Bridging the Ethnic Divide: Student and School Characteristics in African American, Asian-Descent, Latino, and White Adolescents' Cross-Ethnic Friend Nominations

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Based on the revised social contact theory, correlates of cross-ethnic friend nomination among 580 African American, 948 Asian-descent, 860 Latino, and 3986 White adolescents were examined. Socioeconomic and academic disparities between ethnic groups differentiated cross-ethnic friend nomination between schools for all groups but African Americans. For all groups, cross-ethnic friend nomination was less likely among students who preferred same-ethnic friends. Academic orientations were associated with cross-ethnic friend nomination positively for African American and Latino, but negatively for White participants. Longer family residence in the U.S. and English language facility was associated positively with cross-ethnic friend nomination for Asian-descent and Latino participants. Results point to the need to differentiate hypotheses by ethnic group, and to consider individual-in-context models in cross-ethnic friend nomination.

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In the years following mandatory school desegregation in the United States, research on intergroup relations flourished, primarily documenting the infrequency of friendships between African American and White youth. Decades later, as increasing numbers of youth grow up in multi-ethnic schools, opportunities for friendships to cross-ethnic boundaries have expanded, and what constitutes ''cross-ethnic'' can no longer reasonably be confined to African American and White youth. Although adolescents in ethnically diverse school settings still tend to befriend peers from their own ethnic background (Hamm, 2000; Joyner & Kao, 2000; Quillian & Campbell, 2003; Way & Chen, 2000), some form close friendships with youth from other ethnic groups. Scholars have argued that the ability to form an ethnically diverse friendship network enhances success in school during adolescence and success in an ethnically diverse society in adulthood (LaFromboise, Coleman, & Gerton, 1993).

Social contact theory has been a primary basis for research on friendship formation in multi-ethnic settings. Historically, the view has centered on aspects of the ''contact'' (school) setting that support favorable intergroup relations (Schofield, 1991). Pettigrew (1998) recently reformulated the theory to incorporate individual differences, within contact settings, that enhance positive relations. Empirical study of how student and school factors simultaneously relate to cross-ethnic friend nomination in multi-ethnic settings is necessary to support this view, and would further broaden the literature on cross-ethnic friendship nomination. Thus, from both a practical and theoretical perspective, it is important to identify factors associated with cross-ethnic friendship nomination among American adolescents.

Social Contact and Adolescents' Cross-Ethnic Friend Nominations

In its rudimentary form, social contact theory posits that regular, persistent contact with someone enhances the chances that adolescents will select the person as a friend. Thus, adolescents most likely to nominate a cross-ethnic peer as a friend are those in schools that feature a comparatively large number of other-ethnic students (Joyner & Kao, 2000; Quillian & Campbell, 2003). Cross-ethnic friend nomination may depend, however, on school organization. Curricular tracking can distribute students from various ethnic groups unevenly. Studies indicate that African American and Latino youth whose achievement is comparatively higher than most members of their ethnic group become ethnically isolated in classrooms (Phelen, Davidson, & Cao, 1991), thus increasing their chances of cross-ethnic friendship selection. By contrast, White and Asian-descent youth in

higher academic tracks may have enough same-ethnic peers in their classes to rely solely on same-ethnic friendships.

More sophisticated and formal versions of social contact theory posit that contact is necessary, but not sufficient, to generate a positive relationship between individuals of different backgrounds (Allport, 1954; Schofield, 1991). Unequal status of groups can lead to a clash of interests and intergroup tension, thereby reducing the likelihood that cross-ethnic friends will be viewed as desirable (Pettigrew, 1975). The results of several studies suggest that the greater the disparity in socioeconomic status between African American and White youth in a setting, the less frequently one finds members of these groups engaging in cross-ethnic friendships (Miller, 1990; Schofield, 1989). The same is true for disparities in academic performance, with some studies reporting this pattern for Asian American students as well (Hamm, 1998; Lee, 1996; Peshkin, 1991). These findings have limited generalizablity, however, as they are constrained largely to within-school rather than between-school analysis. The theory suggests effects on friendship nomination at the context level, rather than individual level. In a sample of multiple schools, greater disparity in achievement or socioeconomics (SES) between ethnic groups should be associated with fewer cross-ethnic friend nominations.

The efficacy of mere contact in prompting cross-ethnic friendship may also be qualified by individual differences in adolescents' personal characteristics (Pettigrew, 1998). For example, contact may not result in cross-ethnic friend nomination among adolescents who articulate a preference for same-ethnic friends or strongly positive attitudes toward their own ethnic group. These youth may seek to maintain an ethnically homogeneous circle of friends as a means of affirming their identity as a member of their ethnic group (Peshkin, 1991). This particular viewpoint is not limited theoretically to specific ethnic groups, although ethnic identity is usually not a salient dimension of self for White adolescents, even in ethnically diverse settings (Phinney, 1990).

Extending this possibility, Ogbu has described African American and Latino adolescents as members of oppressed minority groups. As an adaptive response to a long history of oppression and discrimination, these groups develop an "oppositional identity" characterized by a heightened sense of ethnic group alliance and affiliation, a distrust of Whites, and a disinclination to take part in activities valued by the dominant White culture, including academic effort and success (Ogbu & Simons, 1998; Fordham & Ogbu, 1986). The more African American and Latino adolescents adopt this orientation, the less they will find White peers attractive as potential friends and the more likely they will be to confine friendship to members of their own ethnic group (Fordham &

Ogbu, 1986; Matute-Bianchi, 1986). Ogbu theorized further that ethnic groups without this history of oppression (voluntary minority groups) would more willingly engage in schooling processes, would hold more favorable and trusting views of Whites, and, be more willing to forge friendships with White peers, perhaps using friendship as a means to assimilate into mainstream American society (Lee, 1996; Matute-Bianchi, 1986).

Researchers have had a difficult time supporting the relations that Ogbu proposes in larger samples of African American teens (e.g., Taylor, Casten, Flickinger, & Roberts, 1994). Spencer, Noll, Stoltzfus, and Harpalani (2001) found positive relationships between in-group orientatons and achievement and general valuation of school. Phinney, Ferguson, and Tate (1997b) found strong positive beliefs about and pride in one's primary ethnic group to be associated with more favorable out-group attitudes. These findings challenge the credibility of hypotheses derived from Ogbu's theory and lead us to conduct exploratory analyses about the role of in-group orientations. As well, the theory focuses attention on nomination of White peers; this suggests a need for hypotheses regarding nomination of White, as opposed to any, cross-ethnic friends.

Other individual variables could affect cross-ethnic friendship, beyond those implicated by Ogbu. For Asian-descent and Latino adolescents in particular, experiences related to immigration status must be considered. Quillian and Campbell (2003) found that later generations of Asian-descent adolescents were more likely than their immigrant counterparts to nominate White friends, speculating that this pattern arose because of later generations' comparable or higher status relative to Whites on status markers such as SES and achievement. By this argument, generational differences should not predict Asian-descent youths' nomination of African American or Latino peers, who occupy a more marginalized status (see also, Lee, 1996). Across generations, Latinos collectively have experienced more permanent segregation from Whites. They may be as likely to form friendships with members of other ethnic minority groups, as with Whites (Quillian & Campbell, 2003).

English language proficiency also may contribute to friendship patterns among immigrant youth. To be friends, partners must communicate effectively and understand one another (Savin-Williams & Berndt, 1990). Adolescents of limited English proficiency may not be able to communicate with peers beyond their own ethnic group, and may lack familiarity with aspects of American adolescent culture (Suarez-Orozco & Suarez-Orozco, 2001). Such dissimilarities may minimize the appeal of cross-ethnic friends. Low English language proficiency may isolate immigrant youth in English as Second Language (ESL) classrooms or particular

academic tracks, limiting contact with peers of other ethnic groups (Peshkin, 1991). Taken together, these results suggest that adolescents of limited English proficiency would be less likely to cross-ethnic lines in their friendship nominations than would adolescents with greater facility with English.

Finally, demographic characteristics such as gender and family SES can be meaningful to cross-ethnic friend nomination. Cross-ethnic friendships, at least between African American and White youth, may not occur in schools because the White students typically studied are comparatively affluent while their African American peers are from more disadvantaged backgrounds (e.g., Schofield, 1989). Lee (1996) also suggested that middle-class Asian-descent youth, in particular, are encouraged by parents to form relationships with White peers. Because researchers have emphasized the standing of an individual relative to members of his or her ethnic group within the same school (e.g., Fordham & Ogbu, 1986), we considered adolescents' level of parental education relative to members of their group in their school (Schofield, 1989).[1] We included gender as a variable, as African American and White adolescent males are more likely than females to nominate cross-ethnic friends (Schofield, 1989). Because the likelihood of cross-ethnic friend nomination may decrease across the high school years, at least for African American and White adolescents (Shrum, Cheek, & Hunter, 1988), we examined grade level as well.

Hypotheses

We expand hypotheses based on various versions of social contact theory to multi-ethnic settings that include Asian-descent and Latino, as well as White and African American adolescents. We predict that the likelihood of nominating at least one cross-ethnic friend will increase as the proportion of cross-ethnic peers in the school increases. Further, Asian-descent and White adolescents in noncollege-bound academic tracks will be more likely than their college-bound peers to nominate cross-ethnic friends, whereas the reverse will be true for African American and Latino adolescents.

Based on a traditional formulation of social contact theory (Allport, 1954) we propose that, for each ethnic group, cross-ethnic friend nomination will be greatest in schools in which disparities for parental

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[1] This refers to a student-level indicator of SES. We also examined the SES of target ethnic groups relative to the SES of other ethnic groups as a school-level factor, as suggested by social contact theory.

educational attainment and academic achievement are minimized be-
tween the target ethnic group and other ethnic groups. Finally, we work
within Pettigrew's (1998) reformulation of the theory to consider individ-
ual differences in cross-ethnic friend nomination. Application of different
viewpoints calls for differentiated hypotheses across ethnic groups, and to
nomination of White friends, as opposed to cross-ethnic friends in general.
We propose that for all ethnic groups, cross-ethnic friend nomination will
be more likely among adolescents who express weaker in-group prefer-
ences. For African American and Latino adolescents, we further predict
that cross-ethnic friend nomination—particularly of White peers—will be
less likely among teens who express stronger in-group pride and sense of
group membership, who perceive greater ethnic-based discrimination,
and who are less academically oriented. Finally, for Asian-descent and
Latino teens, we predict that nomination of White friends will be more
common among adolescents whose families have resided longer in the
United States, and who possess advanced or fluent facility with English.
We expect that generation status and language facility will differentiate
Asian-descent adolescents' nomination of White friends, in particular.

METHOD

Sample

Schools.   Seven public high schools (grades 9–12) in Wisconsin and
California participated in the study. Schools ranged from 2% to 46%
African American, from 7% to 30% Asian-descent, from 11% to 32%
Latino, and from 36% to 66% White. In two of the schools, no single ethnic
group constituted a numerical majority. In the remaining schools, the
numerical majority of students were White, but over 35% of the student
body was from two or more ethnic minority groups. The schools varied in
size and served a broad base of SES within and across ethnic groups.

Participants.   All students attending these schools were invited to
participate in the study. Usable self-report questionnaires were obtained
for the larger study from 73% of students. Nonparticipants either refused
to complete the questionnaires or were denied permission by parents to be
part of the study (8%), were special education students who were not able
to complete the questionnaires independently (6%), or were absent on one
or both days of questionnaire administration. The questionnaires assessed
features of social relationships, psychological development, and
schooling. Within this sample, 69% of African American, 81% of Asian-
descent, 74% of Latino, and 77% of the White participants listed at least

one identifiable school friend. Students who were excluded from analyses for lack of friend data were compared with students retained in the sample with respect to the independent variables in the study. Students who were dropped reported significantly lower academic orientations and significantly lower ratings of discrimination in their school environment. No other significant differences were detected. The final sample included 580 African American, 948 Asian-descent, 860 Latino, and 3986 White adolescents.[2]

Student-Level Independent Variables

Sociodemographics. Respondents identified their primary ethnic identification from a forced, single choice list of 16 possible ethnic categories. Problematic identifications were resolved by comparison with school records. Adolescents who indicated membership in one of four major categories, African American, Asian-descent, Latino, and White, were retained in the current sample. Students of other ethnic backgrounds were excluded because of very small sample sizes within each school. Parental education was also reported by respondents. Response options ranged from 1 (some grade school) to 8 (professional or graduate degree). Mother's and father's reported education levels were averaged to create a single, continuous indicator of parental education.

Relative academic orientations. Three measures of academic attitudes and behaviors were selected based on the suggestions of previous research. Self-reported grade-point average (GPA) was scored on the standard four-point scale. Self-reported grades have been found to correlate satisfactorily ($r = .76$) with students' actual grades (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987). Respondents also indicated how far they expected to take their education; six response options were available, ranging from 1 (Leave school now) to 6 (Finish college and take further training (medical, graduate school, etc.)). Effort in schoolwork was an estimate of the amount of time students spent on homework per week in mathematics, science, social studies, and English. Response options

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[2] "Asian-descent" and "Latino" are broad representations of individuals from different countries of origin. In this sample, Asian-descent included adolescents of Chinese, Japanese, Vietnamese, and Korean descent. Latino students included primarily Mexicans and Puerto Ricans. Cross-ethnic friend nomination took place within these broad ethnic categories; for instance, a Korean teen nominating a Vietnamese friend (Lee, 1996). However, participants were asked to self-identify their ethnic group membership from one of 7 major ethnic categories, not to indicate their country of origin. "Asian" and "Latino" students in any single school tended to be from the same country of origin, which reduced the significance of this issue.

ranged from 1 (none) to 6 (4 hours or more). Scores were standardized within each content area, and then averaged to create a single composite. Because, for each ethnic group, GPA, aspirations, and effort loaded on a single factor in preliminary factor analyses, an academic orientations composite was created by averaging the standardized indicators of each. Finally, because we were interested in academic orientations relative to members of their ethnic group within their schools, we standardized scores and took the difference between this score and the standardized within-ethnic group, within-school mean. Higher scores indicated more positive academic orientations.

Ethnic group orientations.   In a review of the literature on adolescent ethnic identity, Phinney (1990, 1992) identified three elements relevant to members of all ethnic groups: self-identification as a group member, sense of belonging to a group, and attitudes/feelings toward one's own group. Research based on Ogbu's (e.g., Fordham & Ogbu, 1986) theory also refers to a sense of belonging and attitudes/feelings toward one's ethnic group. Respondents' ethnic group membership was determined by the previously described ethnic self-identification question. Sense of belonging to the ethnic group was measured by the question, ''Suppose you wanted some people to know all about you. How important would it be for them to know about your ethnic background?'' Response options ranged from 1 (not at all important) to 5 (extremely important). Feelings about one's ethnic group membership were measured by the item, ''Overall, my feelings about my ethnic background are:.'' Response options ranged from 1 (strongly negative) to 6 (strongly positive). Although significant, the magnitude of correlation between these indicators was low (in the .20s), so they were retained as separate variables.

Preference for same-ethnic friends.   On a scale from 1 (not at all important) to 5 (extremely important), respondents rated how important it was to have friends of their own ethnic background.

Perceived discrimination.   Respondents indicated, on a scale ranging from 1 (almost never) to 5 (almost always), how frequently teachers, other adults at school, and other students were unfair or negative toward the respondent based on his or her ethnic background. These three items were highly intercorrelated for all ethnic groups; we standardized each and averaged it into a single ''perceived discrimination'' composite variable. Cronbach's α for the three-item scale was .77 for African American, .75 for Asian-descent, .70 for Latino, and .74 for White respondents.

Family generation status and English language facility. Participants' generation status was determined by a question in which students indicated (yes, no, or don't know) whether they, their mother, father, and maternal and paternal grandparents were born in the United States. Coding included 1 (immigrant: participant was born in another country but immigrated to the United States); 2 (parent immigrated, U.S.-born participant: one parent was an immigrant); 3 (both parents and participant U.S.-born); and 4 (at least one grandparent was U.S.-born, in addition to parents and participant being U.S.-born). Facility with English was determined by participants' responses, on a five-point scale ranging from 1 (not at all well) to 5 (extremely well), to how well they spoke English and how well they understood English. Within each ethnic group, these two items were highly correlated ($r = .73$–$.81$), and were averaged into a single ''facility with English language'' variable.

Responses to the generation status and language facility variables were moderately and significantly correlated within each ethnic group (r's ranged from .36 to .43, all $p < .001$). We standardized each variable, and then combined the two scores to create a single composite measure. Higher scores reflected greater English-speaking facility and more recent family immigration. This variable was calculated only for the Asian-descent and Latino samples. By their own report, White and African American participants and their families were nearly exclusively U.S.-born and native English speakers.

Probability of cross-ethnic friend nomination. To distinguish school effects from chance opportunity for cross-ethnic friendship nomination, we created a variable based on the ethnicity and number of friends nominated, and the ethnic composition of the school. For each respondent, we calculated the binomial probability that by chance, at least one of the nominated friends would be from another ethnic group. For analyses that involved the prediction of White friends, we included only the percentage of White peers, rather than other-ethnic peers.

School-Level Independent Variables

To calculate school-level predictor variables we returned to the total sample of students who participated in the study, whether or not they provided usable friendship nomination data. Thus, school-level indicators of parental education and academic achievement were calculated based on the perceptions of an average of 73% of the students attending the school, to represent more inclusively the school-level factors approximated by

aggregates of student-level information. We were interested in the positioning of each group relative to other groups in the school; thus, values were calculated as the ethnic group within-school difference from the school mean (excluding the ethnic group of interest).

Dependent Variable: Cross-Ethnic Friend Nomination

We derived two dependent variables from a list of up to five of the full names of respondents' closest school friends. Friends' ethnic background was determined by matching each nominated school friend to the demographic information for that individual.

First, we created a variable to examine nomination patterns within and across the four ethnic groups, within each school. This variable was determined for each ethnic group at the school level, and for nominations of members of each ethnic group (African American, Asian-descent, White, and Latino) in each school. For each ethnic group, we first determined the mean number of friends nominated from each of the four represented ethnic groups by dividing the total number of friend nominations of members of each ethnic group represented in the study by the total number of nominations. We then adjusted this variable according to how likely adolescents would be to nominate friends from a particular group by chance alone, given the number of friends nominated and the proportion of members of that ethnic group in the school. For each ethnic group within each school, we conducted a group-level test of proportion that yielded a z-score as a test of whether or not observed nomination patterns were equivalent to expected nomination patterns of each major ethnic group, based on school ethnic composition. This calculation was a z-score variant of Laumann and colleagues' homophily index (Laumann, Gagnon, Michael, & Michaels, 1994, as cited in Joyner & Kao, 2000), and involved observed (p) and expected (π), values as

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

where p is the total number of friend nominations of members of the target group divided by the total number of nominations; π the total number of students in the target group divided by the total number of students in the school; and n the total number of nominations.

Second, we wished to determine the extent to which particular individual- and school-level factors increased the likelihood of cross-ethnic friend nomination. We calculated two dependent variables for these analyses: nomination of White friends only (for ethnic minority participants)

TABLE 1

Percentage of Students Nominating at Least One Cross-Ethnic Friend (One White Friend), by Ethnic Group Within School

School	African American	Asian American	Latino	White
1	90 (80)	71 (62)	64 (54)	56
2	88 (81)	87 (76)	78 (67)	44
3	51 (36)	88 (80)	60 (48)	35
4	95 (83)	92 (61)	80 (70)	57
5	75 (54)	55 (43)	86 (71)	72
6	80 (70)	84 (71)	75 (61)	51
7	40 (20)	64 (59)	68 (45)	72

and nomination of cross-ethnic friends, including White peers. These dependent variables were dichotomous, signifying whether or not the adolescent had nominated any White/cross-ethnic friends. Table 1 indicates, by ethnic group, the proportion of students in each school who nominated at least one cross-ethnic friend and at least one White friend. With a few exceptions within the African American and White samples, most participants in each school nominated at least one cross-ethnic friend.

RESULTS

Nomination Patterns

Our first step was to examine friendship nomination patterns, with the ethnic composition of the school student body accounted for. Nomination patterns across schools were relatively consistent; adolescents disproportionately nominated same-ethnic friends, even in schools in which the proportions of same-group members were extremely small. Nomination of cross-ethnic friends, regardless of the ethnic group nominated, occurred at rates less than would be expected, given friendship network size and school ethnic composition. This pattern was particularly pronounced for White participants, for whom there was only one school (in which White students were in a numerical minority) in which cross-ethnic friend nomination reflected school ethnic composition. An exception to the patterns of undernomination was found among the African American and Latino respondents, who on the whole nominated one another at chance-level rates. Table 2 presents findings from one school (5% African American, 17% Asian-descent, 11% Latino, and 66% White) to illustrate this summary of findings.

TABLE 2

Z-Scores for Test of Proportions for Equivalence of Observed Versus Expected Nomination Patterns Given Ethnic Composition of School

| | Ethnic Group Nominated . . . | | | |
Ethnic group Nominating . . .	Asian-descent	African American	Latino	White
African American	− 2.97*	9.04***	1.77	− 3.42**
Asian-descent	10.46***	− 3.95***	− 4.93***	− 3.61***
Latino	− 5.37***	.54	14.39***	− 7.75***
White	− 12.91***	− 7.31***	− 11.00***	20.28***

Note. Significant z-scores indicate nomination patterns beyond chance. Positive z-scores indicate overnomination; negative z-scores indicate undernomination.

*$p \leq .01$; **$p \leq .001$; ***$p \leq .0001$.

Student and School Factors in Cross-Ethnic Friend Nomination

We sought to identify factors associated with increases or decreases in the odds that adolescents nominated at least one cross-ethnic or White friend. We used multi-level modeling for several reasons. First, friendship nominations made by students attending the same school represent nested data structures; that is, they are not independent observations. Second, school-level differences in cross-ethnic friend nomination can be modeled (Moody, 2001). Third, social contact theory (Pettigrew, 1998) calls for individual- and school-level factors, which requires partitioning student- and school-level variances (Bryk & Raudenbush, 1992). Our analyses involved binary-dependent variables; thus, we used hierarchical generalized linear modeling. Because some hypotheses called for prediction of White friend nomination but others for prediction of unspecified other-ethnic peers, we conducted analyses for both dependent variables within the ethnic minority samples. With few exceptions within the African American and Asian-descent samples, the results for both dependent variables were comparable. Results are presented fully for analyses that involved the nomination of at least one cross-ethnic friend, as these analyses involved all four ethnic groups. Variations for the nomination of White friends are reported under the African American and Asian-descent headings.[3]

We include results from the unconditional, individual-, and school-level models. For each ethnic group, the unconditional model provided an

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[3] Tables with the results of nomination of White friends only are available from the authors.

estimate of the grand mean log odds of an individual nominating at least one cross-ethnic friend. From this value, we determined the estimated grand mean probability of a student nominating at least one friend from another ethnic group. This model provided the log odds and probability to which we compared the effects of both individual- and school-level variables in subsequent models. The student-level model included all variables measured at the student level as predictors of the outcome. The binomial probability of nominating at least one cross-ethnic (or White) friend, given the number of friends nominated by the adolescent and the percentage of other students in the school, was included to adjust the dependent variable for chance-level nomination (labeled ''opportunity'' in the tables). Three dichotomous variables—sex, grade, and track—were entered as male = 1, grades 11–12 = 1, and college preparatory = 1, respectively. The coefficients for the three dichotomous variables represent the effects of belonging to the group coded as 1. All other variables were centered around their grand mean, so the value of the intercept is the estimated mean value for this comparison group. These coefficients can be directly interpreted as changes in the log odds of nominating at least one cross-ethnic friend, and were used to calculate the estimated change in probability of nominating at least one cross-ethnic friend. The values of the other individual-level variables were standardized. The estimated coefficients for these variables can be interpreted as the effects on the log odds of nominating at least one cross-ethnic friend, resulting from an increase of one standard deviation on the predictor variable. Independent variables with coefficients that were at least twice their standard error were interpreted as significant predictors (Kreft & Leeuw, 1998).

The school-level models predicted the residual variance in the individual intercept with all individual-level variables controlled in the individual-level equation. The number of high schools included in the study (7) is fewer than the number recommended for this level of analysis. Thus, we estimated school-level predictor coefficients in separate models (for a similar statistical example, see Wang, 1998). Comparison of the school-level predictor coefficients is not warranted because of their estimation in separate models. School-level predictors were centered around their grand means; coefficients represent the estimated change in the log odds of nominating at least one cross-ethnic friend for an adolescent in a school with a value on the predictor that is one standard deviation above the grand mean for the predictor. The estimated change in probability of nominating at least one cross-ethnic friend related to the school-level predictor was calculated from this coefficient. We conducted all analyses separately for each ethnic group, given differences in both variables

included, and their theorized relationship with cross-ethnic friend nomination.

African American participants. Table 3 contains the parameter estimates for this ethnic group. Testing of the school-level variance component revealed statistically significant variation at the school level (level 2 var = .76, χ^2 (6) = 108.68, $p < .001$). The unconditional model yielded an intraclass correlation (ICC) of .19 for the African American sample of adolescents, indicating that 19% of the variance in adolescents' nomination of at least one cross-ethnic friend lies between schools. For the individual-level predictor model, the probability of nominating a cross-ethnic friend given school composition and number of friends nominated was entered as a predictor variable to account for chance nomination of cross-ethnic friends. Additionally, students in upper grades had a modestly greater probability of nominating at least one cross-ethnic

TABLE 3

HGLM Parameter Estimates for African American Participants' Likelihood for Nomination of at Least One Cross-Ethnic Friend

	Coefficient	Standard Error	Probability	Variance Accounted
Unconditional model	.88	.43	.71	.10
Student-level model				
Intercept	.43	.43	.61	
Opportunity	5.37	2.69	.09	
Sex	.20	.27	.65	
Grade	.63[a]	.24	.14	
Track	− .11	.27	− .03	
Feelings about ethnic group	− .03	.13	− .01	
Importance of ethnic group	− .13	.13	− .03	
Importance of same-ethnic friends	− .16	.13	− .04	
Ethnic-based discrimination	− .05	.13	− .01	
Relative parental education	.11	.12	.03	
Relative academic orientation	.30[a]	.15	.07	
School-level models				
IIA relative parental education	1.31	1.02	.12	.12
IIB relative academic orientation	1.43	1.21	.12	.11

Note. Probability refers to the increase in predicted probability for nomination of at least one cross-ethnic friend for the comparison group for dichotomous predictor variables and a one standard deviation increase of continuous predictor variables. For each level II model only one school-level predictor of the level I intercept was included, in addition to all student-level predictors.

[a]Coefficients that are two times the standard error are significant predictors.

friend than those in lower grades. Also, the stronger the students' academic orientation, the greater their likelihood of nominating at least one cross-ethnic friend. The school-level models for this group did not yield any significant factors.

For the nomination of White friends only, testing of the school-level variance component revealed statistically significant variation at this level (level 2 var = .97, χ^2 (6) = 116.40, $p < .001$). The unconditional model yielded an ICC of .23 for the African American sample of adolescents, indicating that 23% of the variance in adolescents' nomination of at least one White friend was between schools. Grade and relative academic orientation were not significant (although the coefficient for the latter approached significance, $\beta = .30$, $p = .07$), but chance opportunity given the ethnic distribution of students in the school ($\beta = 4.40$, $p = .02$), and a minimal preference for same-ethnic friends ($\beta = -.34$, $p = .02$) both increased the likelihood that a White friend would be nominated. The total variance accounted for by this model was 8.0%. As for the nomination of cross-ethnic friends in general, the school-level models did not yield any significant factors.

Asian-descent participants.   Table 4 includes the parameter estimates for students in this ethnic group. The school-level variance component indicated a statistically significant variation in the outcome at the school level (level 2 var = .32, χ^2 (6) = 71.35, $p < .001$). The ICC for the Asian-descent sample was .11, indicating that 10.80% of the variance in the outcome existed across schools.

In the student-level predictor model, after accounting for the chance likelihood of nominating a cross-ethnic friend, given the school ethnic distribution and number of friends nominated, gender, preference for same-ethnic friends, and the immigration status/English language facility composite were significant predictors. Among Asian-descent participants, the likelihood of nominating cross-ethnic friends was greater among male students, and students whose families had lived in the United States longer and who were more facile with English language. The likelihood of nominating a cross-ethnic friend was lower among those who expressed a stronger preference for same-ethnic friends.

The school-level models produced one significant predictor. The likelihood that Asian-descent adolescents nominated at least one cross-ethnic friend was lower in schools in which Asian-descent adolescents' academic achievement was comparatively better relative to that of their other-ethnic peers.

For the nomination of White friends, results were comparable with the student-level predictor variables in significance, magnitude, and

TABLE 4

HGLM Parameter Estimates for Asian-Descent Participants' Likelihood for Nomination of at Least One Cross-Ethnic Friend

	Coefficient	Standard Error	Probability	Variance Accounted
Unconditional model	1.35[a]	.27	.79	.24
Student-level model				
Intercept	1.08[a]	.39	.75	
Opportunity	9.38[a]	4.25	.06	
Sex	.50[a]	.23	.08	
Grade	.08	.23	.01	
Track	.27	.27	.05	
Feelings about ethnic group	.18	.13	.03	
Importance of ethnic group	− .10	.12	− .02	
Importance of same-ethnic friends	− .55[a]	.13	− .12	
Ethnic-based discrimination	.08	.13	.02	
Generation status/language facility	.83[a]	.15	.12	
Relative parental education	.02	.13	.00	
Relative academic orientation	− .15	.14	− .03	
School-level models				
IIA relative parental education	− 1.08	1.55	− .04	.25
IIB relative academic orientation	− 5.18[a]	2.56	− .12	.29

Note. Probability refers to the increase in predicted probability for nomination of at least one cross-ethnic friend for the comparison group for dichotomous predictor variables and a one standard deviation increase of continuous predictor variables. For each level II model only one school-level predictor of the level I intercept was included, in addition to all student-level predictors.

[a]Coefficients that are two times the standard error are significant predictors.

direction, although the model accounted for less variance (level 2 var = .24, χ^2 (6) = 52.78, $p < .001$). The ICC for the Asian-descent sample of adolescents was .067, indicating that 6.7% of the variance in the outcome existed across schools. No school-level variables were significantly associated with the nomination of White friends.

Latino participants. Table 5 contains the model estimates for Latino students. The test of the school-level variance component in this model indicated statistically significant variation in the outcome across schools (level 2 var = .33, χ^2 (6) = 30.78, $p < .001$). For the Latino sample, the ICC was .09, indicating that 9.10% of the variance in the outcome existed across schools.

In the student-level model, academic track, importance of same-ethnic friends, the immigration status/language facility composite, and relative

TABLE 5

HGLM Parameter Estimates for Latino Participants' Likelihood for Nomination of at Least One Cross-Ethnic Friend

	Coefficient	Standard Error	Probability	Variance Accounted
Unconditional model	1.33	.25	.79	.39
Student-level model				
Intercept	1.30	.28	.79	
Opportunity	11.22[a]	2.83	.08	
Sex	.33	.29	.05	
Grade	− .49	.29	− .09	
Track	.73[a]	.36	.10	
Feelings about ethnic group	− .28	.16	− .05	
Importance of ethnic group	.14	.16	.02	
Importance of same-ethnic friends	− .44[a]	.15	− .08	
Ethnic-based discrimination	− .28	.16	− .05	
Generation status/language facility	.91[a]	.16	.12	
Relative parental education	.38[a]	.14	.06	
Relative academic orientation	.09	.17	.01	
School-level models				
IIA relative parental education	.98[a]	.45	.06	.42
IIB relative academic orientation	.66	.99	.02	.39

Note. Probability refers to the increase in predicted probability for nomination of at least one cross-ethnic friend for the comparison group for dichotomous predictor variables and a one standard deviation increase of continuous predictor variables. For each level II model only one school-level predictor of the level I intercept was included, in addition to all student-level predictors.

[a]Coefficients that are two times the standard error are significant predictors.

parental education were significant predictors, in addition to the probability of nominating a cross-ethnic friend given school composition and number of friends nominated. Nomination of at least one cross-ethnic friend was more likely among Latino adolescents who expressed less preference for same-ethnic friends and who were in college-bound tracks. Additionally, adolescents of longer-term family residence in America and greater proficiency with English, and whose parents had attained comparatively higher levels of education relative to the families of Latino students in the school, were more likely to nominate cross-ethnic friends.

The school-level models for this group yielded one significant predictor: Latino adolescents were more likely to nominate at least one cross-ethnic

friend when, as a group, their parents had attained higher levels of education, relative to the education status of members of other ethnic groups.

For the nomination of White friends only, testing of the school-level variance component revealed a statistically significant variation at the school level (level 2 var = .23, χ^2 (6) = 25.06, $p < .001$). The ICC for the Latino sample of adolescents was .07, indicating that 6.5% of the variance in the outcome existed across schools. The student- and school-level predictors for the nomination of White friends were of comparable magnitude and direction as for the nomination of cross-ethnic friends of any ethnic group.

White participants. Model estimates are included in Table 6. Analysis of the school-level variance component in this model indicated statistically significant variation in the outcome across schools (level 2

TABLE 6

HGLM Parameter Estimates for White Participants' Likelihood for Nomination of at Least One Cross-Ethnic Friend

	Coefficient	Standard Error	Probability	Variance Accounted
Unconditional model	.21	.21	.55	.05
Student-level model				
Intercept	.25	.20	.56	
Opportunity	2.32[a]	.52	.06	
Sex	.50[a]	.09	.12	
Grade	− .36[a]	.09	− .09	
Track	− .19	.11	− .05	
Feelings about ethnic group	.07	.05	.02	
Importance of ethnic group	.02	.05	.00	
Importance of same-ethnic friends	− .08[a]	.04	− .02	
Ethnic-based discrimination	− .02	.05	− .00	
Relative parental education	− .22[a]	.05	− .05	
Relative academic orientation	− .19[a]	.06	.05	
School-level models				
IIA relative parental education	− 1.14[a]	.29	.06	.10
IIB relative academic orientation	− 1.13[a]	.51	− .08	.08

Note. Probability refers to the increase in predicted probability for nomination of at least one cross-ethnic friend for the comparison group for dichotomous predictor variables and a one standard deviation increase of continuous predictor variables. For each level II model only one school-level predictor of the level I intercept was included, in addition to all student-level predictors.

[a]Coefficients that are two times the standard error are significant predictors.

var = .28, χ^2 (6) = 144.41, $p < .001$). The ICC was .08, indicating that 7.80% of the variance in the outcome is at the school level.

For the student-level model, after accounting for the likelihood of nominating at least one cross-ethnic friend, given the school ethnic distribution and number of friends nominated, gender, grade level, preference for same-ethnic friend, relative parental education, and relative academic orientation were significant correlates. Cross-ethnic friend nomination was more likely among White adolescents who expressed less preference for same-ethnic friends, whose parents had attained comparatively lower levels of education, among males and younger, as compared with older, high school students. White adolescents were more likely to nominate at least one cross-ethnic friend if their academic orientation was low relative to other White students in the school.

Both predictors were significant in the school-level models. Nomination of at least one cross-ethnic friend was more likely in schools in which the achievement disparity was lower between White adolescents and other ethnic groups represented in the school, and in schools in which differences in parental educational attainment between Whites and other ethnic groups in the school were smaller.

DISCUSSION

The contemporary American adolescent population is more ethnically diverse than it has ever been in U.S. history, and it continues to change. The numbers of Latino and Asian/Pacific Island students are increasing while the percentage of White students are diminishing (U.S. Department of Education, 1996). Much of adolescents' contact with members of other ethnic groups occurs in schools; yet, little is known about factors that promote or inhibit intergroup friendship.

Social contact theory has been the dominant theoretical view guiding the study of cross-ethnic friend nomination. In its classic form, the theory highlights features of contexts such as schools that support positive intergroup relations. We focused on the condition of equal status, in terms of parental education and academic success, as a characteristic that could differentiate nomination patterns between schools. However, in the theory's most recent reformulation, Pettigrew (1998) argued that individual characteristics must be considered in conjunction with characteristics of the contact setting. This study appears to be the first to examine student and school factors in adolescents' cross-ethnic friend nomination from this framework. Additionally, we conducted analyses separately for each ethnic group, and for the nomination of White, versus any cross-ethnic friend.

We found that the ethnicity of both nominator and nominee are relevant to understanding cross-ethnic friend nomination.

The multi-ethnic schools in our sample differed significantly in the likelihood that students nominated cross-ethnic friends; status differentials helped to explain school differences for all ethnic groups but African Americans. As the within-school, average academic achievement of White teens increased relative to the achievement level of the other ethnic groups in the school, the likelihood that they would nominate cross-ethnic friends decreased. Schofield (1989) described how, in relation to actual achievement disparities, White students became positioned as "good students" while African American youth did not. Differential access to the valued student role created insurmountable barriers to cross-ethnic relationships—that is, White students did not find African American peers desirable as friends. For Asian-descent adolescents in the current study, similar effects emerged with respect to nomination of cross-ethnic friends in general (but not specifically nominations of White peers). In their studies within single, ethnically heterogeneous high schools, Lee (1996) and Peshkin (1991) attributed repudiation of ethnic minority, cross-ethnic schoolmates by Asian-descent adolescents to these students' negative images of their peers' academic abilities and qualities, images that were supported by actual significant achievement differences within the schools. Our findings suggest that to the extent that these differences are minimized, in-group biases in nomination diminish for Asian-descent students.

Parental education attainment also differentiated nomination patterns between schools. As the school-based average parental education level of White teens increased relative to the average of other ethnic groups in the school, White students were less likely to nominate cross-ethnic friends. However, as Latino students' average parental education level grew, relative to other groups in the school, they were more likely to nominate cross-ethnic friends. Similarly, Miller (1990) found that minority students who experienced greater socioeconomic disparity from their White schoolmates were less involved in interracial activities and less committed to school integration. According to social contact views (Pettigrew, 1975; Schofield, 1991), group-level achievement and socioeconomic differentials may translate into unequal access to key roles, to imbalances in power between ethnic groups, and to the creation of insiders and outsiders within the student body. Research into students' perceptions of their school's social environment, including their access to important roles, and compared across multiple schools, could provide evidence to support our interpretation of these findings as an equal status effect.

Our efforts to assess the multi-level nature of cross-ethnic friend nomination highlight the complexity of the role of SES correlates in

cross-ethnic friend nomination. For both White and Latino respondents, parental education attainment operated both with respect to the positioning of individuals within their own group, as well as with respect to the status of their ethnic group relative to other groups in the school. That is, for White students, cross-ethnic friend nomination was more likely when parents' educational attainment was comparatively lower than that of other White students in their school; for Latino students, cross-ethnic friend nomination within a given school was more likely when parents had attained greater education compared with the families of other Latino students in the school. For both groups, cross-ethnic friend nomination was more likely when students were in schools in which the parental educational disparity between their group and others in the school was minimized. These results align with multi-level modeling scholars' assertions that status variables have their effects on students' school adjustment through multiple levels of influence (Bryk & Raudenbush, 1988).

Our analyses of student factors yielded key findings as well. A consistent finding was that adolescents who maintained strong in-group preferences were less likely to nominate any cross-ethnic friends. Potential reasons behind this relationship are intriguing. Adolescents are in the process of defining a sense of self with respect to multiple social identities, including ethnic group membership. A multi-ethnic context, as well as ethnic socialization experiences, may prompt a desire for the company of same-ethnic peers as a means to help develop a sense of ethnic group membership (McGuire, McGuire, Child, & Fujioka, 1978; Peshkin, 1991). Or, in line with social identity principles, as part of the process of differentiating their group membership from others, some adolescents may develop strong in-group peer preferences that incline them to choose same-ethnic over cross-ethnic friends (Cotterell, 1996). Relational interpretations counter identity-based views of this association: perhaps adolescents experience their cross- and same-ethnic relationships differently in ways that lead to an in-group preference. In one study, African American and White early adolescents rated the quality of existing same-ethnic friendships more positively than existing cross-ethnic friendships (Hughes, 2001). In a different vein, Pettigrew (1998) discussed social psychological findings within adult samples that prejudiced beliefs impede positive intergroup relations; preferences for same-ethnic friends may reflect an underlying ethnic-based prejudice. Research that directly targets rationales behind in-group preferences are necessary to provide definitive support for any of these possibilities. We note further that as is often the case for intentions/beliefs and behaviors, the relation between in-group preferences and actual nomination was less than perfect, and of comparable or smaller magnitude than other significant relations in the model.

Future research should address individual and contextual factors that mediate the relationship between a strong desire for same-ethnic friends and cross-ethnic friend nomination.

For Asian-descent and Latino youth, combined greater proficiency with English and a longer family history in the United States were positively associated with cross-ethnic friend nomination, White or otherwise. From a relational standpoint, friendships require both the ability to communicate readily and to be understood, and shared interests and experiences, in order to promote companionship and to minimize conflict (Savin-Williams & Berndt, 1990). The immigrant youth in our sample may have struggled to communicate with and relate to English-speaking peers if they possessed limited English-speaking ability and recent exposure to American adolescent culture (Suarez-Orozco & Suarez-Orozco, 2001). Such challenges may reduce these teens' capacity to develop cross-ethnic friendships, both limiting the appeal of cross-ethnic friends from their standpoint, as well as their ability to gain social acceptance from English-speaking peers (Peshkin, 1991). The significance of immigration status and English language proficiency may also reflect school organizational practices. Students of limited English proficiency may experience little cross-ethnic contact because of assignment to academic tracks related to their language proficiency (Peshkin, 1991; Phelen et al., 1991).

We did not find compelling support for Fordham and Ogbu's (1986) contention that African American and Latino adolescents who express strongly positive ethnic group orientations, diminished academic orientations, and perceptions of ethnic-based discrimination avoid nomination of White, or cross-ethnic peers. In these ethnic groups, cross-ethnic friend nomination was more likely among more academically oriented adolescents. A more parsimonious interpretation may be proximity. Given ethnic group differences in class assignment, higher achieving African American and Latino adolescents may have more opportunity than their lower achieving peers to meet and form relationships with cross-ethnic friends. The negative relationship between academic orientation and cross-ethnic friend nomination observed for White students could be similarly interpreted in terms of proximity, since higher achieving White students are less likely to have classes with cross-ethnic peers than do their lower achieving counterparts. A difficulty in teasing out the role of nomination pools (e.g., classrooms), versus intentional selection based on student characteristics related to ethnic group membership, is that we have little understanding of specific pools from which adolescents nominated friends, or the distribution of ethnic groups across contact opportunities and nomination pools.

We note that the ethnic group correlates we examined (pride in and importance of ethnic group membership) may function in an indirect fashion as well, affecting in-group and out-group attitudes, which, then perhaps relate to actual nomination. Recent research findings have confirmed an association between ethnic group orientations and intergroup attitudes (e.g., Hamm & Coleman, 2001; Phinney, Cantu, and Kurtz, 1997a). Of course, our measures of ethnic group orientations were limited. Phinney et al. (1997b) used multi-item attitudinal scales developed within the schools directly involved in the research, and Spencer et al. (2001) focused on internalization of positive racial attitudes.

In our substantive analyses, we focused on predicting the likelihood that adolescents would nominate at least one cross-ethnic friend. The majority of participants did nominate at least one cross-ethnic friend. However, we also compared nomination rates across various pairings of ethnic groups to rates expected, given the ethnic distribution of the school. In-group biases in nomination were strongly present within all groups, most clearly for White adolescents. In only one school, the school in which White students constituted a numerical minority, did the White adolescents' list of nominated friends bear resemblance to the ethnic diversity of their school. This school may have offered the most ideal demographic circumstances for cross-ethnic nomination by White adolescents (see Moody, 2001). Also, although ethnic minority students of similar status (African American and Latino) nominated one another relatively readily, there appeared to be resistance among all the ethnic minority groups to nominate White friends. These nomination patterns diverge from results of other studies that suggest that ethnic minority teens nominate White peers in a more prevalent fashion (Hallinan & Teixeira, 1987; Quillian & Campbell, 2003). The school-level status differential factors may represent an important step toward understanding these between-group patterns.

Our study is unique in its effort to consider school-level factors simultaneous with student predictors. However, we acknowledge that these analyses were constrained, given the difficulty in detecting significant effects of predictors with a small number of schools. However, we can be confident in the robustness of the findings that we obtained; when the number of schools is small, the chance of finding significant school-level effects is low unless the effect is very strong (Kreft & Leeuw, 1998). Regrettably, we could not determine the relative significance of school-level parental education and academic status. It is possible that the effects of mean-level parental education, and mean-level academic achievement for White adolescents have an interactive relationship with the dependent variable; such possibilities require larger samples of schools for investigation. Finally, these schools were not nationally representative. All

schools were multi-ethnic, with substantial proportions of White students. A broader sample could capture better the array of high schools found in the United States, offer greater geographic representation, and permit greater generalizability.

In conclusion, the results of this study underscore a need for theoretical positions to consider that adolescents develop friendships based on their personal characteristics, but in contexts such as schools that have features that have implications for friendship formation. At a minimum, researchers must attend to opportunity for nomination, given the school ethnic composition. In our findings, the proportion of cross-ethnic friends in the school significantly reduced variance in nomination patterns. Also, theoretical frameworks should incorporate characteristics of who is being nominated, not just of the nominator. For instance, we found that after accounting for school-level contact, nomination patterns were more favorable between African American and Latino youth than other pairings of groups, despite potential barriers in language and American cultural fluency between these groups. We also found variation if we differentiated nomination of White from cross-ethnic friends in general. Relative academic status was significant only to Asian-descent adolescents' cross-ethnic friend nomination when ethnic minority students were included with Whites as nominated peers. This suggests different factors weighing into Asian-descent students' nominations, related to the ethnicity of the peers in the nomination pool (Lee, 1996). Regrettably, we did not have sufficient sample size to examine the associations of these predictors with nomination of specific ethnic minority group members. Research conducted in more schools and/or in schools with less of a White student presence will be useful.

In assessing cross-ethnic friendship patterns, this study reveals aspects of the complex social dynamics of multi-ethnic school settings. The results clearly call for a comprehensive framework for understanding processes of friendship nomination that is sensitive to the diversity in adolescents' personal and school experiences.

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