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A DEVELOPMENTAL PERSPECTIVE ON THE ROLE OF
GENDER AND SOCIAL CONTEXT OF CASUAL SEX BEHAVIOR

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Abstract: Young adult casual sex behaviors have lead to increased public attention and concern. To date, no research has investigated how casual sex behaviors changes as adolescents age into young adulthood or how gender and social contexts influence casual sexual behavior. We use four waves of the Toledo Adolescent Relationship Study and growth curve models to investigate the patterns of change in the number of casual sex partners of 742 men and women between ages 15 to 22. Both men and women increase the number of casual sex partners over time but men increase at a faster rate which leads to a gender gap in casual sex in early adulthood. Casual sex becomes common during young adulthood with 56% of 22 years ever experiencing casual sex. By age 22, men, on average, have had seven casual sex partners and women have had 2.5. Romantic relationships and peer attitudes and behaviors are significantly associated with increases in the number of casual sex partners with romantic relationship experience more important among women and peers more influential among men. Findings from the current study showcase the progression of casual sex behavior and suggest that casual sex is not replacing traditional dating.

Keywords: casual sex, adolescents, young adults

1.1 Introduction

Researchers and the popular media have expressed concerns about a ‘hook up’ culture characterized by casual sexual activity that occurs outside the confines of traditional dating relationships (Armstrong, Hamilton, and England 2010; Blow 2008; Glenn and Marquardt 2001). The sexual behavior of adolescents and young adults is well documented, with 90% of young men and women having sexual intercourse by age 23 (Mosher, Chandra, and Jones 2005). To date, most empirical work on casual sex among young adults has relied on samples of four-year college students (e.g., England, Fitzgibbons Shafer, and Forgary 2007; Grello, Welsh, and Harper 2006; McGinty, Knox, Zusman 2007; Owen, Rhoades, Stanley, and Fincham 2010; Paul 2006; Regan and Dreyer 1999; Poppen 1995); however, the majority of 18-24 year olds (59 percent) are not currently enrolled in higher education (US Census Bureau 2007), which means there is limited knowledge about the casual sex experiences of more educationally diverse young adults. Further, cross-sectional research has yet to examine the nature of the change in casual sex over time and how that change is influenced by gender and the social context within which adolescents and young adults live.

Drawing on life course theory and using growth curve models we analyze casual sex trajectories from adolescence to early adulthood with an emphasis on the gendered experience of casual sex. Further, our work moves beyond a descriptive portrait by considering how social context (peers, parents, and dating/romantic relationships) influences temporal, age-related shifts in casual sex trajectories for both men and women. To analyze these research questions, we use the four waves of the Toledo Adolescent Relationship Study (TARS), which samples adolescents in 2000 and follows respondents into young adulthood (fourth wave collected in 2006-2007). The TARS data include a diverse group of individuals who are asked about their casual sex

behavior at four different time points. Longitudinal data and growth curve models allow us to follow the same individual over time and assess how casual sex behavior changes as adolescents age into young adulthood. These data and models also permit us to predict what leads to differences in changes in casual sex (Singer and Willett 2003). To date no research has directly assessed how casual sexual behavior changes from adolescence to young adulthood.

Casual sex becomes more common as individuals age from adolescence to young adulthood. Among sexually active teenagers, 38% had sex outside of a dating relationship (Manning, Giordano, Longmore 2006). Among 18-24 year olds, 54% report ever having casual sex and 39% report having had casual sex during the last two years (Lyons, Manning, Giordano, Longmore 2010). Although estimates of teens' lifetime casual sex partners have been determined using the large nationally representative Longitudinal Study of Adolescent Health (Add Health) (e.g. Manning et al. 2006), these data cannot be used to determine estimates for young adults because the casual sex status cannot be determined for every intimate relationship at the later waves. The current study based on TARS uses data that specifically asks young adults the number of casual sex partners at each interview wave.

Sexual relationships during adolescence can have long lasting ramifications often into adulthood as individuals learn how to navigate intimate relationships (Landsford, Yu, Erath, Pettit, Bates, and Dodge 2010). For example, sexually experienced adolescents have typically reported a greater number of sexual partners as well as increased odds of marrying or cohabiting by the time they were young adults (Meier and Allen 2007; Raley, Crissey, and Muller 2007). These findings suggest that early sexual relationships have long term consequences for later adult attachment and intimacy. Surprisingly, there is limited research that directly examines changes in teenagers' casual sex behavior as they move into adulthood.

Gender is a key variable when investigating sexual behavior and is the main independent variable in the current study. Adolescent girls were less likely to engage in casual sex compared to boys (Manning, Longmore, and Giordano 2005; Manning et al. 2006). However, there were mixed results regarding the gender difference in casual sex during young adulthood. One study (Poppen 1995), focused on a sample of college students, found that men had more casual sex experiences compared to women. More recent studies (Grello et al. 2006; Paul, McManus, and Hayes 2000) of college students have documented a similar gendered pattern. Further, using a sample drawn from dating bars, which included a more broad selection of early young adults, Herold and Mewhinney (1993) reported that men and women do not differ on the number of lifetime casual sex partners. Similarly, Bailey, Fleming, Henson, Catalano, and Haggerty (2008) did not find a gender difference in casual sex experience in a longitudinal school-based sample of young adults six months after high school graduation. As adolescents age and move through the life course, the gender gap in casual sex may narrow as acceptability of casual sex increases at older ages.

Casual sexual activity is included in analyses of problem behaviors (contraceptive use, alcohol use, delinquency, and poor educational outcomes). The findings are mixed, but there is consensus that teens in casual sexual relationships were less likely to use condoms and contraception (Manlove, Ryan, Franzetta 2007; Manning, Longmore, and Giordano 2000) leading to greater risk of sexually transmitted infections and unplanned pregnancies. Further, qualitative analysis using samples of college students reported that alcohol use and binge drinking usually occurred prior to casual sex (Bogle 2008; Paul 2006). Most (88.6 percent) college students stated personal reasons, which included being under the influence of alcohol or drugs, as explanations for engaging in casual sex (Ragan and Dreyer 1999). Adolescents who

participated in casual sex were more likely to report being involved in delinquent activity (Seffrin 2009) and had poorer educational outcomes such as lower grade point averages, weaker attachment to school and lower college expectations (McCarthy and Grodsky 2010). To better understand the implications of casual sex it is important to assess the factors associated with casual sex and developmental changes in casual sex behavior.

This research is guided by the life course perspective, of which a core principle is the timing of life events and the notion of age graded behavior. Elder (1995) explained that there are expected social roles and behaviors associated with a person's age. Further, an individual's actions occurring during an earlier life stage both directly and indirectly influences behavior in later life stages (Elder 1985). The life course perspective has been incorporated into much prior work on adolescent or early adult sexual behavior, as evidenced by the recognition that prior sexual experiences (i.e., age at first intercourse) might influence later sexual risk behaviors (Sandfort, Orr, Hirsch, and Santelli 2008; Murphy, Brecht, Herbeck, and Huang 2009).

Consistent with this prior research on sexual behavior, we also recognize that the influence of early life experiences on later life events may be shaped in part by the gendered nature of these experiences. Also, individuals' trajectories are influenced both by coexisting trajectories and transitions (MacMillian and Copher 2005) and previous events and transitions (Elder 1985). To clarify, most individuals started their romantic and sexual trajectories, which could also be thought of as romantic or sexual careers, during adolescence. For example, Miller, Norton, Curtis, Hill, Schvaneveldt, and Young (1997) reported that the numbers of friends who had sex at age sixteen and age of first romantic date are significant predictors of sexual debut. Thus, these romantic and sexual careers were influenced by other simultaneous trajectories.

1.2 The Social Context of Sexual Behavior

Prior literature on casual sex has shown that there are important coexisting factors such as romantic relationships, peer influences, substance use, family background, and religiosity. Surprisingly, little research has examined the importance of dating/romantic relationships on casual sex behavior. It is often assumed that these two types of relationships are mutually exclusive. This may be the case, but it is also likely that individuals who participate in casual sex may have romantic or dating relationships (Armstrong et al. 2010). For example, Manning et al. (2006) reported that 14% of casual sex relationships during adolescence occurred with ex-romantic partners, 48% with friends, and 6% with people whom they went out with once in a while. Other times casual sex began with the intention of leading to a committed relationship (Lyons, Giordano, Manning, and Longmore forthcoming), which may or may not be realized. Growth curve models allow us to examine how changes in romantic relationships over time are related to shifts in casual sex behavior.

Unlike romantic relationships, there is much more literature on how peer attitudes and behaviors affect sexual behavior. In the process of learning intimate scripts, the peer network provides an early forum for developing attitudes and perspectives on these behaviors (Cavanagh 2007). Manning et al. (2005) reported that teens who perceived that their peers approve of sexual behavior had greater odds of casual sex. The association between peer behavior and attitudes and casual sex may change over time. Thus, it is important to allow peer attitudes and behaviors to vary as individuals age from adolescence into young adulthood. Peers' attitudes and behaviors are expected to be a strong predictor of casual sex for both men and women.

Substance use is a significant predictor of risky sex behavior, such as early sexual debut, sex without a condom, and sex with multiple partners (Crockett, Raffaelli, and Shen 2006;

Lohman and Billings 2008). Prior research on adolescent alcohol use has not reported gender differences (Crockett et al. 2006; Fromme, Corbin, and Kruse 2008); thus we expect that alcohol will emerge as an important predictor of casual sex for both men and women. However, more teenage men than women use drugs (Center for Disease Control 2007). Accordingly, drug use may be more influential for men than women. Substance use may have influenced casual sex during adolescence differently than during young adulthood. For example, in earlier studies, growth curve models showed an increase in alcohol and marijuana use during the transition from the last year in high school to the first year of college (Fromme et al. 2008) and an increase in binge drinking and drug use as adolescents transitioned into emerging adulthood (Needham 2007). Qualitative analysis using samples of college students revealed that alcohol use and binge drinking usually occurred before casual sex (Bogle 2008; Paul 2006). Often, a “typical hook up” or casual sex experience is characterized as two individuals being intoxicated (Paul and Hayes 2002). In the current study, we expect that alcohol use and drug use will increase the rate of casual sex for both men and women.

Parents influence and socialize their children through social interaction as well as the intergenerational transmission of socioeconomic status. One way to measure the nature of these ties is parent-child relationship quality. Using Add Health, Fingerson (2005) reported that teenagers who were close to their mothers were less likely to have sex. Another analysis revealed that parental caring was related to adolescents remaining virgins compared to experiencing casual sex (Manning et al. 2005). No research to date has assessed the possible association of parent-child relationship quality and casual sex behavior of early young adults. Parental factors during adolescence have a significant relationship with later romantic relationships (Conger, Bui, Bryant, and Elder 2000), suggesting that parents do have a long-term

impact on their children's lives. However, more research needs to explore if parent-child relationship quality during young adulthood is a significant correlate of casual sex behavior. We anticipated that parent-child relationship quality will be negatively related to casual sex for both men and women.

Little research has investigated how religiosity is correlated with casual sex during adolescence or young adulthood; however, researchers have analyzed the role of religious beliefs on general sex behavior. For example, religious adolescents were less likely to transition to first sex (Hardy and Raffaelli 2003), and were significantly more likely to abstain from oral and vaginal sex compared to their less religious counterparts (Uecker, Angottii, and Regnerus 2008). Additionally, Manning et al. (2005) reported a significant negative relationship between the importance of religion in a teen's life and experiencing casual sex. This patterned relationship between religious beliefs and sexual behavior is similar for college students. Lefkowitz, Gillen, Shearer, and Boone (2004), relying on a sample of university students, found that attending religious services was negatively related to number of sex partners. Owen et al. (2010) also reported that casual sex was negatively correlated with religiosity. Similar to the relationship found for adolescents, we expect that higher religiosity is associated with less casual sex behavior among young adults.

There are other factors that are important predictors of casual sex besides social context variables. These include race and ethnicity, family structure, mother's education, and poverty status. Based on prior research, we expect that Black adolescents will report higher rates of casual sex behavior compared to their White counterparts (Manning et al. 2005), but do not anticipate a race difference between Whites and Hispanics and Whites and Other race. Prior research has also shown that teenagers who live in single-mother households report earlier

sexual onset (Harris, Duncan, and Boisjoly 2002), while two parent biological households were associated with lower odds of experiencing casual sex (Manning et al. 2005). Thus, we expect that respondents who were not raised in a two parent biological household will report higher rates of casual sex. Parental education is an indicator of socioeconomic class and reflects opportunities available to respondents. While prior research has shown that education of parents tends to delay sexual debut, the influence of parental education appears to be stronger for adolescent women compared to men (Zimmer-Gembeck and Helfand 2008). Manning et al. (2005) found little relationship between parental education and experiencing casual sex. We also include neighborhood poverty status as an indicator of socioeconomic background, as prior research has documented that adolescents from more disadvantaged backgrounds were more likely to have sex than their more advantaged peers (Giordano, Longmore, Manning, Northcutt 2009).

1.2.2 Current Investigation

This paper examines changes in the number of casual sex partners from adolescence into young adulthood, and the contextual factors that influence change in casual sexual behavior. Specifically, we determine whether there is a significant change in the number of casual sex partners as teens move into early adulthood. Prior research has not studied the casual sex trajectories of these targeted age groups; thus this descriptive portrait provides the foundation for the subsequent questions. Given gender differences in sexual scripts and social expectations (Maccoby 1998) we document gender differences in casual sex and rates of change. Next, we examine how time-varying social context variables influence the trajectories for the total sample and according to gender. Rather than relying on cross-sectional assessments this strategy permits analysis of change in behaviors over time.

This work contributes to prior studies in four key ways. First, our sample is not composed exclusively of college students. This allows us to investigate the casual sex behavior of a more educationally diverse sample of young adults. Second, we provide estimates of individual casual sex trajectories that represent the change in casual sex behavior over time (Cunningham 2008). The use of growth curve models allow us to determine both individual and group averages of casual sex partners at age 15 and how quickly the average increases over time rather than just considering sexual behavior at one point in time. Third, we adopt a developmental perspective that draws attention to how individuals change from adolescence into adulthood. The time period from adolescence to adulthood is one of experimentation and flux (Arnett 2004) so it is important to recognize that individuals' behaviors are not static. Growth curve models also permit the inclusion of time-varying variables, such as substance use, so we can account for shifts in traditional risk factors. Fourth, we examine social context indicators that have been found to be related to casual sexual activity among teenagers and sexual risk behaviors among all youths (e.g., Uecker et al. 2008; Crockett, Raffaelli, and Shen 2006; Feldman, Rosenthal, Brown, and Canning 1995; Manning et al. 2005), including romantic relationship experience, peer influence, substance use, familial influences, and religiosity. Drawing on prior research on adolescent and early adult sexual activity, we anticipate that romantic relationship experience, peers, and substance use will have positive influences on casual sex and parental relationship quality and religiosity will have negative influences on casual sex.

2.1 Material and Methods

2.1.1 The Toledo Adolescent Relationship Study (TARS)

To investigate our research questions, the Toledo Adolescent Relationship Study (TARS) is used. TARS is a four wave dataset, which was collected to investigate the influences of family, peer, and romantic partners on romantic and sexual behaviors of adolescents, as well as how these factors influence youths as they transition to young adulthood. The first wave collected in 2000, included a random sample of youth in the 7th, 9th, and 11th grades in Lucas County, Ohio, as well as a parent/guardian interview. School records were used for the sampling frame, however, school attendance was not a requirement to be included in the sample. At wave I, the sample included 1,316 youth. At wave IV, the sample included 1,092 valid respondents reflecting a retention rate of 82%. Most of the interviews occurred in the respondents' homes. There is an oversampling of racial minority youth. Demographic characteristics of Lucas County are similar to national estimates regarding race and ethnicity, family income, and education.

TARS is an appropriate dataset for several reasons. First, the TARS data provide detailed measurement at each wave about casual sex behavior allowing a developmental assessment of casual sex. The TARS has four waves of data so there are frequent interviews, which are spaced one to two years apart. Second, the casual sex question in the TARS directly asks how many casual sex partners respondents have had at each wave. This is a critical question for investigating the change in number of casual sex partners over time. Although the first two waves of the Add Health include measures of casual sex partners, at the third wave extensive missing data issues arise; at wave three respondents are asked to list all of their sexual and romantic partners, but causal relationship status cannot be determined for over 17,000 relationships because of an error in the skip patterns resulting in many Add Health respondents

not being asked about casual status of their relationships. Thus, the total number of casual sex partners cannot be determined using the Add Health data. Third, much of the research on casual sex uses either college samples or school based samples. To be selected into TARS school attendance was not a requirement, which means that individuals with a larger range of educational experiences are included in the current study. This is important because individuals who are not attending high school during wave I, or those who do not go to four-year colleges at the later waves, may have different casual sex trajectories.

The analytic sample consists of respondents between the ages of 15 and 22 (N=742). We limit the minimum age to 15 because very few respondents have casual sex before age 15. The final analytic sample is based on 742 respondents or 2,968 observations.

2.2.2 Dependent Variable

This paper investigates casual vaginal sex using longitudinal data with the dependent variable measured at each wave. At wave I, respondents are asked: “How many different girls/guys have you had vaginal sex with that you weren't really dating or going out with?” At the other three waves respondents are asked: “In the last 12/24 months (depending on the time interval between interviews), how many different girls/guys have you had vaginal sex with that you weren't really dating or going out with?” At wave 2, the time interval is 12 months and at waves 3 and 4 the time interval is 24 months. This strategy allows reports of sexual behavior close to the time of interview and should minimize issues associated with recall bias. For each wave, casual sex partners of the current wave are added to the total of the prior wave to operationalize lifetime casual vaginal sex partners.

2.2.3 Independent Variables

Gender. The wave I measure of gender is a dummy variable where respondents report being female or male. The variable is coded 1=female and 0=male.

2.2.4 Social Context

This study includes seven indicators of social context. *Romantic Relationship.* “In the past year, how many girls/guys did you date?” This is a continuous and time-varying variable. The measure is censored at five for each wave and is skewed to the right.

Perceived Peer Sex Attitudes. Three questions are asked at all four waves and are used to construct a scale measuring perception of peers’ attitudes toward sex. These questions are: (1) “My friends think it’s okay to date more than one person at a time;” (2) “My friends think you should only have sex with someone you love” (reverse coded); and (3) “My friends think you should only have sex if you are married” (reverse coded). Answers range from 1=strongly disagree to 5=strongly agree with higher numbers reflecting more sexually permissive attitudes. The alphas at each wave include: wave I alpha=.40; wave II alpha=.53; wave III alpha=.61; and wave IV alpha=.63.

Perceived Peer Sexual Behavior. To measure whether respondents believe their friends are sexually active, we ask at all four waves: “How many of your friends had sex,” with responses ranging from 1=none to 6=all.

Alcohol and Drug Use. Two variables measure alcohol and drug use. Respondents at waves I through III are asked: “In the past 12 months, how often have you drunk alcohol;” and at wave IV, “In the past 24 months, how often have you drunk alcohol?” Responses range from 1 = never to 9 = more than once a day. Drug use is measured in the same way based on the question: “how often have you used drugs to get high (not because you were sick)?”

Parent-Child Relationship Quality. To measure parent-child relationship quality five variables are used to create a scale. The questions measured at wave I are: (1) “My parents often ask about what I am doing in school;” (2) “My parents give me the right amount of affection;” (3) “My parents trust me;” (4) “I’m closer to my parents than a lot of kids my age;” and “I feel close to my parents.” Comparable questions are asked at later waves only with age appropriate language. For example, “My parents often ask about what I am doing (e.g., in school, at work, with my friends, etc.)” The scale alphas are: wave I alpha = .77; wave II alpha = .79; wave III alpha = .78; and wave IV alpha = .80. Responses range from 1= strongly disagree to 5 = strongly agree, with higher scores reflecting higher relationship quality.

Religiosity. Identical religiosity questions are not asked at wave I and wave IV so different measures are used to tap religiosity. At waves I and II, the question, “How important is religion in your life” is used. Answers range from 1 = not important at all to 5 = very important. At waves III and IV the question, “How important is your spiritual life” is used. The responses are 1 = not important at all to 5 = very. Higher scores reflect greater religiosity.

2.2.5 Control Variables

The control variables are measured at wave 1. Respondents are classified into four *race/ethnic* groups: Non-Hispanic White, Non-Hispanic Black, Hispanic, and Other. White is the omitted category for the multivariate analysis. *Family structure* is a Wave I nominal measure with four categories coded as dummy variables: two biological; single parent; step family; and other family structure (such as living with relatives or foster care). For multivariate analyses, the omitted category is two biological parents. *Mother’s education* consists of four categories coded as dummy variables: less than a high school degree (omitted category for multivariate analyses); high school graduate; some college experience; and college degree or higher.

Neighborhood poverty is coded as “1” if respondent lived in neighborhoods where 20% of the household are below the poverty line at Wave 1 and “0” otherwise.

2.2.6 Analytic Strategy

This study employs growth curve analysis, which provides descriptions of the shape of the individual’s initial casual sex pattern in the form of an intercept and the individual’s casual sex trajectory over time in the form of a slope (Singer and Willett 2003). For the current analysis, the intercept and slope are random, meaning that the model allows for individuals in the sample to have different intercepts and slopes. In other words, a single respondent is not forced or fixed at one value for the number of casual sex partners at age 15 or in the rate at which he/she increases the number of casual sex partners over time. Growth curve models also allow for the inclusion of time-varying covariates to determine their influence over time.

Our analytic strategy is to estimate five models. First, we estimate the unconditional growth model, which establishes initial number of casual sex partners (see baseline column in growth curve models) and the rate of change over time (see change in casual sex column in growth curve models). In other words, we study the initial level of casual sex (the average intercept or mean at baseline) and then examine whether there is a significant change in casual sex over time (the average slope or change in casual sex.) The second model includes gender to assess whether male and female respondents differ in their degree of casual sexual experience at age 15 or over time. Similar to the unconditional growth model, we determine whether male and female respondents have significantly different initial levels of casual sex and whether there are differences in the rate of change. The third model includes the social context and control variables, and examines whether the social context variables influence the initial level of casual

sex or the rates of change. Subsequently, the full model is separated into two models, by gender, to assess whether there are gender differences in the influence of the social context variables.

3.1 Results

Table 1 displays the descriptive statistics for the variables included in the analysis. As shown, the average number of casual sex partners for the sample across time is 1.98. The mean number of casual sex partners for female and male respondents is 1.16 and 2.91, respectively (not shown). Casual sex experience varies according to age. The mean and range of lifetime casual vaginal sex partners at age 15 is .23 (range 0-7) and 4.44 (range 0-75) at age 22.

Table 1 shows that the sample is nearly evenly divided by gender. Romantic relationship is a time-varying covariate measured at all four waves, and ranges from 0-5; it indicates how many romantic relationship a respondent has had since the last wave of data. When variables are time-varying, such as romantic relationship experience, the means reported are grand means over time. The respondents had about 1.95 romantic relationships during the last year. Respondents report that their peers hold slightly more permissive sex attitudes, 8.7 (range 3-15) and most of their peers have had sex (mean= 4.3 and ranges 0=none to 6=all of them). The sample has a mean alcohol use of 3.3, indicating that respondents report drinking about once every couple of months, and use drugs (mean =2) approximately once a year. Parental relationship quality is a time-varying indicator and respondents score relative high on relationship quality with their parents with a mean of 17.5 (range of 0-25). Religiosity is a time-varying covariate, and the sample has a mean religiosity score of 3.2 (range 0-5) indicating the sample is somewhat religious.

Table 2 shows the mean number of casual sex partners according to age and gender. There is not a significant gender difference for mean number of casual sex partners at age 15, but

there is a gender difference at every other age with men having more casual sexual partners than women. At age 22, men report having 7 lifetime casual sex partners and women report 2.5 partners. Furthermore, when we consider the percentage of each age and gender group who had casual sex a similar pattern emerges. Only nine percent of 15-year-old teens report casual sex experiences (11 % for men and 6% for women) compared to 56% of 22-year-olds (64% of men and 51% of women) (results not shown). In other words, the majority of young adults have experienced casual sex by the time they reach young adulthood.

Table 3, Model 1 shows the results for the unconditional growth curve model for the entire sample. There are two columns for each growth curve model: “baseline” and “growth in casual sex.” The baseline, sometimes called the intercept, is defined as the average initial level of casual sex at age 15, with age 15 being our first measured time point. The growth in casual sex column, or the slope, reports the average change over time in casual sex. Model 1 is descriptive in that it statistically tests for significant differences in the intercept (at baseline) and slope (change in casual sex). At baseline, or age 15, respondents do not have a mean of lifetime casual sex partners that is significantly different than zero. There is a significant increase in the slope, which means that each year the sample increases in the mean number of casual sex partners on average by .69.¹

Model 2 of Table 3 examines the initial difference, or the intercept, in casual sex partners for male and female respondents and the growth in casual sex, the slope, by gender. Women do not report significantly fewer casual sex partners than men at age 15 ($p=.76$). The intercept coefficient, $\gamma_{10} = -.01$; $p=.94$, is also not significant, which suggests that men do not have more than zero casual sex partners at age 15. This is not surprising because at age 15 the bivariate findings (Table 2) show that there is no gender gap in number of casual sex partners with both

¹ Time is centered so, 0=age 15 and 7=age 22.

male and female 15 year old youths reporting low mean numbers of casual sex partners (men = .31 and women = .15). Model 2 also shows that male compared with female respondents have a significantly steeper growth in casual sex partners over time. The coefficient $\gamma_{10} = 1.02$ is the growth in casual sex partners for men, and is interpreted as: for each year, male respondents increase their casual sex partners by about 1 partner. Female respondents only increase their casual sex partners by .4 partners every year. Thus, over time men report more casual sex partners than do women.

Model 3 includes the social context and control variables. The results indicate that the gender gap in the growth in casual sex partners persists. That is, male compared with female respondents continue to experience greater change in number of casual sex partners even after taking into account the influence of social context variables. The social context indicators that are related to casual sex include romantic relationship experience and peer covariates. Romantic relationship experience is positively associated with increases in casual sex. Peers' permissive sexual attitudes and behaviors are positively associated with increases in respondents' reports of casual sex. The substance use variables have significant and positive effects on the change in casual sex (results not shown), but are no longer statistically significant when put in the model together. The parental relationship quality variable and religiosity are not significantly related to the change in the number of casual sex partners².

To summarize the findings thus far, male compared with female respondents do not have more casual sex partners at age 15. Male respondents report increases in their number of casual

² If the dependent variable is measured using the question of lifetime casual sex partners at each wave instead of the summation of casual sex partners since last wave the multivariate results are similar. There are a few minor exceptions. For the entire sample (Table 3), drug use is significant at baseline and "Other Family Form" at baseline is non-significant. For women (Table 4), Alcohol use is non-significant at baseline and friends' sexual behavior and drug use become significant in the growth variables. For men (Table 4), Friends' sexual behavior becomes non-significant in the growth variables.

sex partners over time at a significantly faster rate than do female respondents, and this gender gap is not explained by social context or control variables. For the sample, casual sex is associated with aging into young adulthood.

To further explore the gender gap in casual sexual behavior over time, Table 4 displays the findings of the full growth curve models for male and female respondents separately. Among female respondents, 15-year-olds do not have more casual sex partners than zero. As noted above, female respondents have a growth in casual sex partners of .4 when no other variables are in the model, but the intercept and slope, indicating an increase in casual sex partners over time. When the effects of the growth in casual sex partners of the two time-varying variables of romantic relationship experience and alcohol use are included in the model, the effect of growth in casual sex for women is no longer statistically significant. This means that these two variables explain the increase in women's casual sex.

Three of the social context factors are important in the female model. First, romantic relationship experience, friends' permissive sex attitudes, and alcohol use are associated with increases in casual sex for female respondents even after control variables are included in the model. Drug use, parental relationship quality, and religiosity are not significant predictors of change in casual sex partners among female respondents. Friends' sexual behavior positively influences the growth in casual sex partners for female respondents, but is no longer significant when the effect of friends' permissive sex attitudes is included in the model.

Table 4 also includes the results for the full model for men. Similar to women, romantic relationship experience has a positive influence on the increase in casual sex partners. Men reporting romantic relationship experiences during the last year report growth in casual sex of .21 per year. The growth in casual sex, for both friend variables are significantly related to

casual sex, but when included in the model together both effects are reduced. Table 4 shows that friends' sexual behavior remains significantly related to respondents' reports of casual sex in the full model. Similarly, both drinking and drug use have positive effects on the increase in number of casual sex partners (results not shown), but when included in the model together their effects are reduced to non-significance. Finally, when friends' sexual behavior is included in the model, the change in casual sex is no longer significant for men, suggesting that the time-varying indicator of friends' sexual behavior mediates the growth in casual sex. In other words, when friends' sexual behavior is taken into account, men no longer report a significant growth in casual sex over time. In sum, romantic relationship experience amplifies the rate at which men increase their numbers of casual sex partners every year. The friend covariates are important for men, especially friends' sexual behavior. Religiosity and parental relationship quality, however, do not have significant influences on the growth in casual sex for men or women.

4.1 DISCUSSION

Casual sex occurs more commonly during young adulthood relative to adolescence, and this trend is confirmed with the growth curve models. Moreover, our findings are consistent with the life course concept of age-graded behavior (Elder 1985) with early casual experience setting a trajectory of later casual sexual activity. Further, most young adults do have casual sex at least one time, which suggests that this behavior becomes normative and supports the notion that young adulthood is the time when individuals experiment with sexual behavior (Arnett 2004). Both men and women significantly increase the number of casual sex partners they have over time. However, men increase their number of casual sex partners at a faster rate resulting in a gender difference, or gender gap, in young adulthood.

With regard to key covariates related to casual sex, we find that romantic relationship experience is strongly associated with casual sex for both men and women. While this may seem counterintuitive, prior research shows that a substantial minority of adolescents who participate in casual sex also have sex in romantic relationships during the same time frame (Manning et al. 2005). Popular culture outlets including newspaper and magazine articles often portray casual sex behavior as replacing traditional dating, but findings from the current study and other studies do not support this claim. This is further demonstrated by the finding that women no longer have a significant increase in casual sex once romantic relationships are included in the model.

Prior research on adolescence highlights the importance of peers' sexual attitudes and behaviors, but relatively few studies have considered the influence of peers on young adults' sexual behavior. Perceptions of friends' behaviors and attitudes influence casual sex trajectories in the full sample and separately for men and women, however, peers play an important role particularly for men. Although individuals tend to have friends who are similar to themselves, understanding the specific and increasing ways peers affect behavior is important to consider.

When only alcohol or drugs are examined, both substances have positive associations with increased casual sex experience for men and women, a finding that has been reported in the literature on substance use and sexual behavior (Grello et al. 2006). Our findings are important because although substance use is not associated with casual sex during middle adolescence when casual sexual experiences are less likely, drugs and alcohol use become influential as people transition to young adulthood and casual sex becomes more common. It is important to note that neither substance use variables are significant in the full model. As a result, a key time in intervention would be at the middle adolescent life course stage. Interestingly, neither parental relationship quality nor religiosity are related to casual sex in our sample. Overall, we

find that the social contexts of adolescents and young adults, particularly romantic relationships and peers, are associated with casual sex behavior, however, these factors do vary for men and women.

This study has some limitations. The dependent variable is total number of casual sex and does not distinguish types of casual sex relationships. For example, some casual sex relationships are with ex-boyfriends or ex-girlfriends and some relationships are with individuals who are not known well (Manning et al. 2006). It is possible that there are different gender patterns and correlates for distinct types of casual sex relationships and behaviors. Another limitation to the current study is that TARS is a regional sample and therefore national estimates of casual sex behavior cannot be determined. However, there is not a current national longitudinal dataset available that measures casual sex in terms of lifetime partners from adolescence into adulthood. Lastly, men compared to women may overstate their number of casual sex partners. Dinkelman and Lam (2009) do show that it is mathematically possible to have a true gender difference in the number of sex partners. Further, if older men are having casual sex with young women then we may observe true differences in casual sex partners not just measurement error.

There are several important questions for future work. Given the bias toward college samples, additional work on casual sex requires diverse samples that investigate casual sex trajectories among young adults with a variety of education and employment experiences (Armstrong et al. 2010). Further research should examine not only the patterns of casual sexual activity but the age graded motivations and reasons for casual sex. This may help us better understand what casual sex means to young adults. Researchers should also focus on the health (well-being and physical) and relational (stability and quality) implications of casual sexual

activity. The prior work on this topic has focused primarily on the negative implications of casual sex (e.g., Paik 2010), but future research should explore the conditions under which young people incorporate some 'casual' experiences into their romantic and sexual careers without incurring heavy social or personal costs. Casual sexual activity has become a normative feature of the sexual careers of young adults and further research is warranted to explore the variation, correlates and consequences of this behavior.

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Table 1. Descriptive Statistics

Dependent Variable	Mean	SD	%
Lifetime Casual Sex Partners	1.98	5.64	
<i>Time</i>			
<i>Age</i>			
15			11%
16			14%
17			16%
18			19%
19			7%
20			16%
21			6%
22			10%
<i>Independent Variables</i>			
Female			53%
Male (omitted)			47%
Romantic Relationships	1.95	1.57	
Friends Liberal Sex Attitudes	8.65	2.64	
Friends Sexual Behavior	4.31	1.62	
Alcohol Use	3.32	2.17	
Drug Use	1.99	2.11	
Parental Relationship Quality	17.51	6.27	
Religiosity	3.17	1.28	
<i>Controls</i>			
White (omitted)			63%
Black			24%
Hispanic			12%
Other Race			2%
Two Parent Biological (omitted)			53%
Single Parent Family			23%
Step Family			13%
Other Family Form			11%
<i>Mother's Education</i>			
Less than High School (omitted)			12%
High School			32%
Some College			33%
College or More			22%
Neighborhood Poverty below 20%			27%
Neighborhood Poverty above 20% (omitted)			73%

N=2968

Source: Toledo Adolescent Relationship Study waves One through Four

Table 2. Mean Number of Casual Sex Partners By Gender

	Total	Female	Male	T-tests
Age				
15	0.23	0.15	0.31	
16	0.79	0.51	1.08	*
17	1.16	0.51	1.98	***
18	1.98	1.13	2.96	***
19	2.21	1.21	3.43	***
20	3.30	1.89	5.06	***
21	4.07	2.32	6.02	***
22	4.44	2.55	6.99	***

N=2968

Source: Toledo Adolescent Relationship Study waves One through Four

Table 3. Growth Curve Models for lifetime Casual Sex Partners On Social Context Variables

	Model 1			Model 2			Model 3		
	Baseline Casual Sex	Growth In Casual Sex		Baseline Casual Sex	Growth In Casual Sex		Baseline Casual Sex	Growth In Casual Sex	
Intercept	-0.04	0.69 ***		-0.01	1.02 ***		1.19	-0.20	
Females				-0.08	-0.62 ***		-0.15	-0.52 ***	
<i>Social Context</i>									
Romantic Relationships							0.09	0.15 ***	
Friends Liberal Sex Attitudes							-0.06	0.05 ***	
Friends Sexual Behavior							-0.07	0.05 *	
Alcohol Use							-0.06	0.02	
Drug Use							0.08	0.02	
Parental Relationship Quality							-0.03	0.00	
Religiosity							-0.03	-0.01	
<i>Controls</i>									
Race									
Black							0.92 *		
Hispanic							-0.13		
Other Race							-0.23		
Family Structure									
Single Parent Family							-0.04		
Step Family							0.87 *		
Other Family Form							0.39		
Mother's Education									
High School							0.13		
Some College							-0.05		
College or More							-0.15		
Poverty							-0.20		

N=2968

†=p<.1;*=p<.05; **=p<.01; ***=p<.001

Table 4. Growth Curve Models of Life Time Casual Sex Partners On Social Context Variables for Females and Males

	Female		Male	
	Model 1		Model 1	
	Baseline Casual Sex	Growth In Casual Sex	Baseline Casual Sex	Growth In Casual Sex
Intercept	0.66	-0.36 †	1.02	-0.58
<i>Social Context</i>				
Romantic Relationships	0.02	0.09 **	0.10	0.21 **
Friends Liberal Sex Attitudes	-0.08 *	0.04 ***	0.01	0.05 †
Friends Sexual Behavior	0.06	0.00	-0.24	0.10 *
Alcohol Use	-0.11 *	0.03 *	0.04	0.01
Drug Use	0.09 †	0.01	0.02	0.04
Parental Relationship Quality	-0.02	0.00	-0.05	0.00
Religiosity	0.06	-0.02	-0.15	0.00
<i>Controls</i>				
Race				
Black	-0.47		2.52 ***	
Hispanic	-0.61		0.57	
Other Race	-0.36		0.32	
Family Structure				
Single Parent Family	0.42		-0.41	
Step Family	0.29		1.40 †	
Other Family Form	0.21		0.87	
Mother's Education				
High School	-0.08		1.03	
Some College	0.18		0.22	
College or More	0.05		0.29	
Poverty	0.09		-0.55	

N=2968

†=p<.1;*=p<.05; **=p<.01; ***=p<.001