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Social-Contextual Influences on Adolescent Romantic Involvement: The Constraints of Being a Numerical Minority

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Abstract

This research explores white-black differences in adolescent heterosexual romantic involvement and how these differences are shaped by social context. We find that, parallel to patterns of marriage in adulthood, Non-Hispanic white girls are more likely to be in a romantic relationship than African American girls. This is particularly true when we focus on heterosexual romantic relationships formed with schoolmates. Among boys, African Americans are more likely to be romantically involved than Non-Hispanic whites. We investigate the contribution of two broad types of social-demographic factors to these race-ethnic differences, population composition and normative climate. We develop theory about why being a numerical minority should lead to lower levels of relationship formation, especially when interracial relationships are rare. Results support the population composition hypotheses but not the idea that race-ethnic differences arise because of differences in normative climate.

Compared to non-Hispanic whites, African Americans marry later and are more likely never to marry. According to the U. S. Census Bureau (2005), among those aged 25–29 in 2001, 34 percent of non-Hispanic white women had never married, while the corresponding figure for African American women was 59 percent, a 25 percentage point difference. The pattern for men is similar, but the race gap is smaller -- about half that for women. In 2001, 48 percent of Non-Hispanic white men age 25–29 and 61 percent of African American men had not yet married, a difference of 13 percentage points.

Prior research demonstrates that contextual factors such as the availability of marriageable men, explain at least some of the racial gap in marriage, but black-white differences remain after statistical analyses control for these factors (Lichter, McLaughlin, Kephart, & Landry, 1992; Mare & Winship, 1991). One reason why differences remain net of these controls may be that the contextual measures are typically fairly crude, indicating the characteristics of a county or labor market area. Clearly there is substantial heterogeneity in economic and demographic context within these geographically defined areas. At the heart of the problem is that metropolitan areas, counties, or even neighborhoods do not define a social space that organizes individuals' lives. Patterns of social interaction are likely shaped more by work, schools, families, religious organizations, etc. than they are by geographic boundaries. For example, Teitler and Weiss (2000) found that compared to neighborhood characteristics, school characteristics are much stronger predictors of adolescent sexual behavior. A better way to measure social context could be to measure the characteristics of the organizations individuals encounter regularly, for example, school, workplace, and church. For adults, this approach can

be difficult because the number of relevant organizational affiliations can be prohibitively large. Measuring social context may be easier for adolescents in part because their lives are more tightly controlled by the family and school than parallel institutions control adult lives. Whereas only 38 percent of married men and women age 18–59 met their spouse at school or work (Laumann, Gagnon, Michael, and Michaels, 2000), as we will see in our analysis, over half of adolescent romantic relationships are with someone in their school.

Our study employs data from the National Longitudinal Survey of Adolescent Health (Add Health) to examine race differences in adolescent heterosexual romantic experiences and the social-contextual factors that contribute to these differences in adolescence. This approach to understanding race-ethnic differences in marriage works only to the extent that patterns in adolescence can inform us about the social processes that impact adults. Two types of evidence suggest that this may be so. First, adolescent romantic and sexual experiences predict patterns of relationship formation in early adulthood (Raley, Crissey, and Muller, 2007). Second, race-ethnic differences in adolescent relationships may mirror adult experiences. Cooksey, Mott, and Neubauer (2002) find that African American adolescents are less likely to date than whites. Further, Carver, Joyner and Udry (2003) also show that African Americans, particularly African American girls are less likely than non-Hispanic whites to have had a recent or ongoing romantic relationship. Yet, findings in this regard are inconsistent and other research suggests that non-Hispanic white and African-American adolescents are about equally likely to be romantically involved (Giordano, Manning, and Longmore 2005). Thus the first part of our analysis explores race-ethnic variation in romantic experiences. The second examines the influence of social context, as defined by schools, on adolescent romantic experiences.

Social Contextual Influence on Romantic Relationship Formation

A variety of theoretical approaches to understanding the relatively high marriages rates among non-Hispanic whites anticipate the importance of social context. These fall into two broad camps: one focusing on population composition and the availability of acceptable mates and the second addresses the normative climate that may impact the centrality of heterosexual romance and the desirability of marriage. In the first category is the “sex ratio” explanation. Especially high mortality and incarceration rates among young minority men, means that the ratio of available men to women is higher for Non-Hispanic whites than African Americans. Consequently, African American women face greater competition in the marriage market and are more likely never to marry (Crowder and Tolnay 2003). This simple sex-ratio story may apply for adolescent relationships as well. As adolescents age, African American boys face higher drop out rates and more grade retention than African American girls (Greene & Winters, 2006; Riegle-Crumb 2006). Thus, in high-school the sex ratio may be unbalanced, particularly among juniors and seniors.

Population composition may be important in other ways too. Drawing from Blau (1977), we hypothesize that preferences for racial homogamy depresses marriage rates more among minorities than among the majority population. To show how this is so, we start by considering what marriages should look like without discrimination. In that case, population heterogeneity should increase the likelihood that one marries someone of a different race-ethnicity, especially for those in (small) minority groups (Blau 1977). For example, any random person a Chinese-American encounters is more likely to be of a different ethnicity than is the case for non-Hispanic whites. As a result, we should expect that Chinese-Americans are more likely to be in interracial marriages than is the case for Non-Hispanic whites. Of course, in the United States, race is highly salient, and an interracial encounter is less likely to result in marriage than an intraracial encounter. Since more of the encounters of the minority population are interracial than is the case for the majority population, racial discrimination is a greater barrier to marriage for minorities than is the case for majority whites. For a variety of reasons, there

is likely less racial discrimination in adolescent relationships than in marriage (Joyner and Kao 2005; Blackwell & Lichter 2004). Nonetheless, the difference is only a matter of degree and race is still salient in adolescent social relationships (Joyner Kao, 2000; Kao and Joyner 2004).

A second broad type of contextual influence is normative climate. A long standing stream of research emerging from the *Adolescent Society* (Coleman, 1961) demonstrates that there is wide variation in the normative climates within schools. In some schools academic achievement enhances social status, while in others participation in athletics (boys) or being a cheerleader (girls) is the ticket into the “leading crowd.” The effects of the social aspects of school context on educational opportunities and outcomes have been recognized for decades (Bryk, Lee, & Holland, 1993; Coleman & Hoffer, 1987; Crosnoe, 2001) and more recently have been extended to other outcomes, such as sexual activity (Bearman & Bruckner, 2001; Teitler & Weiss, 2000) and problem behavior (Crosnoe, 2002; Harris, Duncan, & Boisjoly, 2002).

Our analyses will examine whether adolescent romantic involvement is shaped by the school climate. Whereas, in *Adolescent Society*, girls appeared to face a normative context that disapproved of sexual relationships across all schools, we expect that today norms about sex and romance vary substantially across contexts. One reason to expect increased variation is that norms about adolescent sexual behavior are weaker than they once were (Thornton 1989; Thornton & Young-DeMarco 2001) and the popular media commonly publishes stories about the youth “hook-up” culture that does not have real relationships, but “friends with benefits” (e.g., Klinghoffer, 1998; Benoit Denizet-Lewis 2004). Another is that disadvantaged neighborhoods are increasingly isolated from the mainstream (Wilson 1996; Tigges, Browne, and Green 1998) and concurrently racial segregation in schools continues to be high (Reardon, Yun, Eitle 2000). This social isolation can provide opportunities for greater variety in the social expectations and beliefs about adolescent romantic and sexual relationships. Disadvantaged neighborhoods might also have fewer social resources—greater residential instability, more single parents, lower proportions with college educated parents—to support and monitor couple relationships (Harding 2007).

Gender Differences

Generally, we expect that the contextual influences should be similar for boys and girls, but there is one exception that requires that we conduct separate analysis by sex. The population composition argument that focuses on the availability of mates suggests that there should be a positive effect of the sex ratio on the probability that a girl is romantically involved and a negative effect on the probability that a boy is romantically involved. That is, from a mate availability perspective, a lower sex ratio should hinder girls and help boys to form romantic relationships. Since we expect that the sex ratio will be lower for blacks than whites (Greene & Winters, 2006; Riegle-Crumb 2006), we expect that, if African Americans are less likely to form romantic relationships than Non-Hispanic whites, this difference will be larger for girls than for boys. Given that our focus is on race differences and this difference may vary by gender, we conduct separate analyses for boys and girls.

Another related reason to conduct separate analyses by gender is that patterns of interracial marriage and dating vary by gender. African American men are more likely to marry white women than African American women are to marry white men and a similar pattern appears to hold for dating relationships as well (Crowder & Tolnay 2000; Yancy 2002). Thus, we can expect that in schools where African Americans are a small proportion, racial composition is a greater constraint for girls than for boys. We estimate models separately for boys and girls because the effects of population composition, both the sex ratio as well as the racial

composition, on race differences in relationship formation might vary by gender. We choose this option over a pooled model with a gender interaction to simplify the presentation of our analyses and because the point of our analysis is not to test whether the effects of racial composition vary by gender.

We should also note that population composition and normative climate are not completely independent factors, and in fact, normative climate might be shaped by population composition. One example is provided by Guttentag and Secord (1983), who argued that the sex in shorter supply has greater bargaining power and that the sexes have different levels of interest in committed (or sexually exclusive) relationships. According to these authors men have less interest than women in committed relationships, and consequently when men are in short supply, men have more bargaining power and the social climate will be less supportive of romantic relationships and more supportive of non-romantic sexual relationships. Because of data limitations, our analyses do not explore the relationship between population composition and normative climate or how the effects of one aspect of school context are conditioned by the influence of the other.

Data and Method

Data for this analysis come from the National Longitudinal Survey of Adolescent Health (Add Health). The complex longitudinal design of the Add Health includes a 1994–95 in-school interview, a 1995 Wave I in-home interview, a 1996 Wave II in-home interview, and a 2001–2002 Wave III in-home interview. In 1994, the Add Health selected a sample of 80 high schools and 52 “feeder” middle schools. The in-school survey was administered to students in grades 7 to 12 from September 1994 to April 1995. In this questionnaire, students were asked about a wide range of topics from family background to risky behaviors. From this survey, Add Health has data from 90,000 adolescents who attended the Add Health schools, with information on their sociodemographic characteristics and peer group networks.

The 1995 Wave I in-home sample was drawn from those eligible to respond to the in-school survey and supplemented by school rosters. Respondents to the first in-home interview comprise a nationally representative sample of adolescents in grades 7 to 12 in the US. About 200 adolescents were selected from each of the 80 pairs of schools. Additional respondents, including ethnic minorities, siblings, and disabled students were selected as oversamples. Of those sampled, 78.9 percent responded to the Wave I interview, resulting in a total sample of 20,745 (Bearman, Jones, & Udry, 1997). Approximately one year later Add Health conducted a second in-home interview, repeating many of the questions asked in Wave I. As described below, we aggregate data within the school to describe the population composition and school climate and employ the sample of those in grade 10 at Wave I (N=1470 girls and 1425 boys) to examine the influence of school context on romantic activity measured approximately one year later (at Wave II).

We focus on the sample of 10th graders at Wave I, who are in their junior year at Wave II, since romantic involvement at this age is normative, but the girls are not so old that they are typically forming relationships with boys who have graduated high school (see appendix). We do not include those in the 9th grade because some are still in junior high schools and the process might differ in these contexts because of the generally younger age of the student population. We do not include those in the 11th grade in Wave I (and in their senior year in Wave II) because the proportion of girls’ relationships formed with boys inside the school decreases below fifty percent in the senior year. Additionally, we exclude respondents attending an all-boys school because having an in-school heterosexual relationship is not possible in this context. No respondents attended an all-girls school.

Measures

Individual-Level Dependent variable—Had Romantic Relationship in School. To identify respondents who were in a recent romantic relationship we use responses to the Wave II question “*In the last 18 months— since {MONTH, YEAR}— have you had a special romantic relationship with any one?*” Note that Wave II interviews occurred May 1996 to August 1996. In our sample this generally corresponds to the end of (or just after) the respondents’ junior year. Thus the question is asking respondents to report romantic relationships that occurred from the later part of the respondents’ sophomore year through the end of their junior year. Following the convention established by the original Add Health survey (e.g. Carver et al 2003), we consider respondents to have had a romantic relationship if they answer yes to this question. Adolescents who were romantically involved were asked about the characteristics of their relationships, including whether they attended the same school as their romantic partner as well as the sex of their partner. We limit the analysis to heterosexual relationships because, in our sample, very few of the reported relationships are same-sex and population composition (i.e., sex ratio) should influence hetero- and homo-sexual relationships differently. In addition, we distinguish between relationships formed in school and those formed with someone outside of the school, because the population composition argument applies only to in-school relationships.

Race-ethnicity is measured using responses to the Wave I interview. Adolescents are asked to report whether they were white, black or African American, American Indian or Native American, Asian or Pacific Islander, or “other.” The structure of the questionnaire allowed adolescents to report more than one race, but most reported only one. Those that reported more than one were asked to identify the race that best describes their racial background. In addition, a question allows the identification of those of “Hispanic or Latino origin.” We use this information to identify non-Hispanic whites (non-Hispanics for whom white was the only or the best-fitting racial category), African Americans (respondents for whom black or African American was the only or best-fitting racial category) and Latinos (non-black respondents who report being of Hispanic or Latino origin. We also include an “other category” for all those not fitting any of the above categories.

Context Variables—We use data from the in-school interview to describe the high-school population, the sex ratio as well as the racial composition. The in-school survey was completed by all students attending on the day of the interview and when weighted to account for nonresponse is representative of the school population. We checked our measure of racial composition against a measure from the National Center for Education Statistics Common Core Data file. This variable correlates with ours at .98. We use the Wave I data from respondents in the eleventh and twelfth grades to describe the normative climate. We choose these grades for two reasons. First, generally, advanced students have more social status and therefore more power to influence the social climate than do freshmen and sophomores. Second, we wish to examine the influence of school context on the individual behavior of tenth graders. By limiting these contextual measures to juniors and seniors, these measures do not include the behaviors of the individuals we wish to observe.

Following our theoretical background, the contextual variables fall into two categories. The first set describes the population composition. Starting with the sex ratio, we operationalize this three ways: percent male, percent of non-Hispanic whites male, and percent of African Americans male. Another composition measure indicates the percent of the high-school population that is African American. We also explored two measures of population heterogeneity by parental education and race-ethnicity. Both are constructed using the formula for Theil’s entropy index discussed on pages 36–37 of Reardon & Firebaugh (2000). Neither

of these measures influenced relationship formation and they are not included in any of the analyses we present.

The second set of contextual variables describes the normative climate, constructed by aggregating the weighted Wave 1 responses of junior and seniors to the school-level. The first of these measures is the proportion that had a romantic relationship, and the second is the calculation of the popularity of respondents in romantic relationships relative to the popularity of the rest of the students in the school. Our measure of popularity is taken from the nominations respondents made in the Add Health in-school survey. Each adolescent was asked to list up to 5 male and 5 female friends. From this information Add Health constructed a measure of the number of times a respondent was nominated as a friend. Based on the idea that more popular students should on average receive more nominations, this measure is commonly used to indicate adolescents' popularity (e.g., Haynie and Payne 2006; Cheng and Udry 2002). The school-level measure is the ratio of the mean popularity of those romantically involved over the mean popularity of those not involved.

We control for many aspects of the adolescent's status and experience as of Wave I, including family structure, parental education, age, whether the respondent indicated attraction to the same-sex, and popularity. Our measure of family structure has four categories: two-biological or adoptive parents, single-parent, step-parent, and other. Parents' education indicates the level of education for the respondents more highly educated parent and has five categories: less than high school, high school, some college, college grad, and missing. Less than high school is the reference category. We also explored controls for pubertal development, closeness to parents, self esteem, interviewer-reported physical attractiveness of the respondent, religious attendance, the importance of religion, the frequency of prayer, affiliation with an evangelical Christian religion, AH-PVT score, GPA, school attachment, health, and levels of trouble with school work. None of these factors significantly predicted romantic involvement within the following year in our sample of 10th graders and thus in the interest of parsimony we exclude them from the analyses we present.

RESULTS

Table 1 shows distributions on the variables by race-ethnicity for boys and girls separately. In Wave 2, when most of the respondents were in their junior year of high school, 67 percent of African American girls, 79 percent of Non-Hispanic white girls and 60 percent of Latino girls have had a recent heterosexual romantic relationship. The black-white difference mimics the pattern of relationship formation we observe in adulthood, with non-Hispanic white women marrying more quickly than African American women. Among non-Hispanic white girls, over half of their romantic relationships are with someone from their school, but for African American women a lower proportion of their romantic relationships are with someone from their school suggesting that schools may facilitate relationship formation among non-Hispanic white girls better than for African American girls.

Race differences differ substantially by gender. For boys, African Americans are the most likely to be romantically involved whether we consider all romantic relationships or just those formed in school. These findings may explain the discrepancy between Giordano and colleagues' analysis, which found no race differences in whether adolescents were romantically involved, and other research (Carver et al. 2003 ; Cooksey et al., 2002) which found race differences. The former study pooled boys and girls, while the findings from the other two studies were for girls. Having described race differences in romantic involvement among 10th grade girls and boys, we next address the question of whether these arise because of differences in school contexts.

The school contexts for non-Hispanic whites are in some ways similar and in other ways different from those of African Americans. One similarity is that generally school contexts are about 50–50 male-female. There is more variability when we look at the race-specific measures of gender composition, but even there the differences are not great. African American girls are in schools where 45 percent of the African American population is male, whereas non-Hispanic white girls are in schools where 48 percent of the Non-Hispanic white population is male. An important difference across schools concerns the racial composition. The average African American girl is in a school that is about 52 percent African American and 34 percent non-Hispanic white. In contrast, the average non-Hispanic white girl attends a school that is 8 percent African American and 82 percent non-Hispanic white. Because means do not accurately portray the depth of the racial segregation in this sample, we also present the distributions on a categorical variable describing the racial composition. The large majority of non-Hispanic whites attend schools that are less than 10 percent black and essentially none (N=3) attend schools that are over 60 percent black. In contrast, African Americans are in schools that are much more racially heterogeneous. Some are in schools that are less than 10 percent black, more are in schools that are over 90 percent black, but most fall in the middle range of 10 to 59 percent African American.

In the background we suggested two ways that the population composition might contribute to race differences in romantic involvement, one involving the sex ratio and the other racial composition. The results in Table 1 indicate that there are not sufficient race differences in the sex ratio for it to be a contributing factor, and indeed, in multivariate models estimated separately for Non-Hispanics and African Americans by gender, the sex ratio had no effect on the likelihood of having a romantic relationship with a schoolmate. Table 1 also shows substantial variability in racial composition. If population composition has the effects we expect, then we should find that blacks in mostly white schools should be less likely than whites in those schools to form relationships in school, but race differences should be smaller in schools that have a more balanced racial composition. Furthermore, this pattern should be especially strong for girls. Finally, among those who form relationships, blacks in mostly white schools should be more likely than whites to form relationships outside school.

Unfortunately, the high level of racial segregation constrains our statistical analyses. Specifically, we have too few schools with sufficient numbers of white and black respondents to estimate a random effects multi-level model, allowing the effect of race to vary across schools. Instead, to examine how the effect of race varies by the racial composition of the school, we pool observations from schools with similar compositions and estimate individual-level models, adjusting standard errors to account for the clustered sampling design. Table 2 presents the results from this analysis.

The top panel presents the results for girls. In the first set of schools (N=46 schools) where African Americans comprise less than 10 percent of the population, we see that black girls are significantly less likely than non-Hispanic white girls to report having had a recent romantic relationship with a schoolmate. As the proportion black in the school increases, the racial “disadvantage” decreases so that in the set of models for schools that are 30–59 percent African American, the race effect is positive, although not statistically significant. Unfortunately we do not have enough non-Hispanic white girls in schools that are over 90 percent African American to see whether when they are in the numerical minority they are significantly less likely than African Americans to be romantically involved with a schoolmate.

Model 2 adds a control for popularity, or the number of friendship nominations the adolescent received in the in school interview. Friendship formation for African Americans may be constrained in low-minority schools for some of the same reasons why romantic relationships are difficult to form. Consistent with this idea, the effect of being black in a school that is less

than 10 percent black is smaller once we control for popularity. Yet, the contrast between African Americans and Non-Hispanic whites continues to be statistically significant, and we still see the general pattern of less-negative effects as the proportion black increases.

We also estimated models predicting, among adolescents who have any heterosexual romantic relationship, whether the relationship is with someone in the same school or with someone out of the school. These results (available on request) show a similar pattern. Black girls' relationships are significantly ($p < .10$) less likely than white girls' to be with someone in school versus out of school, when the school is less than 10 percent black, but there are no race differences among girls attending schools that are 30–59 percent black.

The bottom panel presents the results for boys. As discussed previously, research on patterns of interracial marriage and dating shows that couples where the husband is black and the wife white are much more common than the reverse (Crowder and Tolnay 2003). Thus, we expected that in schools with only a small number of blacks, African American boys' relationship formation would be less constrained compared to girls. The first set of models show that in low-minority schools, white and black boys have similar proportions with a recent romantic relationship. A t-test indicates that the difference between the race coefficient for boys is statistically different from that for girls. More directly relevant for our theory, in schools where African Americans comprise 30 percent to 59 percent of the population, Non-Hispanic white boys are less likely to be romantically involved with schoolmates than African Americans. This is consistent with the idea that the population composition is constraining Non-Hispanic white boys' relationships. Model 2 adds a control for popularity and although popularity is a significant predictor of having a romantic relationship with a schoolmate, the control does not much change the race effect or how it varies across different types of schools. A similar pattern of results appears when we model, among those forming any heterosexual relationship, whether the relationship is with someone in school or outside of school (analyses available on request). In low minority schools there are no race differences in whether the relationship is with a school mate, and in schools that are 30–59 percent black, white boys are significantly less likely than black boys to form relationships with someone from school versus with someone from outside of school.

Overall the pattern of results suggests that being in a context where a smaller proportion of the population is of the same race constrains relationship formation, and that this is perhaps particularly true for groups (African American women and non-Hispanic white men) that are especially likely to form relationships within their own racial group. African American girls are much more likely than Non-Hispanic white girls to be in contexts where they are in the numerical minority and this is one reason why they are less likely to have had a recent romantic relationship. Indeed, when African American girls are in mixed schools (30–60% black), their romantic involvement is at least as high as that of non-Hispanic white girls.

Finally, we estimate models to examine the impact of normative climate on adolescent romantic relationship formation. Table 3 presents the results from a hierarchical model predicting heterosexual romantic involvement with a school mate (left side) and any heterosexual romantic involvement (right side) using individual-level and school-level variables separately by gender. The results presented in Table 2 strongly suggest the importance of racial composition and that these effects vary by race-ethnicity. Consequently we include race-ethnicity as well as a cross-level interaction between race-ethnicity and the racial composition of the school. Note that the variable describing the racial composition, percent black, is centered at the mean so that the main effect of the individual-level race-ethnicity variables describes their effect in schools where 16 percent of the population is African American. In Model 2 we add the proportion of juniors and seniors in Wave 1 that were romantically involved. The results for girls show that consistent with the results presented in Table 2, the racial composition of

the school impacts relationship formation and this effect varies by race-ethnicity. Counter to expectations, the prevalence of romantic relationships among the juniors and seniors of the school does not predict whether the respondent is romantically involved (with a schoolmate or with anyone) the following year.

More importantly, adding this variable (or other variables that describe the normative climate such as the proportion who want a romantic relationship, or the popularity of the romantically involved relative to everyone else – not shown) does not change the race-ethnicity coefficients. The bottom panel suggests that for boys, the prevalence of romantic relationships is predictive of having a romantic relationship with a schoolmate in the following year. Yet, as was the situation for girls, adding this control does not significantly alter the race-ethnicity coefficients. Overall these results do not provide much support that the normative climate contributes to race-ethnic differences in romantic involvement.

DISCUSSION AND CONCLUSION

An extensive literature attempts to understand why Non-Hispanic whites are able to enter marriage at an earlier age than African Americans, despite the fact that both groups express a preference for being married. Clearly the unbalanced sex ratio combined with the weaker economic situation of African American men relative to Non-Hispanic white men are important pieces of the answer, but results from previous studies suggest that they do not provide a complete explanation. Our study takes a new approach by examining how adolescent romantic relationships are constrained or facilitated by the school context. This approach is possible because the pattern of race differences in adolescence matches that observed in adulthood; African American girls are less likely than Non-Hispanic white girls to be in romantic relationships. When combined with findings from previous research, which shows that when they are romantically involved, African American's relationships are less intimate (Giordano et al. 2005), this suggests that the factors that constrain adult union formation are already at work in late adolescence.

We find that even in contexts that are relatively balanced in terms of sex ratio, African American girls are less likely to be romantically involved than Non-Hispanic white girls. Our results suggest an additional influence of population composition may be at work, the effect of being a numerical minority in a society where race is a salient barrier to relationship formation. Although compared to marriage there are high levels of interracial relationships in adolescence, interracial relationships are less common than one would expect if relationship formation were random along this dimension. Even when adolescents do form interracial relationships they are less likely to introduce their partner to friends and family (Wang, Kao, Joyner 2006). Because race is a barrier, in schools where there are few others of their same ethnicity, African American girls are less able to form romantic relationships. In contrast, Non-Hispanic white girls rarely find themselves in schools that are less than 10 percent white. In our sample it was so rare, we were unable estimate race differences in schools that were over 60 percent black. Further, in examining the change in the effects of race as schools become increasingly black, we see that the black disadvantage is much stronger when African Americans make up less than 10 percent of the population, while the black coefficient is actually positive once the population is 30 to 59 percent black.

In addition, our results provide little evidence that normative climate contributes to race differences in romantic involvement. We do find that African Americans are more likely to be in schools where fewer of the juniors and seniors are romantically involved (Table 1), but in multivariate models this was not a significant predictor of romantic involvement with a schoolmate for girls. For boys, the normative climate impacts relationship formation with a schoolmate in the ways we expected. One reason why we get significant effects for boys and

not girls is that, by their junior year, an increasing proportion of girls are forming relationships with boys who have graduated high school. Regardless, controlling for normative climate did not impact the race coefficients and moreover, the models predicting having any romantic heterosexual involvement (in or out of school) show no significant effects. That is, in contrast to population composition, normative climate is a poor explanation for why African American girls are less likely than their Non-Hispanic white counterparts to form romantic relationships with schoolmates.

These results may provide additional insight into the constraints to marriage minority populations, particularly women, face in the United States. Of course, marriage is not the same as dating and the results we present here may do little to inform us about the social processes that influence marriage. Yet, we believe that our analysis of adolescent relationship formation informs the literature on white-black differences in marriage patterns. Being a demographic minority will constrain both types of relationships (marriage and dating relationships) so long as people prefer to form relationships with others of the same race. Indeed, this demographic constraint may be even greater for marriage than dating since race is likely a stronger barrier to marriage than to other types of romantic relationships (Joyner and Kao 2005). Further, organizations that structure adult lives likely resemble high schools in that Non-Hispanic whites rarely find themselves in organizations where few of their colleagues are white, while the situation is much more common for African Americans. In this context where race continues to be so highly salient, being in the minority means that each encounter with the opposite sex is less likely to result in a relationship.

Despite the contributions of this research for understanding how schools shape adolescent romance and (perhaps) marriage, there are important weaknesses of this study which we should note. The biggest limitation is the focus on black-white differences. Ideally the theories and analyses presented here should be expanded to examine the influence of racial composition on Latino and Asian adolescents. Unfortunately, adding these pan-ethnic groups substantially increases the complexity of the analysis and, more importantly, we do not have a sufficiently large or diverse set of schools to adequately test the hypotheses that emerge by theorizing about these groups. A second limitation is that we do not have information on other social contexts of adolescents, such as work or church. It may be that adolescents who are constrained by the demographic composition of their schools form relationships in other contexts. A third limitation is that we are unable to examine whether normative climate varies by population composition as predicted by Guttentag and Secord (1983). While our analysis is limited by these constraints, it nonetheless shows that the composition of schools, unquestionably important social organizations for adolescents, advantage the majority population's ability to form relationships.

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Appendix

We selected respondents in the 10th grade in Wave I because we wanted to focus on a group of adolescents for whom romantic involvement was common and where most romantic relationships happened within schools. The table below shows the results from an analysis of romantic involvement by grade level separately for girls and boys.

Heterosexual romantic involvement and romantic involvement with schoolmate by gender and grade level in Wave I

Grade Level	Girls			Boys		
	10	11	12	10	11	12
Had romantic relationship	0.71	0.76	0.82	0.67	0.72	0.77
Had romantic relationship in school	0.44	0.4	0.38	0.38	0.46	0.48
Proportion w/romantic relationship that had in school relationship	0.62	0.53	0.46	0.57	0.64	0.62
Median age of romantic partner	16	17	18	15	16	16
Mean age of romantic partner	16.7	17.4	18.3	15.2	16	16.5

For both boys and girls, the proportion romantically involved increases by grade level, but for girls the proportion romantically involved with someone in school declines by grade level. The pattern for girls discouraged us from focusing on dating patterns too late in high school for our population composition analysis, because as girls get older their pool of potential mates is decreasingly defined by the school. For boys, there is substantially less change over grade level in the proportion of relationships that happen with schoolmates, but the greatest proportion occurs in their junior year – the year that we focus on in our analyses.

Table 1
Description of dependent and independent variables by gender by race ethnicity, 10 graders in Add Health

	Girls				Boys			
	Non-Hispanic black	Non-Hispanic white	Hispanic	Weighted Proportions	Non-Hispanic black	Non-Hispanic white	Hispanic	Weighted Proportions
Outcome (Wave 2)								
Had romantic relationship	0.67	0.79	0.60	0.74	0.65	0.64	0.35	
Had romantic relationship in school	0.31	0.46	0.36	0.47	0.42	0.29		
Had romantic relationship out of school	0.36	0.34	0.23	0.27	0.24			
Individual Level Independent Variables (Wave 1)								
Age	16.02	15.83	15.94	16.19	16.13	16.26		
Family Structure								
Married Bio parents	0.29	0.58	0.70	0.27	0.61	0.57		
Step	0.15	0.20	0.12	0.15	0.17	0.17		
Single	0.47	0.18	0.18	0.44	0.20	0.23		
Other	0.09	0.03	0.00	0.15	0.03	0.02		
Parent Education								
Less than HS Grad	0.12	0.08	0.51	0.05	0.06	0.47		
HS Grad	0.33	0.29	0.24	0.41	0.32	0.22		
Some college	0.24	0.27	0.10	0.18	0.23	0.14		
College grad	0.25	0.34	0.09	0.28	0.35	0.13		
Missing	0.06	0.02	0.06	0.09	0.04	0.04		
Same sex attraction	0.05	0.03	0.04	0.09	0.06	0.11		
Popularity	4.20	5.27	4.22	3.69	4.49	4.20		
School Level Independent variables (Wave 1)								
Percent male	0.49	0.49	0.49	0.50	0.50	0.50		
	--	0.48	--	--	0.51			
Percent of non-Hispanic white males	0.45	--	0.49	--	--	0.38		
Percent of non-Hispanic black males	0.34	0.82	0.30	0.33	0.83			
Percent non-Hispanic white	0.52	0.08	0.07	0.53	0.08	0.10		

	Girls			Boys		
	Non-Hispanic black	Non-Hispanic white	Hispanic	Non-Hispanic black	Non-Hispanic white	Hispanic
Weighted Proportions						
Percent non-Hispanic black % non-Hispanic black (categorical)						
< 10%	0.08	0.74	0.74	0.12	0.75	0.76
10–29%	0.23	0.17	0.25	0.20	0.16	0.19
30–59%	0.36	0.09	0.01	0.33	0.09	0.05
60–89%	0.00	0.00	0.00	0.00	0.00	0.00
>90%	0.33	0.00	0.00	0.35	0.00	0.00
Unweighted N	329	717	159	261	702	180

Logistic Regression Estimates from Models Predicting Having an In-School Romantic Relationship versus no In-School Romantic Relationship

Table 2

	% Black < 10%			% Black 10–30%			% Black 30–59%					
Panel A -- Girls												
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	b	se	b	se	b	se	b	se	b	se	b	se
Race-Ethnicity (Non-Hispanic White)												
Black	−1.15 [†]	0.60	−0.97	0.60	−0.75 [†]	0.43	−0.62	0.38	0.25	0.41	0.41	0.43
Hispanic	−0.31	0.37	−0.25	0.39	0.12	0.58	0.53	0.54	0.61	1.50	0.56	1.47
Other	−0.60 [†]	0.32	−0.51	0.33	−0.21	0.33	−0.08	0.29	0.30	0.54	0.48	0.52
Family Structure (Married Biological)												
Step	0.17	0.27	0.19	0.28	−0.50	0.54	−0.43	0.50	0.58	0.60	0.61	0.63
Single	0.11	0.30	0.13	0.30	−0.28	0.48	−0.34	0.44	0.59	0.41	0.61	0.38
Other	−0.30	0.59	−0.11	0.66	1.05	0.64	1.37 [*]	0.63	1.54 [†]	0.87	1.50 [†]	0.87
Parent Education (Less than HS Grad)												
HS grad	0.07	0.36	0.09	0.38	0.58	0.49	0.46	0.55	1.24	0.89	1.22	0.92
Some college	0.70	0.42	0.67	0.45	0.26	0.64	0.16	0.63	0.97	0.63	0.74	0.67
College grad	0.20	0.39	0.17	0.40	0.71	0.46	0.68	0.46	0.71	0.61	0.66	0.63
Missing	−0.02	0.69	0.03	0.69	0.83	0.69	0.97	0.68	0.70	1.49	0.73	1.48
Same sex attraction	−1.23 [*]	0.44	−1.11 [*]	0.44	−0.24	0.97	−0.26	0.89	−3.96 ^{**}	1.22	−4.21 ^{**}	1.30
Age	−0.26 [†]	0.15	−0.27 [†]	0.15	−0.08	0.24	0.02	0.19	0.20	0.15	0.21	0.14
Popularity			0.14 ^{**}	0.04			0.18 [*]	0.07			0.12 [†]	0.07
Pseudo R ²	0.04		0.06		0.05		0.09		0.06		0.08	
	% Black < 10%			% Black 10–30%			% Black 30–59%					
Panel B -- Boys												
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	b	se	b	se	b	se	b	se	b	se	b	se
Race-Ethnicity (Non-Hispanic White)												
Black	0.31	0.49	0.38	0.56	−0.34	0.39	−0.22	0.42	0.82 ^{**}	0.28	0.86	0.31

Panel A -- Girls											
% Black < 10%				% Black 10–30%				% Black 30–59%			
Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
b	se	b	se	b	se	b	se	b	se	b	se
Hispanic	−0.17	0.32	−0.16	0.32	0.37	0.65	0.50	0.40	1.38	0.34	1.40
Other	0.09	0.33	0.16	0.32	−0.45	0.42	−0.32	−2.40**	0.70	−2.43	0.67
Family Structure (Married Biological)											
Step	−0.10	0.22	−0.10	0.23	0.83*	0.39	0.77†	0.03	0.81	0.08	0.78
Single	0.26	0.29	0.23	0.29	0.41†	0.22	0.39*	0.41	0.64	0.44	0.69
Other	0.79	0.65	0.65	0.59	0.69	0.80	0.70	−0.23	0.96	−0.21	0.91
Parent Education (Less than HS Grad)											
HS grad	0.20	0.34	0.23	0.35	0.08	0.79	0.16	0.05	1.01	0.08	1.07
Some college	0.56	0.36	0.52	0.38	0.29	0.84	0.40	−0.07	1.34	−0.03	1.41
College grad	0.55	0.36	0.38	0.36	0.17	0.71	0.32	0.13	1.13	0.10	1.16
Missing	−0.71	0.71	−0.56	0.68	−0.95	1.34	−0.90	−0.01	1.16	0.07	1.25
Same sex attraction	0.18	0.34	0.07	0.35	−0.71	0.67	−0.60	−1.76	1.44	−1.72	1.46
Age	−0.11	0.14	−0.15	0.14	0.07	0.19	0.04	−0.26	0.30	−0.25	0.31
Popularity			0.15**	0.03			0.13**			0.06**	0.07
Pseudo R ²	0.02		0.06		0.04		0.06	0.12		0.13	

† Note: $p < .10$;* $p < .05$;** $p < .01$

Table 3
Hierarchical Modeling Estimates Predicting In-School Romantic Relationship and Any Romantic Relationship by Gender

	Girls					
	In school Relationship vs No In School Relationship			Any Relationship vs No Relationship		
	Model 1		Model 2	Model 1		Model 2
	Coef	Std Error	Coef	Std Error	Coef	Std Error
Intercept	-0.52	0.17	-0.50	0.18	1.25	0.22
School Characteristics (mean centered)						
% non-Hispanic black in school	-2.44**	0.76	-2.36**	0.74	-1.06	0.92
% in relationship			-0.91	0.93		
Race-Ethnicity (Non-Hispanic White)						
Non-Hispanic black	-0.46*	0.23	-0.46*	0.22	-0.65*	0.29
* % black in school (mean centered)	2.73**	0.88	2.61**	0.86	1.13	1.19
Hispanic	0.56	0.46	0.52	0.46	-0.26	0.42
* % black in school (mean centered)	6.37†	3.70	6.40†	3.72	7.66*	3.52
Other	-0.19	0.26	-0.21	0.26	-0.78**	0.29
* % black in school (mean centered)	3.79**	1.46	3.74**	1.45	3.05†	1.70
Family Structure (Married Biological)						
Step	0.05	0.22	0.05	0.22	0.56*	0.25
Single	0.11	0.20	0.11	0.19	0.33	0.23
Other	0.71*	0.35	0.70*	0.35	1.46**	0.51
Parent Education (Less than HS grad)						
HS grad	0.03	0.20	0.02	0.20	-0.31	0.23
Some college	-0.30	0.29	-0.31	0.29	0.19	0.28
College grad	0.26	0.21	0.25	0.21	-0.12	0.24
Missing	-0.09	0.44	-0.08	0.44	-0.96*	0.45
Popularity (mean centered)	0.14***	0.03	0.14***	0.03	0.13**	0.04
Same sex attraction	-0.73*	0.32	-0.72*	0.32	-0.34	0.41
Age (mean centered)	-0.07	0.10	-0.06	0.10	0.12	0.12
	In school Relationship vs No In School Relationship			Any Relationship vs No Relationship		

	In school Relationship vs No In School Relationship				Any Relationship vs No Relationship			
	Girls							
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	Coef	Std Error	Coef	Std Error	Coef	Std Error	Coef	Std Error
Boys								
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	-0.91	0.28	-0.95	0.29	0.31	0.34	0.29	0.35
School Characteristics (mean centered)								
% non-Hispanic black in school	-1.13	0.80	-1.28	0.84	0.65	0.80	0.54	0.79
% in relationship			1.95*	0.80			1.03	0.97
Race-Ethnicity (Non-Hispanic White)								
Non-Hispanic black	0.36	0.30	0.37	0.30	0.85*	0.35	0.85*	0.35
* % black in school (mean centered)	1.19	1.00	1.42	1.03	-1.64	1.02	-1.48	1.01
Hispanic	0.07	0.27	0.18	0.28	0.13	0.27	0.20	0.28
* % black in school (mean centered)	1.35	1.48	1.42	1.52	-1.00	1.19	-0.95	1.18
Other	-0.19	0.22	-0.12	0.23	-0.16	0.23	-0.11	0.24
* % black in school (mean centered)	-3.59*	1.45	-3.49*	1.45	-0.47	1.22	-0.35	1.20
Family Structure (Married Biological)								
Step	0.17	0.20	0.18	0.20	0.22	0.23	0.22	0.23
Single	0.32 [†]	0.19	0.33 [†]	0.19	0.28	0.19	0.28	0.19
Other	0.52	0.37	0.52	0.37	0.34	0.38	0.33	0.38
Parent Education (Less than HS grad)								
HS grad	0.16	0.29	0.15	0.30	0.42	0.33	0.42	0.33
Some college	0.45	0.31	0.46	0.32	0.14	0.35	0.14	0.35
College grad	0.29	0.29	0.29	0.30	0.30	0.34	0.30	0.34
Missing	-0.09	0.47	-0.10	0.48	-0.52	0.46	-0.52	0.46
Popularity (mean centered)	0.12**	0.02	0.12**	0.02	0.14**	0.03	0.14**	0.03
Same sex attraction	-0.38	0.30	-0.38	0.30	-0.46	0.29	-0.46	0.29

	In school Relationship vs No In School Relationship				Any Relationship vs No Relationship			
	Girls							
	Model 1		Model 2		Model 1		Model 2	
	Coef	Std Error	Coef	Std Error	Coef	Std Error	Coef	Std Error
Age (mean centered)	-0.14	0.11	-0.13	0.11	0.16	0.12	0.17	0.12

[†] Note: p < .10;
* p < .05;
** p < .01