_{ij} + \epsilon_{ij} \]

Level 2: \( \beta_{0j} = \gamma_{00} + \gamma_{01} (\%\text{Latino})_j + \gamma_{02} (\%\text{Asian})_j + \gamma_{03} (\text{Teaming})_j + u_{0j} \)

\( \beta_{pj} = \gamma_{p0}, \) for \( p \geq 0. \)

Model 5:

Level 1: \( \eta_{ij} = \beta_{0j} + \beta_{1j} (\text{GENGER})_{ij} + \beta_{2j} (\text{GENERATION})_{ij} + \beta_{3j} (\text{ParentEd})_{ij} + \beta_{4j} (\text{SouthAsian})_{ij} \)

\[ + \beta_{5j} (\text{SoutheastAsian})_{ij} + \beta_{6j} (\text{NFriend})_{ij} + \beta_{7j} (\text{GPA})_{ij} + \beta_{8j} (\text{EthID})_{ij} + \epsilon_{ij} \]

Level 2: \( \beta_{0j} = \gamma_{00} + \gamma_{01} (\%\text{Latino})_j + \gamma_{02} (\%\text{Asian})_j + \gamma_{03} (\text{Discrepancy})_j + u_{0j} \)

\( \beta_{pj} = \gamma_{p0}, \) for \( p \geq 0. \)
Appendix D1
Map of Locations of MSDP Schools
Appendix D2
Map of MSDP Schools (in greater Los Angeles) & Neighborhood Predominate Ethnic Group
Appendix D3
Map of MSDP Schools (in the Bay Area) & Neighborhood Predominate Ethnic Group
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