

Racially and Ethnically Diverse Schools and Adolescent Romantic Relationships¹

Kate Strully
University at Albany, SUNY

Focusing on romantic relationships, which are often seen as a barometer of social distance, this analysis investigates how adolescents from different racial-ethnic and gender groups respond when they attend diverse schools with many opportunities for inter-racial-ethnic dating. Which groups respond by forming inter-racial-ethnic relationships, and which groups appear to “work around” opportunities for inter-racial-ethnic dating by forming more same-race-ethnicity relationships outside of school boundaries? Most prior studies have analyzed only relationships within schools and, therefore, cannot capture a potentially important way that adolescents express preferences for same-race-ethnicity relationships or work around constraints from other groups’ preferences. Using the National Longitudinal Study of Adolescent Health, I find that, when adolescents are in schools with many opportunities for inter-racial-ethnic dating, black females and white males are most likely to form same-race-ethnicity relationships outside of the school; whereas Hispanic males and females are most likely to date across racial-ethnic boundaries within the school.

Operating against a historical backdrop of racial miscegenation laws and legalized segregation, institutional integration—particularly, school integration—has been a cornerstone of U.S. hopes and efforts to improve racial and

¹ This research was supported by a grant from the National Institute of Child Health and Human Development (K01HD065868). I am grateful to Peter Bearman, Scott South, Glenn Dean, Robert Mare, and the *AJS* reviewers for helpful comments and suggestions. Direct correspondence to Kate Strully, Department of Sociology, University at Albany, SUNY, 1400 Washington Avenue, Arts and Sciences, Albany, New York 12222. E-mail: kstrully@albany.edu

ethnic relations. While school integration policies in the 1960s sought primarily to increase achievement and self-esteem among African-American children, in more recent decades, diverse schools have come to be seen as an important way to reduce social distance across racial and ethnic groups (Wells and Crain 1994). It is often hoped that if young people go to school with peers from different racial and ethnic backgrounds, they will form close relationships across racial-ethnic boundaries and these relationships formed at young ages may set the stage for more close inter-racial-ethnic relationships throughout the life course (Wells and Crain 1994; King and Bratter 2007). Taking an optimistic view, having young people attend more diverse schools should help build a future U.S. society that is less fractured by race and ethnic divides.

But how successful have integrated schools been at fostering close inter-racial-ethnic relationships and reducing social distance across race and ethnic groups in recent cohorts? This study addresses this question with a novel focus on how school racial-ethnic composition may influence the formation of dating relationships outside of schools. Using respondents' reports of romantic and sexual relationships collected in the first and second waves of the National Longitudinal Study of Adolescent Health (Add Health), I investigate the question: When an adolescent attends a school in which a high proportion of the students are from a different racial-ethnic group than the adolescent—and consequently the adolescent has ample opportunities for inter-racial-ethnic dating but few opportunities for same-race-ethnicity dating—is she or he more likely to form relationships outside of the school, particularly same-race-ethnicity relationships outside of the school? If this is the case, it would seem that, when dating pools within schools offer fewer opportunities for same-race-ethnicity relationships, the school becomes a weaker focal point for relationships and some individuals may actually “work around” such opportunity structures by forming more same-race-ethnicity relationships outside of schools. Most existing studies of school integration and relationship (e.g., friendship) formation have examined social networks within schools and focused on how much the likelihood of inter-racial-ethnic relationships between students attending the same school increases as the student body becomes more diverse (Joyner and Kao 2000; Moody 2001; Quillian and Campbell 2003; Mouw and Entwisle 2006). While these studies offer a number of important findings and insights, their exclusive focus on relationships within school boundaries means they have not been able to consider alternative questions about out-of-school relationships addressed in this study.

This analysis further examines how associations between school composition and dating patterns inside and outside of schools differ by respondents' gender and race-ethnicity. For groups with relatively high rates of inter-racial-ethnic dating (e.g., Hispanics), a higher proportion of different-

race-ethnicity potential partners within the school may primarily present opportunities for cross-race-ethnicity dating and be associated with an increase in inter-racial-ethnic relationships. However, for other groups with low rates of inter-racial-ethnic dating (e.g., African-American women), a higher proportion of different-race-ethnicity potential partners may primarily present constraints in dating opportunities within the school and may be associated with more same-race-ethnicity relationships outside of school boundaries.²

This consideration of school racial-ethnic compositions and adolescent dating is particularly relevant given recent demographic trends in the United States. On the one hand, declines in the segregation of schools and communities since the civil rights movement combined with rising immigration from Latin America and Asia have created unprecedented structural opportunities for adolescents to date across racial and ethnic lines (Lee and Bean 2004; Orfield and Lee 2004; Lichter 2013). Interracial romances in adolescence are correlated with interracial marriages in adulthood and may therefore pave the way for more multiracial households and children in the future (King and Bratter 2007). On the other hand, young people still make their relationship choices in a color-conscious society shaped by legacies of slavery and legalized segregation, and recent changes that increase structural opportunities for inter-racial-ethnic dating may have very different meanings and lead to different behavioral responses across racial-ethnic and gender groups. Documenting which groups respond to school diversity by forming more inter-racial-ethnic relationships, and which groups appear to “work around” school diversity by forming more same-race-ethnicity relationships outside of schools, will shed light on patterns of social distance across gender and racial-ethnic groups in recent cohorts in the United States.

In addition to investigating these questions about school racial-ethnic composition and romantic relationships, this analysis also provides empirical tests of structural sociological theories of relationship formation offered by Scott Feld (1981) and Peter Blau (1977a). The following results further shed light on individual- and school-level predictors of dating outside of one's school. When adolescents date individuals who do not attend their

² Following the lead of other researchers (e.g., Lee and Bean 2004), I use the somewhat imprecise term “race-ethnicity” when referring to the customary categories of non-Hispanic white, non-Hispanic black, non-Hispanic other, and Hispanic (i.e., the categories that are often derived from standard census questions). While the division between white and black in the United States is often seen as racial, the boundaries that separate Asians and Hispanics are more often seen as ethnic. In order to be able to refer to this typology in an efficient way, I use the term “race-ethnicity” to refer to “groups that distinguish themselves based on ancestry and/or color” (Lee and Bean 2004, p. 223).

school, the relationship is more likely to involve sexual intercourse and is less likely to have consistent condom use (Ford, Sohn, and Lepkowski 2001; Ford and Lepkowski 2004). While out-of-school relationships appear to increase adolescents' risks of sexually transmitted disease and unwanted pregnancy, we have limited knowledge of what predicts dating outside of one's school.

SCHOOL RACIAL-ETHNIC COMPOSITION AND RELATIONSHIPS

From a structural sociological perspective (e.g., Simmel [1908] 1955; Blau 1977a), social distance can be gauged by the extent to which people appear to avoid forming ties across particular boundaries. For instance, if most relationships in a school or community are same-race-ethnicity, even though the local population is racially and ethnically diverse, there is substantial social distance across racial-ethnic groups. However, given the interdependence of social relationships, it is often ambiguous who is avoiding whom or whether avoidance is mutual. Blau (1977a) employs this notion of social distance when defining group salience as the extent to which the number of in-group relationships exceeds the level that would be predicted by "proportionate mixing" (i.e., random mixing where the rates of in- and out-group ties match the proportions of groups in the population).

Focusing on romantic relationships, which are intimate and typically exclusive, can shine a bright light on the topography of social distance and racial-ethnic relations. While the relative odds of inter-racial-ethnic romances (e.g., dating, cohabiting, or marital relationships) have increased severalfold in the past four decades, most romances in the United States are still between people from the same racial or ethnic group, and rates of inter-racial-ethnic romances remain far below the levels that would be predicted by proportionate mixing (Harris and Ono 2005; Qian 2005). This tendency likely reflects a combination of people's preferences for same-race-ethnicity relationships and limited opportunities for meeting and getting to know individuals from different racial-ethnic groups given widespread segregation in the United States. When observing how people form relationships, their preferences and desires for particular types of relationships are almost always unobserved. Rather, what we witness are the relationships that are actually formed, which reflect people's preferences within the constraints of given "opportunity structures." For instance, a young woman may prefer a boyfriend from outside her own race group, but if there are very few such men in her school or neighborhood, she may not be able to actually fulfill this preference.

Responding to substantial declines in race segregation across schools following the 1954 *Brown v. Board of Education* ruling, several researchers have investigated how much the likelihood of an inter-racial-ethnic rela-

tionship—most often, a friendship—between students at a school increases as the school becomes more racially and ethnically diverse (Joyner and Kao 2000; Moody 2001; Quillian and Campbell 2003; Mouw and Entwisle 2006). This work has sought to document the social implications of school integration policies and help disentangle the influences of preferences and opportunity structure on the racial-ethnic compositions of relationships. With regard to the latter goal, the basic logic is to use the racial-ethnic composition of the student's school as a proxy for a young person's relationship "opportunity structure." Although preferences are not directly observable, if researchers are able to accurately identify all the potential relationship partners in a person's opportunity structure, the effects of opportunity structure may be adjusted for in statistical models and the remaining variation in social ties should primarily reflect differences in people's preferences (putting to the side complicating factors, such as selection into schools based on unobservable characteristics). The most prominent examples of this work apply sophisticated exponential random graph models to data on friendship networks within schools that were sampled through the Add Health (Moody 2001; Quillian and Campbell 2003; Mouw and Entwisle 2006). Findings from this literature show that, while the relative odds of cross-race-ethnicity friendships increase substantially as schools become more diverse, rates of inter-racial-ethnic friendships are typically far below the levels that would be predicted by proportionate mixing within schools. This literature also suggests that numerical minorities tend to "self-segregate" as they grow in size and that institutional structures, like academic tracking, can significantly hinder associations between school diversity and inter-racial-ethnic friendships (Moody 2001).

This prior work on school compositions and relationship formation offers a number of important insights. However, it also overlooks a potentially important possibility that racially and ethnically diverse schools may be weaker focal points for adolescents' relationships. That is, an adolescent may be more likely to form close relationships outside of his or her school if the adolescent's own racial-ethnic group is a smaller share of the student body. If this is the case, the school may be a poor proxy for adolescents' relationship opportunity structures, particularly for adolescents in more diverse schools. More consequential for U.S. race and ethnic relations, if diverse schools are weaker focal points for adolescents' relationships, the potential for diverse schools to foster close inter-racial-ethnic relationships and reduce social distance across groups may be hindered. Further, if adolescents in more diverse schools are more likely to form specifically same-race-ethnicity relationships outside of the school, an exclusive focus on in-school relationships may overlook an important way that adolescents express preferences for same-race-ethnicity relationships or work around constraints generated by other groups' same-race-ethnicity preferences.

These questions about school compositions and the formation of relationships outside of school boundaries build on the theoretical insights of Scott Feld (1981) and Peter Blau (1977a).

Racial-Ethnic Composition and Schools as Network Foci

Feld's (1981) "focus theory" of networks argues that individuals tend to organize their social relationships around "extranetwork foci" of activity (e.g., schools, workplaces, clubs, etc.) and that the probability of a relationship being formed between two individuals increases when they share an extranetwork foci (e.g., go to the same school, work together, etc.). Existing work on school integration and relationships draws on this basic insight when treating schools as proxies for young people's relationship opportunity structures. However, this work largely neglects Feld's additional hypothesis that the extent to which shared foci lead to relationships (in Feld's language how "constraining" foci are) varies across foci with different characteristics. Although Feld does not explicitly discuss issues of population composition in his writing on focus theory, stubborn social distances across racial-ethnic groups in the United States would lead us to expect that more racially and ethnically diverse extranetwork foci (e.g., integrated schools) may be less constraining and provide weaker foci for people's social relationships.

Evidence shows that students' feelings of belonging and attachment to their schools are lower when their own race group is a smaller share of the school's student body (Johnson, Crosnoe, and Elder 2001). However, whether these feelings translate into more boyfriends or girlfriends outside of the school is unclear. Joyner and Kao (2000), in their analysis of inter-racial-ethnic friendships in the Add Health, report no association between school racial-ethnic diversity and the odds of nominating no friends inside the school. However, this null result may be related to the facts that people typically have many more friends than romantic partners and same-race-ethnicity preferences are often weaker for friendships, compared to romantic relationships. Because of differences in how the Add Health collects data on friendships and romantic relationships, Joyner and Kao also do not know the races or ethnicities of people's out-of-school friends, and so they cannot consider an additional question central to this analysis, which is whether school racial-ethnic composition is associated with specifically same-race-ethnicity relationships outside of the school.

Racial-Ethnic Composition and the Crossing of Alternative Boundaries

Blau's (1977a) structural sociological propositions emphasize the importance of group sizes in determining the formation of in- and out-group ties.

One of Blau's most well-known propositions is the "propinquity principle," which posits that, all else equal, as opportunity structures (e.g., schools, communities, etc.) become more diverse, and individuals encounter more members of other racial-ethnic groups and fewer members of their own racial-ethnic group, cross-race-ethnicity ties will become more numerous.³ However, standing somewhat in contrast to the propinquity principle is a far less studied proposition regarding numerical constraints and "trade-offs." Blau posits that when people have strong in-group preferences along a certain dimension (e.g., race-ethnicity), the intersection of this dimension with other dimensions of differentiation (e.g., school boundaries) will reduce the number of potentially acceptable partners and may numerically necessitate the crossing of alternative boundaries. To quote Blau (1977b, p. 44), "For individuals to satisfy their most salient in-group preferences, they must set aside other in-group preferences and enter into intergroup relations along other lines."⁴

Being in a racially and ethnically heterogeneous school does not only mean more opportunities to date members of other racial-ethnic groups, as posited by the propinquity principle, it also means fewer opportunities to date members of one's own racial-ethnic group, holding constant school size. For individuals or groups with strong preferences for same-race-ethnicity relationships or with constraints in their dating choices because of other groups' same-race-ethnicity preferences, being in a diverse school may mean individuals are more likely to date across alternative non-racial-ethnic boundaries—namely, school boundaries—in order to satisfy same-race-ethnicity preferences or needs. In such cases, individuals may be seen as "opting out" of or "working around" a school-based opportunity structure that does not suit their relationship preferences or needs.

To summarize the application of Blau's propositions to this project, for groups with weak tendencies toward same-race-ethnicity dating, the pro-

³ Examples of empirical work testing Blau's propinquity principal include South and Messer (1986), Joyner and Kao (2000), Quillian and Campbell (2003), and Mouw and Entwisle (2006).

⁴ Blau demonstrates this general issue with the example of academics. Tolerance of diversity has been shown to increase with education and Ph.D.'s are more likely than many other people to form relationship across, say, race or religious background. However, Blau suggests that, rather than education leading people to have more positive feelings toward diversity, perhaps highly educated individuals just have very strong preferences and in-group biases when it comes to education. Ph.D.'s frequently want to socialize among and marry other Ph.D.'s, sometimes within the same discipline. If we consider what proportion of the population has Ph.D.'s, particularly within a specific area of study, this preference for educational homophily can be seen as generating major numerical constraints in terms of potential relationship partners. Such numerical constraints may effectively force highly educated individuals with strong in-group education preferences to be more willing to cross other types of group boundaries (e.g., religion, race-ethnicity, etc.).

pinquity principle leads us to expect a positive association between the availability of different-race-ethnicity potential partners in a school and cross-race-ethnicity relationships.⁵ However, for groups with stronger tendencies toward same-race-ethnicity dating, we may find a positive association between the availability of different-race-ethnicity potential partners in a school and the number of same-race-ethnicity partners outside of the school. Returning to the notion that social distance across groups can be gauged by the extent to which people appear to avoid forming cross-group ties, finding that more opportunities for inter-racial-ethnic dating within schools is associated with more same-race-ethnicity relationships outside of schools may be interpreted as evidence of social distance.

Adolescents in racially and ethnically diverse schools may have several reasons for wanting to find same-race-ethnicity partners, despite the ready availability of different-race-ethnicity partners in their school. Although public opinion data reveal large increases in people's stated approval of inter-racial-ethnic relationships in general (Qian 2005), adolescents dating across racial-ethnic lines still appear to face stigma in their immediate communities and seem to negotiate this disapproval by behaving differently in their relationships. For instance, compared to adolescents in intra-racial-ethnic relationships, adolescents in inter-racial-ethnic relationships are less likely to reveal their relationships in public (e.g., with public displays of affection) or meet their boyfriend's or girlfriend's parents, and adolescents involved in inter-racial-ethnic romances report more peer troubles at their schools (Vaquera and Kao 2005; Wang, Kao, and Joyner 2006; Kreager 2008). Tatum (2003, 2004) has also shown that, for black youth who are transitioning to adulthood in the context of a racist society, interracial peer relationships can reinforce negative messages about black Americans, and close relationships with other black youth are important for the development of a positive racial identity. While school integration and increasing rates of inter-racial-ethnic dating are welcomed by many as evidence of blurring racial and ethnic boundaries, ongoing bias and stigma may mean that having a different-race-ethnicity boyfriend or girlfriend is, on average, a less positive experience for individual adolescents, compared to having a same-race-ethnicity boy/girlfriend.

School Racial-Ethnic Composition as an Opportunity or a Constraint

Rates of inter-racial-ethnic dating vary across racial-ethnic and gender groups in the United States, indicating that racial and ethnic boundaries

⁵ It should be emphasized that while Blau's propositions about in- and out-group ties use language about "preferences," the following findings cannot be interpreted as reflecting individuals' or groups' preferences because relationship formation is interdependent. Instead of discussing group's "preferences" for same-race-ethnicity dating, I refer to "ten-

are more easily crossed by some groups than others. Considering the dyadic romantic relationship data from the Add Health that is used in the following analysis, inter-racial-ethnic dating relationships are rarest among non-Hispanic white males and only slightly more common among non-Hispanic white females (8.5% and 13% of the dating relationships reported by these white males and white females, respectively, were with nonwhite partners). However, low rates of inter-racial-ethnic dating among whites may be partially driven by the fact that whites are a numerical majority in the United States, making white-white relationships more likely even with proportionate mixing. Inter-racial-ethnic dating relationships are also very rare among non-Hispanic black women, but are somewhat more common among non-Hispanic black men (only 12% of the dating relationships reported by black women were with nonblack men, whereas 20% of the relationships reported by black men were with nonblack women). These low rates of inter-racial-ethnic dating, particularly among black women, are in spite of the fact that blacks are a relatively small share of the U.S. population and young black women outnumber young black men.⁶ On the other hand, inter-racial-ethnic dating relationships are much more common and less variable by gender among Hispanics (43% and 40% of the dating relationships reported by Hispanic males and females were with non-Hispanic partners).⁷ Data limitations do not allow me to separate out Asian Americans for the following analysis, but estimates based on Add Health data published elsewhere find rates of inter-racial-ethnic dating among Asian Americans that are comparable to Hispanic rates (Vaquera and Kao 2005; Kreager 2008). As will be discussed further in the interpretation of the results, these varying patterns of inter-racial-ethnic dating are rooted in the cultural norms and historical legacies that surround race-ethnicity and gender in the U.S. context.

These overall rates of inter-racial-ethnic dating are not stratified by local area compositions and so do not take into account variations in opportunities for inter-racial-ethnic dating. However, they suggest that, in general, Hispanics are much more able or willing to date across racial-ethnic lines relative to blacks, particularly black women. We can, therefore, expect that behavioral responses to school diversity may be very different across these groups. For Hispanics, being in a school with more non-Hispanic students may primarily present opportunities for more inter-racial-ethnic dating and,

dencies" toward same-race-ethnicity dating, which I intend to capture individuals' preferences as well as constraints generated by the preferences of others.

⁶ Fifty-five percent of the black respondents in the Add Health are female (estimate weighted to be representative of the U.S. adolescent population in 1994–95).

⁷ These rates of inter-racial-ethnic dating are based on 10,902 relationships reported in the first and second waves of the Add Health included in this analysis. More information about the sample characteristics is provided below.

following Blau's propinquity principle, being in such a school is likely to be correlated with more inter-racial-ethnic relationships for Hispanics. For blacks, on the other hand, particularly black women, being in a school with more nonblack students may primarily present constraints in terms of potential dating partners and, following Blau's propositions about constraints and trade-offs, being in such a school is likely to be correlated with more same-race-ethnicity relationships outside of the school for black women. It is more difficult to generate *a priori* hypotheses regarding whites' behavioral responses to school compositions because, while they have low overall rates of inter-racial-ethnic dating, this may partially reflect their larger group size. The following estimates stratified by school racial-ethnic composition will reveal whether white adolescents in schools with many nonwhite students tend to form more inter-racial-ethnic relationships within the school or more same-race-ethnicity relationships outside of the school. However, given that white males have a lower overall rate of inter-racial-ethnic dating than white females, we might expect white males to be more likely than white females to form same-race-ethnicity relationships outside of school boundaries when attending a school with many nonwhite students.

DATING RELATIONSHIPS OUTSIDE OF SCHOOL BOUNDARIES

Because adolescence is an exceptional period in individuals' social, psychological, and physical development, intimate and romantic relationships formed during this period may have important and lasting consequences for well-being. With these points in mind, researchers have become increasingly interested in how various characteristics of adolescent dating relationships correlate with negative and positive behaviors and outcomes (for reviews of this literature, see Giordano [2003] and Karney et al. [2007]). Work in this area shows that dating relationships with individuals who do not attend an adolescent's school are relatively common and that these institutionally discordant relationships may be riskier for adolescents (Ford et al. 2001). Having romantic partners outside of the school has the potential to weaken adolescents' affective attachment to their school, and school attachment is correlated with higher self-esteem and better academic performance (Johnson et al. 2001). Epidemiological studies have found that, when adolescents have sexual relationships with individuals who do not attend their school, the relationship is less likely to have consistent condom use and is positively associated with self-reports of having a sexually transmitted infection (Ford et al. 2001; Ford and Lepkowski 2004). To contextualize these findings, I conducted my own comparison of Add Health respondents' relationships with partners who do and do not attend their school (results not shown, available by request). Relationships with partners outside of the school are more likely to involve sexual intercourse, particularly

for female respondents. This is likely related to the fact that, for female respondents, male partners who do not attend the respondent's school are, on average, substantially older than male partners who do attend the school. For both male and female respondents, relationships with partners outside the school are also less socially embedded. For instance, when partners do not attend the adolescent's school, fewer of the adolescent's friends know the partner, and the partner is more likely to have been a stranger when the relationship started. If racially and ethnically diverse schools are indeed weaker foci for adolescent romantic relationships, an increase in out-of-school dating may expose adolescents, particularly female adolescents, to comparatively riskier relationships.

DATA AND VARIABLES

Data for this analysis come from the first two waves of the National Longitudinal Study of Adolescent Health (Add Health). The Add Health began in 1994–95 with a nationally representative clustered sample of 132 schools. A short in-school questionnaire was administered to all students who were present at one of the sample schools on the day of the survey. Students were then sampled from within each school for a more extensive in-home questionnaire. Students who participated in the first in-home questionnaire were followed up with a second-wave survey in 1996. In later years, respondents to the in-home survey were followed up for additional waves of data collections. However, because school composition and boundaries are of key interest in this analysis, I use data from only the first two waves of the Add Health when most respondents are still enrolled in one of the sampled schools. By later waves, most respondents had completed high school and moved from adolescence into young adulthood (Harris 2011).

The following analysis includes both dyadic- and individual-level outcomes. These outcomes are based on a series of "relationship roster" questions included in the wave 1 and 2 in-home surveys. In these questions, respondents are asked about up to three "special romantic" relationships that occurred in the past 18 months. Respondents are also asked about up to three additional sexual relationships that occurred in the past one to two years.⁸ In both waves, respondents are asked a series of questions about each relationship, including the partner's race-ethnicity, whether the partner attends the respondent's school, the start and end dates of the relationship, and activities and events in the relationship. This question se-

⁸In the wave 1 survey, respondents are asked to report additional sexual relationships that occurred since January 1, 1994, and, in the wave 2 survey, respondents are asked to report additional sexual relationship that occurred since the wave 1 interview.

quence generates a list of up to six relationships in wave 1 and up to six relationships in wave 2. Because this analysis distinguishes multiple types of relationships, some of which are relatively rare (e.g., out-of-school cross-race-ethnicity relationships), it is necessary to maximize the number of relationship observations. For this reason, I combine both the “special romantic” relationships and the additional sexual relationships reported in waves 1 and 2 to construct a list of between 0 and 12 relationships per respondent.⁹ For the dyadic-level outcomes in this analysis, each reported relationship is an observation. For the individual-level outcomes, I simply count the number of particular types of relationships the respondent reports (e.g., between 0 and 12 out-of-school relationships).

The dyadic-level outcomes in this analysis are clearly contingent on a relationship being formed, and so respondents reporting no relationships contribute no observations to the dyadic outcomes. Given this, the dyadic outcomes (which are interpreted primarily in terms of predicted probabilities) are intended to provide a descriptive picture of how observed relationships are distributed across in-school and out-of-school and same- and different-race-ethnicity categories according to school compositions. On the other hand, the individual-level counts of particular types of relationships include zero values and, therefore, incorporate respondents reporting no relationships. Given this, I rely on the individual-level outcomes to test more specific hypotheses about increases in frequencies of out-of-school relationships and out-of-school same-race-ethnicity relationships.

Key Variables of Interest

Proportion different-race-ethnicity.—The main exposure of interest in the analysis is the proportion of opposite-sex students in the respondent’s

⁹ In some of the existing studies of adolescent romantic relationships using the Add Health (e.g., Ford et al. 2001; Manlove, Ryan, and Franzetta 2007), researchers stratify “special romantic” relationships and additional sexual relationships. Due to details in the relationship roster questions, the nature of the additional sexual relationships captured in the Add Health is somewhat unclear. While some of these relationships may be more casual than a special romantic relationship (something more akin to a “hookup”), others may be just as serious and intimate as a special romantic relationship, but they ended up in the additional sexual category simply because the respondent had already reported three special romantic partners. To validate the decision to combine both types of relationships in this analysis, I replicated all the following models for the total sample separately for the special romantic and additional sexual relationships. Results were consistent for both categories of relationship. Unfortunately, data sparseness made it impossible to replicate the gender- and racial-ethnic-specific models in this analysis separately for both categories of relationship. However, keeping in mind necessary caveats because of data sparseness, an examination of descriptive statistics suggested that patterns of racial-ethnic and school boundary crossing were comparable for both special romantic and additional sexual relationships regardless of respondents’ gender and race-ethnicity. (These results are not included but are available by request.)

school from a different racial-ethnic group than the respondent. To construct this measure, I aggregated within each sampled school the races-ethnicities and genders reported by the students who completed the in-school questionnaire and then assigned the appropriate values based on the respondent's gender and race-ethnicity (e.g., white females were assigned the number of nonwhite males in the school divided by the number of males in the school, Hispanic males were assigned the number of non-Hispanic females in the school divided by the number of females in the school, and so on). Higher values on this variable imply that the respondent has more opportunities for cross-race-ethnicity dating, but fewer opportunities for same-race-ethnicity dating, inside the school.

Relationship type.—The first dependent variable in this analysis is a four-category dyadic-level measure of whether a given relationship crosses racial-ethnic boundaries, school boundaries, neither, or both. This measure has the following categories: (i) in-school same-race-ethnicity relationship (reference category), (ii) in-school cross-race-ethnicity relationship, (iii) out-of-school same-race-ethnicity relationship, or (iv) out-of-school cross-race-ethnicity relationship. The goal when analyzing this outcome is to explore which boundaries (school or race-ethnicity) relationships are most likely to cross as the proportion different-race-ethnicity variable increases.

Count of out-of-school relationships.—The second dependent variable is a respondent-level measure of the number of out-of-school relationships (between 0 and 12) that the respondent reports in the "relationship roster" questions. A positive association between this outcome and the proportion different-race-ethnicity variable would suggest that, when respondents have many opportunities for cross-race-ethnicity dating, but few opportunities for same-race-ethnicity dating, in their schools, schools become weaker foci for dating relationships.

Count of out-of-school same-race-ethnicity relationships.—The third dependent variable is a respondent-level measure of the number of out-of-school same-race-ethnicity relationships (between 0 and 12) that the respondent reports in the "relationship roster" questions. A positive association between this outcome and the proportion different-race-ethnicity variable would suggest that some respondents "work around" opportunities for inter-racial-ethnic dating within schools by forming more same-race-ethnicity relationships outside of schools.

For the three relationship outcomes, in- and out-of-school relationships were distinguished based on respondents' reports of whether the relationship partner attends the same school as the respondent. To identify same-race-ethnicity and cross-race-ethnicity relationships, I categorized the respondent's own race-ethnicity and the respondent's report of the relationship partner's race-ethnicity into four categories: non-Hispanic white, non-Hispanic black,

non-Hispanic other, and Hispanic.¹⁰ Relationships in which the partner's and respondent's race-ethnicity match were treated as same-race-ethnicity and otherwise treated as cross-race-ethnicity.

Respondent-Level Control Variables

All the following models adjust for a number of respondent sociodemographic characteristics, including the respondent's *age* (a continuous measure in years taken at wave 1), *gender* (a dichotomous indicator for whether the respondent is female), *race-ethnicity* (a four-category measure that distinguishes between non-Hispanic white [reference category], non-Hispanic black, Hispanic, and non-Hispanic other), and *parental socioeconomic status* (a scale based on parental education and occupation).¹¹

The following models also include dichotomous indicators for whether the respondent is a *first-generation immigrant*, *second-generation immigrant*, or *nonimmigrant* (reference category).¹² Because of ethnic enclaves and the spatial concentration of recent immigrants in particular neighborhoods, first- and second-generation immigrant respondents may be more likely to be in schools with lower values on the proportion different-race-ethnicity variable. There is also evidence to suggest that first- and second-generation adolescent immigrants are less likely to form romantic relationships outside of their own ethnic group (Fujino 1997). When stratifying the

¹⁰ As in many national surveys, the Add Health first asks about Hispanic origin and then asks about race identity (e.g., black, white, Asian/Pacific Islander, etc.). If the respondent reported Hispanic origin for himself or herself or his or her partner, the respondent or partner was coded as Hispanic, regardless of the responses to the subsequent race questions. Unfortunately, insufficient cell sizes do not allow me to distinguish between Hispanic-white, Hispanic-black, etc. The Add Health survey instrument allows respondents to select more than one race category for themselves and for relationship partners. In the Add Health survey, respondents who select more than one race for themselves are asked a follow-up question, "Which one category best describes your racial background?" I use the answer to this question as the race category for non-Hispanic respondents who select more than one racial identification. For the relationship partner, no such follow-up question is asked. If the respondent selects more than one race category for the partner and the partner is not Hispanic, the partner is coded as non-Hispanic other.

¹¹ The parental socioeconomic scale was constructed by summing five ranked categories of parental education (from less than high school to advanced degree) and occupation (from out of the labor force to professional). This coding of variables from the in-school survey follows the strategy employed by Moody (2001) in his analysis of Add Health friendship data.

¹² Any respondents who reported that they were born outside of the United States were coded as first-generation immigrants. Respondents who were born in the United States could then be coded as either a second-generation immigrant or nonimmigrant depending on whether the parent who was interviewed in the wave 1 in-home parental survey reported being born inside or outside of the United States.

models by race-ethnicity, being a first- or second-generation immigrant may be more likely to shape relationship outcomes for the Hispanic subgroup where recent immigrants are the most numerous.

Finally, the following models also include a control for the *total number of relationships* (between 0 and 12) that the respondent reported in the relationship rosters. This measure adjusts for the fact that, all else equal, having more relationships should increase the chances that some of those relationships cross school or racial-ethnic boundaries.

School-Level Control Variables

In all the following models, I adjust for the *average socioeconomic status in the school*. This variable was created by averaging the parental socioeconomic scale variable within each of the schools to obtain a mean school-level socioeconomic status. The average socioeconomic status within the school is correlated with school racial-ethnic composition and may influence the extent to which students' social lives are focused within the school (e.g., more advantaged schools may be more socially cohesive because of more extracurricular activities or community involvement).

I further adjust the following models for *racial-ethnic inequality in the school*. According to Blau (1977b), inter-racial-ethnic relationships should be less likely when there are significant class inequalities across racial-ethnic groups. Schools characterized by class inequalities across racial-ethnic groups may also be less cohesive and more socially fragmented. This control variable is a 20-category scale based on multiple correlation coefficients from school-specific regressions of the parental socioeconomic scale on race-ethnicity.¹³ In schools with the lowest values, race-ethnicity is a very weak predictor of socioeconomic status, whereas in schools with the highest values race-ethnicity is a salient predictor of socioeconomic status.

The following models also include a control for *school size*, which is a continuous measure of the number of students in the school measured in hundreds. All else equal, small schools will have higher values on the proportion different-race-ethnicity variable simply because smaller schools provide smaller denominators. Attending a smaller school also means fewer potential in-school dating partners, which may make respondents more likely to date across racial-ethnic or school boundaries.

¹³ Drawing on Moody's (2001) strategy for measuring school racial-ethnic inequality, I regressed the respondent-level race-ethnicity categories (non-Hispanic white, non-Hispanic black, non-Hispanic other, and Hispanic) on the parental socioeconomic scale separately for each sampled school in the Add Health. The R^2 from each of these school-specific models was then saved as a school-level predictor. To smooth the distribution of this measure and correct for a handful of noisy estimates generated by small schools, the R^2 values were then recoded into 20 ordered categories at every fifth percentile.

I also adjust in the following models for the *proportion female in the school*, which is a continuous measure of the number of female students in the school divided by the total number of students in the school. Imbalanced sex ratios within schools will influence the pools of potential in-school partners and may influence whether students date across racial-ethnic or school boundaries.

Additionally, I include a dichotomous indicator for whether the school has *area-based admissions*. Schools that admit students based on whether they reside in the school district are coded one for this variable and schools with another form of admissions criteria (e.g., admissions based on entrance exams, etc.) are coded zero. When schools admit students primarily based on residential location, students may have fewer opportunities to form relationships with peers who do not attend their school.

I also include a dichotomous indicator for whether the school is a *magnet school*. Magnet schools are coded one and general public schools, private schools, and other types of schools are coded zero. Unlike schools with area-based admissions, magnet schools tend to draw students from multiple diverse and geographically dispersed communities. Students in magnet schools may, therefore, have more opportunities than students in other schools to form relationships with peers who do not attend their school. Historically, magnet schools have also frequently been seen as a means for promoting racial integration of schools (Metz 2003), and attitudes about race and race relations may differ in magnet schools compared to other types of schools.

Finally, I control for where schools are located. First, I include a three-category control for whether a school is located in a *rural area*, *suburban area*, or *urban area* (reference category). Greater population density in urban and suburban areas will provide adolescents with more opportunities to meet peers outside their schools or racial-ethnic groups. Second, I include a four-category control for whether a school is located in the *Northeast*, *South*, *Midwest*, or *West* (reference category). Both school race composition and rates of cross-race-ethnicity romances (e.g., marriages) vary across regions in the United States (Qian 1999; Logan, Oakley, and Stowell 2008).

Sample

In order to be included in this analysis, Add Health respondents had to be attending a coeducational sampled school in both waves 1 and 2;¹⁴ com-

¹⁴A few of the Add Health sampled schools have values very close to 0 or 1 for the proportion female in the school, indicating that these are likely single-sex schools. Since these schools do not provide a dating opportunity structure for heterosexual relationships, I exclude respondents attending these schools from the analysis.

plete the in-home questionnaire in both waves 1 and 2; report no same-sex relationships in either the wave 1 or wave 2 rosters; and have a parent or guardian complete the parental questionnaire in wave 1 (parental responses are necessary for identifying second-generation immigrants in the immigrant control variable). These criteria create a total potential sample for this analysis of 8,767. Further excluding respondents with missing values on any of the covariates or outcomes yields a final sample of 6,301 respondents.

Because the wave 1 and wave 2 interviews are only about a year apart and respondents are asked to report on romantic relationships occurring in the past 18-month period, it is possible that some relationships may be double-counted—most notably, a recent or current romantic relationship reported in wave 1 could fall within the 18-month reporting window of the wave 2 survey as well. I exclude from the analysis 3,299 potentially duplicate relationships which were reported in wave 2 and had a relationship start date before the date of the wave 1 interview.¹⁵ These relationships are excluded from the respondent-level counts of relationships and the dyadic-level measure of relationship type. Excluding these potentially duplicate relationships, the 6,301 respondents in the final sample report a total of 10,902 relationships.

Table 1 displays descriptive statistics for the respondent-level data, and table 2 displays descriptive statistics for the dyadic-level data. As shown in table 2, about 42% of the relationships reported are with partners who do not attend the respondent's school, and, within each racial-ethnic group, female respondents report more out-of-school relationships than their male counterparts. Both in-school and out-of-school relationships are more likely to be same-race-ethnicity than cross-race-ethnicity, and same-race-ethnicity relationships are particularly numerous among white males, white females, and black females. As shown in table 1, the average respondent in the sample attends a school in which 40% of the opposite-sex students are from a different racial-ethnic group than the respondent. Not surprisingly, the mean for this variable varies across the racial and ethnic groups. Average whites in the sample attend schools in which about 30% of potential dating partners are nonwhite, average blacks attend schools in which about 60% of the potential dating partners are nonblack, and average Hispanics attend schools in which about 70% of potential dating partners are non-Hispanic. Stratifying the following models by race-ethnicity adjusts for this confounding between the respondent's race-ethnicity and school composition. Looking at the respondent-level control variable for total number of relationships in table 1, the average respondent

¹⁵ Results were highly consistent regardless of whether I included or excluded these potentially duplicated relationships.

in the sample reports close to two relationships. This low number reflects the respondents' young ages and the fact that about 20% of them report zero relationships (shown in the distribution for the total number of relationships at the bottom of the table). In the dyadic-level data in table 2, which exclude the approximately 20% of respondents reporting zero relationships, the average number of total relationships is about 3.5.

MODELS

When predicting the dyadic-level categorical measure of relationship type, I use a multinomial logistic regression model that can be written as

$$\ln \frac{\Pr(Y_{ijk} = m | X_{ijk}, \vartheta_{jk}^{(2)}, \vartheta_k^{(3)})}{\Pr(Y_{ijk} = b | X_{ijk}, \vartheta_{jk}^{(2)}, \vartheta_k^{(3)})} \\ = \beta_0 + \beta_1 X_{jk, \text{prop diff}} + \beta_2 X_{jk, \text{respondent controls}} + \beta_3 X_{k, \text{school controls}} + \vartheta_{jk}^{(2)} \\ + \vartheta_k^{(3)} + \varepsilon_{ijk},$$

where the subscript i indicates relationships, the subscript j indicates respondents, and the subscript k indicates schools. In order to account for the three-level clustered structure of the dyadic data and obtain more accurate standard errors, I include in this model two random intercepts: $\vartheta_{jk}^{(2)}$ is a respondent-level intercept to adjust for the clustering of relationships within respondents, and $\vartheta_k^{(3)}$ is a school-level intercept to adjust for the clustering of respondents within schools. The outcome in this model is the likelihood that a relationship falls in a given category m (e.g., in-school cross-race-ethnicity, out-of-school same-race-ethnicity, or out-of-school cross-race-ethnicity) relative to the reference category b (i.e., in-school same-race-ethnicity). The term $X_{jk, \text{prop diff}}$ is the proportion different-race-ethnicity variable that varies across respondents in different racial-ethnic and gender groups within schools. The term $X_{jk, \text{respondent controls}}$ is the set of respondent-level control variables listed above, and $X_{k, \text{school controls}}$ is the set of school-level control variables listed above.

When predicting respondents' counts of out-of-school relationships and out-of-school same-race-ethnicity relationships, I use a poisson model that can be written as

$$Y_{jk} | X_{jk}, \vartheta_k^{(3)} = \beta_0 + \beta_1 X_{jk, \text{prop diff}} + \beta_2 X_{jk, \text{respondent controls}} \\ + \beta_3 X_{k, \text{school controls}} + \vartheta_k^{(3)} + \varepsilon_{jk},$$

where the subscript j indicates respondents and the subscript k indicates schools. To account for the two-level clustered structure of the respondent-level data, I include in this model one random school-level intercept, $\vartheta_k^{(3)}$, that adjusts for the clustering of respondents within schools. The school-level

TABLE 1
SAMPLE MEANS FOR INDIVIDUAL-LEVEL VARIABLES

	WHOLE SAMPLE	WHITE		BLACK		HISPANIC	
		Female	Male	Female	Male	Female	Male
Proportion different-race-ethnicity in school	.40 (.02)	.33 (.02)	.29 (.02)	.61 (.04)	.57 (.05)	.67 (.04)	.70 (.04)
Relationship counts:							
Number of out-of-school relationships	.84 (.03)	.87 (.05)	.72 (.04)	1.04 (.08)	1.16 (.10)	.84 (.08)	1.01 (.11)
Number of out-of-school same-race-ethnicity relationships	.67 (.03)	.73 (.04)	.63 (.03)	.90 (.07)	.97 (.12)	.46 (.06)	.54 (.08)
Respondent controls:							
Race-ethnicity (ref=non-Hispanic white):							
Non-Hispanic black	.12						
Hispanic	.09						
Non-Hispanic other	.05						
Female	.52						
Age	14.96 (.13)	14.80 (.14)	15.06 (.17)	15.07 (.22)	15.31 (.20)	14.85 (.23)	15.12 (.21)
Immigrant status (ref=nonimmigrant):							
First-generation immigrant	.05	.02	.01	.04	.04	.19	.17
Second-generation immigrant	.07	.03	.03	.03	.04	.34	.29
Parental SES	5.89	5.90	5.91	5.76	6.02	5.58	5.70
	(.02)	(.03)	(.04)	(.07)	(.07)	(.10)	(.09)
Total number of relationships	1.94 (.05)	1.93 (.06)	1.99 (.08)	1.79 (.10)	2.49 (.14)	1.58 (.12)	2.19 (.15)

School controls:									
Average SES	5.89	(.01)	5.89	(.02)	5.89	(.02)	5.90	(.03)	5.87
Racial-ethnic SES inequality in the school	9.79	(.62)	9.33	(.69)	9.24	(.73)	10.38	(1.08)	12.00
Proportion female	.50	(.00)	.50	(.00)	.49	(.00)	.51	(.01)	.50
School size (hundreds)	7.10	(.51)	6.67	(.55)	6.64	(.51)	7.79	(.77)	8.98
Magnet school	.07	(.76)	.02	(.80)	.02	(.83)	.30	(.62)	.22
Area-based admissions									.57
Location (ref=urban):									
Suburban	.56		.58		.58		.55		.49
Rural	.21		.24		.25		.16		.03
Region (ref=West):									
Midwest	.31		.37		.34		.23		.08
South	.39		.36		.38		.67		.32
Northeast	.16		.16		.18		.05		.23
Proportion distribution of total number of relationships:									
0 relationships	.23		.22		.23		.26		.31
1 relationship	.24		.24		.23		.25		.25
2 relationships	.21		.22		.22		.22		.18
3 relationships	.14		.15		.13		.14		.14
4 relationships	.08		.07		.09		.06		.06
5-12 relationships	.10		.10		.10		.07		.17
N (level 1, respondents)	6,301		1,939		1,791		686		514
N (level 2, schools)	122		108		111		77		71
									72
									485
									462
									79

NOTE.—All estimates are weighted to be representative of the U.S. adolescent population in 1994–95. Numbers in parentheses are SEs.

TABLE 2
SAMPLE MEANS FOR DYADIC-LEVEL VARIABLES

	WHOLE SAMPLE	WHITE		BLACK		HISPANIC	
		Female	Male	Female	Male	Female	Male
Proportion different-race-ethnicity in school...	.39 (.02)	.32 (.02)	.28 (.02)	.62 (.04)	.56 (.05)	.70 (.04)	.71 (.05)
Relationship type:							
In-school same-race-ethnicity .....	.49	.49	.61	.39	.42	.29	.24
In-school cross-race-ethnicity .....	.09	.07	.05	.04	.12	.20	.31
Out-of-school same-race-ethnicity .....	.35	.38	.30	.50	.40	.28	.25
Out-of-school cross-race-ethnicity .....	.07	.06	.04	.07	.07	.23	.20
Respondent controls:							
Race-ethnicity (ref=non-Hispanic white):							
Non-Hispanic black .....	.13						
Hispanic .....	.09						
Non-Hispanic other .....	.03						
Female .....	.50						
Age	15.54 (.12)	15.40 (.12)	15.63 (.16)	15.53 (.21)	15.94 (.20)	15.29 (.26)	15.54 (.22)
Immigrant status (ref=nonimmigrant):							
First-generation immigrant .....	.03	.02	.01	.02	.02	.13	.14
Second-generation immigrant .....	.05	.02	.03	.02	.04	.29	.27
Parental SES	5.86 (.03)	5.87 (.04)	5.87 (.04)	5.72 (.09)	5.98 (.10)	5.58 (.17)	5.67 (.11)
Total number of relationships	3.49 (.07)	3.38 (.08)	3.56 (.14)	3.38 (.22)	4.06 (.16)	3.11 (.19)	3.69 (.17)

Wave 2 .....	.40	.40	.42	.33	.37	.39	.37
School controls:							
Average SES	5.89	5.89	5.89	5.91	5.91	5.84	5.87
	(.03)	(.02)	(.02)	(.03)	(.03)	(.03)	(.02)
Racial-ethnic SES inequality in the school	9.35	8.98	9.00	9.62	10.30	10.95	11.27
	(.65)	(.70)	(.79)	(1.20)	(1.22)	(1.11)	(1.03)
Proportion female .....	.50	.50	.50	.51	.50	.50	.49
	(.00)	(.00)	(.00)	(.01)	(.01)	(.01)	(.01)
School size (hundreds)	7.54	7.31	7.00	8.37	6.72	8.82	10.58
	(.58)	(.70)	(.56)	(1.18)	(.77)	(1.24)	(1.56)
Magnet school .....	.07	.01	.01	.33	.30	.24	.13
Area-based admissions .....	.77	.82	.84	.57	.67	.59	.61
Location (ref=urban):							
Suburban .....	.58	.60	.60	.53	.50	.46	.50
Rural .....	.21	.23	.24	.15	.28	.08	.04
Region (ref=West):							
Midwest .....	.32	.37	.37	.22	.16	.14	.20
South .....	.40	.36	.36	.66	.75	.26	.33
Northeast .....	.16	.16	.17	.05	.05	.26	.26
N (level 1, relationships)	10,902	3,379	3,295	1,097	1,050	702	907
N (level 2, respondents)	4,686	1,472	1,379	513	391	349	363
N (level 3, schools)	121	105	110	70	66	63	71

NOTE.—Numbers in parentheses are SEs.

intercept will also correct for any overdispersion at level 2 in this model. To further adjust for potential overdispersion at level 1 in this model, I estimate robust standard errors using the Huber-White estimator.¹⁶

After running models for the total sample, I replicate each of the above models for non-Hispanic white, non-Hispanic black, and Hispanic males and females. Unfortunately, an insufficient number of Asian respondents in the Add Health sample prohibits me from running separate Asian models. Particularly for the three-level multinomial models, stratifying by gender and race-ethnicity can make the data slightly sparse. Because of insufficient variation, it was necessary to exclude from the model for white males a single school-level control variable, the dichotomous indicator for area admissions. All of the other subgroup models include all the control variables listed above.

In all the following models, I apply sample weights supplied by the Add Health at both the individual and school levels (Chantala and Tabor 2010). For the dyadic-level models, there is no relationship-level weight to apply. I therefore follow the strategy of other researchers (e.g., Ford et al. 2001) and apply to each relationship the weight of its reporting student, based on the assumption that the probability of selection of a relationship was determined in substantial part by the probability of selection of the respondent.

As with most research on associations between local population compositions and individual behaviors, results may be influenced by individuals with unmeasured characteristics selecting into different environments, and the following estimates must be interpreted as primarily descriptive. Most notably for this analysis, respondents with more positive attitudes toward other racial-ethnic groups, and probably higher propensities toward cross-race-ethnicity dating, are likely to disproportionately select into schools where more of the student body is from a different racial-ethnic group. This should exert upward bias on the likelihood of cross-race-ethnicity relationships but should exert downward bias on the likelihood of same-race-ethnicity relationships, and most likely this bias should apply similarly to both in-school and out-of-school relationships. A central motivation for this analysis is to test whether the proportion different-race-ethnicity in the school is positively associated with the frequency of out-of-school same-race-ethnicity relationships. It is, therefore, worth emphasizing that selection patterns are likely to bias this association in a downward direction, and the following estimates of this relationship type are likely to be conservative.

¹⁶ According to Rabe-Hesketh and Skrondal (2008), in a poisson model with random intercepts for the level-2 unit, robust estimation of standard errors should address potential overdispersion at level 1. For more information about the Huber-White estimator, see White (1980).

AN ESTIMATE OF PROPORTIONATE MIXING

As discussed above, research on segregation and relationship formation is often concerned with how people form ties within given “opportunity structures” and how observed rates of inter-racial-ethnic relationships compare to “proportionate mixing.” It is therefore useful before presenting the results to consider the racial and ethnic compositions of respondents’ in-school and out-of-school relationship opportunity structures and note what the distribution of relationships is likely to look like given proportionate mixing. It is very reasonable to define a respondent’s in-school opportunity structure in terms of the school’s student body. However, the out-of-school opportunity structure is much less easily defined. When Add Health respondents are asked how they knew their out-of-school boyfriends or girlfriends at the start of the relationship, they report knowing the person through a number of different contexts—including places of worship, residential neighborhoods,¹⁷ or through mutual friends—and in close to 30% of cases they report that they knew the partner in some other (i.e., miscellaneous) way or that the partner was a stranger when the relationship began. Although it will certainly be imperfect to use administrative boundaries to gauge out-of-school relationship opportunity structures, I assume temporarily just for the purposes of demonstration that many of respondents’ out-of-school relationships are likely to be with individuals who reside in their census tracts of residence, and I use the population of adolescents in respondents’ census tracts as a rough estimate of out-of-school relationship opportunity structures.¹⁸

Table 3 then shows the average proportion different-race-ethnicity, with the average proportion same race-ethnicity in parentheses, in respondents’ schools and census tracts, broken down into quartiles according to the main exposure of interest in the study, the proportion different-race-ethnicity in the school. The bottom quartile reflects the bottom 25% of the distribution for the proportion different-race-ethnicity variable—respondents in this quartile have the most opportunities for same-race-ethnicity dating and the fewest opportunities for cross-race-ethnicity dating in their schools. Alternatively, the top quartile reflects the top 25% of the distribution for the proportion different-race-ethnicity variable—respondents in this quartile have the most opportunities for cross-race-ethnicity dating and the fewest opportunities for same-race-ethnicity dating in their schools. One of the key points to note in this table is the positive correlation of .741 between the proportion different-race-ethnicity in respondents’ schools and

¹⁷In this question the boundaries of a neighborhood are undefined, and it is up to the respondent to decide who is or is not a neighbor.

¹⁸I also tried using respondents’ counties of residence to estimate out-of-school opportunity structures, and results were similar to those generated by census tracts.

TABLE 3
THE PROPORTION DIFFERENT-RACE-ETHNICITY AND PROPORTION SAME
RACE-ETHNICITY IN PARENTHESES OF RESPONDENTS' SCHOOLS AND
CENSUS TRACTS, DYADIC-LEVEL DATA STRATIFIED BY THE PROPORTION
DIFFERENT-RACE-ETHNICITY IN THE SCHOOL IN QUARTILES

	Bottom Quartile	Second Quartile	Third Quartile	Top Quartile
Proportion different-race-ethnicity in school ^a . . .	.15 (.85)	.27 (.73)	.49 (.51)	.82 (.18)
Proportion different-race-ethnicity adolescents (ages 12–20) in census tract ^b . . . . .	.11 (.89)	.11 (.89)	.33 (.67)	.70 (.30)
Pairwise correlation between proportion different in school and proportion different in tract: .74				

NOTE.—Cut-points for the quartiles are as follows: bottom $\leq .21$; second $> .21, \leq .33$; third $> .33, \leq .65$; top $> .65$.

^a $N = 10,902$.

^b $N = 10,837$.

census tracts. Not surprisingly, school and community population compositions are correlated. As we move from the bottom to the top quartile, respondents have more opportunities for cross-race-ethnicity dating and fewer opportunities for same-race-ethnicity dating both inside and outside of their schools.

On the other hand, if we compare the racial-ethnic compositions for the schools and census tracts within each quartile, it is apparent that the average respondent typically has more opportunities for same-race-ethnicity dating outside of schools relative to inside of schools. Within each quartile, the proportion same race-ethnicity is higher in the census tracts than in the schools. We can therefore conclude from table 1 that respondents in the higher quartiles have fewer opportunities for same-race-ethnicity dating both inside and outside of schools, relative to respondents in the lower quartiles; however, if respondents in the higher quartiles desire same-race-ethnicity relationships, dating outside of the school is typically a comparatively better strategy than dating inside the school.

We can now use the school and census tract compositions from table 3 to develop a rough estimate of what the distribution of relationships should look like given proportionate mixing. Assuming that the rate of out-of-school dating remains constant at the sample mean of 42% across all four quartiles, and assuming that the racial-ethnic composition of in-school relationships matches the racial-ethnic compositions of schools and the racial-ethnic composition of out-of-school relationships matches the racial-ethnic composition of adolescents in census tracts, figure 1 displays pre-

Inter-Racial-Ethnic Dating

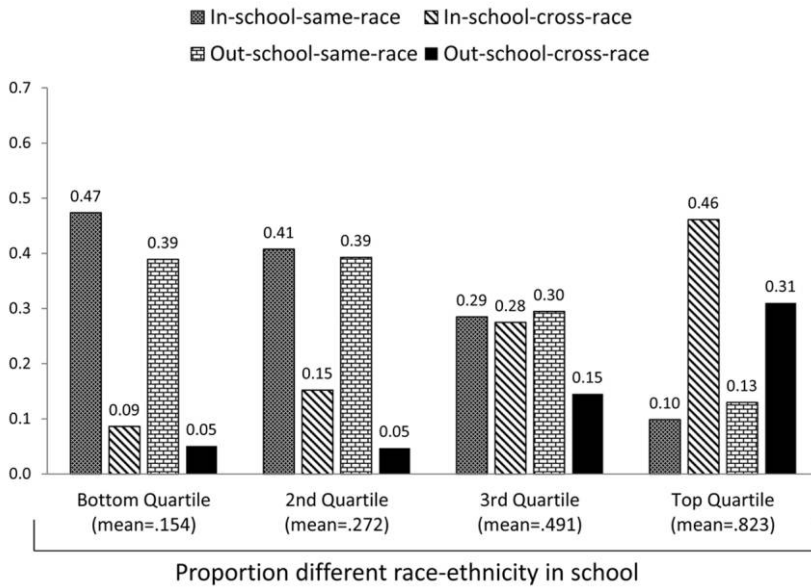


FIG. 1.—Predicted probabilities of relationship types based on proportionate mixing, stratified by the proportion different-race-ethnicity in the school (in quartiles). Predicted probabilities are based on school and tract compositions from table 3. Cut-points for the quartiles are as follows: bottom, $\leq .21$; second, $> .21, \leq .33$; third, $> .33, \leq .65$; top, $> .65$.

dicted probabilities for same- and cross-race-ethnicity relationships inside and outside of schools based on proportionate mixing, stratified across quartiles for the proportion different-race-ethnicity in the school.¹⁹ As we move from the bottom to the top quartile in this figure, the likelihood of in-school same-race-ethnicity relationships declines and the likelihood of in-school cross-race-ethnicity relationships increases. Given correlations between the school and tract compositions, we similarly find that, given proportionate mixing, the likelihood of out-of-school same-race-ethnicity relationships declines across the quartiles and the likelihood of out-of-school cross-race-ethnicity relationships increases. We can also note that in the top quartile in figure 1, where respondents have the fewest opportunities for same-race-ethnicity dating, proportionate mixing implies that the most

¹⁹To obtain the predicted probabilities presented in figure 1, I assumed that within each quartile, 58% of the relationships were in school and 42% were out of school. For in-school relationships, I multiplied 58% by the percentage of same-race-ethnicity and different-race-ethnicity students in the school. For out-of-school relationships, I multiplied 42% by the percentage of same-race-ethnicity and different-race-ethnicity adolescents in the census tract.

likely types of relationships for the average respondent in the sample are a cross-race-ethnicity relationship inside the school or a cross-race-ethnicity relationship outside the school. When interpreting the following results, these predicted probabilities based on proportionate mixing will provide a useful baseline point of comparison.

When replicating these predicted probabilities based on proportionate mixing for each of the six gender and racial-ethnic groups (i.e., for white females and males, black females and males, and Hispanic females and males), the trend in each type of relationship goes in the same direction for all groups. In other words, for all groups, the probability of a same-race-ethnicity relationship declines both inside and outside of schools, while the probability of a cross-race-ethnicity relationship increases both inside and outside of schools. Not surprisingly, these trends are somewhat less steep for whites, compared to blacks and Hispanics, since whites are a much larger share of the population. (The gender- and race-ethnicity-specific proportionate mixing figures are not shown for efficiency of space but are available by request.)

It is worth highlighting that, because of the correlations between school and community compositions, the likelihood of an out-of-school same-race-ethnicity relationship declines across the quartiles for the total sample and for all the subgroups, given proportion mixing. That is, the racial-ethnic compositions of out-of-school opportunity structures should generate a negative association between the proportion different-race-ethnicity in the school and the frequency of out-of-school same-race-ethnicity relationships for the total sample and all subgroups. Any evidence that the number of same-race-ethnicity relationships outside of the school does not decline as the proportion different-race-ethnicity in the school increases (e.g., if the frequency remains flat or increases) will be in contrast to the trends in the compositions of out-of-school opportunity structures. Such evidence will suggest that individuals forming out-of-school relationships are exhibiting strong tendencies toward same-race-ethnicity dating.

RESULTS

I begin by using the dyadic-level data to explore which boundaries (i.e., school or race-ethnicity) relationships are most likely to cross as the opportunities for intra- and inter-racial-ethnic dating within schools vary. Table 4 presents coefficients from a multinomial logistic regression model for the total sample predicting relationship type. All the coefficients in this table are expressed relative to the reference category of an in-school same-race-ethnicity relationship. According to the first row in this table, as the proportion of different race-ethnicity students in the school increases, and respondents consequently have fewer options for same-race-ethnicity dating

within the school, there is a statistically significant increase in the likelihood that a given relationship is an in-school cross-race-ethnicity relationship, an out-of-school same-race-ethnicity relationship, or an out-of-school cross-race-ethnicity relationship, relative to the reference category of an in-school same-race-ethnicity relationship. While the coefficients for the proportion different-race-ethnicity variable in this table suggest that school composition is a significant predictor of school and racial-ethnic boundary crossing in relationships, it is difficult to decipher trends in each specific type of relationship since these coefficients capture changes in both the reference category and the relationship type reflected in the coefficient. For a more intuitive picture of the trends in each type of relationship, we can turn to figure 2, which displays predicted probabilities stratified across the quartiles of the proportion different-race-ethnicity variable.

In figure 2, as we move from the bottom quartile, where respondents have the most opportunities for same-race-ethnicity dating in the school, to the top quartile, where respondents have the most opportunities for cross-race-ethnicity dating in the school, we see unsurprisingly that the probability of an in-school same-race-ethnicity relationship decreases, while the probability of an in-school cross-race-ethnicity relationship increases. Turning to the out-of-school relationships, we see that the probability of an out-of-school cross-race-ethnicity relationship increases across the quartiles. This was expected since the census tract estimates in table 3 indicated that respondents in the higher quartiles have more opportunities for cross-race-ethnicity dating outside as well as inside schools. However, in contrast to the expected trends based on the census tract estimates, the probability of an out-of-school same-race-ethnicity relationship does not decline across the quartiles but rather remains relatively flat, increasingly slightly in the third and top quartiles. While opportunities for same-race-ethnicity dating outside of schools are likely shrinking across the quartiles, probabilities for this type of relationship remain stable, suggesting that out-of-school same-race-ethnicity relationships are more common in the higher quartiles than the out-of-school opportunity structure would lead us to expect.

It is interesting to now focus on the probabilities in the top quartile to gauge adolescents' relationship behavior when their own racial-ethnic group is a small share of the school's student body. In the top quartile, where, on average, about 80% of the opposite-sex students in the school are a different race-ethnicity than the respondent, the most common type of relationship is not an in-school cross-race-ethnicity relationship (as implied by proportionate mixing) but rather an out-of-school same-race-ethnicity relationship. When presented with many opportunities for cross-race-ethnicity dating within schools, a common response seems to be forming same-race-ethnicity relationships outside of school boundaries. It is also interesting to note that in-school relationships in the top quartile have

TABLE 4
THE ASSOCIATION BETWEEN SCHOOL RACIAL-ETHNIC COMPOSITION AND WHETHER
A GIVEN RELATIONSHIP CROSSES SCHOOL OR RACIAL-ETHNIC BOUNDARIES

	In-School Cross- Race	Out-of- School Same-Race	Out-of- School Cross-Race
Proportion-different-race-ethnicity in school ...	5.63*** (.55)	2.98*** (.41)	5.80*** (.54)
Respondent controls:			
Race-ethnicity (ref=non-Hispanic white):			
Non-Hispanic black	-1.11*** (.26)	-.40* (.17)	-1.34*** (.27)
Hispanic	1.33*** (.37)	.51+ (.31)	1.15** (.40)
Non-Hispanic other	1.58*** (.38)	.05 (.28)	1.32** (.40)
Female .....	.33+ (.18)	.60*** (.12)	.63*** (.16)
Age .....	.06 (.06)	.29*** (.05)	.22** (.07)
Immigrant status (ref=nonimmigrant):			
First-generation immigrant	-.72+ (.40)	-.14 (.31)	-.81+ (.43)
Second-generation immigrant .....	.04 (.33)	-.00 (.21)	-.27 (.34)
Parental SES .....	.04 (.07)	.06 (.04)	.02 (.07)
Total number of relationships .....	.15*** (.04)	.13*** (.03)	.29*** (.05)
Wave 2 .....	.13 (.16)	.06 (.09)	.08 (.14)
School controls:			
Average SES .....	.07 (.48)	-1.04** (.35)	.14 (.54)
Racial-ethnic SES inequality in the school ...	-.05** (.02)	-.01 (.01)	-.05** (.02)
Proportion female	-.76 (2.21)	.83 (1.69)	-1.27 (2.65)
School size (hundreds)	-.06*** (.02)	-.03* (.01)	-.05** (.02)
Magnet school	-.18 (.29)	.12 (.23)	-.07 (.28)
Area-based admissions	-.26 (.17)	-.34** (.13)	-.46* (.22)
Location (ref=urban):			
Suburban .....	.09 (.16)	.17 (.11)	-.11 (.16)
Rural .....	.05 (.29)	.03 (.19)	-.38 (.29)
Region (ref=West):			
Midwest .....	.01 (.24)	.05 (.15)	.11 (.25)
South	-.18 (.22)	.06 (.17)	-.05 (.21)
Northeast	-.19 (.21)	-.21 (.14)	-.01 (.23)

TABLE 4 (Continued)

	In-School Cross- Race	Out-of- School Same-Race	Out-of- School Cross-Race
Constant	-4.86 (3.28)	-.73 (2.43)	-8.07* (3.82)
N (level 1, relationships)		10,902	
N (level 2, respondents)		4,686	
N (level 3, schools)		121	

NOTE.—The reference category for this association is “in-school, same race”; coefficients are from a multinomial logistic regression model. Numbers in parentheses are SEs.

⁺ $P < .10$.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

roughly similar probabilities of being same-race-ethnicity (.239) or cross-race-ethnicity (.226). Compared to the bottom quartile where in-school relationships are several times more likely to be same-race-ethnicity (.585) than cross-race-ethnicity (.037), this reflects a very large relative increase in the likelihood of an in-school cross-race-ethnicity relationship. However, this rate of in-school cross-race-ethnicity dating is still well below the level implied by proportionate mixing (.461 in fig. 1).

Table 5 presents coefficients from multinomial logistic regression models stratified by race-ethnicity and gender. For efficiency of space, this table only displays the coefficients for the proportion different-race-ethnicity variable. Coefficients for the control variables are not shown but are available by request. As was the case with the total sample, these coefficients capture simultaneous trends in the both the reference category and the category of the coefficient. Predicted probabilities are more intuitive to interpret, and they are presented for each racial-ethnic and gender group in figure 3. In order to maintain a relatively even distribution of the data across the quartiles, the cut-points for the quartiles are calculated based on the racial-ethnic and gender-specific distributions for the proportion different-race-ethnicity variable.

For the categories of in-school same-race-ethnicity relationships, in-school cross-race-ethnicity relationships, and out-of-school cross-race-ethnicity relationships, the directions of the trends across the quartiles are consistent for all the race-ethnicity and gender groups in figure 3. Although there are differences in baseline rates and rates of change, all the groups display decreases in-school same-race-ethnicity relationships and increases in both in-school cross-race-ethnicity and out-of-school cross-race-ethnicity relationships across the quartiles. However, for the category of out-of-school same-race-ethnicity relationships, we see notably different patterns

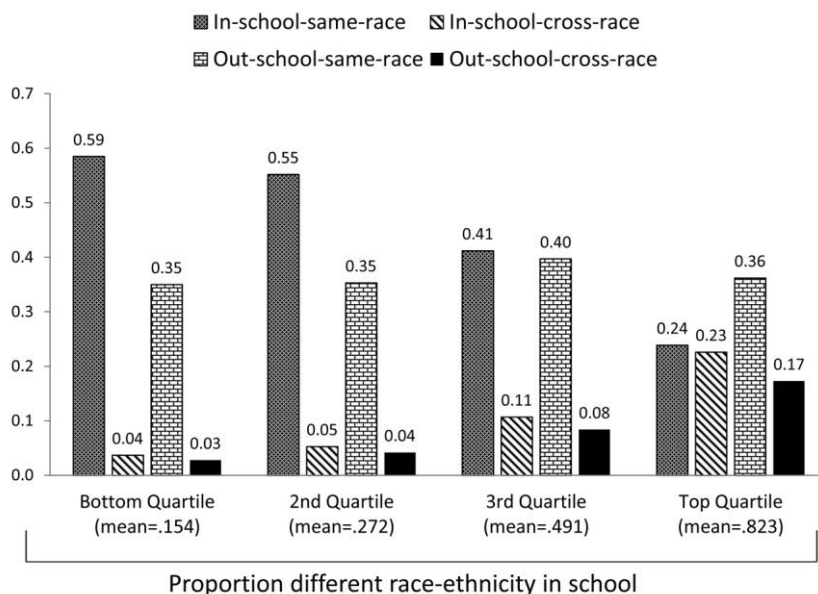


FIG. 2.—Predicted probabilities of relationship types based on multinomial logit model, stratified by the proportion different-race-ethnicity in the school (in quartiles). Cut-points for the quartiles are as follows: bottom, $\leq .21$; second, $> .21, \leq .33$; third, $> .33, \leq .65$; top, $> .65$.

across the racial-ethnic and gender groups. The probabilities of out-of-school same-race-ethnicity relationships appear to increase nonmonotonically across the quartiles for white males and black females but appear to remain quite flat for white females. For Hispanic females, on the other hand, the probabilities of out-of-school same-race-ethnicity relationships decline notably across the quartiles. For black males and Hispanic males, trends in out-of-school same-race-ethnicity relationships are less clear, although overall there is a slight decrease in the probabilities from the bottom to the top quartiles. These trends provide a preliminary picture of racial-ethnic and gender variation in associations between school compositions and out-of-school same-race-ethnicity relationships. These associations are tested further with individual-level data below.

It is useful to again focus on the probabilities in the top quartiles to gauge how adolescents in different racial-ethnic and gender groups behave with regard to dating when their own racial-ethnic group is a small share of the student body. However, comparing the top quartiles across groups in figure 3 is problematic because the quartile cut-points are gender- and race-ethnicity specific. In order to present a uniform cut-point, figure 4 displays predicted probabilities for respondents who have a value of .75 or

TABLE 5
THE ASSOCIATION BETWEEN SCHOOL RACIAL-ETHNIC COMPOSITION AND WHETHER
A GIVEN RELATIONSHIP CROSSES SCHOOL OR RACIAL-ETHNIC BOUNDARIES,
BY RESPONDENT'S RACE-ETHNICITY AND GENDER

	In-School Same-Race (Reference Category)	In-School Cross-Race	Out-of-School Same-Race	Out-of-School Cross-Race
Model 1: white females:				
Proportion different-race- ethnicity in school . . . . .	...	1.84+ (1.04)	.85 (.84)	4.20*** (1.09)
<i>N</i> (level 1, relationships)	3,379			
<i>N</i> (level 2, respondents)	1,472			
<i>N</i> (level 3, schools)	105			
Model 2: white males:				
Proportion different-race- ethnicity in school . . . . .	...	6.13*** (1.31)	4.55*** (.94)	7.44*** (1.38)
<i>N</i> (level 1, relationships)	3,295			
<i>N</i> (level 2, respondents)	1,379			
<i>N</i> (level 3, schools)	110			
Model 3: black females:				
Proportion different-race- ethnicity in school . . . . .	...	4.84** (1.68)	2.97* (1.19)	3.61* (1.55)
<i>N</i> (level 1, relationships)	1,097			
<i>N</i> (level 2, respondents)	513			
<i>N</i> (level 3, schools)	70			
Model 4: black males:				
Proportion different-race- ethnicity in school . . . . .	...	4.92*** (1.40)	1.30 (1.04)	6.03*** (1.31)
<i>N</i> (level 1, relationships)	1,050			
<i>N</i> (level 2, respondents)	391			
<i>N</i> (level 3, schools)	66			
Model 5: Hispanic females:				
Proportion different-race- ethnicity in school . . . . .	...	10.14*** (2.71)	5.84** (2.20)	7.76*** (2.05)
<i>N</i> (level 1, relationships)	702			
<i>N</i> (level 2, respondents)	349			
<i>N</i> (level 3, schools)	63			
Model 6: Hispanic males:				
Proportion different-race- ethnicity in school . . . . .	...	6.47** (2.14)	3.62+ (2.11)	5.52** (2.03)
<i>N</i> (level 1, relationships)	907			
<i>N</i> (level 2, respondents)	363			
<i>N</i> (level 3, schools)	71			

NOTE.—Model 1 for white females, model 3 for black females, model 4 for black males, model 5 for Hispanic females, and model 6 for Hispanic males include all the control variables listed in table 4. Model 3 for white males includes all the control variables listed in table 4 except for the dichotomous indicator for area-based admissions. This covariate is excluded from model 3 because more restricted variation in the outcome for white males made it difficult to estimate model 3 with all the control variables. Coefficients are from multinomial logistic regression models. Coefficients for the control variables are not shown but are available by request from the author. Numbers in parentheses are SEs.

+ $P < .10$.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

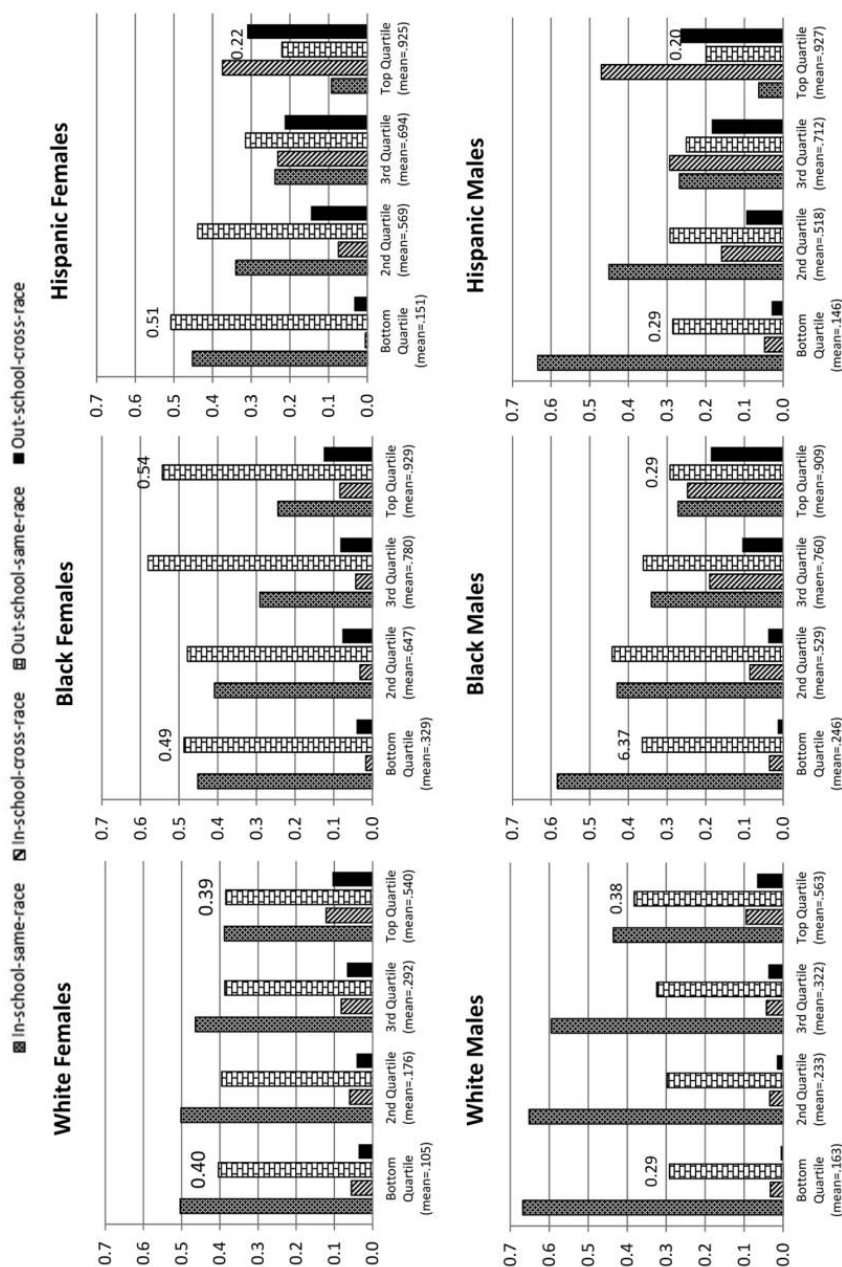


FIG. 3.—Predicted probabilities of relationship types for racial-ethnic and gender groups, stratified by the proportion different-race-ethnicity in the school (in quartiles). Predicted probabilities are based on the multinomial logistic regression models presented in table 5.

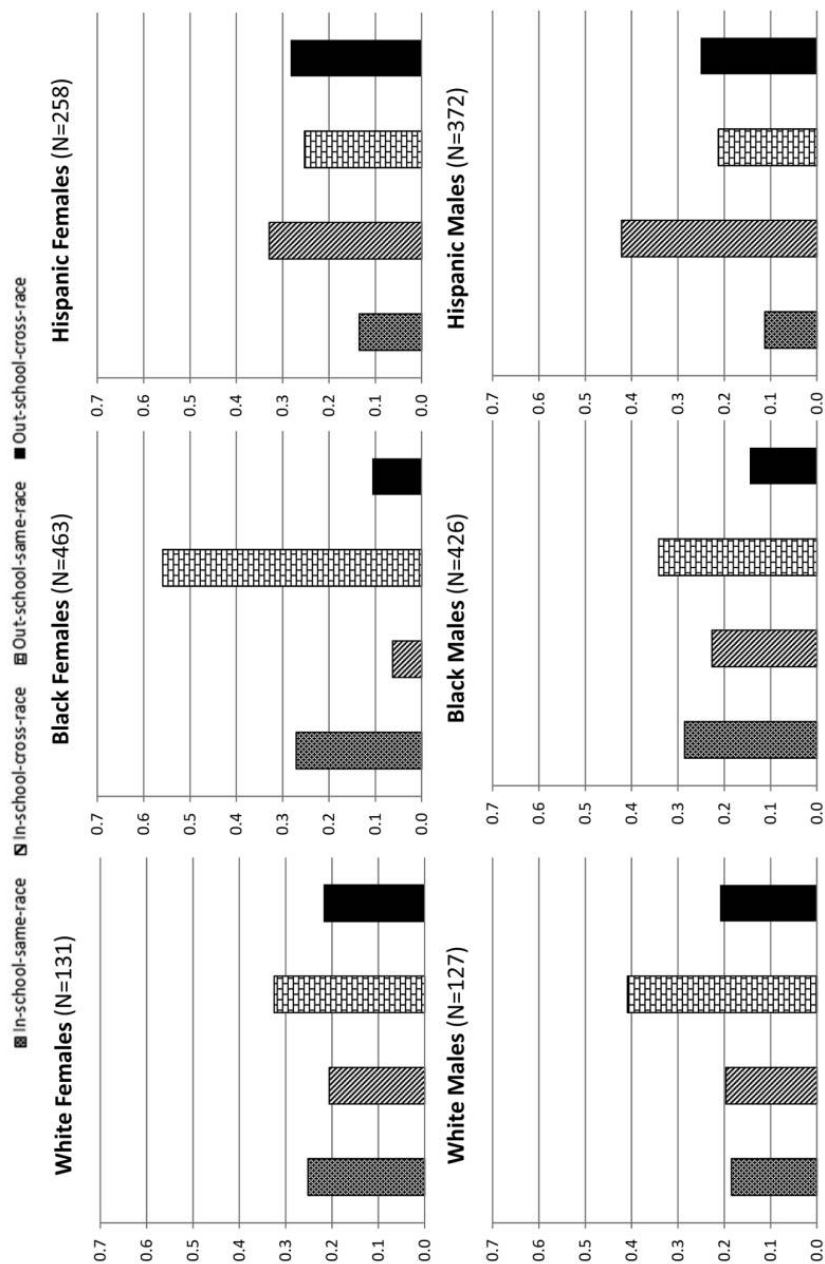


FIG. 4.—Predicted probabilities of relationship types for racial-ethnic and gender groups when proportion different-race-ethnicity is greater than or equal to .75. Predicted probabilities are based on the multinomial logistic regression models presented in table 5.

higher on the proportion different-race-ethnicity variable. When respondents are in schools where, at most, only 25% of the opposite-sex students are from their own racial-ethnic group, the most common type of relationship for white males and females and black males and females is an out-of-school same-race-ethnicity relationship. The probabilities of out-of-school same-race-ethnicity relationships are highest for black females and second highest for white males. However, for Hispanic males and females facing similar constraints in terms of same-race-ethnicity dating within their schools, the most likely type of relationship is an in-school cross-race-ethnicity relationship.

The dyadic-level data presented so far provide a useful picture of how the distribution of observed relationships changes as the opportunities for same- and cross-race-ethnicity dating within schools vary. However, all of the dyadic-level observations are contingent upon a relationship being formed. To further investigate questions about increases in frequencies of out-of-school relationships and specifically same-race-ethnicity relationships outside of schools, I turn to individual-level data which include respondents reporting zero relationships.

Table 6 presents exponentiated coefficients from poisson models predicting the number of out-of-school relationships that respondents report. For the total sample, a one-unit increase in the proportion different-race-ethnicity variable is associated with about a 1.5 factor increase in the number of out-of-school relationships reported, adjusting for the total number of relationships the respondent reports as well as the other control variables. Stratifying the model by race-ethnicity and gender, we see that the positive association between the proportion different-race-ethnicity variable and out-of-school relationships is concentrated among white males, white females, and black females. For these three groups, a one-unit increase in the proportion different-race-ethnicity variable is associated with about a 2–2.5 factor increase in the count of out-of-school relationships. Alternatively, for black males, Hispanic females, and Hispanic males, the proportion different-race-ethnicity variable is not significantly associated with the number of out-of-school relationships.

To gain greater insight into whether the increases in out-of-school dating among white females, white males, and black females reflect an increase in specifically same-race-ethnicity dating outside of schools, we turn to table 7, which presents exponentiated coefficients from poisson models predicting respondents' counts of out-of-school same-race-ethnicity relationships. In the first model for the total sample, there is no significant association between the proportion different-race-ethnicity in the school and the number of out-of-school same-race-ethnicity relationships. Looking across the models stratified by gender and race-ethnicity, this null as-

sociation for the total sample appears to reflect contrasting results across the subgroups. For white females, there is no significant association between the proportion different-race-ethnicity variable and the number of out-of-school same-race-ethnicity relationships; the exponentiated coefficient is close to one and is not statistically significant. The positive association between the proportion different-race-ethnicity variable and the number of out-of-school relationships for white females in the previous table does not appear to reflect an increase in the number of specifically same-race-ethnicity relationships outside of the school. For white males and black females, on the other hand, the proportion different-race-ethnicity variable is positively associated with the number of out-of-school same-race-ethnicity relationships. The coefficients for white males and black females are roughly comparable in magnitudes (the white male coefficient is very slightly larger than the black female coefficient). However, this association is statistically significant at the .05 level for black females but is only significant at the .10 level for white males. This difference in significance levels across the white male and black female models may emerge because males are generally less likely to date outside of their schools than females and, since whites are a numerical majority, fewer of them have high values on the proportion different-race-ethnicity variable. In sum, for black females, the positive association between the proportion different-race-ethnicity variable and the number of out-of-school relationships in the previous table appears to reflect in substantial part an increase in the number of same-race-ethnicity relationships outside of the schools. This also appears to be the case for white males, although this finding needs to be interpreted more cautiously given the borderline significance level. For black males and Hispanic males, the proportion different-race-ethnicity variable is significantly negatively associated with the number of out-of-school same-race relationships, which coincides with the trends in the racial-ethnic compositions of out-of-school opportunity structures presented earlier. For Hispanic females, the coefficient for the proportion different-race-ethnicity variable is negative and comparable in magnitude to the black male coefficient, although it is not statistically significant; this is likely because the Hispanic subsample is smaller than the black subsample in this analysis.

Having considered the central findings regarding school racial-ethnic composition, we can now review some notable results related to the individual- and school-level control variables. First, out-of-school relationships are more common for older respondents and female respondents. This pattern, which is apparent in coefficients presented in both table 4 and table 6, conforms to findings from a handful of studies examining discordant relationships and risky sexual behaviors (Ford, Sohn, and Lepkowski 2003; Ford and Lepkowski 2004). Second, Hispanic and other-race

TABLE 6
THE ASSOCIATION BETWEEN SCHOOL RACIAL-ETHNIC COMPOSITION
AND COUNTS OF OUT-OF-SCHOOL RELATIONSHIPS

	WHOLE SAMPLE	WHITE		BLACK		HISPANIC	
		Female	Male	Female	Male	Female	Male
Proportion different-race-ethnicity in school . . .	1.46*** (.14)	1.95** (.50)	2.60*** (.58)	1.95** (.43)	.98 (.24)	1.01 (.40)	.64 (.21)
Respondent controls:							
Race-ethnicity (ref=non-Hispanic white):							
Non-Hispanic black . . . . .	.96 (.06)						
Hispanic . . . . .	.95 (.10)						
Non-Hispanic other . . . . .	.87 (.08)						
Female	1.25*** (.05)						
Age	1.11*** (.02)	1.19*** (.03)	1.12*** (.03)	1.18*** (.06)	1.05 (.05)	1.14* (.07)	1.02 (.04)
Immigrant status (ref=nonimmigrant):							
First-generation immigrant . . . . .	.98 (.11)	1.02 (.30)	.75 (.13)	.34+ (.21)	1.16 (.48)	1.29 (.28)	.75* (.11)
Second-generation immigrant . . . . .	.98 (.11)	.93 (.21)	1.28 (.22)	1.15 (.28)	1.50 (.47)	.84 (.15)	.98 (.19)
Parental SES	1.00 (.02)	.98 (.03)	.99 (.04)	1.05+ (.03)	.96 (.05)	1.03 (.06)	.98 (.05)
Total number of relationships	1.46*** (.03)	1.47*** (.03)	1.51*** (.03)	1.49*** (.04)	1.47*** (.04)	1.60*** (.06)	1.39*** (.07)
School controls:							
Average SES . . . . .	.78 (.14)	.71 (.20)	.93 (.21)	1.34 (.35)	.96 (.27)	.49 (.23)	1.47 (.63)

Racial-ethnic SES inequality in the school	1.01 (.01)	.99 (.01)	1.02** (.01)	1.04*** (.01)	1.02 (.01)	1.02 (.01)	.98* (.01)
Proportion female	.60 (.40)	1.06 (1.51)	.28 (.33)	.33 (.27)	.31 (.38)	.42 (.74)	.18 (.30)
School size (hundreds)	1.00 (.01)	.99 (.01)	1.01 (.01)	.98+ (.01)	.98+ (.01)	1.00 (.02)	1.00 (.01)
Magnet school	1.12 (.09)	1.02 (.24)	.98 (.23)	1.23* (.11)	1.09 (.15)	.722+ (.13)	.76 (.13)
Area-based admissions	.97 (.06)	.97 (.11)	1.17 (.15)	1.27** (.11)	1.02 (.12)	1.00 (.14)	.78+ (.10)
Location (ref=urban):							
Suburban	.99 (.05)	1.04 (.10)	1.01 (.10)	1.12 (.08)	.85 (.09)	.81 (.12)	.18 (.17)
Rural	.85 (.09)	.79 (.14)	.95 (.12)	.65** (.10)	.85 (.18)	.51+ (.20)	.59 (.26)
Region (ref=West):							
Midwest	1.08 (.09)	1.24 (.20)	1.05 (.13)	1.34* (.15)	1.09 (.18)	1.59 (.50)	1.61* (.35)
South	1.08 (.07)	1.37* (.17)	.86 (.09)	1.02 (.11)	.75* (.10)	1.06 (.19)	1.72** (.31)
Northeast	1.05 (.09)	1.23 (.20)	1.04 (.13)	1.18 (.13)	.62** (.11)	.75 (.15)	1.41* (.23)
N (level 1, respondents)	6,301	1,939	1,791	686	514	485	462
N (level 2, schools)	122	108	111	77	71	72	79

NOTE.—This table contains exponentiated coefficients from Poisson models. The proportion different-race-ethnicity coefficients for the white female, white male, and black female models are not statistically distinguishable. The proportion different-race-ethnicity coefficients for the black male, Hispanic female, and Hispanic male models similarly cannot be statistically distinguished. However, there are several significant differences between the white male, white female, and black female coefficients on the one hand and the black male, Hispanic female, and Hispanic male coefficients on the other. Numbers in parentheses are SEs.

+ $P < .10$.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

TABLE 7
THE ASSOCIATION BETWEEN SCHOOL RACIAL-ETHNIC COMPOSITION AND COUNTS
OF OUT-OF-SCHOOL SAME-RACE-ETHNICITY RELATIONSHIPS

	WHOLE SAMPLE	WHITE		BLACK		HISPANIC	
		Female	Male	Female	Male	Female	Male
Proportion different-race-ethnicity in school ...	.78 (.13)	.93 (.34)	1.77+ (.55)	1.59* (.37)	.42** (.14)	.42 (.36)	.24** (.12)
Respondent controls:							
Race-ethnicity (ref = non-Hispanic white):							
Non-Hispanic black	1.11 (.09)						
Hispanic .....	.74* (.10)						
Non-Hispanic other .....	.54** (.11)						
Female	1.26*** (.06)						
Age	1.13*** (.03)	1.22*** (.04)	1.11** (.03)	1.16** (.05)	1.12* (.06)	1.11 (.11)	1.08 (.06)
Immigrant status (ref = nonimmigrant):							
First-generation immigrant	1.18 (.18)	.74 (.20)	.87 (.17)	.35 (.24)	.94 (.69)	2.09** (.52)	1.72* (.36)
Second-generation immigrant	1.09 (.13)	.89 (.30)	1.27 (.25)	1.07 (.30)	1.74 (.69)	.98 (.22)	1.84** (.36)
Parental SES	1.00 (.02)	1.01 (.03)	.98 (.04)	1.04 (.04)	.98 (.06)	1.05 (.09)	1.01 (.04)
Total number of relationships	1.43*** (.02)	1.43*** (.04)	1.49*** (.03)	1.48*** (.04)	1.44*** (.03)	1.74*** (.09)	1.38*** (.06)

School controls:									
Average SES	.66*	.71	.84	.76	.79	.18**	.51		
	(.13)	(.26)	(.21)	(.25)	(.27)	(.11)	(.41)		
Racial-ethnic SES inequality									
in the school	1.02*	1.00	1.02*	1.04***	1.02	1.05+	.98		
	(.01)	(.01)	(.01)	(.01)	(.01)	(.03)	(.02)		
Proportion female	.97	2.05	.94	.41	.07*	1.34	.04		
	(.73)	(3.34)	(1.11)	(.41)	(.09)	(4.17)	(.11)		
School size (hundreds)	1.01	1.00	1.00	.99	.99	1.02	.99		
	(.01)	(.01)	(.01)	(.01)	(.01)	(.03)	(.02)		
Magnet school	1.11	1.00	.94	1.20+	1.20	.59	.68		
	(.13)	(.42)	(.24)	(.12)	(.19)	(.20)	(.16)		
Area-based admissions	1.00	1.01	1.17	1.28*	.87	1.05	.78		
	(.09)	(.16)	(.19)	(.14)	(.11)	(.29)	(.14)		
Location (ref = urban):									
Suburban	1.00	1.02	1.12	1.17	.65**	.73	1.12		
	(.07)	(.13)	(.13)	(.12)	(.10)	(.17)	(.21)		
Rural	.87	.81	1.07	.75	.83	.28	.59		
	(.11)	(.17)	(.16)	(.14)	(.20)	(.22)	(.28)		
Region (ref=West):									
Midwest	1.03	1.18	1.12	1.50**	.83	1.71	2.55**		
	(.12)	(.24)	(.16)	(.25)	(.15)	(.80)	(.90)		
South	1.04	1.48*	.93	1.08	.71*	.92	1.12		
	(.10)	(.25)	(.11)	(.19)	(.11)	(.27)	(.24)		
Northeast	1.00	1.38+	1.03	1.31+	.24***	.60	.63*		
	(.11)	(.26)	(.16)	(.20)	(.08)	(.23)	(.15)		
N (level 1, respondents)	6,301	1,939	1,791	686	514	485	462		
N (level 2, schools)	122	108	111	77	71	72	79		

NOTE.—This table contains exponentiated coefficients from Poisson models. Numbers in parentheses are SEs.

+ $P < .10$.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

adolescents are more likely than white and black adolescents to date across racial-ethnic lines both outside and inside the school. This pattern, which is apparent in the multinomial results in table 4, conforms to findings from several prior studies of adolescent dating relationships (e.g., Vaquera and Kao 2005; Kreager 2008). Third, being a first-generation immigrant is negatively associated with inter-racial-ethnic dating, both inside and outside of schools (see the multinomial logit results in table 4). And, for Hispanic respondents, being a first-generation immigrant is positively associated with forming more same-race-ethnicity relationships outside of the school (see the poisson results in table 7).

Turning to the school-level control variables, being in a school characterized by greater socioeconomic inequality across racial-ethnic groups is negatively associated with inter-racial-ethnic dating both inside and outside of the school (see the multinomial logit results in table 4). This result supports Blau's (1977*b*) hypothesis that correlations between multiple dimensions of stratification hinder cross-group relationships. In line with this hypothesis, table 7 reveals that school racial-ethnic inequality is also positively associated with the number of same-race-ethnicity relationships formed outside of school boundaries, but only for white males and black females. Finally, being in a larger school, which should increase one's overall pool of potential partners, is negatively associated with crossing both school and racial-ethnic boundaries in adolescent dating relationships (see the multinomial logit results in table 4). When respondents have more partners to choose from in the school, racial-ethnic and institutional homophily are more common.

DISCUSSION AND CONCLUSION

Focusing on romantic relationships, which are often seen as a barometer of social distance, this analysis sought to understand how adolescents from different racial-ethnic and gender groups respond when they have many opportunities for inter-racial-ethnic dating within their schools. Which groups respond by primarily forming inter-racial-ethnic relationships, and which groups appear to "work around" opportunities for inter-racial-ethnic dating by forming more same-race-ethnicity relationships outside of school boundaries? Considering the predicted probabilities for respondents attending schools in which at least 75% of the opposite-sex students are from a different racial-ethnic group (fig. 4), we saw that when Hispanic respondents have lots of opportunities for inter-racial-ethnic dating in their schools, they are most likely to date non-Hispanic partners within their schools. However, when white and black respondents have similarly ample opportunities for inter-racial-ethnic dating in their schools, they are most likely to

date someone from their own racial-ethnic group outside of their schools. White males and black females in these circumstances are particularly likely to date same-race-ethnicity partners outside of the school. Individual-level models confirmed a positive association between the availability of different-race-ethnicity potential partners within the school and the frequency of same-race-ethnicity relationships outside of the school for black females and white males, although for white males the association was borderline significant. In sum, black females and white males appear most likely to “work around” inter-racial-ethnic dating in their schools, whereas Hispanics, both males and females, appear most likely to date across racial-ethnic boundaries within the school.

White females’ and black males’ relationship patterns appear to fall somewhere in between Hispanics on the one hand and black females and white males on the other hand. When in a school where at least 75% of the opposite-sex students are from a different racial-ethnic group, the modal relationship category for white females and black males was an out-of-school same-race-ethnicity relationship. However, for white females and black males, the difference between this category and the other relationship categories was not nearly as stark as for black females and white males. Further, in the individual-level models, there was no positive association between the proportion different-race-ethnicity variable and out-of-school dating for black males. And, while white females were more likely to date outside the school as the proportion different-race-ethnicity variable increased, they did not appear to be forming more specifically same-race-ethnicity relationships outside of the school.

Considering these results in terms of Blau’s structural propositions, the behavior of Hispanics fits most closely with the propinquity principle—when school-based opportunity structures allow for more inter-racial-ethnic dating, the main behavioral response for Hispanics is more relationships that cross racial-ethnic boundaries. On the other hand, the behavior of black females and white males fits most closely with Blau’s propositions regarding numerical constraints and the crossing of alternative boundaries. For white males and black females, when school-based opportunity structures provide more potential cross-race-ethnicity partners, and consequently there are numerical constraints in terms of same-race-ethnicity potential partners, the main behavioral response is more relationships that cross alternative (i.e., school) boundaries rather than racial-ethnic boundaries.

For the average respondent in this analysis, 40% of the potential dating partners in the school were from a different racial-ethnic group. Following long-term declines in school and community segregation and rising immigration from Latin America and Asia, these individuals attending U.S. high schools in the mid-to-late 1990s had substantial structural opportunities for

inter-racial-ethnic romances. But, behavioral responses to these structural opportunities were very different across gender and racial-ethnic groups. Two cultural and historical factors are critical in making sense of these varying behavioral responses. First, legacies of slavery may continue to isolate African-Americans when it comes to romantic pairings in the contemporary United States. As Yancey (2009) argues, conceptualizations of biological differences between whites and blacks that helped to legitimate slavery and the one-drop rule that grew out of these beliefs have lingering residues that generate stigma and sanctions against interracial romances involving black partners. Second, and likely more important given the strong gender asymmetries in the white and black results, is Eurocentric norms of beauty that apply more strongly to women than to men. Many scholars have written about how mainstream standards of feminine beauty privilege traditionally European features (e.g., Craig 2002; Patton 2006), and survey research shows that the correlation between lighter skin tones and perceived physical attractiveness applies much more strongly to women than men (Hill 2002). This construction of feminine beauty means that barriers to interracial dating tend to be most pronounced for black women. It is commonly found that romances between black men and white women are much more common than romances between black women and white men (Kennedy 2003; Yancey 2009). Since blacks are a much smaller share of the U.S. population than whites, the structural consequence of these cultural barriers is that black women in the United States typically have more limited pools of potential partners than any other racial-ethnic and gender group. For young black women attending schools with relatively few black men, these constraints should be particularly pronounced, and they appear to lead to an increased likelihood of dating black men outside of the school. Evidence that the proportion different-race-ethnicity variable was associated with more same-race-ethnicity relationships outside of school boundaries for black females and white males points to a large social distance between these two groups with regard to dating and romance.

For young black women and white men, forming more same-race-ethnicity relationships outside of school boundaries may, on the one hand, reflect a positive adaptive behavior. Since adolescents involved in inter-racial-ethnic romances may face subtle stigma and sanctions in their schools and communities (Vaquera and Kao 2005; Wang et al. 2006; Kreager 2008), avoiding these relationships may be a well-reasoned and advantageous strategy for individuals. Forming same-race-ethnicity relationships outside of the school may be a particularly important option for young black women in schools with few other black students since same-race-ethnicity peer relationships can be a critical ingredient in the development of positive racial identities among black youth (Tatum 2003, 2004). However, on the other

hand, alternative evidence reviewed above (i.e., Ford and Lepkowski [2004] and my own comparisons of respondents' in- and out-of-school relationships) suggests that out-of-school relationships may involve riskier sexual behaviors, particularly for young women whose out-of-school partners are often substantially older. From this perspective, turning outside of the school to satisfy a need for same-race-ethnicity partners may be a risky adaptive strategy, particularly for young black women.

Results for Hispanic males and females, which suggest that a high value on the proportion different-race-ethnicity variable primarily fosters inter-racial-ethnic relationships, reflects the fact that Hispanics in the United States do not face the same historical legacy as African-Americans and may be categorized by themselves and others as white or black. Many recent Hispanic immigrants also come from native countries where racial mixing is much more common than in the United States (Rodriguez 2003). Some researchers have posited that, for these reasons, the growth of the Hispanic population may help to break down traditional white-black racial barriers in the United States (for a review of this topic, see Lee and Bean [2004]). And, at first pass, results from this analysis indeed suggest that Hispanic youth are particularly well positioned to reduce social distances across racial and ethnic groups. However, it is also important to note that Hispanics who date across racial-ethnic boundaries are more likely to date white partners than black partners, and this is particularly true for Hispanic males whose choices are likely being shaped by Euro-centric norms of female beauty. Turning to the dyadic-level data used in this analysis, and keeping in mind that about 12% of the respondents included in the analysis were non-Hispanic black, we can note that, of the non-Hispanic females that Hispanic males date, only 4% of them are black women. However, of the non-Hispanic males that Hispanic females date, 12% of them are black men. Therefore, while Hispanic youth in diverse schools are making important strides in reducing social distances in romantic relationships, these strides are occurring in a highly gendered way that may further limit the partner pools of young black women.

Results also showed that the proportion different-race-ethnicity in the school was positively associated with the frequency of out-of-school romantic relationships for white males, white females, and black females, but not for the other gender and racial-ethnic groups. Considering this result in terms of Feld's focus theory of social networks, it appears that when schools provide many opportunities for cross-race-ethnicity dating, and by extension fewer opportunities for same-race-ethnicity dating, they are weaker foci for the romantic relationships of some groups, but not necessarily others. The increases in out-of-school relationships among black females appeared to primarily reflect an increase in out-of-school same-race-ethnicity partners,

but this pattern was less pronounced among white males and did not apply to white females. This suggests that adolescents may have varying motivations for forming out-of-school relationships. Some white males and black females might be primarily motivated by a greater availability of same-race-ethnicity partners outside of the school, whereas white females may simply have weaker overall attachment to the school. However, regardless of why some adolescents who are numerical minorities in their schools are more likely to date outside of the school, these findings suggest that policies that attempt to use institutional diversity as a way to reduce social distance across racial-ethnic groups—while undoubtedly worthwhile and important in the U.S. context—may also be complicated by the fact that the role of the institution in focusing social relationships may weaken (for at least some groups) as the racial-ethnic composition of the institution becomes more diverse.

Before concluding, a few caveats and cautions should be noted. First, the results of this analysis describe varying relationship behaviors by different groups across different contexts. Because of unmeasured selection processes that lead people into different contexts and different types of relationships, the results are descriptive and must not be interpreted in terms of causal effects of school or individual attributes. Related to this, the varying behaviors across the gender and racial-ethnic groups cannot be interpreted as reflecting individuals' or groups' preferences because relationship formation is interdependent. This analysis could not decipher whether a given group's behavior reflects their preferences, a response to constraints generated by another group's preferences, or, most likely, some combination of the two. Second, since this analysis relied on respondents' reports of partners' characteristics, the information on partners may be influenced by respondents' perceptions. A particular concern here is the possibility that respondents may downplay heterogeneity—for instance, if a white respondent reports that his or her partner is white when the partner would describe himself or herself as Hispanic. In this case, the analysis might overestimate the number of same-race-ethnicity relationships, and, if tendencies to downplay heterogeneity are stronger among respondents in less diverse schools, we might overestimate the association between being in a less diverse school and having more same-race-ethnicity relationships. Third, it is conceivable that the dynamics documented in this study might operate differently for subsets of relationships—for instance, for casual sexual relationships as opposed to highly committed nonsexual relationships. Unfortunately, an insufficient number of observations did not allow me to test for such heterogeneity, particularly within the racial-ethnic and gender subgroups. It should be kept in mind that the above findings reflect an overall pattern for all of the reported relationships and may not apply to more specific subsets of relationships.

Despite these limitations, this analysis provided a useful picture of how recent cohorts of young Americans, coming of age in an increasingly racially and ethnically diverse society, respond when a local context does not provide many opportunities for same-race-ethnicity dating. Future researchers who have access to data with a larger number of relationship observations, which would allow for more refined subgroup analyses, may want to explore a number of additional interesting questions, such as whether the results vary for more or less committed relationships and whether adolescents are more likely to cross particular racial-ethnic boundaries (e.g., the white/black divide vs. the Hispanic/non-Hispanic divide) when dating outside versus inside the school.

REFERENCES

- Blau, Peter. 1977a. *Inequality and Heterogeneity: A Primitive Theory of Social Structure*. New York: Free Press.
- . 1977b. "A Macrosociological Theory of Social Structure." *American Journal of Sociology* 83 (1): 26–54.
- Chantala, Kim, and Joyce Tabor. 2010. "Strategies to Perform a Design-Based Analysis Using the Add Health." <http://www.cpc.unc.edu/projects/addhealth/data/guides/weight1.pdf>.
- Craig, Maxine L. 2002. *Ain't I a Beauty Queen? Black Women, Beauty, and the Politics of Race*. Oxford: Oxford University Press.
- Feld, Scott. 1981. "The Focused Organization of Social Ties." *American Journal of Sociology* 86 (5): 1015–35.
- Ford, Kathleen, and James Lepkowski. 2004. "Characteristics of Sexual Partners and STD Infection among American Adolescents." *International Journal of STD and AIDS* 15:260–65.
- Ford, Kathleen, Woosung Sohn, and James Lepkowski. 2001. "Characteristics of Adolescents' Sexual Partners and Their Association with Use of Condoms and Other Contraceptive Methods." *Family Planning Perspectives* 33:100–105.
- . 2003. "Ethnicity or Race, Area Characteristics, and Sexual Partner Choice among American Adolescents." *Journal of Sex Research* 40 (2): 211–18.
- Fujino, Diane C. 1997. "The Rates, Patterns and Reasons for Forming Heterosexual Interracial Dating Relationships among Asian Americans." *Journal of Social and Personal Relationships* 14:809–28.
- Giordano, Peggy C. 2003. "Relationships in Adolescence." *Annual Review of Sociology* 29:257–81.
- Harris, David R., and Hiromi Ono. 2005. "How Many Interracial Marriages Would There Be If All Groups Were of Equal Size in All Places? A New Look at National Estimates of Interracial Marriage." *Social Science Research* 34 (1): 236–51.
- Harris, Kathleen M. 2011. "Design Features of the Add Health." <http://www.cpc.unc.edu/projects/addhealth/data/guides/design%20paper%20WI-IV.pdf>.
- Hill, Mark E. 2002. "Skin Color and the Perceptions of Attractiveness among African Americans: Does Gender Make a Difference?" *Social Psychology Quarterly* 65: 77–91.
- Johnson, Monica K., Robert Crosnoe, and Glen H. Elder. 2001. "Student's Attachment and Academic Engagement: The Role of Race and Ethnicity." *Sociology of Education* 74:318–81.

- Joyner, Kara, and Grace Kao. 2000. "School Racial Composition and Adolescent Racial Homophily." *Social Science Quarterly* 81 (3): 810–25.
- Karney, Benjamin R., Megan K. Beckett, Rebecca L. Collins, and Rebecca Shaw. 2007. "Adolescent Romantic Relationships as Precursors of Healthy Adult Marriages: A Review of Theory, Research and Programs." Technical Report, RAND Labor and Population. http://www.rand.org/pubs/technical_reports/TR488.html.
- Kennedy, Randall. 2003. *Interracial Intimacies: Sex, Marriage, Identity, and Adoption*. New York: Pantheon.
- King, Rosalind B., and Jenifer L. Bratter. 2007. "A Path toward Interracial Marriage: Women's First Partners and Husbands across Racial Lines." *Sociological Quarterly* 48:343–69.
- Kreager, Derek A. 2008. "Guarded Borders: Adolescent Interracial Romances and Peer Trouble at School." *Social Forces* 87:887–910.
- Lee, Jennifer, and Frank D. Bean. 2004. "America's Changing Color Lines: Immigration, Race/Ethnicity, and Multiracial Identification." *Annual Sociological Review* 30: 221–42.
- Lichter, Daniel T. 2013. "Integration or Fragmentation? Racial Diversity and the American Future." *Demography* 50:359–91.
- Logan, John R., Deirdre Oakley, and Jacob Stowell. 2008. "School Segregation in Metropolitan Regions, 1970–2000: The Impacts of Policy Choices on Public Education." *American Journal of Sociology* 113 (6): 1611–44.
- Manlove, Jennifer, Suzanne Ryan, and Kerry Franzetta. 2007. "Contraceptive Use Patterns across Teens' Sexual Relationships: The Role of Relationships, Partners, and Sexual Histories." *Demography* 44:603–21.
- Metz, Mary Haywood. 2003. *Different by Design: The Context and Character of Three Magnet Schools*. New York: Teachers College Press.
- Moody, James. 2001. "Race, School Integration, and Friendship Segregation in America." *American Journal of Sociology* 107 (3): 679–716.
- Mouw, Ted, and Barbara Entwisle. 2006. "Residential Segregation and Interracial Friendship in Schools." *American Journal of Sociology* 112 (2): 394–442.
- Orfield, Gary, and Chungmei Lee. 2004. "Brown at 50: King's Dream or Plessy's Nightmare?" The Civil Rights Project, Harvard University. http://www.gse.harvard.edu/news_events/features/2004/orfield01182004.html.
- Patton, Tracey O. 2006. "Hey Girl, Am I More than My Hair? African American Women and Their Struggles with Beauty, Body Image, and Hair." *National Women's Studies Association Journal* 18:24–51.
- Qian, Zenchao. 1999. "Who Inter-marries? Education, Nativity, Region, and Interracial Marriage, 1980 and 1990." *Journal of Comparative Family Studies* 30:579–97.
- . 2005. "Breaking the Last Taboo: Interracial Marriage in America." *Contexts* 4:33–37.
- Quillian, Lincoln, and Mary E. Campbell. 2003. "Beyond Black and White: The Present and Future of Multiracial Friendship Segregation." *American Sociological Review* 68:540–66.
- Rabe-Hesketh, Sophia, and Anders Skrondal. 2008. *Multilevel and Longitudinal Modeling Using Stata*. College Station, Tex.: Stata Press.
- Rodriguez, Clara E. 2003. "Mexican-Americans and the Mestizo Melting Pot." Pp. 95–108 in *Reinventing the Melting Pot: The New Immigrants and What It Means to Americans*, edited by Tamar Jacobs. New York: Basic Books.
- Simmel, Georg. (1908) 1955. *Conflict and the Web of Group Affiliations*. Free Press (1955).
- South, Scott J., and Steven F. Messner. 1986. "Structural Determinants of Intergroup Association: Interracial Marriage and Crime." *American Journal of Sociology* 91 (6): 1409–30.

- Tatum, Beverly D. 2003. *Why Are All the Black Kids Sitting Together in the Cafeteria? A Psychologist Explains the Development of Racial Identity*. New York: Basic Books.
- . 2004. "Family Life and School Experiences: Factors in the Racial Identity Development of Black Youth in White Communities." *Journal of Social Issues* 60: 117–35.
- Vaquera, Elizabeth, and Grace Kao. 2005. "Private and Public Displays of Affection among Interracial and Intra-Racial Adolescent Couples." *Social Science Quarterly* 86:484–508.
- Wang, Hongyu, Grace Kao, and Kara Joyner. 2006. "Stability of Interracial and Intra-racial Romantic Relationship among Adolescents." *Social Science Research* 35: 435–53.
- Wells, Amy S., and Robert L. Crain. 1994. "Perpetuation Theory and the Long-Term Effects of School Desegregation." *Review of Educational Research* 64:531–55.
- White, Halbert. 1980. "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity." *Econometrica* 48:817–30.
- Yancey, George. 2009. "Crossracial Differences in the Racial Preferences of Potential Dating Partners: A Test of the Alienation of African Americans and Social Dominance Orientations." *Sociological Quarterly* 50:121–43.