

## **THE INFLUENCE OF INTERRACIAL FRIENDSHIPS ON THE LIKELIHOOD OF INTERRACIAL INTIMACY<sup>1</sup>**

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## **Abstract**

Researchers regard interracial intimacy as a mechanism for integration because of the assumption that the partners come from distinct social worlds, e.g. racially homogeneous friendship networks. Using the National Longitudinal Study of Adolescent Health (Add Health), a nationally representative sample of adolescents in grades 7-12 in the U.S., I investigate the relationship between interracial intimacy and interracial friendship, specifically the question of how young adults' chances of having an interracial romantic relationship depend on the racial composition of their friends during adolescence and their exposure to interracial relationships among these friends. My preliminary results suggest that interracial friendship remains a significant influence on the odds of interracial intimacy, even after controlling for selection bias, group size, and personal characteristics. Also, group size moderates the influence of friends' interracial relationships and respondent's own interracial relationships. In brief, non-casual contact influences interracial intimacy both independently and interactively with opportunities for casual contact.

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## Introduction

The 2007 election of Barack Hussein Obama II as the first non-white president of the United States renewed the conventional wisdom that interracial intimacy would overcome the nation's racial history. During the campaign, Obama himself played on this hope, using his biracial parentage to ameliorate white fears and the diversity within his extended family to symbolize the nation's future. President Obama's parents are emblematic of shifts in racial attitudes since the 1960s. But how much has the social geography of racial/ethnic contact actually changed, and what are the social consequences of changing patterns in interracial intimacy?

Interracial intimacy is significant because it is socially perceived to involve a political decision about group relations that prescribes a future direction beyond a past or current state of affairs. Traditional theories of assimilation defined marital assimilation as the final stage in group relations before previously distinct groups amalgamate into one group. Accordingly, researchers have long interpreted intermarriage rates as indicators of the relative social distance that persists between groups. Researchers have defined *social distance* as a sense of distance between groups (Wark and Galliher 2007). I define social distance as the preferred level of proximity between two racial/ethnic groups defined by at least one group's sense of difference from the other. Thus social distance is a general measure of *assimilation* between two groups, defined as "the decline of an ethnic distinction and its corollary cultural and social differences" (Alba and Nee 2003:11).

The literature on interracial intimacy in the United States, especially intermarriage, documents both historical continuity and change (Laumann et al 1994; Qian and Lichter 2008). Despite a 5-fold increase in the number of interracial marriages since 1970, less than 5% of marriages are interracial, and race remains the strongest social barrier to romantic unions, exceeding education, age, and religion. A shortcoming of this body of work is that it focuses more on magnitude than process. Marriage rates may indicate which groups have more

frequent interactions, but they do not reveal what kinds of interactions lead to interracial intimacy, whether different forms of interracial intimacy arise from different kinds of interactions, or whether interracial intimacy in turn leads to further interaction. In other words, we know much less about the causal mechanisms that connect interracial intimacy with group relations.

I use *group relations* to refer to the general process that researchers measure with social distance and of which assimilation is an important variant. The process involves how groups define each other (Blumer and Duster 1980) and political-cultural struggles over resources (Omi and Winant 1994). Generally scholars contrast assimilation with the majority-group policies of pluralism, oppression, exclusion/expulsion, and genocide (Yetman 1998), whereas recent research contrasts it with variants of unequal pluralism: reactive ethnicity (Portes and Rumbaut 2001), panethnicity (Espiritu 1992), selective assimilation (Dhingra 2007), transnationalism (Schiller, Basch, and Blanc-Szanton 1992), and affiliative ethnicity (Jimenez 2010). Although assimilation researchers often regard interracial intimacy as indicating social progress, observers of these other variants of group relations have shown that it is also associated with many other meanings including dilution, betrayal, opportunism, poor judgment, and even an achieved authenticity.

In this paper, I examine the validity of this longstanding indicator of group relations by exploring whether the composition and culture of friendship networks influences the likelihood of subsequent interracial intimacy, i.e. friendships in adolescence and intimacy in early adulthood. The question at stake is whether intimacy is a consequence of non-casual contact in already integrated social worlds or actually serves as a bridge for distinct social worlds that have only casual contact (i.e. local demographic availability). Is interracial intimacy merely the result of a “random walk” or also the product of changing social relations?

First I argue that adolescent friendships provide opportunities to improve upon existing studies of interracial intimacy and develop a conceptual framework that identifies specific hypotheses. Second, I discuss the appropriateness of my dataset, the National Longitudinal Study of Adolescent Health (Add Health), for this research and describe the operationalization

of my variables and the analytic approach. Third, I present the preliminary results and discuss their potential implications.

### **Literature review, conceptual framework, and hypotheses**

Until recently, the literature on interracial intimacy has been dominated by research on intermarriage. This body of work has primarily examined the distribution of existing marriages in U.S. Census data to estimate the effects of opportunity (partner availability) and social distance (preference) on spousal choices; that is, the odds of marrying within or across group boundaries. These studies have examined interracial intimacy by either (1) solving for group-wide social distance as the residual of opportunity effects (i.e. relative group size) on spousal choices (Blau 1977; Heaton and Jacobson 2000; Lieberson and Waters 1988; Qian 1997) or (2) estimating within-group variations in social distance using place-based indicators of segregation and economic inequality (Hwang, Saenz and Aguirre 1997; Okamoto 2007). Similar factors shape the likelihood of interracial friendships (Joyner and Kao 2000; Kao and Joyner 2006); however, researchers have almost exclusively focused on interracial intimacy and interracial friendships as different forms of interracial contact to be explained instead of examining the relationship between them.

A focus on adolescent friendships suggests several ways to improve upon the study of interracial intimacy. First, the study of adolescents and young adults requires a shift in focus to non-marital intimacy because they are more likely to have had romantic relationships than marriages (Blackwell and Lichter 2004). Researchers have long recognized the need to expand the focus of interracial intimacy research beyond marriages. Indeed an exclusive focus on marriage data underestimates the extent of interracial contact in nonmarital relationships (Joyner and Kao 2005). Second, adolescence largely take place in the context of schooling, and school composition provides a more temporally and spatially proximate measure of the opportunities for interracial contact than the residential Census tracts surrounding already married couples (Hallinan and Smith 1985; Hallinan and Texeira 1987).

Third, friendships and their associated network cultures index within-place variations in non-casual interracial contact and racial attitudes. Researchers of interracial contact agree that

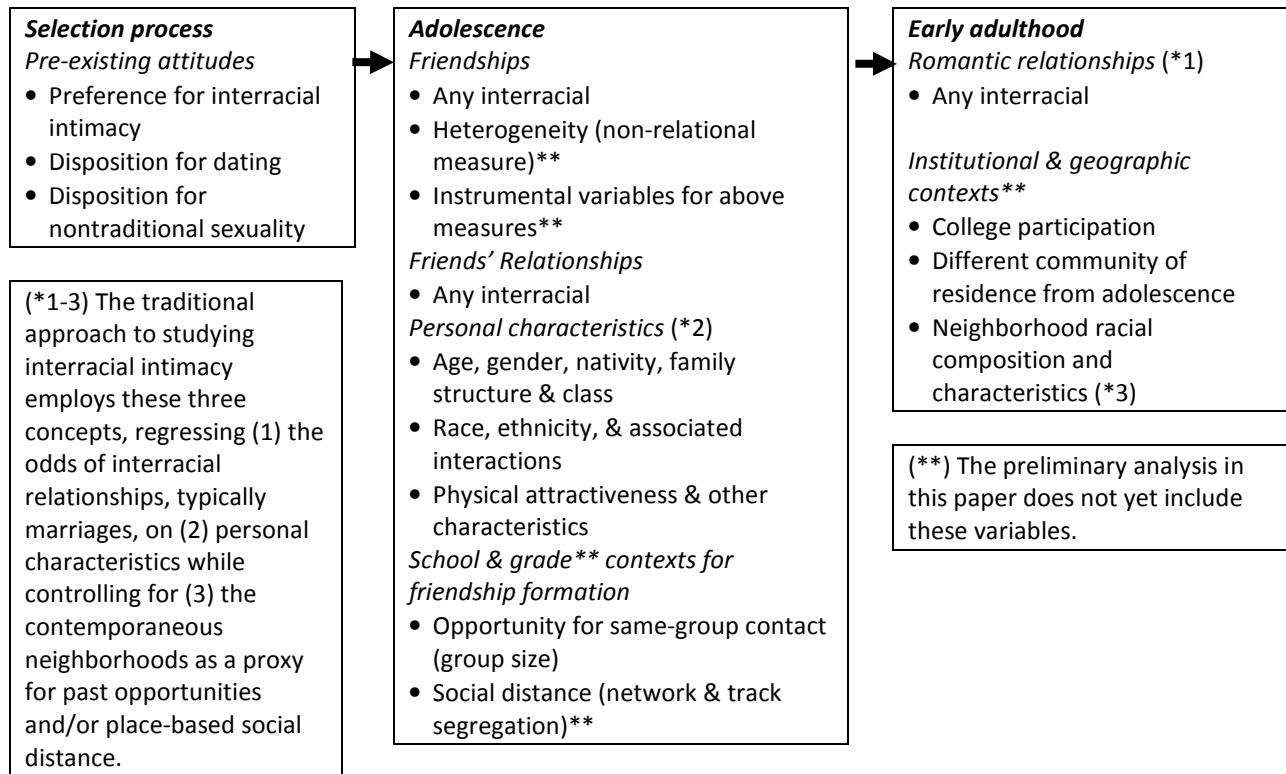
close equal-status contact, such as between friends, influences attitudes, behavior, and policy views but disagree about whether other types of exposure dissolve social distance (Emerson, Kimbro and Yancey 2002; Lee, Farrell and Link 2004). I use *network culture* to refer to the beliefs, assumptions, and dispositions to which individuals are directly exposed through their social networks. For my purposes, network culture refers to the anticipated reactions of other individuals in one's social network to one's attitudes, habits, and behaviors in regards to interracial intimacy. It approximates what intermarriage scholar, Mattijis Kalmijn, calls "third party interference" in the partner selection process, a factor he distinguishes from the two other major causes: marriage market opportunities and personal preferences (1998). In brief, network culture is the culture of a network that may be racially exclusive but is not analytically constrained to be racially or ethnically defined (Loveman 1999).

Accordingly, my conceptual framework, outlined in figure 1, examines the odds of interracial intimacy by estimating the effects of interracial friendship while controlling for the opportunities and social distance shaping friendship formation. The underlying model proposes that experiences in adolescence influence behaviors in early adulthood controlling for (a) selection on pre-existing attitudes, (b) adolescent context, and (c) early adulthood context. Specifically, interracial friendship networks in adolescence influence interracial intimacy in early adulthood independently of the effects of personal and family characteristics, controlling for (a) pre-existing dispositions for interracial intimacy, dating, and non-traditional sexuality, (b) school based opportunities & norms shaping friendship formation, (c) early adulthood college participation, and (d) residence in a different community than in adolescence. As shown in figure 1, the framework significantly improves on the traditional approach that examines the odds of intermarriage by estimating the effects of personal characteristics while controlling for current neighborhood composition as a proxy for the past opportunities shaping union formation.<sup>2</sup>

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<sup>2</sup> An arguably more appropriate use of Census data would be to use the current geographies of the intermarried as indicating their residential choices as couples rather than factors causing their union (Holloway et al 2005; Wright et al 2003).

**Figure 1. Conceptual framework**



Having had a friend of a different race from one's own is a form of non-casual interracial contact that may increase the likelihood of interracial intimacy by making interracial interaction more familiar. The romantic involvements of one's friends may also provide social signals that sanction or encourage interracial contact. For example, a Latino individual may have one of six kinds of networks: (a) all Latino friends who did not date non-Latinos in adolescence, (b) all Latino friends who dated at least some non-Latinos, (c) a combination of Latino and non-Latino friends who did not date interracially, (d) a combination of Latino and non-Latino friends who dated at least some individuals of a different race than their own, (e) all non-Latino friends who did not date interracially, and (f) all non-Latino friends who dated at least some individuals of a different race than their own. Therefore, I hypothesize that:

*H1: Young adults' odds of having interracial relationships are higher if they had any interracial friends in adolescence.*

*H2: Young adults' odds of having interracial relationships are higher if their friends in adolescence had any interracial relationships.*

## **Data and Methods**

Special features of the National Longitudinal Study of Adolescent Health (Add Health) allow me to identify friends, romantic partners, and the romantic partners of friends. Add Health includes a nationally representative sample of schools, from which it sought to collect information from every student (Harris et al 2009). In the first wave of data collection in 1994-95, the study administered “in-school” interviews with an original sample of 90,118 students, followed by in-home interviews with a subsample of 20,745 students and 17,700 parents. The study returned to the in-home sample of students for three additional waves of interviews in 1996 (Wave II), 2001-02 (Wave III), and 2007-08 (Wave IV) when subjects were 24-32 years of age. Add Health’s large sample size and oversamples of multiple minority groups permit the analysis of interracial intimacy beyond Blacks and Whites (e.g. Kao 2001; Kao and Joyner 2004; Quillian and Campbell 2003). Its friendship nomination data permits the identification of both the composition of friendship networks and the romantic relationships of friends. The longitudinal design also allows me to examine the consequences of friendships for later relationships.

To test my hypotheses, I use hierarchical logistic regression models of interracial intimacy defined as an individual’s interracial relationship history by Wave IV of Add Health. Specifically I use the Stata *xtmelogit* command to estimate multilevel models with random intercepts for each school. I focus on opposite-sex interracial intimacy among respondents with single-race self-identifications consistent across Waves I (home), I (school), and III, but I also intend to examine races and genders separately. I also plan to separately examine the respondents with racially mixed or inconsistent identities.

I construct the relationship history variable by combining the Wave III inventory of post-Wave I “romantic relationships” with the Wave IV inventory of marriages, cohabitation



partners, unions that resulted in pregnancy, current romantic partners, and partners since 2001 (approximately Wave III). As Shiao and Tuan have argued, “dating histories provide a more comprehensive record of romantic behavior [than marriage data] and can thus provide a more robust indicator of how romantic involvements mediate group relations” (2008: 264).

Accordingly, I operationalize interracial intimacy as having had any interracial relationship by Wave IV vs. no interracial relationships, but I also plan to compare alternative operationalizations such as: (a) Any interracial relationship by Wave III, any interracial relationship between Waves III and IV, vs. no interracial relationships (a multinomial model); and (b) Increasing levels of participation in interracial relationships such as never, any relationship, any cohabitation (Wave IV only), and any marriage (Wave IV only).

I measure interracial friendship as respondent nomination of any friend who self-identifies as being of a different race than the respondent, and I measure friends’ interracial relationships as respondent nomination of any friend who reports any interracial “special romantic relationship” during Wave I. To control for aspirational nominations, I intend to compare models that (1) include both reciprocated and non-reciprocated nominations and (2) include only the reciprocated nominations, adding separate variables for any non-reciprocated interracial friends and their interracial relationships. To control for differences between same-sex and different-sex friendships, I will compare models that (a) include both male and female friendships and (b) include only the same-sex friendships, adding separate variables for any different-sex friendships and their interracial relationships. Thus I will estimate four models that vary by reciprocation of nominations and gender of friends.

To address possible selection effects, I have three strategies: I plan to use behavioral proxies for pre-existing attitudes that were not collected in Add Health: any interracial relationship in Wave I, number of relationships by wave IV, and any same-sex relationship by wave IV. I will also evaluate potential instrumental variables (Kirk 2009; Morgan 2002) for network composition, the leading candidate for which is participation in cheerleading/dance teams, basketball, and football. In Add Health, these sports draw greater participation from non-whites and a specific gender, making them plausible instruments for estimating the effects of network composition on opposite-sex intimacy. Third I will control for school- and grade-

level opportunities and norms governing co-ethnic friendship formation by constructing indices for proportion of same-race students, propensity for in-group friendships, and segregation across academic tracks and extracurriculars.

That said, I can only indirectly control for the possibility that students sort into friendship circles that share common attitudes and beliefs (Eckert 1989; Lee 1996; Perry 2002), because Add Health did not assess pre-existing racial and sexual attitudes. Similarly, individuals generally do not choose partners for their friends, but exposure to friends' interracial relationships may remain confounded with pre-existing attitudes. Add Health also does not include sufficient data to analyze (1) the effects of having a multiethnic extended family, (2) the effects of family and adolescent friendships on non-relationship interracial intimacy, (3) the effect of interracial intimacy on subsequent networks<sup>3</sup>, and (4) age-cohort variation.

### **Preliminary Results**

Tables 1, 2, and 3 present the results of my preliminary analysis using Add Health's restricted-use data through Wave IV, with neither weights nor imputed values. Table 1 reports the means of key variables by racial/ethnic group with the groups ordered by the proportion that reported any interracial relationship by Wave IV. Tables 2 and 3 reports the results of multilevel logistic regressions as odds ratios for the likelihood of having any interracial relationship by Wave IV across male and female respondents, reciprocated and non-reciprocated nominations, and same-sex and different-sex friendships. This analysis excludes respondents with multiple, changed, or other identifications as well as the very few who consistently identified solely as Native American. In addition, these models do not as yet include instrumental variables for friendship composition or conventional variables for class-level opportunities, school- or class-level social distance, or early adulthood context. In brief, the preliminary analysis examines whether having had any interracial friendships in adolescence influences whether Add Health respondents have had any interracial relationships between Wave I and Wave 4, controlling for the behavioral proxies, personal characteristics, and school-level opportunities.

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<sup>3</sup> Only respondents who were in 7<sup>th</sup> or 8<sup>th</sup> grade in wave 1 were asked to nominate friends in Wave III.

Table 1 shows that white respondents were the least likely to report having had an interracial relationship (28.9%) by Wave IV when Add Health respondents were 24-32 years of age, whereas Hispanics were the most likely (51.9%). In terms of personal characteristics, the white and black respondents were on average half a year younger than the Asian American and Hispanic respondents. The Asian respondents included the most males, and the black respondents included the most females. The white respondents included the fewest foreign-born (1.4%), while the Asian respondents included the most (55.7%). On average, the parents of Hispanic respondents reported the fewest Bachelor's degrees, whereas the parents of Asian respondents reported the most. The parents of the Asian respondents were the least likely to report having received public assistance, whereas the parents of the black respondents were the most likely.

In terms of school characteristics, the Asian respondents went to schools where their proportion was the smallest (21.7%), whereas the white respondents went to schools where their proportion was the largest (74.0%). Asian Americans and whites reported attending schools with median family incomes \$10 thousand higher than the schools reported by blacks and Hispanics. In terms of friendship diversity, whites were the least likely to report having had interracial friendships (54.6%), whereas Asians were the most likely (70.0%). The same pattern followed for the likelihood of nominating a friend who reported having an interracial relationship in wave I (20.7% of whites and 29.8% of Asians). In terms of the behavioral proxies for pre-existing dispositions for interracial intimacy, white respondents were the least likely to have had an interracial relationship in wave I, whereas Hispanic respondents were the most likely. Asians reported the fewest total relationships after wave I and by wave IV, whereas whites and blacks reported the most. Asians were also the most likely to report having had a same-sex relationship by wave IV whereas whites were the least likely.<sup>4</sup>

Table 2 examines the persistent effect of friendship diversity across four models that progressively add controls for personal characteristics, school characteristics, and school-network interactions. Model 1 includes only variables for friendship racial composition. Model 2 adds personal characteristics. Model 3 adds school-level variables for group size and social class

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<sup>4</sup> I suspect the same-sex relationship variable was miscoded and will require correction.

context. Model 4 adds interaction terms to assess whether group size limits or increases the effects of friendship diversity.

The results of model 1 show that having had an interracial friendship in high school significantly increases the odds of reporting interracial intimacy by early adulthood. However, the effect of having a friend who had an interracial relationship is not significant, and neither is the effect of the interaction between interracial friendship and friend's interracial relationship. Also, there is substantial variation across schools: Respondents who attended a school one standard deviation above the mean had 28.3% higher odds of interracial intimacy by early adulthood. Model 2 (+personal characteristics) shows significant racial differences nuanced by gender and nativity, which reduce slightly the effect of interracial friendships. Model 3 (+school-level characteristics) also reduces the effect of interracial friendships and not surprisingly diminishes the level of variation between schools. Model 4 (+interactions) suggests that the latter reduction in effect size and statistical significance is partly due to a significant interaction between group size and friend's interracial relationship. Apparently, the effect of friends' interracial relationships is to intensify the negative effect of group size on the odds of later interracial intimacy.

Table 3 examines what friendship diversity adds to the traditional model of interracial intimacy and whether its effect persists after controlling for selection bias. Model 5 includes only personal characteristics. Model 6 adds school-level characteristics. Model 7 adds the full set of variables for friendship diversity and is the same as Model 4 in Table 2. Lastly, Model 8 adds behavioral proxies for pre-existing dispositions in favor of interracial intimacy that might select respondents for interracial networks.

The results of model 5 (personal characteristics only) show that being Asian or having college educated parents increases the odds of interracial intimacy by early adulthood. More complexly being a black male or a foreign born Hispanic further increases the odds, being a U.S. born Latino increases the odds even more, but being a black female decreases them. Again, there is significant variation across schools: Respondents who attended a school one standard deviation above the mean had 22.8% higher odds of interracial intimacy by early adulthood.

As expected, model 6 (+school-level characteristics) shows that school-level variables dramatically cut the across-school variation by two-thirds, reduce to non-significance the positive Asian effect and negative foreign born x Hispanic interaction effect, and reduce the size of the black male and Hispanic effects. Model 7 shows that when the friendship diversity variables are added, there are only small changes from the effect sizes in Model 6 and no changes in levels of statistical significance. *In other words, the effect of interracial friendship is independent of the main variables in the traditional approach to studying interracial intimacy.*

Lastly, model 8 (+selection variables) confirms the positive and significant effect of interracial friendship even after controlling for the substantial and significant effects of pre-existing attitudes. Interestingly, the negative and significant effect of the interaction of group size and friend's interracial relationship in model 4 is joined in model 8 by the negative and significant effect of the interaction of group size and respondents' having had an interracial relationship in wave I. Again, the effect of both friends' interracial relationships and respondents' own interracial relationships is to intensify the negative effect of group size. Lastly, the interaction of group size and respondent's interracial friendship has an effect in the same, negative direction, though it is not statistically significant.

## **Discussion**

My preliminary analysis of the influence of interracial friendships on the likelihood of interracial intimacy indicates that interracial friendships in adolescence are indeed (H1) more likely to lead to interracial intimacy in early adulthood. However, friends' interracial relationships do not significantly increase the likelihood of interracial intimacy, contrary to the second hypothesis (H2). In fact, as respondents' group size increases, respondents who nominated friends who had interracial relationships and respondents themselves who had interracial relationships in adolescence are less likely to report interracial intimacy in early adulthood.

On the one hand, these results suggest that increasing interracial intimacy indicates not only rising demographic diversity but also a rise in non-casual interracial contact. On the other hand, the effect of non-casual contact appears to weaken and may even become negative as

one's group increases in size. While non-casual contact has an effect independent of opportunities for casual contact, it leads to more interracial contact, i.e. subsequent interracial intimacy, primarily for demographic minorities instead of also demographic majorities. In sum, I find that group size shapes not only the availability of interracial contact but also its effects. This result suggests that interracial contact has different meanings for romantic candidates depending on group size. For individuals from smaller groups, interracial contact is not only more likely but also reduces the salience of group boundaries, whereas for those from larger groups, interracial intimacy is not only socially optional but may also actually increase boundary salience.

Outside the study of interracial intimacy, other researchers have noted the consequences of relative group size for intergroup relations. In Kanter's classic work on corporate America in the 1970s (1977), she argued that much of the hostile and awkward reception to female executives was due to their demographic status as tokens, which she conceptualized as a group composing less than 15% of an organizational position and facing a much larger group that can define itself as the cultural norm for the job in question. In contrast with situations where members of a minority group have a greater representation, token women achieved social belonging mainly by distancing themselves from stereotypes of women in ways that reinforced the stereotypes in the minds of both their male co-workers and themselves. In contemporary terms, these female executives were only able to reposition themselves on the other side of the boundary against female participation rather than to effect a boundary transcendence (Wimmer 2008). Like Kanter's subjects, the Add Health respondents in my analysis do not evidence a consistent change in interracial boundaries unless their groups were relatively small during their adolescence. In brief, whether interracial intimacy is more than a random walk among potential partners, even if increasingly more diverse, depends on whether the walk teaches individuals that their group is not the demographic norm.

**Table 1. Group-specific means for interracial relationships, personal characteristics, school characteristics, and friendship network characteristics**

	White	Black/ African	Asian/PI	Hispanic	Total
<b>Interracial relationship by Wave IV</b>	0.289	0.300	0.475	0.519	0.340
<i>Wave I variables</i>					
<b>Age in 1994</b>	14.97	14.99	15.51	15.40	15.08
<b>Gender</b>					
<b>Female</b>	0.554	0.617	0.475	0.546	0.560
<b>Foreign born</b>	0.014	0.022	0.557	0.268	0.100
<b>Number of parents with BA/BS</b>	1.522	1.397	1.948	1.196	1.473
<b>Public assistance received</b>	0.040	0.129	0.032	0.108	0.067
<b>Proportion of same-race students at school</b>	0.740	0.451	0.217	0.450	0.601
<b>Median family income at school</b>	\$43,741	\$32,918	\$43,114	\$33,872	\$40,246
<b>Interracial friendship</b>	0.546	0.630	0.700	0.575	0.578
<b>Friend with interracial relationship</b>	0.207	0.216	0.298	0.305	0.230
<b>Interracial relationship in wave I</b>	0.084	0.082	0.132	0.263	0.115
<b>Number of relationships by wave IV</b>	4.921	4.946	3.511	4.276	4.742
<b>Same sex relationship by wave IV</b>	0.143	0.174	0.258	0.220	0.170
<b>Smallest valid N (Variable)</b>	3215 (Foreign-born)	1106 (Median family income at school)	293 (Median family income at school)	929 (Public assistance received)	8204 (Median family income at school)

**Table 2. Estimates of multilevel logistic regression models of any interracial relationships in odds ratios, starting with the effects of friendship diversity**

<b>Independent Variables(1)</b>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<i>Fixed Effects(2)</i>				
Intercept(3)	0.396***	0.334***	0.594**	0.549***
Gender				
Female		1.136	1.110	1.110
Race and Ethnicity				
White		---	---	---
Asian		1.802*	0.777	0.752
Black		2.861***	1.484*	1.508*
Hispanic		5.440***	2.774***	2.774*
Race/ethnicity Interactions				
Black * Female		0.262***	0.261***	0.258***
Hispanic * Female		0.829	0.856	0.862
Hispanic * Foreign born		.440*	0.579	0.576
Number of parents with BA/BS		1.125*	1.069	1.067
Percent of same-race students at school			0.980***	0.985***
Median family income at school			1.009**	1.009**
<b>Interracial friendship</b>	<b>1.595***</b>	<b>1.449***</b>	<b>1.266**</b>	<b>1.356**</b>
<b>Friend with interracial relationship</b>	<b>1.173</b>	<b>1.116</b>	<b>1.084</b>	<b>1.198</b>
<b>Interaction: I/r friend * Friend with i/r relationship</b>	<b>0.998</b>	<b>1.091</b>	<b>1.087</b>	<b>0.999</b>
<b>Interact.: Perc. Same-race * I/r friend</b>				<b>0.996</b>
<b>Interact.: Perc. Same-race * Friend i/r relationship</b>				<b>0.992*</b>
<i>Random Effect(4)</i>				
Across-schools variance (random intercept)	1.283*	1.181*	1.065*	1.061*
LR test vs. logit	78.87***	36.10***	7.53**	6.66**
Individual level N	3881	3772	3772	3772
School level N	119	119	119	119

**Notes**

1. All continuous variables are centered on their means: age, grade, percent of same-race students at school, and number of relationships by wave IV.
2. Fixed effect equation also includes variables for foreign born, Asian \* female, Asian \* foreign born, age, grade, no religious affiliation, married parents, and receipt of public assistance that are not shown in the table.
3. The fixed equation intercepts were estimated separately and represent the odds of an interracial relationship by wave IV for U.S. born white males who had the mean years of age, were in the mean grade, had some religious affiliation, whose parents were not married, whose households of origin did not receive public assistance, whose schools had the mean percent of same race students and the median school family income, who did not have an interracial friendship or a friend who reported an interracial friendship, and who did not report an interracial relationship in wave I, who had the mean number of relationships by wave IV, and who did not report a same-sex relationship by wave IV.
4. Random intercepts are used to model variance between schools.



**Table 3. Estimates of multilevel logistic regression models of any interracial relationships in odds ratios, starting with the effects of personal characteristics**

<b>Independent Variables(1)</b>	<b>Model 5</b>	<b>Model 6</b>	<b>Model 7 (=4)</b>	<b>Model 8</b>
<i>Fixed Effects(2)</i>				
Intercept(3)	0.426***	0.721*	0.549***	0.410***
Gender				
Female	1.140	1.112	1.110	1.051
Race and Ethnicity				
White	---	---	---	---
Asian	2.044*	0.799	0.752	0.934
Black	3.055***	1.467*	1.508*	1.451*
Hispanic	6.003***	2.824***	2.774***	2.405***
Race/ethnicity and Gender Interactions				
Black * Female	0.261***	0.260***	0.258***	0.275***
Hispanic * Female	0.783	0.823	0.862	0.978
Hispanic * foreign born	0.407*	0.551	0.576	0.622
Number of parents with BA/BS	1.116#	1.061	1.067	1.122#
Percent of same-race students at school		0.978***	0.985***	0.988***
Median family income at school		1.010**	1.009**	1.012***
<b>Interracial friendship</b>			<b>1.356**</b>	<b>1.227*</b>
<b>Friend with interracial relationship</b>			<b>1.198</b>	<b>1.084</b>
<b>Interaction: I/r friend * Friend with i/r relationship</b>			<b>0.999</b>	<b>1.040</b>
<b>Interact.: Perc. Same-race * I/r friend</b>			<b>0.996</b>	<b>.997</b>
<b>Interact.: Perc. Same-race * Friend i/r relationship</b>			<b>0.992*</b>	<b>.993*</b>
Controls for pre-existing attitudes				
Interracial relationship in wave I				3.583***
Interaction: Perc. Same-race * I/r relation. in wave I				0.990*
Number of relationships by wave IV				1.510***
Any same-sex relationship by wave IV				2.193***
<i>Random Effect(4)</i>				
Across-schools variance (random intercept)	1.228*	1.073*	1.061*	1.031*
LR test vs. logit	51.06***	8.96**	6.66**	1.31
Individual level N	3772	3772	3772	3772
School level N	119	119	119	119

**Notes:** See Table 2.

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