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Of Sex and Romance: Late Adolescent Relationships and Young Adult Union Formation

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Abstract

To better understand the social factors that influence the diverse pathways to family formation young adults experience today, this research investigates the association between opposite-gender relationships during late adolescence and union formation in early adulthood. Using data from the first and third waves of the Add Health ($n = 4,911$), we show that, for both men and women, there is continuity between adolescent and adult relationship experiences. Those involved in adolescent romantic relationships at the end of high school are more likely to marry and to cohabit in early adulthood. Moreover, involvement in a nonromantic sexual relationship is positively associated with cohabitation, but not marriage. We conclude that the precursors to union formation patterns in adulthood are observable in adolescence.

Keywords

adolescent relationships; cohabitation; marriage; sexual behavior

Over the past 15 years, the typical age at first marriage has shifted to later ages, continuing a trend that began in the 1950s. In 1990, the median age at marriage for men was 26.1, whereas the median age for women was 23.9. In 2003, the estimated median age at marriage had increased to 27.1 for men and 25.3 for women (Fields, 2003). Along with this shift, the experiences of early adulthood have become increasingly varied. Some marry early, whereas others cohabit or remain single. Among the cohort of women born during 1965–1969, approximately one-half had married (23% after cohabiting), 15% had cohabited without marrying, and one-third had formed no union by age 25 (Raley, 2000).

A life course approach helps us to better understand this variation in family transitions by recognizing that events in one stage are shaped in part by what happened in the preceding stage. That development is a cumulative and life-long process suggests that we should observe continuity between one life course stage and the next. Researchers have produced some evidence of this continuity in family patterns. For example, those whose first marriages end in divorce have greater risks of divorce in subsequent marriages even controlling for factors such as race, education, and age at first marriage (Martin & Bumpass, 1989). Patterns of divorce also suggest continuity between educational and marital careers. Marital dissolution is more common for those who start, but do not complete, a college degree than for those who never attend college or who earn a college degree (Glick & Norton, 1977; Raley & Bumpass, 2003). We do not know what produces this continuity. It may be persistent individual

personality characteristics or there may be consistent factors in the social context. For example, given that people tend to live in similar neighborhoods throughout their adult lives, neighborhood factors that contribute to a first divorce might increase the risk of a second. Life course theory suggests that early life course experiences inform the developmental process and contribute to this continuity (Elder, 1975).

Although some evidence suggests continuity in the risks of the dissolution of relationships, we have much less to suggest similarity in patterns of the formation of relationships across the life course. Yet early life course experiences might be an important factor leading to variation in timing and type of union formation we observe in early adulthood. The focus of this article is on experiences with the opposite gender during late adolescence. To investigate the possible continuity between adolescent experiences and relationship formation in early adulthood, we employ data from the first and third waves of the National Longitudinal Survey of Adolescent Health. We also use data from the educational component of the Add Health, the Adolescent Health and Academic Achievement Study (AHAA). These data make possible for the first time the examination of how experiences with the opposite gender during late adolescence are associated with patterns of early adult relationship formation with thorough controls for academic behavior, which accounts for potential educational and economic opportunities in the future.

Adolescent Relationships With the Opposite Gender

There are at least two dimensions to adolescent couple relationships, sex and romance. Of the two, sexual involvement has received much more attention (Longmore, Manning, Giordano, & Rudolph, 2003). A substantial body of literature investigates adolescent sexual activity, including the timing of first sex, contraceptive use, and the influence of sex education (e.g., Franklin, Grant, Corcoran, Miller, & Bultman, 1997; Frisco, 2005; Marsiglio & Mott, 1986; Upchurch, Levy-Storms, Sucoff, & Aneshensel, 1998). This literature is motivated primarily by the desire to reduce teen pregnancy, sexually transmitted infections, and sexual exploitation (Elo, King, & Furstenberg, 1999; Furstenberg, 2003). Sexual involvement in adolescence and early adulthood, however, is also associated with adult relationship experiences. For example, Teachman (2003) shows that the number of sexual partners prior to marriage is positively associated with the likelihood of divorce.

Another dimension of adolescent opposite-gender relationships, one that has received substantially less attention until recently, is romance (Longmore et al., 2003). Romance refers to the strength of the emotional connection as well as the social recognition of the relationship (i.e., the nonsexual aspects of a relationship). An emerging body of research investigates the romantic dimension of adolescent relationships and the implications of romance for adolescent development. Carver, Joyner, and Udry (2003) provide a comprehensive description of adolescent romantic experiences using data from Add Health. Romantic activity increases through the adolescent years, and by age 18, 69% of boys and 76% of girls have had a romantic relationship in the last 18 months. In addition, their results indicate that although heterosexual relationships are common, same-gender relationships are rare. Only 2% of boys and fewer than 4% of girls who had a romantic relationship reported that it was with someone of the same gender. Among those adolescents who are able to provide dates for the start (and, if applicable, the end) of their relationships, the duration of adolescent romantic relationships is surprisingly long. Half of the relationships of adolescents 16 years old and older had been ongoing for at least 21 months. The majority of these couples had gone out together alone, told one another that they loved each other, and gave each other presents. Most had also integrated their romantic partner into their broader social network, going out together as a group with friends, and introducing their partner to their parents.

Research shows that romantic relationships are an important source of volatility in adolescent moods. Adolescents in the 9th through 12th grade report that a quarter to a third of their strong emotions results from romantic affairs (Larson, Clore, & Wood, 1999). Moreover, adolescent romantic involvement has been linked to delinquency (Haynie, Giordano, Manning, & Longmore, 2005) and depression among girls (Joyner & Udry, 2000). Thus, both from their prevalence as well as their intensity, romantic relationships are likely to be an important aspect of adolescent development and the transition into adulthood (Furman & Shaffer, 2003).

Although romantic relationships are generally common during adolescence, there is substantial variation in the content and intensity of these relationships. One source of variation is age; older adolescents typically have more involved and socially integrated relationships. Yet, even among the older couples, some have relationships with relatively low levels of social or emotional engagement (Carver et al. 2003; Crissey, 2005). These low-involvement relationships could be in their initial stages or they may reflect a relationship style that is more focused on sexual activity than on the romantic dimension. Some research suggests that romantic attachment style reflects a broader more general approach to managing and understanding close relationships, including parent-child relationships (Furman & Simon, 1999). Consequently, characteristics of parent-child relationships may be a source of variation in adolescent romantic relationships. Moreover, peers play an important role in setting norms (Simon, Eder, & Evans, 1992). Differences in norms across social contexts may contribute to the variability in romantic experiences of adolescents. Whatever the source of variation in adolescent experiences, if these relationships form a foundation for later family formation, they may account for some of the diversity in the transition to adulthood.

Late Adolescent Experiences as Predictors of Early Adult Union Formation

To our knowledge, no published research has investigated the effect of adolescent relationships on relationship formation in adulthood, although there are obvious mechanisms through which adolescent relationships with the opposite gender at the end of high school could be linked to union formation patterns in early adulthood. First, sometimes young adults cohabit with or even marry their high school sweethearts. Today few adolescents marry in their teens, which we do not expect is a major pathway through which adolescent and adult experiences are linked. In our sample, only 18% (weighted) of those who married did so before age 19. In addition, as we describe below, we tested whether the effect of romantic involvement varied by age and found that the effect of these variables was the same after age 20 as in earlier ages. Second, experience in a romantic relationship enables the development of interpersonal skills to facilitate communication and manage emotions as adolescent romantic couples must negotiate conflicting needs and opinions (Shulman, 2003). The development of relevant skills, of course, begins much earlier in the life course with parents and peers, but romantic relationships add a new layer of complexity to manage (Collins & Sroufe, 1999; Furman & Shaffer, 2003; Furman & Simon, 1999). These skills may then be useful for establishing a *committed* relationship in adulthood. Those with more practice managing relationships may have more relationship skills and may take less time to marry than those who have little direct experience with relationships. Note that those who do not have adolescent relationships will likely eventually marry, but marriage may be delayed to later ages because they waited longer to start acquiring the relevant skills.

The opportunity that romantic relationships provide may be especially important for boys. Girls' friendships are more intimate and more closely resemble romantic relationships than is the case for boys (Maccoby, 1990). Girls without romantic relationships may have more opportunities for learning these skills outside of romantic relationships compared to boys (Giordano, Longmore, & Manning, 2006). Alternatively, because girls may be on average more

active in managing the emotional and social aspects of a relationship than boys, they may learn more from their romantic experiences.

A third mechanism through which adolescent romance might increase rates of marriage in early adulthood could be through social identity (Furman & Shaffer, 2003). Having a romantic relationship offers adolescents opportunities to develop new identities as girlfriends or boyfriends, changing the way others perceive them as well as how they think of themselves. For example, when a boy starts dating, girls may shift their perceptions of him from “buddy” to potential romantic partner. Thus, once his first relationship ends, more will likely follow. Eventually others’ perceptions as well as his own experiences might change this adolescent’s sense of self so that he expects to be in a relationship. More generally, just as experience in romantic relationships in adolescence may facilitate the development of skills to manage the emotional and other interpersonal aspects of the relationship (e.g., communication skills), this experience might also help the development of skills to manage the social aspects of relationships. The role of boyfriend or girlfriend incorporates a wide set of socially constructed rules about behavior. These include rules about how to manage priorities when activities with friends conflict with those of romantic partners, about interaction with the opposite gender while one is in a (heterosexual) relationship, as well as about appropriate ways for couples to interact with each other. Experience in romantic relationships provides a venue for learning these rules and how to negotiate the balance between one’s own preferences and these social demands. This experience might facilitate earlier marriage.

All told, we have good reason to expect that the effects of romantic experiences should be positively associated with marriage rates as this is clearly a relationship that couples anticipate will be long term and so it requires skills to manage. In contrast, we do not expect that the other dimension of adolescent relationships, sexual experiences, will have any direct effect (controlling for romantic experiences) on marriage because these experiences do not enhance these skills or any other characteristics that facilitate long-term relationships. Nonetheless, we do expect that sexual experiences will have an indirect effect on marriage. First, the sexual and romantic dimensions of adolescent relationships are clearly associated. Most sexual activity takes place within romantic relationships. Further, sex can enhance the interpersonal emotional connection and the fact that a couple is sexually involved can change the relationship of the couple to others. Second, sexual activity is negatively associated with academic achievement (Furstenberg, Morgan, Moore, & Peterson, 1987; Miller & Sneesby, 1988; Schvaneveldt, Miller, Berry, & Lee, 2001). Consequently, youth involved in sexual relationships are less likely to go to college, a life course process that inhibits marriage and cohabitation in early adulthood (Thornton, Axinn, & Teachman, 1995). In addition, sexual activity sometimes leads to pregnancy. Although “shotgun” marriages are much less common today than in the past, pregnancy is still a strong predictor of marriage (Bachu, 1999; Raley, Durden, & Wildsmith, 2004). Furthermore, to the extent that the strength of one’s sex drive relative to others of the same age is stable over the early life course, this factor could be another contributor to continuity between adolescence and early adulthood. Those with stronger libidos should on average be more likely to be sexually active as adolescents and may be more motivated to form marital or cohabiting relationships early in adulthood.

In sum, romantic experiences are not uniformly pleasant nor will they universally encourage marriage in early adulthood. Depending on their character, they might also undermine the development of trust in the opposite gender. Adolescent romantic relationships involve some risk, sometimes generating emotions such as jealousy, anger, and depression (Furman & Shaffer, 2003). Yet, on average, we expect that adolescent romantic experiences encourage marriage in early adulthood, perhaps especially for boys, and the primary purpose of this article is to describe and explore this association.

In contrast, we are uncertain as to whether romantic involvement will be associated with cohabitation. In our discussion above, the primary pathways that connect adolescent experiences with adult union formation involve the development of relationship skills as well as a social identity that incorporates the couple role. The importance of skills for managing the interpersonal aspects of relationships is much greater in long-term committed relationships than in short-term casual liaisons. Moreover, the social expectations for couples involved in short-term relationships are also weaker. One likely would expect individuals in casual relationships to prioritize other aspects of their lives, and consequently, there is no need to balance the demands of the romantic relationship with other aspects of life. Consequently, we expect that the effect of adolescent romantic experiences will depend largely on how cohabitation compares to marriage and to more casual relationships. In most cohabiting unions, at least one of the partners expects to marry the other, suggesting that for many cohabitation is a precursor to marriage (Bumpass, Sweet, & Cherlin, 1991). Others who are less sure they want to commit to a relationship permanently use cohabitation as a trial period to establish whether they are compatible (Oppenheimer, 2003). Another set of cohabiters may live together for the convenience of sharing living expenses and having easy access to a sexual partner rather than as a symbol of commitment to each other or to the institution of marriage (Rindfuss & Vandenhuevel, 1990). When cohabitation serves primarily as a stepping-stone to marriage, then romantic involvement should increase the chances of either cohabitation or marriage. In cases where cohabitation serves primarily as a convenient sexual arrangement with a weak “romantic” component, then we should expect that romantic experiences enhance marriage formation but have little direct effect on cohabitation. Although it is not the primary goal of our analysis, examining the separate influences of the romantic and sexual dimensions of adolescent relationships at the end of high school on marriage and cohabitation in early adulthood will provide insight into the ways cohabitation is differentiated from marriage and singlehood.

Other Predictors of Marriage and Cohabitation

Our primary goal is to investigate whether there is continuity in relationship formation patterns from adolescence into early adulthood and to demonstrate that this continuity is not a spurious artifact of other factors such as contemporaneous life course transitions. One set of factors that might contribute to a spurious association is family background characteristics, including parental marital status, parental education, and race. Parental divorce and remarriage are associated with children’s marriage and cohabitation patterns (Axinn & Thornton, 1993), and our own analyses suggest that it is also associated with adolescent relationship formation (Cavanagh, Crissey, & Raley, 2006). Adolescents with more highly educated parents are more likely to expect to go to college, which might both decrease the chances that they invest in romantic relationships during adolescence and delay marriage and cohabitation by increasing the likelihood of college attendance. In addition, previous studies have documented race-ethnic variation in adolescent experiences with the opposite gender (Upchurch et al., 1998) as well as adult union formation patterns. All these characteristics are exogenous to adolescent experiences, so in controlling for them we do not run the risk that we are downwardly biasing estimates of the effect of adolescent experiences on adult union formation. Although it is not a family background characteristic, age is also an exogenous variable. Because adolescent union formation patterns are so strongly associated with age, we include this time-varying variable as a control.

Relationships with the opposite gender during late adolescence are likely connected to a broader set of characteristics and experiences during this time that might also influence union formation in adulthood. These attributes include attractiveness, maturity, closeness to parents, religious involvement, academic performance, self-esteem, having opposite-gender friends, and having a same-gender attraction. It is important to account for these characteristics because,

for example, adolescents with evangelical religious affiliations might be less likely to be romantically and sexually involved as adolescents but more likely to marry in early adulthood. Another example concerns same-gender attraction. Many of the adolescents who have a same-gender attraction also have opposite-gender attractions and some marry, but having a same-gender attraction likely on average reduces romantic involvement in adolescence and may delay marriage and cohabitation as homosexual relationships do not enjoy the same social supports as heterosexual relationships. This variable is included in our models to capture some of the influence homosexuality might have in producing continuity between adolescent and adult relationships in the United States.

We cannot determine whether these factors are mechanisms through which relationships influence adult union formation or if they are characteristics that shape an adolescent's likelihood of forming a romantic relationship. A girl's academic performance might slip as a result of her romantic involvement (Crissey, 2006), and this might ultimately affect when she forms a union later in adulthood. Alternatively, girls who perform better academically might avoid romantic involvement (Halpern, Joyner, Udry, & Suchindran, 2000) because they do not anticipate marriage in the near future. Even though we cannot determine causal ordering, these analyses will provide valuable information because if adolescent relationships influence adult union through the pathways we suggest, then there should continue to be an association even after these controls are included in the model.

Finally, we investigate whether the associations between adolescent opposite-gender relationships persist regardless of experiences following high school, specifically premarital pregnancy and college attendance. In our discussion above, we suggested that sexual experiences with the opposite gender during adolescence would indirectly influence union formation through pregnancy and academic achievement. Romantic involvement might also influence rates of union formation in early adulthood by reducing the chance that an adolescent, particularly a girl, goes to college. These indirect influences through shaping other life course events are important, but we are also interested in whether there is a more direct connection between adolescent and adult relationship experiences.

Method

Data

This study uses data from multiple waves of the National Longitudinal Survey of Adolescent Health. The complex longitudinal design of the Add Health includes a 1994–1995 in-school interview, a 1995 Wave I in-home interview, a 1996 Wave II in-home interview, and a Wave III in-home interview collected in 2001–2002. Our analyses employ data primarily from the Wave I and III in-home interviews. The 1995 Wave I in-home sample was drawn from those eligible to respond to the in-school survey (on the school roster). Respondents to the first in-home interview comprise a national sample of adolescents in Grades 7–12 in the U.S. Ethnic minorities; siblings and students with disabilities were selected as oversamples. The focus of Wave III, collected between August 2001 and April 2002 when respondents were between 18 and 26 years old, is on the transition between adolescence and young adulthood. The Wave III interview was completed for 15,197 respondents or 73% of the original Wave I sample.

An additional source of data for the construction of the academic performance measures is provided by the Add Health and AHAA. As part of the Add Health Wave III data collection, interviewers asked respondents whether they would be willing to allow the Add Health access to their high school transcripts. Starting in fall 2001, AHAA collected high school transcripts and other school-level information from all Add Health high schools as well as 1,400 additional schools that Add Health respondents last attended. Approximately 91% of Wave III respondents gave permission to access their high school transcripts.

Our analyses employ a subsample of adolescents who were in the 11th and 12th grades in the first wave. As mentioned above, involvement in couple relationships varies substantially by age. Relationships become longer, more emotionally intense, and more integrated into the couple's broader network of friends and family as judged by the proportion of couples who say they love each other, exchange gifts, and meet each others' parents. Intense couple relationships are the exception in middle school but become more common by the end of high school. This variation by age leads us to believe that the meaning of romantic involvement might vary by age. A normal relationship in an adolescent's senior year would probably be inappropriately intense for an eighth grader. This developmental diversity threatens to cloud the interpretation of our findings. Consequently, we focus on a subsample of adolescents first observed in the 11th and 12th grades. That is, we measure romantic and sexual involvement for everyone at roughly the same age and using a cohort that is in their mid-20s (94% of the sample falls between the ages 23 and 25) at the time of the Wave III interview.

Despite the strengths of the Add Health data set as the only national sample longitudinal data set with detailed information on romantic and sexual relationships in adolescence as well as marriage and cohabitation in early adulthood, sample attrition and our selection of 11th and 12th graders may mean that the sample does not represent all adolescents in this age group. Not all adolescents are attending high school as some have dropped out and others have graduated. The proportions are sufficiently small, however, as to not bias the results from school-based samples (Udry & Chantala, 2003). Moreover, if dropouts do bias the results, it is likely to reduce the measured effects of romantic and sexual involvement as those whose futures were most affected by opposite-gender relationships are not observed in the sample. A potentially more serious threat to our analysis is the high levels of sample attrition in Wave III.

The first column of Table 1 presents the unweighted distribution on our independent variables for the Wave I sample with valid sample weights ($n = 18,924$). The second column restricts this to respondents in the 11th and 12th grades in Wave I ($n = 6,743$). We explain the construction of the variables in Table 1 below, but the aim here is to identify any systematic bias that might be introduced by restricting our sample to those who have made it to the 11th and 12th grade. Comparing the full sample to 11th and 12th graders we find, not surprisingly, that the grade-restricted sample is older. In the all Wave I sample, the mean age is 15.7 years old, but the sample restricted to the 11th and 12th grades has a mean age of 17.4. Other large differences include the proportion that is in or has recently had a sexual romantic relationship and the level of romantic involvement is higher in the restricted sample. There is also a small difference in the parental education variable with adolescents with more highly educated parents more likely to make it into the restricted sample. Given that this difference is so small, we expect that the other differences (in romantic involvement) likely result from developmental processes rather than sample selection.

The third and fourth columns of numbers present information on the sample of respondents who were not included in our analyses and the analytical sample, which includes those who responded to Wave III, who have valid data on the date of marriage and first union, and who were not married prior to the Wave I interview. This is our analytical sample of 4,911 cases. By far the largest factor reducing the sample between the second and third columns is Wave III sample attrition, which accounts for 1,756 of the 1,832 cases lost. Generally, the characteristics of the analytical sample are roughly similar to those presented in the second column, but many of the differences are statistically significant. For example, those who had a sexual romantic relationship are significantly less likely to make it into the analytical sample (.46 vs. .49 in the attrition sample). The last two columns show the weighted distributions for the total sample and our analytical sample. Generally, the weighted distributions are very similar, and overall, these results suggest that the sample weights do a good job of adjusting

for bias that might be introduced through sample attrition. Nonetheless, there may still be differences between our sample and a truly representative sample on unobserved characteristics, and these differences could bias our results. Despite this potential problem, the Add Health is certainly the best national data set for our analyses.

Measures

Our dependent variables capture the timing of first marriage as well as the timing and type of first coresidential union (marital or cohabiting). These variables are constructed using respondents' answers to questions in the Wave III interview. The survey first asked respondents about the number of times they had been married and the dates of these marriages. We use this information to construct a time-varying indicator of whether the respondent had married in each year. Later the questionnaire asks whether they had ever lived with someone in a "marriage-like" relationship, whether these relationships resulted in marriage, and the dates of transitions into these relationships. We combine this information to create a variable indicating the timing and type of first union. In our sample, 59% of the men and 66% of the women (weighted) had formed a coresidential union (married or cohabiting) by the time of the third in-home interview, when the mean age of respondents was slightly younger than 24 years old. Given the young age, it is not surprising that a small proportion had married, 25% of men and 32% of women. Of those who married, about half (46% of men and 53% of women) had cohabited prior.

The most appropriate way to model the timing of first marriage, or the timing and type of first union, is to employ an event history approach, in this case discrete-time Cox proportional hazard models. To model marriage, we first create a separate observation for each person-year lived between Wave I and first marriage or the Wave III interview (whichever comes first). Then we estimate multinomial logistic regression models in STATA predicting the dichotomous outcome, married or not. We adopt a similar approach for predicting first union type only; we create person-year records up to first union, and the outcome is a three-category variable, indicating whether the respondent married, cohabited, or remained single in that person year. This approach is widely employed and has been shown not to violate assumptions about independence across observations (Allison, 1982). The event history approach has a number of advantages over one that predicts marital-cohabitation status at Wave III. First, we are not only interested in whether the respondent forms a union but the timing of this event. Because not all the respondents have married or cohabited by Wave III, we cannot use age at first union as an outcome. Second, we want to know whether the respondent entered first union through marriage or cohabitation. Because many who cohabit go on to marry, we cannot use marital-cohabitation status at Wave III as our outcome measure.

Our primary independent variables measure experiences with the opposite gender during late adolescence. Our goal is to investigate the association between adolescent experiences with the opposite gender and the timing and type of adult union formation. Most studies that have investigated the effect of opposite-gender relationships on the transition to adulthood have focused on sexual relationships, particularly those that have resulted in a teen pregnancy. In our analyses, we explore an array of measures that take advantage of the fact that the Add Health not only asks about sexual aspects of relationships but also the romantic aspects. Sensitive to the fact that these two dimensions are so strongly associated and each may condition the effects of the other, our measures also allow the effects of sexual involvement to vary by whether sex occurs within a romantic relationship.

Our variables that measure the romantic dimension of adolescent relationships are constructed from respondents' reports of their experiences during the 1994–1995 school year, when they were in the 11th and 12th grade. During the in-home interview, respondents are asked whether they had "a special romantic relationship with anyone" in the last 18 months. Those who

acknowledged having had a romantic relationship are later asked more details about it, such as when the relationship started and whether the couple had sex. In these follow-up questions, a few adolescents ($n = 191$, or 4%) reversed themselves and denied that they had a relationship. Those who admitted a special romantic relationship in the first question and who did not later deny the relationship are considered to have had a romantic relationship. In addition, respondents were asked whether they kissed, held hands with, and said they liked or loved someone other than a family member. Respondents who said that they had done all three with the same partner are also considered to have had a romantic relationship. Combining this information, we construct the first independent variable, *romantic involvement*, which has three categories: no current or recent romantic relationship, currently or recently involved in a romantic but not sexually intimate relationship, and currently or recently involved in a sexually active romantic relationship.

The second set of variables describes the *romantic activities* that took place within the adolescents' relationships. Respondents reporting relationships were asked to identify the activities they did in each relationship. The specific activities are (a) going out together in a group, (b) giving or receiving a present, (c) meeting partner's parents, (d) told other that we are a couple, (e) said I loved or was told I am loved, (f) saw less of other friends, (g) went out together alone, (h) held hands, (i) thought of ourselves as a couple, (j) talked about contraception or sexually transmitted diseases, (k) kissed, (l) touched each other under our clothing or with no clothes on, (m) had sexual intercourse, (n) touched each others' genitals (private parts), and (o) my partner or I got pregnant. The last of these pertain more to the sexual dimension of the relationship, which is not our primary interest. The first nine, however, could all be considered activities associated with the romantic dimension of relationships. We explored each of these activities separately on the chance that some are more strongly associated with marriage and others might be associated with cohabitation. For each activity, we use an average across all recent relationships rather than only the current or most recent relationship because an adolescent's level of romantic involvement likely varies somewhat from relationships to relationship depending on the tendencies of the romantic partner. By averaging, we hope to better capture the adolescent's typical experience or relationship style. This approach also reduces the influence of missing data because we still have information when respondents are missing information on their current or most recent relationship. We estimated the correlation between our averaged measures and measures that use only the first reported relationship. The correlations range from .87 to .92, and so we are confident that this decision does not substantially influence our results.

Two measures attempt to capture the sexual dimension of adolescent experiences with the opposite gender. The first has already been mentioned; our measure of romantic involvement differentiates sexually intimate romantic relationships from those who did not have sexual intercourse. The second measure, a dummy variable, captures sexual experiences outside of romantic relationships. This variable is coded 1 when respondents answered with a *number other than 0* to the question: "Since January 1, 1994, with how many people, not including romantic relationship partners, have you had a sexual relationship?" These are considered *nonromantic sexual relationships* because, although they may have some romantic content, they are less romantic than those listed as special romantic relationship or those that engaged in romantic activities (holding hands, kissing, and saying that they liked or loved each other).

Multivariate models control for family background factors such as parental marital status, parents' education, and race-ethnicity. Additionally, we include variables describing other aspects of adolescent experiences that might influence adult union formation. The first of these is attractiveness, which is measured through an interviewer rating of physical attractiveness and body mass index (BMI). Other controls include religiosity, pubertal development, closeness to parents, and self-esteem. These measures are indices constructed from responses

to multiple questions and have been used in published research using Add Health data (Bearman & Bruckner, 2001). Popularity, another control, is measured as the number of friendship nominations the respondent received in the in-school survey. We also control for having had a same-gender attraction in adolescence. As discussed in the background section, each of these controls might be associated with adolescent relationships with the opposite gender and union formation. With the exception of popularity, these characteristics are all measured in the Wave I in-home survey. A final set of variables measure academic ability and performance in adolescence. The respondent's score on the Add Health Peabody Picture Vocabulary Test is used as a measure of ability. Academic performance is measured using the respondent's high school transcripts, which were collected by the AHAA, the educational component to the Add Health. We combine information about two aspects of academic performance, cumulative grade point average (GPA) and highest math course taken. Adolescents with a 3.0 or better GPA and who take at least Algebra II by the end of high school are considered *college bound*.

Finally, we control for other experiences following high school that might influence union formation including pregnancy and childbirth as well as whether the adolescent actually went to college. These experiences occur after our measurement of adolescent relationships and thus might be considered potential mediating variables. We expect that sexual activity in adolescence has no direct effect on union formation, but it may exert an influence through pregnancy or college going. By observing the change in the coefficients measuring romantic and sexual involvement when we add these variables to the model, we obtain evidence as to whether some of the effect of adolescent experiences is mediated by these other life course events. We expect, however, that romantic involvement will continue to be associated with union formation in adulthood even with these controls because we believe that the association partly results from the development of skills and changes in social identity that accompany adolescent romantic experience. The Add Health data include information that allows us to construct time-varying variables indicating whether the respondent, if female, has given birth or, if male, has fathered a child. Following the advice of Add Health, all multivariate analyses are weighted. Analyses included cases with missing data, and estimates were corrected through multiple imputation procedures. We use the Wave III sample weight (*gswgt3_2*), which is appropriate for analyses using data from Waves I and III. Finally, analyses adjust standard errors for the clustered sampling design by employing the survey procedure in STATA.

Results

The last column of Table 1 describes romantic and sexual experiences with the opposite gender during late adolescence for our analytical sample using weighted data. Between a quarter and a third had a nonsexual romantic relationship, and nearly half had recently had a sexual romantic relationship. That is, a total of 77% had a romantic relationship. The large majority of cases held hands with their romantic partner, and a smaller proportion saw less of their friends to spend more time with their partner. Finally, a substantial minority of adolescents (27%) had a recent nonromantic sexual partner.

Table 2 shows the proportional hazard estimates of the effects of adolescent experiences with the opposite gender on rates of union formation in early adulthood. The leftmost columns of numbers show the results from models predicting first marriage, whether or not marriage was preceded by cohabitation. The right side of the table shows results from competing risk models predicting coresidential union formation by union type. The top of Table 2 (Panel A) shows that romantic involvement has a strong and significant association with marriage rates in early adulthood. Adolescents involved in a sexually active romantic relationship have about double the rates of marriage in early adulthood compared to those who report no relationships. The results displayed under the heading *union formation* show that romantic involvement in late

adolescence is associated with increased rates of both cohabitation and direct marriage (i.e., marriage not preceded by cohabitation). In addition, involvement in a nonromantic sexual relationship is positively associated with forming a cohabiting relationship but negatively associated with direct marriage. We also estimated models that interact the romantic involvement variables with gender, but these interaction terms were not statistically significant and did not improve the fit of the model. To investigate whether these positive effects were driven by individuals forming relationships with their high school partner, we estimated a model that interacted romantic involvement with age. We expected that unions formed with high school partners would be especially likely at younger ages, and so we would expect the effects of romantic involvement on marriage rates to be especially strong before age 19. We tested for but found no significant age interactions. We interpret this to indicate that our results do not arise because of individuals forming unions with their high school partners.

Because previous research indicates that not all romantic relationships are equivalent (Crissey, 2005), we also examine the association between romantic activities and union formation. We expected that more involved relationships (i.e., those with more romantic activity) would be especially likely to influence marriage because these relationships provide the greatest opportunity for the development of relationship skills or to shape a person's social identity. Panel B presents the estimated effects of each romantic activity on marriage and union formation in models that control for the variables presented in Panel A. We also estimated a model using an index that combined all activities into one measure, but this index is not statistically associated with marriage. As Table 2 shows, of the relationship activities, only expression of love is significantly associated with marriage. We tested to see whether the effects of romantic activity differed by gender and found no significant interactions. The analysis of first union type shows that none of the romantic activities is significantly associated with cohabitation, and only two of the romantic activities are significantly associated with direct marriage, expression of love, and seeing less of friends. Generally, romantic activities tend to have stronger associations with marriage than cohabitation, but this difference reaches statistical significance only for seeing less of friends. Overall, romantic activities provide little additional information beyond our indicators of romantic involvement.

The results presented thus far clearly indicate that romantic and sexual experiences in late adolescence are associated with marriage rates in early adulthood, but these associations might be spurious because of other attributes of individuals. Consequently, we estimated models that control for persistent attributes of individuals (Model 1), other aspects of adolescents' development (Model 2), as well as life course events after high school that might be influenced by adolescent experiences with the opposite gender (Model 3). If we are correct that romantic experiences are important because they enable the development of skills and shape individuals, or both, social identity, then relationships in adolescence should continue to have an influence even after these controls.

Table 3 presents results from this series of models. Model 1 includes controls for age, race, parents' education, and family structure while growing up. We show the coefficients for the relationship indicators, which enable us to see the estimated influence of each relationship type independent of the controls. Generally, adding family background characteristics does little to change the coefficients, and romantic involvement continues to be significantly associated with marriage rates in early adulthood.

We next examine whether the association between romantic involvement and marriage is independent of other aspects of adolescent attributes and experiences, and the results are shown as Model 2. This model adds to Model 1 controls for whether the adolescent reported a same-gender attraction in the Wave I interview, BMI, pubertal development, closeness to parents, physical attractiveness, popularity, self-esteem, religiosity, picture vocabulary score, and

academic performance. Adding these controls again does little to the coefficients measuring romantic involvement, which continues to have a positive association with marriage rates in early adulthood, although some of these other aspects of adolescent experience also have an influence. For example, Evangelical Christians are more likely to marry in early adulthood.

The final model examines whether the influence of romantic involvement persists controlling for subsequent life course transitions that might be influenced by adolescent experiences, specifically college going, pregnancy, and childbearing. Not surprisingly postsecondary enrollment is negatively associated with marriage (Thornton et al., 1995). Also pregnancy increases rates of marriage. Yet controlling for these influences does not diminish the positive effects of adolescent romantic involvement, with or without sex. This result suggests that whereas both early pregnancy and college going are important factors shaping the timing of marriage and cohabitation, they are not major avenues through which adolescent romantic involvement increases union formation in early adulthood.

Together, the results in Tables 2 and 3 indicate that romantic involvement has a positive association with marriage, and this association is not spurious resulting from other attributes and experiences in adolescence and the transition to adulthood. In addition, the analyses in Table 2 indicated some differences in the factors associated with cohabitation compared to marriage. Specifically, although romantic involvement is associated with both marriage and cohabitation, nonromantic sexual relationships are associated with accelerated rates of cohabitation and lower risks of direct marriage. The literature on cohabitation suggests that this is a diverse arrangement, with some living together as a matter of convenience and others living together only after a firm marriage date is set. Thus, we wanted to know whether nonromantic sexual activity was positively associated with all types of cohabitation or only the more casual forms. The Add Health does not have information on the couple's marriage plans when they started cohabiting, but we do know whether the cohabiting relationship was followed by marriage. Using this information, we can group first unions into four categories: cohabited but did not marry, cohabited but married the first partner, cohabited and married someone other than the first partner, and married without cohabiting. We expected that those who cohabited but did not marry to be least like those who married without cohabiting. These analyses shown in Table 4 indicate that nonromantic sexual relationships in late adolescence have no effect on rates of cohabitation with a partner the respondents eventually marries but significantly increase the likelihood of entering a cohabiting union with someone the respondent has not married by the time of the Wave III interview. The positive association remains after all the controls are included in Models 1, 2, and 3 of Table 3. Because our data do not contain information on marriage plans at the time of the union, these results are only suggestive, but they indicate that nonromantic sexual activity is associated with an increase in the likelihood of only the more casual form of cohabitation. Put another way, adolescents who have sexual relations with low or no romantic involvement are more likely than others to form cohabiting unions with low likelihood of marriage, and this association persists after controlling for factors such as self-esteem, popularity, and religious attendance.

Discussion and Conclusion

In this article we investigate continuity between adolescent romantic and sexual experiences and adult relationship formation. Our main finding is that marriage in early adulthood is associated with adolescent experiences. For both men and women, there is continuity between adolescent and adult experiences with those involved in adolescent romantic relationships more likely to marry in early adulthood. Whether this association arises because of the skills adolescents develop via adolescent romantic ties, local norms that support romantic relationships in adolescence and adulthood, or about consistency in attachment style throughout the life course, we cannot yet tell, although controlling for a number of other factors

that might produce spurious associations does little to reduce the observed effects of adolescent romantic involvement. The results provide evidence to support the idea that adolescent romantic relationships can serve as a tool for understanding the developmental and social influences that contribute to diversity in union formation during early adulthood.

Another key finding is that adolescent relationships at the end of high school are associated not only with the timing of marriage but also with cohabitation. Prior to our analysis, we were unsure whether romantic relationships would be positively associated with cohabitation. On the one hand, if we viewed cohabitation as a precursor to marriage, then we expected the same factors that accelerate marriage would also facilitate cohabitation. On the other hand, if we viewed cohabitation as being a convenient arrangement for a sexually involved couple, one that requires low levels of social obligation, then there was no reason to think that romantic involvement would encourage cohabitation. We found that romantic relationships during adolescence are positively associated with cohabitation. Yet, in contrast to marriage, nonromantic sexual relationships are positively associated with cohabitation, particularly cohabitation that is not followed by marriage. This finding suggests that, at least for some, the basis for cohabiting relationships might differ from the basis for marriage. Specifically, the romantic dimension is less essential for cohabitation.

Another interesting aspect of our findings is the lack of gender differences in the effects of romantic involvement. One possibility we anticipated was that the association could be stronger for boys because they are less likely than girls to have alternative opportunities to develop skills to manage close relationships. Alternatively, the association could be stronger for girls given other research showing that romantic relationships have a stronger influence on girls than boys (Crissey, 2006; Haynie et al., 2005; Joyner & Udry, 2000). We tested models that interacted romantic involvement with gender and found no significant differences. Even if romantic involvement during adolescence predicts early adult unions for both, the mechanisms through which these effects are produced may vary by gender. This possibility deserves future investigation.

The fact that the oldest members of our sample are only age 26 at the time of the third wave and that the median age at marriage was over 25 in 2001 means that our analyses inform us about relatively early union transitions (Krieder, 2005). This limits the generalizability of our findings as the distinctions between marriage, cohabitation, and singlehood may differ later in life. Even so, the analysis is still valuable. Osgood, Ruth, Eccles, Jacobs, and Barber (2005) recently identified typical paths from adolescence into early adulthood. Although the most common path (37% of their sample) was that employed by “educated singles” who spent their early 20s investing in education and career and had developed few family obligations, there is interesting diversity in the experiences of the remaining majority. The “fast starters” leave school early, marry, enter the labor force, and become parents in their early 20s. In contrast, there were the “slow starters” and “working singles,” who generally had not acquired adult family roles. Another group, “parents without careers,” had developed extensive family obligations early, without much investment in education or career (Osgood et al.). Sandefur, Eggerling-Boeck, and Park (2005) use more racially and ethnically diverse data from a national sample to describe a similar set paths, but in their study, a higher proportion would be classified as fast starters or parents without careers in Osgood’s scheme. Despite their small differences, both studies suggest that there is considerable diversity in the early life course among those who do not attend postsecondary school. Moreover, a substantial minority are forming family relationships at this stage. These early life course trajectories have a strong influence on the remainder of the adult years (Mouw, 2005).

Our study suggests that these pathways into adult family relationships begin even before high school graduation. We link the roots of these life course trajectories to high school experiences,

where some adolescents not only secure their academic opportunities but also take on couple roles for the first time. A possible limitation of this study is that we do not identify the sources of variation in adolescent experiences. Do relationship and academic trajectories emerge because of family characteristics and personal attributes established before adolescence such as conventionality or aligned ambitions (Csikszentmihalyi & Schneider, 2000; Schneider & Stevenson, 1999)? Or are they strongly shaped by experiences during the adolescent years, such as the academic and social norms promoted in the high school environment? Answering these questions is beyond the scope of this study, but given that adolescent experiences are linked to adult relationship formation, future research should investigate the factors influencing both the romantic and sexual dimensions of adolescent relationships.

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Table 1
Distribution on Independent Variables Across Samples With and Without Weights

	Unweighted			Weighted		
	Wave I (11th and 12th)			Wave I (11th and 12th)		
	All Wave I	Total	Attrition	Analytical	Total	Analytical
Romantic involvement						
Nonsexual romantic relationship	0.34	0.29	0.29	0.30	0.28	0.29
Sexual romantic relationship	0.30	0.47	0.50	0.45*	0.49	0.47
Romantic activities						
Went out together in a group	0.46	0.57	0.57	0.57	0.59	0.59
Gave or received a gift	0.48	0.61	0.63	0.60*	0.62	0.61
Met partner's parents	0.45	0.58	0.58	0.58	0.61	0.60
Told others we are a couple	0.51	0.61	0.62	0.60*	0.62	0.62
Same I love/told I am loved	0.51	0.61	0.63	0.60*	0.61	0.60
Saw less of friends	0.32	0.42	0.43	0.42	0.43	0.43
Went out together alone	0.48	0.63	0.64	0.62*	0.64	0.64
Held hands	0.55	0.66	0.68	0.66	0.68	0.67
Thought of ourselves as a couple	0.55	0.65	0.67	0.64*	0.66	0.65
Nonromantic sexual relationship	0.29	0.39	0.26	0.25	0.27	0.27
Age	15.7	17.4	17.4	17.30*	17.4	17.4
Female	0.51	0.51	0.49	0.52*	0.48	0.48
Race-ethnicity						
Non-Hispanic White	0.53	0.50	0.48	0.50*	0.66	0.67
Non-Hispanic Black	0.21	0.19	0.19	0.19	0.16	0.16
Mexican origin	0.09	0.10	0.09	0.11*	0.07	0.07
Other race-ethnicity	0.17	0.21	0.24	0.20*	0.11	0.11
Family structure						
Two biological/adoptive parents	0.51	0.52	0.44	0.55*	0.54	0.56

	Unweighted			Weighted		
	All Wave I	Wave I (11th and 12th)		Total	Wave I (11th and 12th)	
		Total	Attrition		Analytical	Total
Single parent	0.25	0.22	0.25	0.21*	0.21	0.20
Stepfamily	0.18	0.17	0.18	0.16*	0.16	0.15
Other family	0.06	0.09	0.12	0.07*	0.09	0.08
Parental cohabitation	0.14	0.11	0.14	0.10*	0.11	0.09
Parental education						
Less than high school	0.13	0.13	0.13	0.12	0.10	0.10
High school	0.30	0.28	0.29	0.27	0.31	0.31
More than high school	0.57	0.60	0.58	0.60	0.59	0.59
Religious attendance	0.44	0.46	0.47	0.45*	0.46	0.46
Evangelical christian	0.27	0.25	0.24	0.25	0.26	0.27
Opposite-gender friends	0.77	0.80	0.78	0.81*	0.82	0.83
Grade point average	2.60	2.70	2.59	2.63*	2.69	2.64
Body mass index	22.62	23.27	23.03	23.36*	23.25	23.36
Pubertal development	3.00	3.13	3.12	3.13	3.18	3.19
Closeness to parents	4.21	4.12	4.13	4.11	4.14	4.13
AH-PVT score	99.95	100.99	99.20	101.65*	102.69	103.26
Self-esteem	28.50	28.29	28.36	28.27	28.43	28.42
Popularity	4.36	4.29	3.90	4.43*	4.51	4.60
Physical attractiveness	3.56	3.61	3.62	3.61	3.62	3.61
Same-gender attraction	0.06	0.07	0.08	0.07	0.07	0.07
Unweighted <i>n</i>	18,924	6,743	1,832	4,911	6,743	4,911

Note: AH-PVT = Add Health Peabody Picture Vocabulary Test.

* Difference between the attrition sample and the analytical sample (unweighted) is statistically significant at $p < .05$.

Table 2

Proportional Hazard Estimates of the Association Between Opposite-Gender Relationships in Late Adolescence and Union Formation in Early Adulthood
(*n* = 4,911)

	Marriage			Cohabitation			Union Formation		
	<i>B</i>	<i>SE B</i>	<i>e^B</i>	<i>B</i>	<i>SE B</i>	<i>e^B</i>	<i>B</i>	<i>SE B</i>	<i>e^B</i>
	Panel A			Panel B			Panel A		
Romantic involvement (no relationship)									
Romantic no sex	0.37**	0.11	1.45	0.49**	0.11	1.64	0.37*	0.15	1.45
Romantic with sex	0.68**	0.11	1.96	1.05**	0.10	2.80	0.72**	0.15	2.05
Nonromantic sexual ^a	-0.13	0.09	0.88	0.29**	0.08	1.34	-0.30	0.15	0.74
Romantic activities									
Hold hands	0.32	0.21	1.38	0.12	0.11	1.13	0.29	0.22	1.33
Express love	0.39*	0.17	1.48	0.03	0.10	1.03	0.52*	0.23	1.68
Said couple	0.25	0.17	1.29	0.07	0.10	1.08	0.43	0.23	1.54
Think of ourselves as couple	0.22	0.21	1.24	0.06	0.10	1.06	0.26	0.22	1.30
Met parents	0.05	0.14	1.05	-0.08	0.10	0.92	0.18	0.20	1.19
Saw friends less ^a	0.16	0.11	1.17	-0.02	0.09	0.98	0.43**	0.13	1.54
Give or receive gift	0.07	0.16	1.08	-0.09	0.09	0.91	0.19	0.20	1.21
Group date	0.01	0.14	1.01	0.06	0.10	1.07	0.02	0.18	1.02
Date alone	-0.07	0.17	0.94	0.16	0.12	1.17	-0.02	0.21	0.98

Note: *e^B* = exponentiated *B*. Models include controls for age. Coefficients in Panel B are estimates where each activity is entered separately in models with the relationships variables in Panel A.

^a Association with cohabitation significantly different from marriage.

* *p* < .05.

** *p* < .01.

Table 3

Estimates of the Association Between Romantic and Sexual Relationships in Late Adolescence and Marriage Rates in Early Adulthood Controlling for Family Background, Adolescent, and Postadolescent Characteristics ($n = 4,911$)

	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	<i>e^B</i>	<i>B</i>	<i>SE B</i>	<i>e^B</i>	<i>B</i>	<i>SE B</i>	<i>e^B</i>
Romantic involvement (no romantic relationship)									
Romantic no sex	0.39**	0.14	1.48	0.41**	0.15	1.51	0.42**	0.15	1.52
Romantic with sex	0.64**	0.13	1.89	0.65**	0.15	1.91	0.63**	0.15	1.88
Nonromantic sexual	-0.12	0.10	0.89	-0.08	0.10	0.93	-0.13	0.10	0.88
Same-gender attraction				-0.26	0.18	0.77	-0.27	0.18	0.76
Body mass index				-0.01	0.01	0.99	-0.01	0.01	0.99
Any opposite-gender friends				0.24	0.13	1.27	0.26*	0.13	1.30
Development (scale)				-0.04	0.06	0.96	-0.04	0.06	0.96
Closeness to parents (scale)				0.02	0.06	1.02	0.02	0.06	1.02
Attractiveness				0.09	0.05	1.10	0.11	0.06	1.11
Popularity				-0.05*	0.02	0.95	-0.04	0.02	0.96
Self-esteem				-0.01	0.01	0.99	0.00	0.01	1.00
Religious attendance				-0.11	0.14	0.90	-0.10	0.14	0.90
Evangelical christian				0.60**	0.12	1.82	0.57**	0.12	1.77
AH-PVT score				-0.01	0.00	0.99	0.00	0.00	1.00
College bound				-0.11	0.12	0.90	0.05	0.13	1.05
Some postsecondary education							-0.45**	0.10	0.65
Pregnant							0.72**	0.19	2.06
Have child							0.57**	0.19	1.77

Note: AH-PVT, Add Health Peabody Picture Vocabulary Test;

e^B = exponentiated *B*. Controls are age, gender, race-ethnicity, parents' education, and family structure.

* $p < .05$.

** $p < .01$.

Table 4

Estimates of the Association Between Romantic and Sexual Relationships in Late Adolescence and Union Formation Rates by Union Type in Early Adulthood Controlling for Family Background, Adolescent, and Postadolescent Characteristics ($n = 4,911$).

	Cohabitation, No Marriage			Cohabitation, Married Partner			Cohabitation, Married Someone Else			Marriage Without Cohabitation		
	<i>B</i>	<i>SE B</i>	<i>e^B</i>	<i>B</i>	<i>SE B</i>	<i>e^B</i>	<i>B</i>	<i>SE B</i>	<i>e^B</i>	<i>B</i>	<i>SE B</i>	<i>e^B</i>
Romantic involvement (no romantic relationship)												
Romantic no sex	0.47**	0.15	1.60	0.72**	0.23	2.05	1.42*	0.65	4.12	0.33	0.19	1.39
Romantic with sex	0.75**	0.15	2.12	1.34**	0.25	3.82	1.69**	0.60	5.40	0.61**	0.19	1.83
Nonromantic sexual	0.20*	0.08	1.22	0.00	0.13	1.00	0.30	0.39	1.34	-0.20	0.18	0.82

Note. *e^B* = exponentiated *B*. Controls are age, gender, race-ethnicity, parents' education, and family structure, same-gender attraction, body mass index, opposite-gender friends in adolescence, pubertal development, closeness to parents attractiveness, popularity, self-esteem, religious attendance, Evangelical Christian affiliation, Add Health Peabody Picture Vocabulary Test score, course-taking and performance in high school, postsecondary enrollment, and time-varying pregnancy and fertility measures.

* $p < .05$.

** $p < .01$.