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Los Angeles

Friends in High Places:

The Benefits of Cross-Ethnic Friendships for Numerical Minority Students

A thesis submitted in partial satisfaction  
of the requirements for the degree Master of Arts  
in Education

by

Hannah Levy

2016

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## ABSTRACT OF THE THESIS

Friends in High Places:

The Benefits of Cross-Ethnic Friendships for Numerical Minority Students

by

Hannah Levy

Master of Arts in Education

University of California, Los Angeles, 2016

Professor Sandra H Graham, Chair

This cross-sectional study examined the influence of cross-ethnic friendships on students' sense of school belonging and safety, as well as whether this relationship differed by ethnicity and students' ethnic representation in their school. It further explored whether friendships with numerical majority peers in particular were related to these outcomes. The sample was comprised of 2,227 sixth grade students (40.2% Latino, 20.8% Asian, 21.6% African American, 17.4% White) from 26 urban middle schools in California. Findings revealed that a higher proportion of cross-ethnic friendships was associated with greater school belonging for numerical minority White students, and lower school belonging for numerical majority White and African American students. Friendships with numerical majority peers were positively associated with school belonging and safety for White students. Finally, having a higher

proportion of cross-ethnic friendships was associated with greater perceived safety for numerical minority students. Implications for promoting cross-ethnic peer interactions are discussed.

The thesis of Hannah Levy is approved.

Rashmita S. Mistry

Carola E. Suarez-Orozco

Sandra H Graham, Committee Chair

University of California, Los Angeles

2016

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## Friends in High Places:

### The Benefits of Cross-Ethnic Friendships for Numerical Minority Students

Immigration continues to drive the US population to be increasingly diverse, motivating important inquiry regarding the role of the changing ethnic context in students' socioemotional and academic lives. While schools should be capitalizing on this unique intergroup context, the ethnic composition of schools can have negative implications for some students, particularly those with few same ethnic peers. Students are more likely to accept peers from their own ethnic group (Bellmore, Nishina, Witkow, Graham, & Juvonen, 2007), giving students whose ethnic group makes up the majority of their school many opportunities to be accepted. On the other hand, students whose ethnic group is the numerical minority at school have fewer same-ethnic peers to accept them. Additionally, having few same ethnic peers in school has been shown to heighten the salience of ethnicity and can signal the perception that one is different (McGuire, McGuire, Child, & Fujioka, 1978; Umaña-Taylor, Diversi, & Fine, 2002), an important consideration as adolescents are more likely to form and sustain friendships with similar peers (Kandel, 1978).

One potential source of support to help students with few same-ethnic peers fit in is the development of cross-ethnic friendships, or friendships with peers from different ethnic groups. These friendships, particularly those with students from the largest and most numerically powerful ethnic group in the school, may help numerical minority students achieve a sense of belonging and safety by conveying that both their ethnic group and themselves are valued in their school community. In this study, I examine the differential consequences of having cross-ethnic friends for students in the numerical minority and majority, as well as whether friendships with numerical majority peers have any added benefit for students with few same ethnic peers. In

the sections that follow, I am going to discuss prior research about the plight of being underrepresented. I will make an argument that cross-ethnic friendships are an important source of support for this potentially vulnerable population.

### **The Plight of the Underrepresented**

Students' ethnic representation in the school context is highly influential. Students demonstrate a preference for members of their own ethnic group, resulting in more acceptance and less rejection of same-ethnic peers (Bellmore et al., 2007). Students whose ethnic groups are well represented at the school (numerical majority members) reap the benefits of this positive bias by being more likely to be accepted by a greater number of peers. Conversely, students whose ethnic groups are underrepresented at the school (numerical minority members) have lower status and acceptance (Hallinan & Smith, 1985). Acceptance and rejection by peers is associated with students' sense of safety (Lane-Garon & Richardson, 2003) and belonging (Osterman, 2000) at school, indicating that numerical minority students may feel a lower sense of belonging and safety than their majority peers. In examining the influence of ethnic representation on peer relations in the school context, it is important to consider that social identities—in this case, ethnicity—are critical in shaping our sense of self, and consequently impact the way we engage with individuals who we perceive as being similar to or different than ourselves.

**Social identity theory.** Children as young as five demonstrate a preference for people from their own ethnic group (Aboud, 2003; Dunham, Baron, & Carey, 2008). According to social identity theory, this inclination toward similar others develops because of the importance of ethnic group membership to one's sense of self (Tajfel, 1981). As such, individuals act in ways that preserve and improve the status of their ethnic group, and by extension their own self-

esteem (Castano, Yzerbyt, Palladino, & Sacchi, 2002), such as showing favoritism toward other members (Dovidio, Gaertner, Saguy, 2009). In one study of 30 East-African ethnic groups, individuals from most groups evaluated members of their own group as more trustworthy, friendly, and honest than members of other groups (Brewer & Campbell, 1976). The positive bias exhibited by these individuals reflects a consensus in the literature as to the pervasive preference for ingroup members found in adults (for review, see Mullen, Brown, & Smith, 1992) and children alike (Aboud, 2003).

Favoritism toward similar others and prejudice directed at outgroup members has been documented in young children (Aboud, 2003). Employing a minimal groups paradigm, Dunham, Baron, & Carey (2008) found that after random assignment to one of two arbitrary groups, five-year-olds exhibited preferences toward members of their own group with regard to explicit and implicit attitudes, allocation of resources, behavioral attributions, and selective encoding of information. These findings suggest that similar to adults, children demonstrate a preference for similar others that exists even when such groups are relatively meaningless. Given the extensive amount of time adolescents spend in their schools, it is imperative to consider the consequences of this ingroup preference for students with few same ethnic peers.

In the school setting, members of the numerical majority are at a social advantage, given that the majority of students in the school will exhibit a preference toward their own ethnic group. Conversely, individuals in the numerical minority have few same-ethnic peers exhibiting this ingroup preference. Additionally, literature suggests that being a numerical minority member can make individuals vulnerable to social identity threat (Murphy, Steele, & Gross, 2007)—the perception that one may be devalued in a particular context due to a social identity they hold (Branscombe, Ellemers, Spears, & Doosje; 1999). Friendships, particularly cross-ethnic

friendships with the majority ethnic group, may be particularly beneficial for these students by communicating that their ethnic groups—and by extension themselves—are valued in this particular context.

### **Friendships as a Solution**

Friendships are an important source of social interaction and are associated with a range of advantageous outcomes. Children with friends tend to be more social, altruistic, self-confident, cooperative, and less lonely (Graham, Munniksmas, & Juvonen, 2014; Hartup, 1993; Hartup 1996). Friends provide a partner to participate in shared activities (Hartup, 1993), allowing people to engage in positive interaction and conflict management (Newcomb & Bagwell, 1995). During these shared interactions, communication between friends has been demonstrated to be more extensive, cooperative, and positive than between acquaintances during similar interactions (Newcomb & Bagwell, 1995). Friendships also tend to be associated with more positive relationship properties such as similarity, equality, mutual liking, closeness, and loyalty than relationships with non-friends (Newcomb & Bagwell, 1995).

Friendships gain added significance during adolescence, as they evolve from competitive partners in shared activities to more intimate, prosocial companions (Berndt, 1982). Friends act as a support system, helping students navigate their increasingly complex social and academic worlds, which has important implications for academic adjustment. Friendships provide adolescents with a sense of belonging in their schools, the socially bound perception that they are liked, respected, and valued by others in the school context (Hamm & Faircloth, 2005). Feeling as though they belong at school helps students fulfill a developmental need for relatedness to others (Hamm & Faircloth, 2005), and promotes higher levels of academic engagement (Connell & Welborn, 1991). Given the developmental significance of friendships as well as the

increasingly diverse ethnic composition of our nation's schools, extensive research has examined the unique benefits of same and cross-ethnic friendships.

**Same-ethnic friendships.** Homophily is the inclination to interact with others who are similar to the self, particularly with regard to salient characteristics such as gender or ethnicity (McPherson, Smith-Lovin, & Cook, 2001). Due to homophily, students demonstrate a preference for selecting friends from the same ethnic group (Graham, Taylor, & Ho, 2009). Some benefits are uniquely associated with same-ethnic friendships. Friendships with students from the same ethnic group provide support for ethnic identity exploration, leading to stronger ethnic identity development for ethnic minority friends (Graham, Munniksma, & Juvonen, 2014; Yip, Seaton, & Sellers, 2010). In turn, the dimensions of ethnic identity have been found to be differentially associated with self-esteem (Phinney, 1991; Phinney & Chavira, 1992), academic adjustment (Fulgini, Witkow, & Garcia, 2005), perceived efficacy, and prosocial attitudes (Smith, Walker, Fields, Brookins, & Seay, 1999).

While studies provide conflicting results, some evidence suggests that friendships with same-ethnic peers are of better quality than cross-ethnic friendships (Aboud, Mendelson, & Purdy, 2003). While same-ethnic friendships rate similarly to cross-ethnic friendships on some quality indicators such as companionship and emotional security, friendships with same ethnic individuals are associated with greater levels of intimacy (Aboud, Mendelson, & Purdy, 2003). Same-ethnic friendships have also been documented to be closer and more enduring than those with cross-ethnic peers, despite being more conflictual (Schneider, Dixon, & Udvari, 2007). Although same-ethnic friendships provide intimacy and identity exploration, they may not be the best source of support to help numerical minority students fit in and feel safe at school, as they still represent marginalization from the broader social group.

**Cross-ethnic friendships.** As schools become more diverse, students have more opportunities to form cross-ethnic friendships. Due to propinquity, the tendency to select friends based on availability and level of interaction (Graham, Munniksma, & Juvonen, 2014), students in diverse schools form more actual cross-ethnic friendships (Quillian & Campbell, 2003). Classroom features like class size and ethnic composition (Hallinan & Teixeira, 1987), and individual level characteristics such as prejudice (Aboud, Mendelson, & Purdy, 2003), gender, and age influence development of friendships with cross-ethnic peers (Hallinan & Teixeira, 1987). While some studies suggest that grade level is positively associated with students' cross-ethnic friendships and peer interaction (Howes & Wu, 1990), others have found a negative association between age and cross-ethnic friendships (Aboud, Mendelson, & Purdy, 2003; Lease & Blake, 2005) and best friendships (Hallinan & Teixeira, 1987).

Cross-ethnic friendships provide a range of benefits associated with positive intergroup contact and social competence. Friendships allow students from different ethnic groups a chance to get to know each other on a personal, equal level—two essential components for improving intergroup relations proposed in Allport's contact hypothesis (1954). Consistent with contact theory, cross-ethnic friendships promote more positive intergroup attitudes for participants (Davies, Tropp, Aron, Pettigrew, & Wright, 2011) and observers (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). Intergroup contact is also associated with greater disapproval for excluding others, and lower instances of excluding peers based on race (Crystal, Killen, & Ruck, 2008).

Friendships with cross-ethnic peers have important implications in the school context. Although associations vary by gender and ethnicity, students with friends from different ethnic groups tend to be perceived as more self-confident, popular, liked, and smart (Lease & Blake,

2005). Cross-ethnic friendships may also foster positive school experiences by attenuating bullying. Students with friends from other ethnic groups are less likely to be the target of peer victimization (Graham, Munniksmma, & Juvonen, 2014; Kawabata & Crick, 2011) and perceive higher levels of peer support (Kawabata & Crick, 2011). Given these findings, it is not surprising that students with cross-ethnic friends feel safer at school (Munniksmma & Juvonen, 2012; Graham, Munniksmma, & Juvonen, 2014).

***Cross-ethnic friendships and numerical representation.*** A small body of research suggests that cross-ethnic friendships may be particularly beneficial for students whose ethnic groups are underrepresented at school (Baysu, Phalet, & Brown, 2014, Mendoza-Denton & Page-Gould, 2008). In a cross-cultural study of college age ethnic minority individuals, cross-ethnic friendships mediated the relationship between perceived ethnic representation and school satisfaction and self-efficacy (Baysu, Phalet, & Brown, 2014). Turning to the US, a longitudinal study of African Americans in predominantly White universities found that cross-ethnic friendships with majority peers buffered against low sense of belonging for individuals high in race-based rejection sensitivity (Mendoza-Denton & Page-Gould, 2008). These studies suggest that cross-ethnic friendships may be an advantageous source of support for ethnic minority students in numerical minority contexts. However, studies such as these are limited in that the underrepresented students have all been members of ethnic minority groups and the cross-ethnic friendships were with White societal majority group members, thereby conflating numerical and societal minority/majority status. The current study seeks to decouple numerical and societal status by utilizing a sample in which some students from each of the four largest ethnic groups: Asian, Latino, White, and African-American are represented as being numerical minorities while others in the sample are majority group members in their schools. Doing so enabled an



assessment of whether cross-ethnic friendships with students from any ethnic group, including ethnic minorities, are beneficial for students who are underrepresented in their school.

### The Current Study

Drawing upon evidence that numerical representation has implications for students' experiences (Hallinan & Smith, 1985), as well as associations between cross-ethnic friendships and school based outcomes for numerical minority students (Mendoza-Denton & Page-Gould, 2008), the current study has the following aims: 1) to examine whether cross-ethnic friendships are associated with 6<sup>th</sup> grade students' sense of school belonging and safety—two important constructs influenced by peer relations and ethnic representation— and whether these associations differ by ethnicity and numerical ethnic representation (see Figure 1), and 2) to assess whether friendships with numerical majority peers are related to perceptions of school belonging and safety, and if this relationship is consistent across ethnic groups and ethnic representations (see Figure 2).

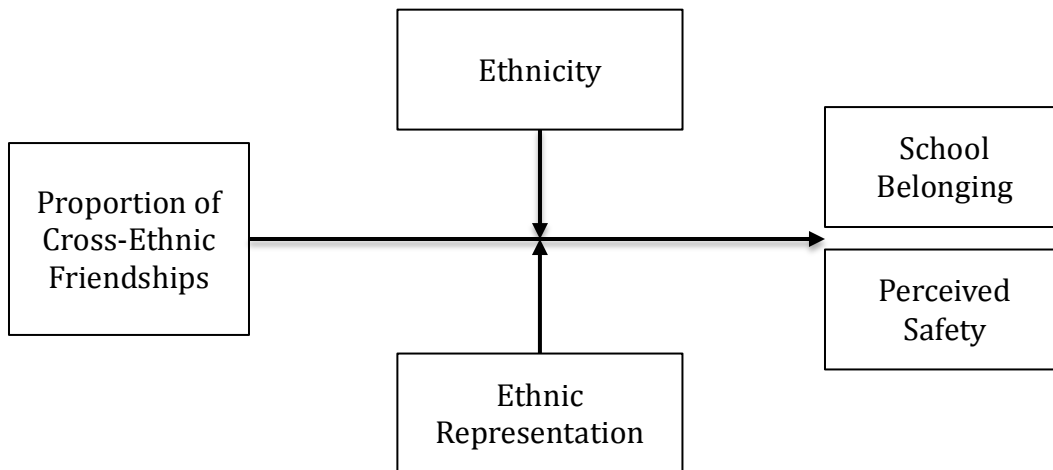


Figure 1. Conceptual model A.

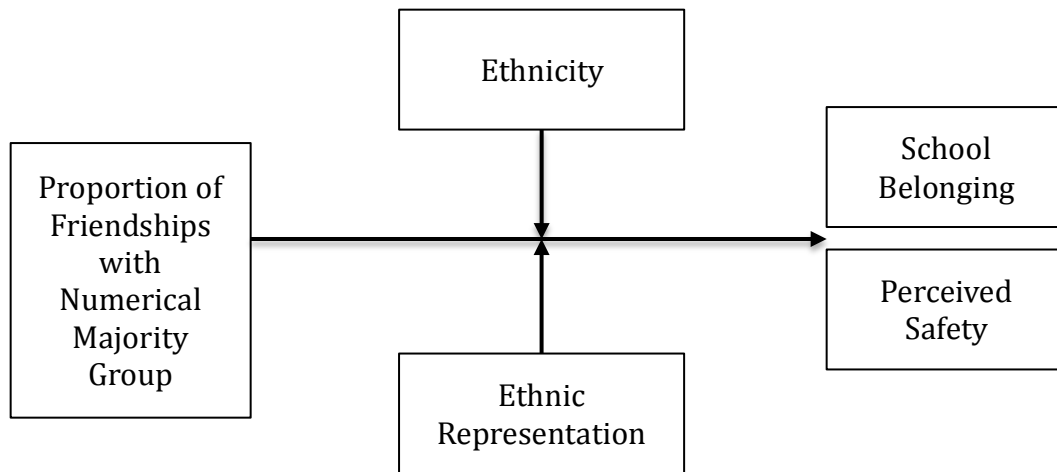


Figure 2. Conceptual model B.

Based on the literature reviewed, I hypothesize that 1) cross-ethnic friendships will be associated with greater perceived safety and belonging for numerical minority students, but not for numerical majority students, and 2) friendships with numerical majority peers will be associated with greater school belonging and perceived safety than friendships with non-majority peers.

## Method

### Participants

Participants for the current study are a subsample of the UCLA Middle School Diversity Project, a longitudinal study that examines the impact of racial/ethnic diversity on students' psychosocial and educational outcomes. The total sample includes approximately 6,000 students from 26 urban middle schools in Northern and Southern California. The schools were selected for their racial/ethnic composition to ensure a variety of school ethnic representations including: majority, balanced, and diverse. In majority schools (n=11), one ethnic group made up at least 50% of the school population and was at least twice as large as the next largest ethnic group. In balanced schools (n=9), two ethnic groups comprised at least 70% of the school, with neither

being more than twice as large as the other, and each being at least twice as large as each remaining ethnic group. Diverse schools (n=6) were those without a majority ethnic group or two balanced groups. School level demographic data from the California Department of Education (CDE) and participants' self-reported ethnicity were used to calculate participants' individual level numerical minority (47%) or majority (53%) status (see below).

The analytic sample (N=2,227) is comprised of sixth grade students from the four largest ethnic groups: Latino (40.2%), East/Southeast Asian (20.8%), African American/Black (21.6%), and European American/White (17.4%). Participants who self-reported as South Asian, Filipino, or Pacific Islander were not grouped with East/Southeast Asian students given prior literature documenting considerable heterogeneity within the Asian panethnic group (Rosenfeld, 2001). Due to insufficient sample size, South Asian, Filipino, Pacific Islander, and Middle Eastern students were excluded from the analyses. Participants who identified as multiethnic or 'other' were excluded because of the ethnic heterogeneity of the groups, and the variability with which these students might identify same and cross-ethnic friendships or perceive their ethnic representation in school. Samples vary somewhat by outcome measure, due to planned missingness and missing data.

## **Procedure**

Participants were recruited in three cohorts from 2009 to 2011. All sixth grade students at the 26 participating middle schools were provided information about the study and written parental consent (81.4% response rate) and student assent forms (83.1% response rate). Students who returned completed parent consent forms were entered into raffles to win an iPod or a \$50 gift card. Data were collected in four waves: Wave 1 (fall of 6<sup>th</sup> grade), Wave 2 (spring of 6<sup>th</sup> grade), Wave 3 (spring of 7<sup>th</sup> grade), and Wave 4 (spring of 8<sup>th</sup> grade). Data for the current

analysis were collected at Wave 2, to allow students time to develop friendships and begin to feel a sense of belonging and safety in their new middle schools. Students completed paper surveys during school hours while trained graduate student researchers monitored. Graduate student researchers provided clarification when necessary, but ultimately instructed students to interpret and complete the survey to the best of their ability. Upon completion of the survey, students were thanked and given a \$5 honorarium for Wave 1 and Wave 2, and \$10 for Wave 3 and 4, for a total of \$30 throughout the four waves.

## **Measures**

**Numerical minority/majority status.** School level demographic data from the California Department of Education and participants' self-reported ethnicity were used to calculate individual level numerical minority or majority status. Participants were identified as having numerical majority status if their ethnic group comprised at least 50% of their school population and was at least twice as large as any other ethnic group. The classification for numerical minority status varied depending on the school's ethnic composition as a majority, balanced, or diverse school. In majority and balanced schools, students who were not in the majority or one of the two large balanced groups were identified as numerical minority students. In diverse schools, participants were identified as numerical minority group members if their ethnic group comprised less than 20% of the school population.

**Proportion of perceived cross-ethnic friendships.** Participants were asked to list their good friends who were in the 6<sup>th</sup> grade at their school. Students were allowed to nominate an unlimited number of friends, and indicated whether they perceived each friend was from the same ethnic group. Prior research has documented greater reciprocity in same-ethnic friendship nominations, as well as a link between reciprocal friendship nominations and school belonging

(Vaquera & Kao, 2008). By using only reciprocal nominations, we risk conflating ethnic composition of the friend group with reciprocity. Thus, we included both reciprocal and non-reciprocal friendship nominations for the current analyses. A proportion of cross-ethnic friendships score ranging from 0 to 1 was calculated by dividing the number of cross-ethnic friends by total number of friendship nominations, with 0 indicating all same-ethnic friendships and 1 indicating all cross-ethnic friendships.

**Proportion of perceived friendships with numerical majority students.** All friendship nominations were assessed to determine if the friend was a numerical minority or majority member, and coded accordingly. Because individual level numerical minority or majority status can be calculated for participants only, nominations to nonparticipants were excluded. A proportion score of friendships with numerical majority students ranging from 0 to 1 was calculated by dividing the number of numerical majority friends by total friendship nominations to participants. A score of 0 indicates that all participant friends are numerical minority students, and 1 indicates that all participant friends are numerical majority group members.

**Availability.** An individual level availability of cross-ethnic peers score was included to control for the variability of cross-ethnic friendship opportunities across schools. Each student's percentage of same-ethnic peers within their school was calculated using data from the California Department of Education.

**School belonging and school safety.** Principal axis factor analysis with a promax rotation was conducted to determine the underlying structure of the ten items used to assess students' perceptions of safety and belonging in school. The Kaiser-Meyer Olkin measure of sampling adequacy was .870 suggesting factorability of the sample. The following criteria were used: a minimum eigenvalue of 1, and, consistent with prior use of these scales, a two-factor

structure. Results of the exploratory factor analyses are reported in Table 1. The two-factor solution, which accounted for 50.05% of the variance, supports the use of the school belonging and safety scales described below.

Table 1  
*Factor Loadings for School Belonging and School Safety*

<i>Items</i>	<i>Factor Loadings</i>	
	<i>School Belonging</i>	<i>School Safety</i>
I feel like I am a part of this school.	<b>.81</b>	-.03
I feel close to people at this school.	<b>.72</b>	-.03
I feel that I belong in this school.	<b>.90</b>	-.07
I feel respected and valued at this school.	<b>.68</b>	.10
How often do you feel safe at school?	.20	<b>.60</b>
How often are you afraid that someone will hurt or bother you at school?	-.02	<b>.68</b>
How often do you feel safe during nutrition?	.05	<b>.66</b>
How often do you feel safe in hallways or stairs?	.01	<b>.62</b>
How often are you afraid that someone will hurt or bother you in your school restrooms?	-.10	<b>.64</b>
How often do you feel unsafe during lunch?	-.06	<b>.65</b>
Eigenvalue	3.75	1.26
Percentage of Variance	37.49%	12.56%

*Note.* Principal axis factoring with a promax rotation. Factor structure indicated in bold.

***School belonging.*** A modified subscale from the Effective School Battery (ESB, Gottfredson 1984) was used to assess school belonging. The measure was composed of four items addressing students' relatedness to the school context (e.g., "*I feel like I am a part of this school*", "*I feel close to people at this school*"). Students rated each item on a 5-point scale from 1 ("for sure, yes!") to 5 ("no way"). Responses were reverse coded such that a high value indicated greater school belonging, and subsequently averaged to create a mean school belonging score ( $\alpha=.86$ ).

***School safety.*** A modified subscale from the Effective School Battery (ESB, Gottfredson 1984) was used to assess school safety. The measure was composed of six questions addressing students' perceptions of safety at school (e.g., “*How often do you feel safe at school?*”, “*How often are you afraid someone will hurt or bother you at school?*”). Students rated each item on a 5-point scale from 1 (“Never”) to 5 (“Always”). Negatively worded items were reversed coded, such that a high value indicated greater perceived safety for all six items, and subsequently averaged to create a mean perceived school safety score ( $\alpha=.81$ ).

### **Analytic Approach**

A series of multiple regression analyses were conducted to determine if the benefits conferred by cross-ethnic friendships to students' sense of school belonging and school safety were qualified by ethnic representation or ethnicity. Analytical models included all main effects of ethnicity, ethnic representation, and proportion of cross-ethnic friendships, as well as all two and three-way interactions. To account for variance in availability of cross-ethnic peers, the percentage of same-ethnic students in the school was included as a covariate. As recommended by Dawson and Richer (2006), we conducted subsequent tests of simple slopes to further assess significant interactions.

To address the second research question—whether friendships with numerical majority peers are especially beneficial for students' sense of belonging and safety—we ran two additional multiple regression models. These models assessed the relationship between proportion of friendships with numerical majority peers and perceptions of belonging and safety, as well as whether this relationship varied by ethnicity or numerical minority/majority status. Analytic models included all main effects of ethnicity, ethnic representation, and proportion of majority friendships, as well as all two and three-way interactions. Again, the percentage of

same-ethnic students in the school was included as a control. None of the two and three way interactions of ethnic representation were significant, indicating that the benefits conferred by friendships with majority peers do not depend on students' own numerical representation in school. These interaction terms were removed from the final models. Again, we conducted tests of simple slopes to probe significant interactions. Given prior research suggesting White individuals are sensitive to increases in the size of ethnic minority groups (Blalock, 1960), White students in the numerical minority were used as the reference group for all analyses.

## **Results**

### **Descriptive Statistics**

Descriptive statistics for and correlations among all study variables are reported in Table 2. Descriptive statistics show that students in our sample, on average, indicate that about half of their friends are cross-ethnic, with some students reporting having no cross-ethnic friends and some reporting that all of their friendships are cross-ethnic. Similarly, slightly less than half of our students' friendship nominations to participants were to numerical majority peers, with some listing no friendships with numerical majority peers and some listing all friends in the numerical majority at their school.



Table 2  
*Means, Standard Deviations, and Correlations Among Variables*

Measure	1	2	3	4	5	6	7	8	9	10
1. School Belonging	1									
2. School Safety	.406***	1								
3. Availability	.053*	-.058**	1							
4. African American	.062*	.064**	-.228***	1						
5. Asian	-.029	-.051*	-.179***	-.269***	1					
6. White	-.082**	.030	-.110***	-.241***	-.235***	1				
7. Latino	.038	-.034	.424***	-.431***	-.420***	-.376***	1			
8. Ethnic Representation <sup>a</sup>	.056*	-.041	.970***	-.277***	-.101***	-.105***	.397***	1		
9. Proportion of Cross-Ethnic Friendships	.025	.053*	-.396***	.040	.117***	.075***	-.190***	-.375***	1	
10. Proportion of Majority Friendships	.027	-.088***	.686***	-.252***	-.087***	-.095***	.356***	.685***	-.379***	1
M	3.638	4.173	.389					1.530	.473	.443
SD	.840	.701	.239					.499	.356	.410
Range	1-5	1-5	0-.683					1-2	0-1	0-1
n	1421	2129	2227	481	463	387	896	2227	2093	2025

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

<sup>a</sup> 1 = numerical minority, 2 = numerical majority

### **Cross Ethnic-Friendships and School Belonging**

Multiple regression revealed that controlling for availability of same-ethnic peers, there was a significant three-way interaction between ethnicity, proportion cross-ethnic friendships, and minority/majority status on school belonging (Table 3). As shown in Figure 3, the effect of cross-ethnic friendships on school belonging differs by both minority/majority status and ethnicity. Further tests of simple slopes concluded that a higher proportion of cross-ethnic friendships is associated with greater school belonging for White students in the numerical minority ( $t=2.55, p=.011$ ), but not for African-American ( $t=1.22, p=.222$ ), Latino ( $t=-.05, p=.959$ ), or Asian ( $t=1.45, p=.147$ ) numerical minority students. Alternatively, a higher proportion of cross-ethnic friendships is associated with lower school belonging for White ( $t=-2.40, p=.017$ ) and African American ( $t=-2.24, p=.025$ ) students in the majority, but not for Asian ( $t=1.59, p=.112$ ) and Latino ( $t=1.57, p=.116$ ) numerical majority students. For White and African American students in the numerical majority, same-ethnic friendships with other majority peers are associated with a higher sense of belonging than cross-ethnic friendships.

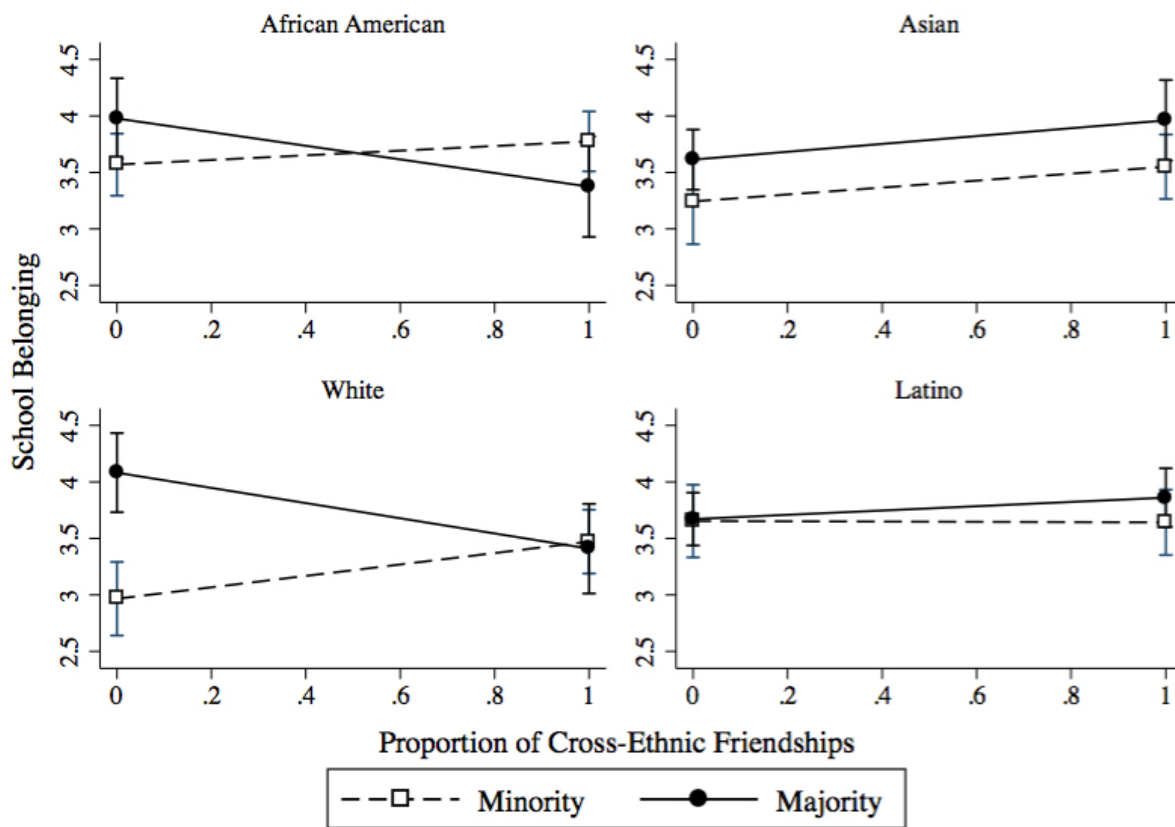


Figure 3. Plots of the three-way interaction between proportion of cross-ethnic friendships, ethnic representation, and ethnicity on school belonging.

### Cross-Ethnic Friendships and School Safety

The three-way interaction between cross-ethnic friendships, ethnic representation, and ethnicity in the initial model was not significant, indicating that the relationship between ethnic representation and cross-ethnic friendships on school safety does not vary by ethnic group.

Turning to the 2 way interactions reported in Table 3, the interaction between proportion of cross-ethnic friendships and numerical minority/majority status on school safety was significant ( $B = -.249$ ,  $SE = .102$ ,  $t = -2.43$ ,  $p = .015$ ). Simple slopes analysis revealed that a higher proportion of cross-ethnic friendships was associated with higher perceptions of school safety for numerical minority students ( $t = 2.40$ ,  $p = .017$ ) but not for numerical majority students ( $t = -1.12$ ,  $p = .263$ )

(Figure 4).

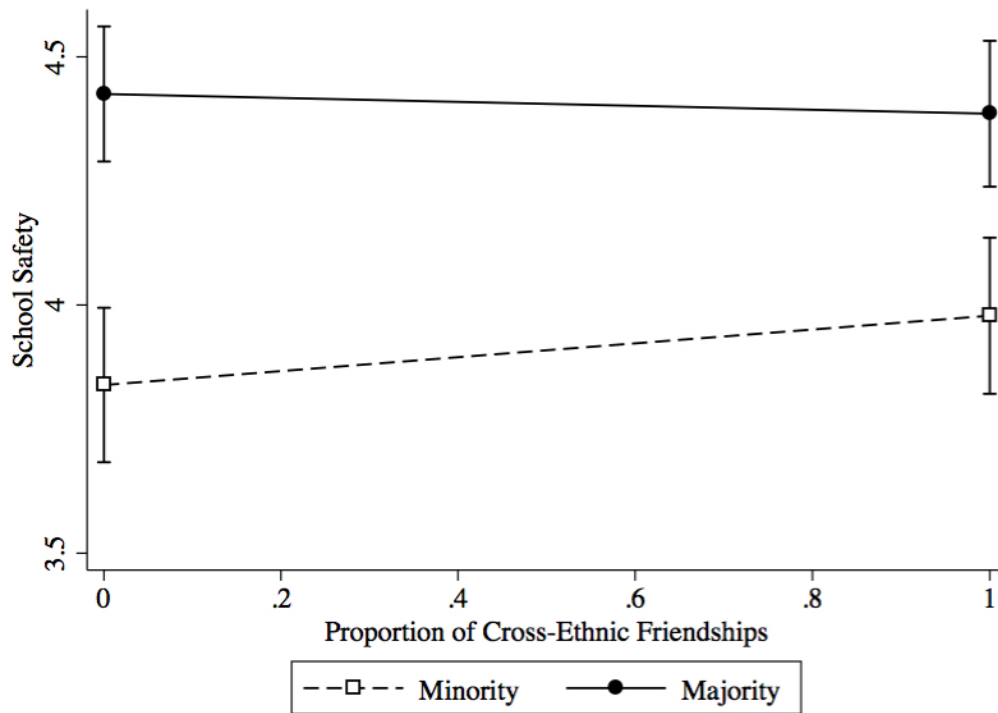


Figure 4. Plot of the two-way interaction between proportion of cross-ethnic friendships and ethnic representation on school safety.

Table 3

*Results of Multiple Regression Analyses Testing Associations Between Cross-Ethnic Friendships, Ethnicity, and Ethnic Representation on School Belonging and School Safety*

Variables	School Belonging $\beta$ (SE)	School Safety $\beta$ (SE)
Constant	3.058 (.152)***	4.129 (.096)***
Availability	-.245 (.424)	-1.168 (.283)***
Majority	1.115 (.278)***	1.108 (.155)***
Cross-Ethnic Friendships (CEF)	.505 (.198)*	.116 (.118)
Latino	.687 (.200)**	.129 (.107)
African American	.603 (.178)**	.296 (.106)**
Asian	.277 (.213)	.138 (.121)
CEF X Majority	-1.178 (.343)**	-.249 (.102)*
CEF X Latino	-.517 (.297)	.159 (.137)
CEF X African American	-.299 (.259)	-.028 (.148)
CEF X Asian	-.198 (.290)	.013 (.154)
Majority X Latino	-1.098 (.256)***	-.538 (.095)***
Majority X African American	-.707 (.272)**	-.53 (.108)***
Majority X Asian	-.745 (.281)**	-.733 (.107)***
CEF X Latino X Majority	1.380 (.426)**	
CEF X African American X Majority	.369 (.467)	
CEF X Asian X Majority	1.219 (.459)**	
$F_{\text{model}}$	3.66***	8.24***
$R^2$	.041	.049

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

### **Numerical Majority Friendships and School Belonging**

Results of the multiple regression models estimating the relationship between proportion of friendships with numerical majority peers and school belonging and safety are reported in Table 4. Multiple regression revealed that students with a higher proportion of friends from the largest ethnic group in school felt a greater sense of belonging; however this association was driven solely by White students (Figure 5). Simple slopes analysis revealed that majority friendships were positively associated with school belonging for White students ( $t=2.03$ ,  $p=.043$ ) but not for Asian ( $t=-.33$ ,  $p=.738$ ), Latino ( $t=-1.18$ ,  $p=.240$ ), or African-American ( $t=-1.06$ ,

$p=.288$ ) students.

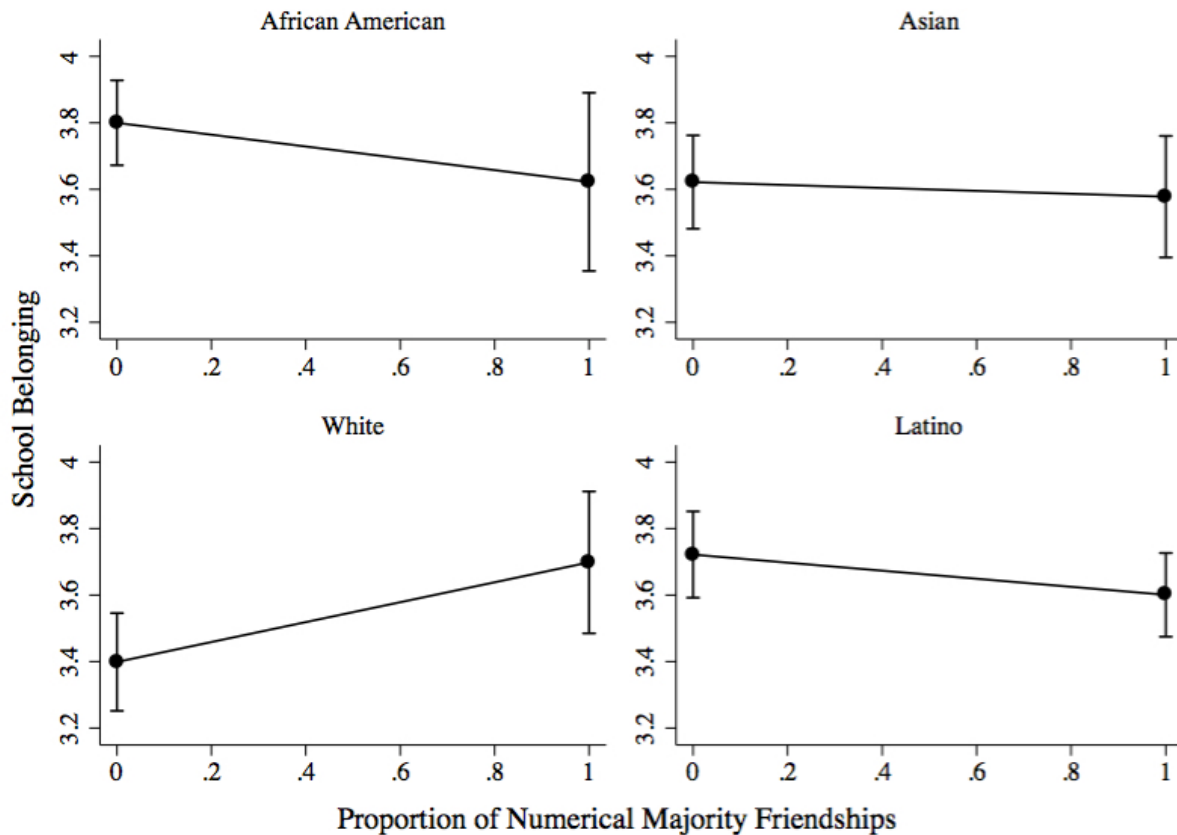


Figure 5. Plots of the two-way interaction between proportion of numerical majority friendships and ethnicity on school belonging.

### Numerical Majority Friendships and School Safety

Similar to school belonging, only White students felt safer when a greater proportion of their friends were from the largest ethnic group in school ( $B= .310$ ,  $SE= .100$ ,  $t= 3.09$ ,  $p= .002$ ) (Table 4; Figure 6). Follow up simple slopes analysis revealed that proportion of numerical majority friendships was positively associated with perceptions of school safety for White ( $t=3.09$ ,  $p=.002$ ) students, and negatively associated for Asian ( $t=-3.12$ ,  $p=.002$ ) and Latino ( $t=-3.80$ ,  $p=.000$ ) students. For African-American students, there was no relationship between proportion of majority friendships and school safety ( $t=-1.00$ ,  $p=.318$ ).

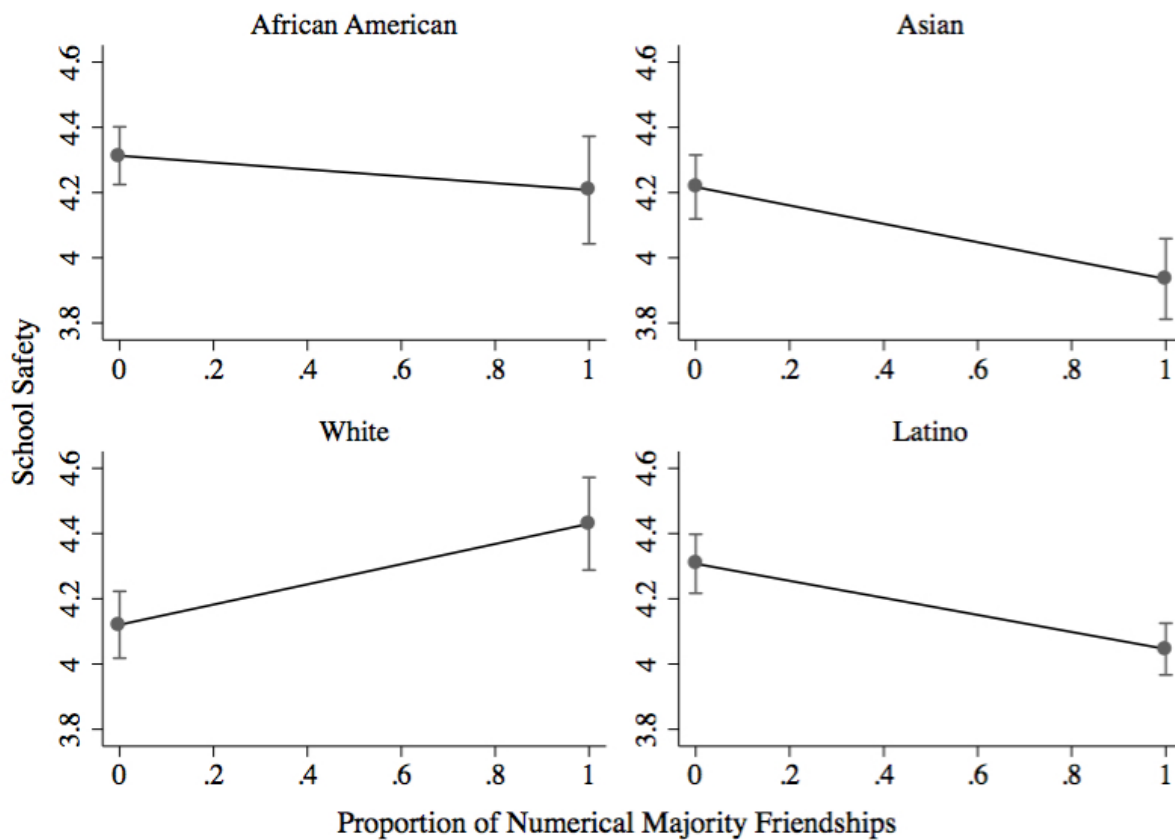


Figure 6. Plots of the two-way interaction between proportion of numerical majority friendships and ethnicity on school safety.

Table 4

Results of Multiple Regression Analyses Testing Associations Between Friendships with Numerical Majority Peers and Ethnicity on School Belonging and School Safety

Variables	School Belonging $\beta$ (SE)	School Safety $\beta$ (SE)
Constant	3.309 (.077)***	4.11 (.054)***
Availability	.241 (.136)	.030 (.091)
Proportion Majority Friends (PMF)	.300 (.148)*	.310 (.100)**
Latino	.323 (.098)**	.187 (.068)**
African American	.401 (.093)***	.193 (.065)**
Asian	.222 (.097)*	.097 (.067)
PMF X Latino	-.421 (.168)*	-.571 (.114)***
PMF X African American	-.477 (.213)*	-.415 (.138)**
PMF X Asian	-.344 (.184)	-.592 (.126)***
$F_{\text{model}}$	3.21**	7.21***
$R^2$	.019	.028

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

## **Discussion**

This study tested whether cross-ethnic friendships, as well as friendships with numerical majority peers, were associated with students' sense of school belonging and safety and whether these associations differed by student's numerical minority/majority status and ethnicity. These findings suggest the importance of students' numerical representation when assessing the benefits conferred by cross-ethnic friendships. Furthermore, these findings indicate that the relationships between cross-ethnic friendships, as well as friendships with numerical majority peers, and school based outcomes vary by ethnic group. While previous studies have examined the benefits associated with cross-ethnic friendships for students from different ethnic groups, this study contributes to the literature by including numerical representation of both the target and the friend.

### **School Belonging**

The results of the multiple regression model demonstrate that the promotive benefits of cross-ethnic friendships for school belonging vary by both ethnic group and students' ethnic representation in the broader school context. Consistent with our hypothesis, for both African American and White students, the relationship between cross-ethnic friendships and school belonging differs depending on whether the student is in the numerical minority or majority. A higher proportion of cross-ethnic friends was associated with greater school belonging for White students in the minority. For both White and African-American students in the majority, same-ethnic friendships were associated with higher school belonging. Only White students tended to feel a greater sense of belonging, however, when more of their friends were in the largest ethnic group in school. Together, these results support the notion that cross-ethnic friendships and friendships with majority peers may help students with few same-ethnic peers feel valued in their



school community. However, these findings had more substantial effects for White students. Prior research suggests has suggested that Whites are sensitive to numerical representation, with numerical minority White employees reporting higher levels of stress than those in numerical majority contexts, for example (Gutierrez, Saenz, & Green, 1994). The current research suggests that as our nation becomes more diverse and White students' likelihood of finding themselves in the minority increases, cross-ethnic friendships may provide support to help develop a sense of connectedness to their diverse school communities.

### **School Safety**

Students with few same-ethnic peers tended to feel safer when a greater proportion of their friendships were cross-ethnic. For numerical minority students, friendships with same-ethnic peers may not so much evoke a sense of safety in numbers, and as such friendships with students outside of their ethnic group may be particularly important for developing a sense of safety. Intuitively, it would seem that friendships with students from the largest ethnic group in the school may provide the most benefits in this regard, by helping students fit in within the school's ethnic context and providing them with a network of peers from the numerically and socially dominant group. Only White students, however, felt safer when a greater proportion of their friendships were with numerical majority peers. Perhaps, as with school belonging, White students' sensitivity to numerical representation leads to a sense of vulnerability associated with numerical minority friendships when compared to students from other ethnic groups.

### **Limitations and Future Directions**

Although this study contributes to our understanding of how school ethnic contexts influence the benefits conferred by cross-ethnic friendships, we acknowledge several limitations. First, the data presented here are cross-sectional in nature and limit our ability to make causal

claims. While one cannot conclude that cross-ethnic friendships caused a greater perception of belonging or safety, these findings do suggest an association that future studies should examine in an experimental or longitudinal design. Second, this study did not examine the ethnic climate at the students' schools. It is possible that students with a greater proportion of cross-ethnic friendships attended schools with more positive relations between ethnic groups, a phenomenon that may be more influential for numerical minority students' sense of belonging and safety than majority students. Relatedly, students in the sample were nested within 26 schools. Future directions include a replication of these findings in a multilevel framework that accounts for school level differences, such as ethnic climate, that are likely to influence the associations found here. Finally, the measure of numerical majority friendships was not without fault. While the measure of cross-ethnic friendships was subjective and therefore available for every friendship nomination listed by the student, the objective measure of numerical majority friendships was based on the nominated students' self-reported ethnicity and the ethnic composition of the school. Because we were only able to collect the ethnicity of participants, nominations to nonparticipants were excluded from the calculation of the proportion of numerical majority-friends variable. Future studies should aim to minimize measurement error by a) surveying all students in a particular context or b) assessing subjective perceptions of numerical majority status.

### **Implications**

Despite the limitations noted above, the study reported here contributes to the friendship literature by emphasizing the contextualized nature of the benefits associated with cross-ethnic friendships. An examination of cross-ethnic friendships that ignores ethnic representation fails to capture the nuanced ways in which diverse contexts shape students' experiences. Through this

framework, we can better understand how ethnic representation and interaction with diverse peers work together to influence students' school based perceptions. This is particularly important for acknowledging and improving the experiences of students whose ethnic groups are underrepresented in their schools.

Students who are underrepresented face a variety of challenges that might interfere with academic, social, and emotional wellbeing at school. This line of research contributes to the literature by identifying a source of support for this vulnerable group: cross-ethnic friendships and friendships with numerical majority group members. To integrate this research into policy and practice, it is important to think about what can be done to facilitate intergroup interaction between minority and majority group members in our nation's schools. Currently, institutional practices such as tracking can promote in-school segregation by limiting students' interaction with cross-ethnic peers. School practices such as these not only physically separate students, but also exacerbate status and power differences between ethnic groups, which may make it difficult for students to form and sustain cross-ethnic friendships. Additionally, prior literature suggests that when White individuals are reminded of the increasing size of racial/ethnic minority groups, they endorse more negative attitudes about ethnic minorities and exhibit greater implicit bias in favor of Whites (Craig & Richeson, 2014). Unfortunately, this suggests that the students who benefitted the most from cross-ethnic friendships, Whites in the numerical minority, may be especially unlikely to form such friendships. Accordingly, future research should build on the current findings by assessing how intergroup attitudes and implicit biases of numerical minority White students compare to those in numerical majority contexts, and how these attitudes act as a barrier to cross-ethnic friendship development. Overall, the findings presented here underscore the importance of future research examining the impact of numerical representation for students

with few same-ethnic peers.

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