Rating and Dating Revisited: How Social and Formal Organizational Attributes Shape the Formation of Adolescent Romantic Relationships.

R. Kelly Raley
Department of Sociology and
Population Research Center
University of Texas

Ken Frank
Department of Counseling, Educational Psychology, and Special Education
Michigan State University

DRAFT

Abstract

We use Add Health data from two large high schools to examine the characteristics of adolescent relationships and how these relationships are shaped through opportunities to meet potential partners through shared course-taking. Our results show that patterns of assortative mating in adolescence resemble patterns we observe in adulthood. Even when there is opportunity to do so, boys and girls do not date across race lines. In addition there is strong sorting by socioeconomic status, and we observe a tendency for adolescents to sort by academic performance, a precursor to educational attainment. We find little evidence that patterns of assortative mating arise because of segregation in course-taking or extracurricular activities

(www.cpc.unc.edu/addhealth/contract.html). Opinions reflect those of the author and do not necessarily reflect those of the granting agency.

Patterns of family formation are an important mechanism through which stratification is maintained from one generation to the next. This occurs through two major avenues. First, economic well being is likely both a cause and consequence of stable family life. Young adults from poorer backgrounds and who have more difficulty establishing themselves in stable jobs delay marriage (Oppenheimer, Kalmijn, and Lim 1997). This delay probably arises both because economic uncertainty reduces an individual's, particularly men's, attractiveness on the marriage market and because it hinders a young couple's ability to afford a wedding as well as establish and maintain an independent household. At the same time, marriage brings economic benefits. Even net of absolute income, married couples are more able than singles to accumulate wealth. This benefit might arise because of increased economies of scale, the benefits of a specialized division of labor, and/or if both are in the labor force improved income stability. There is some evidence that married couples invest more of their income in savings and that men enjoy higher a "marriage premium", higher salaries when married net of (Waite 1995); (Cohen 2002).

A second way that families reinforce social stratification is through patterns of assortative mating. Mate selection processes reinforce divides among socioeconomic groups when couples positively match on education and income, but divisions may be reduced when marriages cross socioeconomic boundaries (Smits, Ultee, and Lammers 1996). In the United States, increases in educational homogamy since World War II may have contributed to increasing socioeconomic stratification (Mare 1991).

This study investigates the formation and characteristics of adolescent romantic relationships by applying network modeling approaches to data available from the National Longitudinal Survey of Adolescent Health (Add Health). The Add Health design dictated the collection of longitudinal data from all students in two large high schools. These data allow us to measure the pool of potential partners, the characteristics of adolescents who do and do not form relationships, as well as the shared characteristics of adolescent romantic partners. A focus on adolescents has the advantage

that, in contrast to adults, the opportunities to meet friends and romantic partners are more closely bounded to a single organization, schools. Of course, some adolescent relationships form outside of schools. Nonetheless, given that school is the primary location where such relationships form, over half of adolescent romantic relationships are with schoolmates, we can say that schools form a market within which students select romantic partners. By focusing on a single organization, we can characterize the attributes of all the potential relationships and compare these to the relationships that do form. This allows us to more directly observe how the opportunities to meet structure relationship formation.

The analysis addresses two basic questions about how schools shape couple formation in adolescence. First, which kinds of characteristics are the strongest factors in mate-selection among adolescents, social status, physical attractiveness, socioeconomic background, or academic characteristics? Second, to what extent does positive sorting on family background and other characteristics arise because course-taking patterns structure adolescent's opportunities to meet? We also, to the extent possible, investigate how patterns of sorting vary across social contexts.

BACKGROUND

A primary motivation of the mate selection literature is to better understand the salience of social boundaries (Kalmijn 1998). Along this line, researchers who study the process of assimilation take growing rates of intermarriage as a sign of the declining importance of ethnic group membership (Gordon 1964; Qian and Lichter 2001);(Alba and Nee 1997). Similarly, research demonstrating declines in religious homogamy suggest that boundaries between religious groups are increasingly permeable (Kalmijn 1991). Yet, rates of interracial marriage, particularly black-white intermarriage continue to be surprisingly low, suggesting the continuing salience of race in our society (Bean and Stevens 2003;Lee and Bean 2004; Perlmann J. 2000).

An investigation into patterns of mate selection not only informs us about the importance and meaning of certain social distinctions, it may also provide us with a basis for understanding how organizations structure social interactions, as Mare's (1991) research on trends in educational homogamy demonstrates. Mare shows that as men's and women's educational attainment increased, so did their age at marriage. However, the increase in age at marriage was less pronounced than the rise in educational attainment, contributing to a shrinking gap between the age at school-leaving and marriage from the 1930s to the 1970s. This decreased gap between finishing school and marriage was associated with an increase in educational homogamy as more couples met in school. After 1980, the average age at marriage stretched beyond the age most complete their schooling and educational homogamy has not continued to increase and may even have declined (Mare 1991). Even though their influence is potentially declining, these findings demonstrate the powerful role educational institutions have in the mate selection process. We expect that educational institutions are particularly important in adolescents' choice of romantic partner.

Because the primary motivation for studying mate choice is to understand the salience of social boundaries and how formal organizations reinforce or counteract tendencies based in history and prejudice, research in this area has focused on a narrow set of attributes. The characteristics receiving the most attention are race, education, age, and sometimes religious affiliation. However, clearly other important factors shape mate choice, such as social status, physical characteristics, and personality. Investigating these other factors can help contextualize the importance of social background. It can also help us to better understand the motivations for adolescent romance.

Prior research, as well as popular depictions, suggests that the motivations for dating relationships in adolescence and young adulthood are based in either in the desire to enhance social status or in physical pleasure. For example, Waller's (1937) account of dating in college asserts that for males desirable attributes include having a good line and being able to dance well. Career prospects are not a direct concern because the relationships are not expected to result in marriage.

Although much has changed since the Waller presented the "Rating and Dating Complex," there is good reason to expect that the logic may continue to apply. Adolescent relationships are even less likely to result in marriage today than they were in the 1930s. Thus, social and physical characteristics may play a greater role than socioeconomic status and career prospects in the sorting process of adolescents than is the case for adults.

Alternatively, social boundaries may continue to be so strong that even in adolescence the selection of romantic partners is shaped by socioeconomic background, such as race and parental education. These patterns may arise either out of preferences for others with similar attributes or because the social structure shapes patterns of interaction by race and socioeconomic status. The first goal of this research is to investigate which factors are most relevant in adolescents' selection of romantic partner. A second goal is to identify whether the observed patterns arise because of the formal structure, or, put differently, because course-taking patterns tend to provide adolescents with opportunities to interact with others with similar family backgrounds.

Because we have in-depth information on relationship formation in two schools we also investigated, to the limited extent our data allow, how patterns of sorting vary across social contexts. Specifically, we explore how the salience of race and social class (as measured by parent's education) varies between our ethnically heterogeneous school in the West and our mostly white school in the Midwest. Our analytical approach accounts for adolescents' opportunities to pair with someone of a different race. These opportunities obviously increase as the racial heterogeneity of the school increases. While we expected that interracial dating is more common in the heterogeneous school, we did not expect that interracial dating increased at the same rate as the opportunities to do so. Increasing diversity sometimes results in greater racial segregation as groups may be tolerant of interracial contact only up to a point. As a minority group grows the existing population can become increasingly threatened and may work to isolate itself (Lieberson 1980). When Lieberson wrote about this phenomenon, he was studying the growing population of African Americans in the

Northeast and Midwest, but the same phenomenon may be observed in schools experiencing rapid growth in the Mexican population. This leads us to expect that race is likely to be a more salient factor in heterogenous settings, particularly those with a large Mexican population, than in a relatively homogenous setting.

DATA and MEASURES

Data come from the National Longitudinal Survey of Adolescent Health (Add Health) and the Adolescent Health and Academic Achievement (AHAA) educational component. The Add Health began with an in-school questionnaire administered to a nationally representative sample of students in grades 7 through 12, and the study followed up with in-home interviews in the two subsequent years. In 2001, as part of a third in-home interview (Wave III), Add Health researchers requested permission to collect respondents' high school transcripts. Data from these transcripts, such as course placement and GPA, have been recoded and attached to the respondent's data file. As with all longitudinal data sets, sample attrition is an issue. Approximately 76% of the eligible respondents completed a Wave III interview, and for the large majority of these cases (94%) transcript data were collected.

We restrict our sample to adolescents who were in the two large saturated schools at Wave 1 and who have transcript data. In all schools we have information about all students surveyed as part of the in school census. However, it is only in saturated schools that we can adequately characterize the pool of potential partners, and it is only among the two large saturated schools that we have sufficient numbers of romantic pairs to estimate our models. To measure academic characteristics and patterns of course-taking we use data from the educational component of the Add Health, produced by the Adolescent Health and Academic Achievement (AHAA) study. AHAA greatly improves our ability to investigate the influence of formal structures on romantic pairing because we can directly measure adolescent's opportunities to meet through shared course-taking.

The first of our two sites Jefferson High, a large high school in the Midwest. Table 1 shows some descriptive information about the students attending Jefferson. This school serves a midsized, midwestern, mostly white, working-class community. The typical student has parents with no more than a high school degree. About a quarter of the students are at risk of obesity given their self-reported height and weight. Just over half believe that their religion's sacred scriptures are the word of God, completely without mistake. Students report that there are few activities for young people in the area, and levels of drinking are somewhat higher than the national average (Bearman, Moody, and Stovel 2004).

Sunshine, also large, is a multi-ethnic high school in the West. Just under half are female, 39 percent are Latino, 23 percent are Black, 5 percent are Non-Hispanic White and the remainder are another race, mostly Asian. The students in this school are in grades 10 through 12. Reflecting the high proportion if immigrants, an unusually large proportion of the students have parents without a high school degree. At the same time, 23 percent of the parents have a college degree. A remarkably large proportion of the students, 30%, are at risk of obesity using the weight-for-height-and-age definition employed by the CDC. Three-quarters report that the bible is the infallible word of God.

The right half of Table 1 describes the sample for which we have complete data. The transcript data are necessary for the examination of how students' opportunities to meet are shaped through shared course-taking, but because of sample attrition in Wave III as well as the AHAA study, we have transcript data for 71 percent of those in Jefferson and 53 percent of those in Sunshine. This is an unfortunately small proportion, however, we can see that the sample of cases for which we have transcript data closely resembles the starting group of those who were in Wave 1.

From the individual-level data we create a pair-wise file with each boy-girl pair represented once. For example, in the Midwestern school where we have a sample of 289 boys and 299 girls, we create a data file with 86411 (289*299) entries. Structuring the data this way allows us to estimate an innovative network model, the benefits of which are discussed after we define our measures. The

primary dependent variable is a dummy indicator of whether the boy-girl pair was romantically involved. We count as involved any relationship where either the boy or the girl nominated the other as a romantic partner. Although students were able to nominate same-sex pairs, these analyses focus on opposite sex pairs for multiple reasons. First, the factors that shape formation of homosexual relationships are likely to be different from those shaping heterosexual relationships. Second, examining homosexual relationships would require that we create an observation for each boy-boy pair and girl-girl pair, greatly increasing the size of our already large data files. Third, as we discuss below, the respondents took the time to identify romantic partners on their school roster less often than we would have liked. We expect that, because of the social stigmas attached to homosexual relationships, the quality of reporting of these romantic ties is of even lower quality.

The section of the questionnaire that asked about romantic involvement was self administered and many of the relationship nominations were not reciprocated (Carver and Udry 1997). Lack of reciprocation might arise either because of careless errors on the part of the respondents, because each member of the pair has a different understanding of their relationship, or because one does not want to acknowledge the relationship. The likelihood of reciprocation could vary by the social status of the nominator *vis à vie* the nominatee, potentially biasing our results. Our approach of including non-reciprocated relationships as romantic ties, might include some relationships that are not real from the perspective of the higher status respondent. This would lead to an underestimate of the influence of social status on adolescent romance. Consequently, we also investigated models that predict whether a boy nominates a girl and compare the findings to the models that include non-reciprocated nominations by girls. Because the results are similar, we believe the low reciprocation rate has more to do with careless responses than with wishful thinking or misunderstanding.

Note that we model only the presence of a romantic tie. That is, relationships acknowledged as a "special romantic relationship" by the adolescent or relationships where the adolescent kissed, held hands with, and told the other person that they liked or loved him or her. Sexual relationships

are clearly important as well and have been investigated by researchers interested in the sexual

networks and the spread of sexually transmitted disease (Bearman et al. 2004). Nonetheless, our

theories are based in literature about social boundaries and the meaning and relevance for social

boundaries is likely to differ for romantic relationships and for non-romantic sexual relationships.

We investigate four types of characteristics of boy-girl pairs, 1) adolescent social status, 2)

physical attractiveness, 3) socioeconomic background, as well as 4) academic characteristics. We

measure adolescent social status with a single variable we label "popularity". Prior to Wave 1, Add

Health administered an in school survey where each adolescent was asked to nominate up to 5 male

and 5 female friends. From this information we create a variable indicating the difference in the

number of friendship nominations the boy and girl received in the in school survey, administered

prior to Wave 1.

Difference in physical attractiveness is measured with three variables. Add Health

interviewers were ask to rate the physical attractiveness of each adolescent respondent on a five point

scale as part of the Wave 1 interview. Our first measure is the absolute difference between the boy

and girl in this interviewer rating. Our second measure is the difference in the adolescents' Body

Mass Index (BMI), calculated using the height and weight the adolescent reported using the formula,

weight in pounds/ (height in inches)^2 X 703. We also investigated measures that used some threshold

to identify adolescents who are overweight or obese. None of the threshold measures works as well

as the continuous variable. Finally, we use the interviewer's rating of the adolescents' physical

maturity, again on a five-point scale as a measure of physical development to measure the difference

between the boy's and girl's physical development. We also investigated a measuring indicating the

difference in height, but the variable did not contribute significantly to the model.

Socioeconomic characteristics include whether the pair involves a boy and girl of the same

race, the absolute difference in the level of parent's education, and whether the pair share the same

religious perspective regarding fundamentalism. Parent's education indicates the level of education

of the more educated parent. A value of one indicates that the parent has less than a high school degree, two is assigned to those with just a high school degree, three indicates that the parent had some college, four represents those with a college degree, and five distinguishes those with some post-bachelorate education. We prefer this measure to one indicating number of years of schooling completed for two reasons. First, a unit change always indicates a distinctly different level of education. The largest possible difference in parent's level of education is 4. Second, the smaller range limits the potential influence of extreme cases.

Finally, four measures indicate shared academic characteristics. The first is the absolute difference in GPA in the 1994 academic year, calculated from the transcript data. The second is the student's grade level, measured from the transcript data. To account for the typical pattern of asymmetry between the boy's and girl's age in romantically involved couples, rather than use the absolute difference in grade level, we construct a series of dummy variables indicating how much further ahead or behind in school the boy is than the girl. The third and fourth variables are the number of courses the boy and girl share and the number of shared extracurricular activities (measured in the in-school survey). We employ these last two measures to address our second research question regarding the influence of the formal school structure on sorting.

In cases where either member of the adolescent pair is missing on characteristics necessary to construct a pairwise measure, we assign the pairwise characteristic a value of 0 (i.e. no difference). To account for potential differences between adolescents who provide information and those who do not, the models include dummy indicators for missing information on independent variables.

ANALYTICAL APPROACH

The main reason why prior research has been unable to determine the influence of opportunities to meet on patterns of mate selection is that the data and modeling tools have not been available. To measure opportunities to meet, we need information on how the social structure patterns contact within a population. Because propinquity is a powerful predictor of contact,

research describing marriage markets typically uses geographic boundaries such as counties or metropolitan areas. A clear problem with this approach is that an individual's opportunity to meet another person in the metropolitan area is not equal across all other residents. Adults meet their partners in a wide range of environments, church, work, friendship networks, and bars, all of which are segregated by race and class. Thus empirically deriving the pool of potential mates is difficult.

A second weakness of prior research on patterns of assortative mating is that it examines only relationships that form. Those in a poor market may decide to delay forming a relationship rather than form one that is undesirable (Lewis and Oppenheimer 2000). For example, those who prefer to be with someone of the same race who are in marriage market with few people of the same race might take longer to find a suitable partner. Conversely, if a person prefers someone of a different race but the social structure inhibits interracial relationships, that person might delay forming a relationship. Thus, the pattern of observed relationships provides a flawed understanding of the mate selection process.

The modeling approach for our analysis derives from a network analysis technique called "p2" models, combined with the rich data from the Add Health and the AHAA educational component, addresses both of these problems. P2 is a multilevel modeling approach with pairs cross-nested within boys and girls. To address our first research question we investigate which joint characteristics predict whether a given pair of adolescents forms a couple. For example, given all the potential couples in a school, are realized couples more likely to involve two individuals of the same race or to have similar grades? To address the second question we add information on course-taking patterns to see whether the patterns observed in the first analysis are still observed once we control for the number of courses an adolescent pair shares. We interpret the part of the effect that is removed as the part due to the structure of the school. We interpret the part that remains as the part due to preferences.

Similar to the advantage of log-linear models for examining mate selection processes, our approach allows us to examine tendency to intermarry independent of the marginal distribution. That is, independent of the impact of population heterogeneity. Additionally, the P2 model uses data on all members of the population not just those who form relationships. This is an improvement over log-linear models which use only those who form a relationship to create the contingency table. This is important because if preferences for intragroup marriages hinder the minority groups' ability to form a relationship, then the observed pattern of relationships will underestimate homophilly (Blau). A second advantage over loglinear models is that p2 easily accommodates the estimation of the effect of multiple characteristics of the individuals simultaneously. Even using large data sets like census microdata, Log linear analysis of mate selection is usually forced to look at one or two characteristics at a time, because cell sizes diminish exponentially with each additional variable.

RESULTS

Table 2 presents descriptive information on the boy-girl pairs in each of the schools by whether or not there was a romantic tie between the two. Starting with Jefferson high school, we see that almost 90% of the boy-girl pairs involve two people of the same race. The representation of different race pairs is the same among pairs without a romantic tie as pairs with a romantic tie, suggesting that race is not a salient dimension in romantic relationship formation in this context. At the same time, the absolute difference in the boy's and girl's parent's education is relevant. Whereas among romantically involved adolescents, the mean difference in parent's education is .9 years of schooling, the difference among pairs without a tie is 1.2 years. It is not much surprise that BMI is an important factor in sorting as is grade-level. Romantically involved adolescent pairs have more similar BMIs and also are most likely to be in the same grade. Romance between a girl and a boy one grade-level higher is also common.

The patterns are generally similar in Sunshine High with only one major exception. A much higher proportion of boy-girl pairs are interracial, reflecting the heterogenous composition of the school. In addition, a higher proportion of the romantically involved pairs are interracial. However, the prevalence of romantically involved interracial pairs did not increase as much as the opportunity to form interracial pairs. This suggests that greater relevance of race in mate selection in Sunshine High as compared to Jefferson High.

In both schools, academic characteristics are important factors in mate selection. Romantically involved students have more similar GPAs, are more likely to take similar courses, and are more likely to share school-based extracurricular activities than boy-girl pairs who are not romantically involved. Our multivariate models investigate the significance of the influence of socioeconomic background characteristics as well as whether these patterns arise because of patterns of course-taking.

Table 3 presents results from models for Jefferson High estimated in HLM. The first pair of columns, Model 0, shows the results of models predicting the existence of a romantic tie using one variable at a time. Model 1 shows results with all of the boy's characteristics entered at the same time and provides us with information about which boys form romantic ties in this context. Generally, the results are consistent with a depiction of adolescent romance motivated by physical infatuation and the pursuit of adolescent social status. Popularity, physical attractiveness, and having a moderate GPA are positively associated with having a relationship. At the same time, socioeconomic background has little influence on who dates. Race and religious beliefs have no significant effects, and parent's education is only weakly associated with relationship formation in Model 1. Boys with a parent with some college education are less likely to be dating than a boy with a high school educated parents, a pattern we find difficult to explain.

Models 2 and 3 show the association between pair characteristics and the existence of a romantic tie and provide us information about who dates whom in this context. These models provide

a different picture of adolescent romance, one that more closely resembles what we find in the patterns of sorting among adults. In Model 2, popularity is not a factor on which adolescents sort; that is, the most popular boys are more likely to date, but when they do they do not necessarily date the most popular girls. While popularity is not a relevant factor in who dates whom, socioeconomic background is. In this racially homogenous context, boy-girl pairs with more similar parent's education are significantly more likely to be romantically involved than boy-girl pairs that are not romantically involved. In addition, we see positive sorting on GPA as well as PVT.

The results from Model 3 suggest that the tendency to sort by socioeconomic status is not a result of the way the school structures adolescents' opportunities to meet through course taking. The positive association between number of shared courses and the existence of a romantic tie demonstrates that courses do influence who dates whom. However, controlling for this factor does not change the magnitude of the association between the variable measuring the difference in parent's education of the boy and the girl and the existence of a romantic tie.

Shared course-taking does explain some of the tendency to sort by GPA. Generally, students who are in the same courses tend to have similar GPAs and thus part of the reason why boys tend to date girls with a similar GPA is that they tend to have more opportunity to meet girls with similar GPAs. However, even controlling for course-taking, GPA continues to exert some influence on the sorting process.

Shared course-taking also explains some of the tendency to sort by grade level. Prior to controlling for this, pairs involving a boy and girl of the same grade level were equally likely to have a romantic tie as pairs involving a boy one grade level higher than the girl. Shared course-taking advantages boy-girl pairs in the same grade and once we control for this factor, it is pairs with the boy one grade-level higher that are most likely to be romantically involved.

Finally, Model 4 shows the results of a model which simultaneously estimates the factors that influence who dates as well as who dates whom. Because the factors that influence who dates are not

the same as those that influence who dates whom, modeling the two processes simultaneously does not change the results much. Boys who are more popular are still more likely to date and boy-girl pairs with similar levels of parents' education are more likely to be romantically involved. The one variable that is important both to both processes is BMI. Boys with higher BMI are less likely to date and there is strong positive sorting on BMI at the pair-level. In Model 4, we see that the pairwise characteristics maintain significance when both processes are modeled simultaneously, but the individual-level characteristic is no longer significant. This is consistent with the idea that heavy boys face limited opportunities for dating in this context because of the strong sorting on this characteristic.

To investigate potential bias introduced by including non-reciprocated nominations, our analyses include models which predict whether the boy nominated the girl. We are reassured by the fact that the pattern of results is substantively equivalent to those presented in Table 3, with two exceptions. The first exception is that when we look only at male nominations, boy-girl pairs of the same race are less likely to be romantically tied than those involving a pair of a different race. Given that the largest minority population in this school is Asian, it suggests that boys who nominate Asian girls are disproportionately likely not to have their nominations reciprocated. The second is that the tendency to match on religious fundamentalism is stronger when we count only romantic nominations acknowledged by boys. Nonetheless, we still observe strong sorting by parent's education, BMI, and GPA, which can not be explained by patterns of course-taking, while we do not observe significant sorting by popularity.

Table 4 presents our models estimated using data from Sunshine High School. Before we discuss these, we should note a number of limitations to this analysis. First, this school involves a more mobile population than that served by Jefferson High and consequently there was higher attrition in Wave III for this context (See Table 1). Second, a smaller proportion of students nominated another student in the school as a romantic partner. Whereas the students at Jefferson

have few dating opportunities outside their high school, those in Sunshine have more abundant opportunities due to their urban location. A consequence of both is that we less completely describe the partner market for these individuals. Despite these weaknesses, this is the only opportunity we know of to examine mate selection processes in an ethnically heterogeneous context.

Models 0 and 1 in Table 4 show that, as was the case at Jefferson, popular boys are more likely to form romantic relationships (at school) than are less popular boys. The effects of BMI are of similar magnitude as in Jefferson, but not statistically significant. Those with higher levels of parents' education are also more likely to form a romantic relationship, and GPA is not strongly associated with relationship formation.

Model 2 shows the association between pairwise characteristics and the existence of a romantic tie. A number of the results here look similar to those we found in Jefferson. Even though a boy's popularity increases the likelihood he will be in a relationship, adolescents do not appear to sort by popularity. That is, popular boys are not especially likely to be involved with popular girls. In addition, adolescent pairs do sort by BMI, GPA, and grade level.

However, a number of patterns differ in the Sunshine context. Unlike at Jefferson, in the racially heterogeneous context of Sunshine, boy-girl pairs of the same race are significantly more likely to be romantically tied than pairs involving a boy and girl of difference races. We also observe significant sorting by religious fundamentalism. Further, net of the influence of race, we do not observe significant pairing by parent's education.

The results from Model 3 indicate that these patterns of sorting by socioeconomic background are not explained by the structure of course-taking in the school. Clearly, sharing courses greatly increases the likelihood that a boy and girl are romantically involved. However, controlling for shared course-taking does nothing to reduce the influence of race and religious beliefs on who dates whom. Thus, in both Sunshine and Jefferson, patterns of assortative mating work largely

independently of the way schools structure adolescents opportunities to meet. The one exception is that sorting by GPA is no longer significant in Model 3.

Model 4 includes both the individual-level and pair-level characteristics. As was the case in Sunshine, the factors that influence who dates are generally different from those that impact who dates whom. Thus, the pattern of effects in Model 4 are generally similar to those in the preceding models. The advantages of modeling the processes jointly can still be seen however. Take for example, the estimation of the influence of race on the likelihood of being involved in a romantic relationship. In Model 1, there are no significant race differences and all groups were equally likely as whites to form a relationship. This is despite the fact that there is strong sorting by race in this school (Models 2 and 3) and whites are a small statistically minority in this school (). Once we control for the advantage that other groups enjoy because of these two factors, we see that whites are more likely to be romantically involved than the other groups and the difference between whites and Asians is statistically significant.

DISCUSSION

The first question we wished to answer with this analysis was which factors are most relevant in adolescents' selection of romantic partner, social status, physical characteristics, socioeconomic status, or academic attributes? The influence of social status is surprisingly small, while the salience of the other dimensions is much stronger. In fact, patterns of assortative mating among adolescents look quite similar to those we observe among adults. Even when there is opportunity to do so, men and women do not date across race lines. In addition there is strong sorting by socioeconomic status and we observe a tendency for adolescents to sort by academic performance, a precursor to educational attainment. It is telling that academic performance is salient in adolescence, before couples are likely to be considering earnings potential as a factor in their decisions regarding whom to date. Altogether, this suggests that patterns of educational assortative mating are due not only to

individuals' desire to achieve the highest family income possible given one's own earning power. Nonetheless, with the rise in women's employment and earnings potential, educational assortative mating intensified earnings inequality. Whatever makes GPA salient to adolescents, be it unmeasured aspects of social status, verbal ability, shared interests, or personality traits (like conformity), this factor plays an important role in the intergenerational transmission of inequality.

Our second question was whether patterns of assortative mating, particularly by race and other dimensions of socioeconomic status, arise because of the ways that institutions (in this case schools) structure social interaction. We find little evidence that patterns of assortative mating arise because of segregation in course-taking or extracurricular activities. Sorting by academic performance is partly due to overlap in courses, but this factor remains significant in the full model, at least in Jefferson.

Even if the social structure does not directly shape assortative mating, it may indirectly influence mate selection by altering preferences, or limiting choice. We have a sample of only two contexts and thus we are extremely limited in our ability to investigate the ways that the composition of contexts influence mate selection. With that caution, we note that in the ethnically heterogeneous school, race was much more salient than parent's education. In addition, in the context where adolescents could easily establish same-race relationships, other aspects of socioeconomic background became salient. Perhaps this is because adolescents mate choice was so limited by the racial composition in the racially heterogeneous school that they could not also realize preferences for others from a similar social class. Another hint that adolescent relationships were constrained was that only a small proportion (16%) of the boys in Sunshine had a romantic tie with a girl in the school, whereas 47% of the boys in Jefferson were romantically involved with a schoolmate. Other differences between these two contexts combined with problems of sample attrition limit our ability to form solid conclusions about the contextual factors that influence adolescent mate selection.

Given that characteristics of adolescent relationships are similar to those of adult relationships, further investigation of the factors that influence adolescent mate choice may be a fruitful approach

17

towards understanding adult relationship formation. Recent popular depictions of adolescent heterosexual relationships in some ways echo the observations of Waller in his 1937 publication the "Rating and Dating Complex." Waller described the dating scene in the context he was studying as oriented around thrill seeking and exploitation, a result of the decline of "formal modes of courtship" (Gordon 1981). In subsequent years his analysis was criticized for misrepresenting the dating cultures on college campuses (e.g. Blood 1955; Gordon 1981). Today we read about adolescents "hooking up" in sexually exploitive relationships, facilitated by internet sites that allow users to post their own and rate other adolescents' photos as attractive or not (Denizet-Lewis 2004). If these accounts (past or present) accurately characterized adolescent dating, then examining these youthful relationships would likely provide little insight into adult relationship formation. These popular descriptions may be accurate for some contexts, but just as was the case for Waller, they do not necessarily represent the majority experience. According to an analysis of data from the Add Health, over 80% of adolescent (hetero)sexual relationships occur in romantic relationships (Ford, Sohn, and Lepkowski, 2001). Consequently, adolescent relationships may provide a fruitful avenue for the investigation of how social and contextual factors shape relationship formation.

Reference List

Alba, Richard and Victor Nee. 1997. "Rethinking Assimilation Theory for a New Era of Immigration." *International Migration Review* 31:826-74.

Bean Frank D. and Stevens Gillian . 2003. *America's Newcomers and the Dynamics of Diversity*. New York: Russell Sage.

Bearman, P. S., J. Moody, and K. Stovel. 2004. "Chains of Affection: the Structure of Adolescent Romantic and Sexual Networks." *American Journal of Sociology* 110(1):44-91.

Blood, R. 1955. "A rests of Waller's Rating Comples." Marriage and Family Living 17: 41-47.

Carver, Karen and J. R. Udry. 1997. "Reciprocity in the Identification of Adolescent Romantic Partners." *Population Association of America* . Washington, D.C.

Cohen, P. N. 2002. "Cohabitation and the Declining Marriage Premium for Men." *Work and Occupations* 29(3):346-63.

Denizet-Lewis, Benoit. 2004. Whatever Happened to Teen Romanc? New York Time Magazine. May 30th.

Gordon, Milton. M.. 1964. Oxford: Oxford University Press.

Gordon, Michael. 1981. Was Waller Ever Right? The Rating and Dating Complex Reconsidered. *Journal of Marriage and the Family*. Pp. 67-76.

Kalmijn, M. 1991. "Status Homogamy in the United-States." *American Journal of Sociology* 97(2):496-523.

———. 1998. "Intermarriage and Homogamy: Causes, Patterns, Trends." *Annual Review of Sociology* 24:395-421.

Lee, J. and F. D. Bean. 2004. "America's Changing Color Lines: Immigration, Race/Ethnicity, and Multiracial Identification." *Annual Review of Sociology* 30:221-42.

Lewis, S. K. and V. K. Oppenheimer. 2000. "Educational Assortative Mating Across Marriage Markets: Nonhispanic Whites in the United States." *Demography* 37(1):29-40.
Notes: ISO Source Title Abbreviation: Demography
ISI Document Solutions: 288AZ
29-Character Source Title Abbreviation: Demography

Lieberson, Stanley. 1980. *A Piece of the Pie: Blacks and White Immigrants Since 1880.* Berkeley: University of California Press.

Mare, R. D. 1991. "5 Decades of Educational Assortative Mating." *American Sociological Review* 56(1):15-32.

Oppenheimer, V. K., M. Kalmijn, and N. Lim. 1997. "Men's Career Development and Marriage Timing During a Period of Rising Inequality." *Demography* 34(3):311-30.

Perlmann J. 2000. " Reflecting the Changing Face of America: Multiracials, Racial Classification, and American Intermarriage.
." Pp. 506-33 in *Interracialism: Black-White Intermarriage in American History, Literature, and Law* , Sollars. New York: Oxford University Press.

Qian, Z. C. and D. T. Lichter. 2001. "Measuring Marital Assimilation: Intermarriage Among Natives and Immigrants." *Social Science Research* 30(2):289-312.

Smits, J., W. Ultee, and J. Lammers. 1996. "Effects of Occupational Status Differences Between Spouses on the Wife's Labor Force Participation and Occupational Achievement: Findings From 12 European Countries." *Journal of Marriage and the Family* 58(1):101-15.

Waite, L. J. 1995. "Does Marriage Matter?" *Demography* 32(4):483-507.

Waller, Willard. 1937. The Rating and Dating Complex. *American Sociological Review*, 2(5): 727-734.