

Running Head: Premarital Cohabitation

The Timing of Cohabitation and Engagement: Impact on First and Second Marriages

Scott M. Stanley and Galena K. Rhoades

University of Denver

Paul R. Amato

Pennsylvania State University

Howard J. Markman

University of Denver

Christine A. Johnson

Oklahoma State University

Citation: Stanley, S. M., Rhoades, G. K., Amato, P. R., Markman, H. J., & Johnson, C. A. (in press). The timing of cohabitation and engagement: Impact on first and second marriages. *Journal of Marriage and Family*.

Author Note

Scott M. Stanley, Psychology, University of Denver; Galena K. Rhoades, Psychology, University of Denver; Paul R. Amato, Sociology, Pennsylvania State University; Howard J. Markman, Psychology, University of Denver; Christine A. Johnson, Research and Graduate Studies, Oklahoma State University.

This analyses and reporting of this research was funded by a grant from The National Institute of Child Health and Human Development, awarded to Scott Stanley, Galena Rhoades, and Howard Markman (R01HD047564). The contents are solely the responsibility of the authors and do not necessarily represent the official views of NIH or NICHD. This research was also supported by the Oklahoma Department of Human Services and the Oklahoma Marriage Initiative, especially in the development of the data set.

Correspondence concerning this article should be addressed to Scott Stanley, Department of Psychology, Center for Marital and Family Studies, Frontier Hall, University of Denver, Denver, CO 80208.

E-mail: sstanley@du.edu

## Abstract

Using a multi-state sample of marriages that took place in the 1990s, this study examined associations between premarital cohabitation history and marital quality in first ( $N = 437$ ) and second marriages ( $N = 200$ ), and marital instability in first marriages (intact  $N = 521$ , divorced  $N = 124$ ). For first marriages, cohabiting with the spouse without first being engaged or married was associated with more negative interaction, higher self-reported divorce proneness, and a greater probability of divorce compared to cohabiting after engagement or marriage (with patterns in the same direction for marital positivity). In contrast, there was a general risk associated with premarital cohabitation for second marriages on self-reported indices of marital quality, with or without engagement when cohabitation began.

Key words:

Demography, Cohabitation

Family structure, commitment

Family structure, remarriage

Marriage

Relationship processes

### The Timing of Cohabitation and Engagement: Impact on First and Second Marriages

Living together prior to marriage is associated with lower levels of marital quality and a greater likelihood of divorce (e.g., Kamp Dush, Cohan, & Amato, 2003). This phenomenon is referred to as the cohabitation effect. Although patterns and the meaning of cohabitation vary in complex ways by race and income (Casper & Bianchi, 2002; Smock, 2000), the cohabitation effect related to first marriages is a widely replicated finding (see Stanley, Rhoades, & Markman, 2006). This study bears on two important issues in understanding premarital cohabitation and its linkages to subsequent marital quality and stability. First, recent evidence suggests that the risks associated with premarital cohabitation may be concentrated among those who live together prior to engagement or plans to marry (see below). We assess this notion and extend the existing literature by examining divorce as an outcome (heretofore not done) in addition to examining relationship quality. Second, we assess whether the cohabitation effect is present in second as well as first marriages, and, if so, whether the effect in second marriages is similarly moderated by engagement at the time cohabitation began.

The cohabitation effect is reflected in that fact that, on average, those who cohabited prior to marriage have lower marital satisfaction, poorer quality communication, lower levels of interpersonal commitment, and greater marital instability than those who did not cohabit premaritally (Cohan & Kleinbaum, 2002; Kamp Dush et al., 2003; DeMaris & MacDonald, 1993; Stanley, Whitton, & Markman, 2004). Some researchers have argued that the cohabitation effect can be explained, in large part, by selectivity (e.g., Lillard, Brien, & Waite, 1995). Selectivity refers to the idea that some characteristics of people predispose them both to cohabit and to have difficulties in marriage, suggesting that cohabitation per se does not increase the risk of poor marital outcomes. While selectivity appears to explain some of the risk, several studies

have failed to eliminate the cohabitation effect when controlling for plausible selection variables such as religiosity, education, and ethnicity (for a discussion, see Stanley et al., 2006). Further, there is evidence that changes in attitudes about marriage and divorce can come from the cumulative experience of cohabitation (Axinn & Thornton, 1992). Thus, some researchers argue that there is something about the experience of cohabitation that leads to an increased risk of marital difficulties (e.g., Kamp Dush et al., 2003), and that aspects of both experience and selection may be important in understanding the cohabitation effect (see Stanley et al., 2006).

In addition to ongoing discussion of selection and experience perspectives in this field, there is evidence that the timing of cohabitation relative to clarity about the relationship's future may be important. Specifically, whether a couple has become engaged before beginning cohabitation has been shown to moderate the cohabitation effect in both longitudinal research (Kline et al., 2004) and a recent national survey (Rhoades, Stanley, & Markman, 2009). In these two studies, those who cohabited without first being engaged reported lower marital quality across a range of variables, including satisfaction, communication quality, confidence, interpersonal commitment, and aggression, controlling for various selection variables.

Such findings are consistent with a prediction developed from an earlier finding in this literature. Using a national, random sample, Stanley et al. (2004) found that married men who had cohabited with their wives premaritally reported lower levels of dedication (interpersonal commitment) to their wives than married men who had not cohabited with their wives prior to marriage. Stanley and colleagues hypothesized that a subset of men in the cohabiting group married their partners despite having a low level of dedication. The researchers proposed that the constraints of cohabitation made it more difficult for men with low levels of dedication to break up. In other words, there may be *inertia* associated with cohabitation that does not exist to the

same degree in non-cohabiting dating relationships. This inertia favors remaining together for reasons other than being dedicated to one's partner—reasons more akin to constraint commitment (Stanley et al., 2006). This argument is similar to Glenn's concept of premature entanglement, wherein factors that prematurely connect two partners interfere with the process of searching for a compatible mate (Glenn, 2002). This reasoning suggests that cohabitation is associated with lower marital quality and divorce mainly among couples who did not commit to marriage before cohabiting, because that group will include some couples who would not have married had they not cohabited. This focus on the intention to marry at the time cohabitation begins is related, though distinct from, research showing that people already cohabiting with plans to marry have, on average, higher quality relationships than do those without such plans (Brown & Booth, 1996; Brown, 2004). Brown and Booth's work draws attention to marital intentions, whether those intentions were present at the beginning of cohabitation or developed during cohabitation. The present study focuses on marital intentions *prior* to cohabitation.

#### *Is there Evidence for the Cohabitation Effect in Second Marriages?*

Less is known about the cohabitation effect in remarriages than in first marriages. Xu, Hudspeth, and Bartkowski (2006) were the first to publish findings systematically examining this question. Using subsamples from the 1987-88 wave of the National Survey of Families and Households, they found that post-divorce cohabitation with partners in general, or only with the remarriage partner, was associated with lower marital happiness and a higher likelihood of divorce. Hence, as has been found for first marriages, there was some evidence of a cohabitation effect for second marriages. In contrast, Teachman (2008) examined data from the 2002 National Survey of Family Growth and did not find premarital cohabitation to be associated with greater risks in second marriages. Although differences in the methods used by Xu et al. and

Teachman may account for differences in findings, the fact that the marriages analyzed in Teachman's study occurred more recently may also account for this apparent contradiction. More research on second marriages is clearly warranted.

### *The Present Study*

The main hypothesis tested in the present study was that those who cohabited without first becoming engaged would, on average, have lower quality marriages and be more likely to divorce than those who cohabited after engagement or not at all before marriage. Limitations in our data set meant that we could examine divorce only in first marriages, but we were able to examine marital quality in both first and second marriages.

We tested these hypotheses in a data set of individuals living in the Central and Southeastern United States who were randomly sampled for telephone interviews in 2001 (see Johnson et al., 2002). The interview included a question about the timing of engagement relative to premarital cohabitation—a question not available in most data sets used to study the cohabitation effect. The data set also allowed for statistical control of numerous selection variables that could be associated with both a higher likelihood of cohabiting prior to marriage and subsequent marital problems (e.g., income, education, religiosity, traditionality, and education). We used ordinary least squares multiple regression to assess whether engagement status at the time of cohabitation was related to married individuals' reports of marital positivity, negative interaction, and divorce proneness, controlling for possible selection characteristics. In a different subsample, we used event history analysis to see if engagement status at the time of cohabitation was related to the odds of divorce in first marriages, also controlling for selection characteristics. No prior study has tested whether divorce is less likely for those who cohabited only after engagement compared to those who cohabited without first being engaged. We

limited the analyses to respondents who were married in the 1990s so that the results address an era in which cohabitation prior to marriage was commonly practiced and accepted (Bumpass & Lu, 2000; Schoen, Landale, & Daniels, 2007; Smock, 2000).

## Method

### *Participants and Procedure*

In 2001, a team of researchers conducted a multi-state, random phone survey for the Oklahoma Department of Human Services of people residing in Oklahoma, Kansas, Arkansas, and Texas. The survey included questions about marriage, divorce, and demographic characteristics. For more specific methodological details, see Johnson et al. (2002). The 2001 survey included 3,023 individuals recruited by random digit dialing. The overall response rate to the survey, among individuals contacted by telephone, was 58%. An additional 303 individuals were recruited from a list the Oklahoma Department of Human Services provided of people receiving Medicaid for reasons of financial need. This additional sampling was conducted in order to assure adequate inclusion of individuals with low income levels. Because calls were made during the day, women were more likely than men to answer the telephone and complete the interview, which resulted in a gender distribution of 70% women and 30% men. For the present study, only participants who had been married in 1990 or later were selected.

*Marital quality sample.* Those who were currently married were used to address questions of how premarital cohabitation was related to self-reported marital quality in first or second marriages ( $n = 637$ ). Table 1 displays the demographic characteristics of this sub-sample.

*Marital instability sample.* Individuals who had married for the first time between 1990 and 2001, and who either had remained married or divorced only one time, were included in the analysis of marital instability. Because the questionnaire did not include a complete marital

history for respondents, we were unable to analyze divorce outcomes by cohabitation history for those who divorced more than once in the 1990s. Only the starting and ending dates of first marriages were available. This sample consisted of 645 individuals who either remained married up to the time of the survey ( $n = 521$ ) or divorced ( $n = 124$ ). Table 1 displays the demographic characteristics of this sub-sample.

### *Measures*

*Cohabitation history.* Participants were asked “Did you and your current spouse live together before you got married?” and “At the time you started living together, were you engaged?” Similar questions were asked about respondents’ prior marriages. Cohabitation history is represented in the regression and event history analyses by two binary variables: cohabited after engagement (0 = *no*, 1 = *yes*) and did not cohabit prior to marriage (0 = *no*, 1 = *yes*). Those who began to cohabit without first being engaged served as the omitted comparison group. There is no information available on how many of those who began cohabiting prior to engagement eventually became engaged prior to marriage versus those who married without ever becoming formally engaged.

*Marital positivity.* Indices of global marital satisfaction (2 items), dedication commitment (3 items), and friendship with the spouse (1 item) were combined into one measure of marital positivity. The marital satisfaction items were drawn from the General Social Survey: “All in all, how satisfied are you with your marriage?” (1 = *completely satisfied*, 5 = *not at all satisfied*) and “Taking things altogether, how would you describe your marriage? Would you say your marriage is...” (1 = *very happy*, 2 = *pretty happy*, 3 = *not too happy*). Dedication to one’s partner was measured with three questions (Stanley & Markman, 1992) answered on a four point scale (1 = *strongly agree*, 4 = *strongly disagree*): “I may not want to be with my spouse/partner



a few years from now (reversed).” “I like to think of my spouse/partner and me more in terms of ‘us’ and ‘we’ than ‘me’ and ‘him/her.’ ” “My relationship with my spouse/partner is more important to me than almost anything else in my life.” Friendship was measured with one item: “We regularly have great conversations where we just talk as good friends” (1 = *strongly agree*, 5 = *strongly disagree*). To obtain a composite score for marital positivity, we converted the three sub-scale scores to z-scores, and the resulting composite is the average of the z-scores, with higher scores reflecting greater levels of marital positivity. Cronbach’s alpha for this composite measure was = .87.

*Negative interaction.* Conflict was measured with a four-item measure of negative interaction that has demonstrated evidence of both reliability and validity (e.g., Stanley, Markman, & Whitton, 2002). The four items were as follows, answered on a three point scale (1 = *never or almost never*, 2 = *once in awhile*, 3 = *frequently*): “Little arguments escalate into ugly fights with accusations, criticisms, name calling, or bringing up past hurts.” “My spouse/partner criticizes or belittles my opinions, feelings, or desires.” “My spouse/partner seems to view my words or actions more negatively than I mean them to be.” “When we argue, one of us withdraws...that is, does not want to talk about it anymore, or leaves the scene.” The scores for the four items were totaled, such that a higher score means greater levels of conflict. Cronbach’s alpha for this measure was = .79.

*Divorce proneness.* For self-reported proneness for divorce, we combined five items related to perceived marital instability from Booth, Johnson, and Edwards (1983). A sample item is “Have you or your spouse ever seriously suggested the idea of divorce?” Cronbach’s alpha for this measure was .86. Because the distribution of scores was highly skewed, we used a logarithmic transformation of the total score in the analyses.

*Traditionality.* Six questions assessing traditional beliefs about marriage were combined for a control variable in the analyses of marital quality. The six items were answered on a five point scale (1 = *strongly agree*, 5 = *strongly disagree*): “When married people realize that they no longer love each other, they should get a divorce even if they have children (reversed).” “When there are children in the family, parents should stay married even if they do not get along.” “Sure, divorce is bad, but a lousy marriage is even worse (reversed).” “Society would be better off if divorces were harder to get.” “People who have children together ought to be married.” “In marriage you can count on your partner being there for you more than you can when you are living with someone outside of marriage.” The scores for the six items were averaged, with higher scores indicating greater endorsement of traditional beliefs about marriage. Cronbach’s alpha for this scale was .74. Although the use of this measure is imperfect because it was not measured at the time of the relationship transitions of interest (cohabitation and marriage), it can still be used to control for potential selection effects in the marital quality analyses. The measure was not used in the stability analyses because the experience of divorce may have influenced such beliefs.

*Other control variables.* Several other variables were included as controls: current yearly family income (1 = *less than \$20,000 per year*, 2 = *more than \$20,000, less than \$40,000*, 3 = *more than \$40,000, less than \$60,000*, 4 = *more than \$60,000, less than \$80,000*, 5 = *more than \$80,000, less than \$100,000*, 6 = *more than \$100,000*), current education level, current age (for marital quality analyses only), age at marriage (for divorce analyses only), gender (0 = *male*, 1 = *female*), length of marriage, race (represented by dummy variables for African American, Native American, and other, with White serving as the omitted comparison group), Latino ethnicity, the state the participant was from (with dummy variables for Arkansas, Texas, and Kansas, with

Oklahoma serving as the omitted comparison group), whether the couple had children together (0 = *no*, 1 = *yes*), and whether there were children from previous relationships (0 = *no*, 1 = *yes*). Respondents were asked about their work status in the prior week, with those working full or part time coded as employed (0 = *no*, 1 = *yes*). Two different variables were available to control for religiosity, and were used in the analyses of marital quality. Global religiosity was assessed with one item: “All things considered, how religious would you say that you are?” (1 = *not at all religious*, 2 = *slightly religious*, 3 = *moderately religious*, and 4 = *very religious*). Additionally, whether or not the respondent had a religious wedding was assessed (0 = *secular wedding*, 1 = *church wedding*) (75% were married in a religious setting). Because the experience of divorce can alter a person’s current level of religiosity, and because the decision to cohabit prior to marriage may affect whether couples have a religious wedding, no measure of religiosity was used in the event history analysis of divorce.

## Results

### *Premarital Cohabitation History and Marital Quality*

Very few cases (8.3% of cases) were missing data on one or more of the variables included in the analyses of marital quality. On income, 39 observations were missing, but no more than four observations were missing on any other variable. Because these income values cannot be assumed to be missing at random and because so few cases were missing any data, we elected to use listwise deletion (see Allison, 2002).

Before presenting regression analyses, we first present means, standard deviations, and effect sizes (Cohen’s *d*) for differences in marital positivity, negative interaction, and divorce proneness by cohabitation history and by marriage number (Table 2). Raw cell means are presented in the upper half of the table and adjusted means (controlling for the same variables as

in the regressions: gender, traditionality, income, employment, age, years married, children, children from previous relationships, religiosity, education, ethnicity, and the respondent's state of residence) are in the lower half of the table. Planned comparisons (t-tests) were used to test for differences between the groups within the first marriage and second marriages groups; significance levels are presented in Table 2. The Cohen's *d* effect sizes represent the degree of difference between groups in standard deviation units, and can be used to interpret the magnitude of these differences. Amato, Booth, Johnson, and Rogers (2007) suggested criteria for interpreting effect sizes for survey data: an effect size of less than .2 is weak, an effect size ranging from .2 to .39 is moderate, and an effect size .4 or above is strong. In general, the pre-engagement cohabitation effect was clear in first but not second marriages; those cohabiting without first being engaged reported poorer marital quality on most measures in most analyses compared to the other groups. As would be expected, the differences among the groups were not as strong with statistical controls included.

The pattern of findings for second marriages was different than for first marriages. While there was less statistical power for these analyses due to sample size, the uncontrolled comparison of means (with significant differences), as well as the effect sizes in the controlled analyses, were consistent with a general association between premarital cohabitation and lower marital quality instead of one moderated by the timing of engagement. In fact, those who cohabited only after engagement generally scored lowest on the marital quality in second marriages.

Next, we tested whether cohabitation history was related to indices of marital quality with multiple regression analyses. See Table 3 for findings related to positivity, negative interaction, and divorce proneness. In each table, Model 1 excludes the interaction terms for

cohabitation history by marriage number (first or second) and Model 2 contains them (first or second marriage by cohabitation only after engagement or not, and first or second marriage by cohabitation prior to marriage or not). The reference group is always those who cohabited without first being engaged. In all models, we controlled for gender, traditionality, income, education, employment, age, years married, children with partner, children from previous relationships, religiosity, education, ethnicity, and the respondent's state of residence. In these tables, the Model 2 coefficients for the cohabitation groups refer to people in their first marriages and the interaction terms showed the differences between individuals in first and second marriages. To obtain the coefficients for people in second marriages, the main effect coefficients need to be added to the interaction term coefficients. Therefore, it is the coefficients in Model 2 that are most consistent with the pattern of means in Table 2.

The findings presented in Table 3 show that those who waited to cohabit until marriage reported significantly higher positivity than those who cohabited without first being engaged. Contrary to what was predicted, however, those who cohabited only after engagement did not report higher levels of positivity. There were no significant interactions between cohabitation history and marriage number, indicating that the differences based on cohabitation history were not moderated by whether a marriage was the first or second.

The findings presented in Table 3 show that those who cohabited without first being engaged reported more negative interaction than either those who cohabited only after engagement or marriage. The significant interaction term for after engagement by marriage number was consistent with patterns observed in the means, suggesting that the after engagement cohabiters reported less negative interaction in first marriages but more negative interaction in second marriages. The findings presented in Table 3 for divorce proneness tell the same story.

Those cohabiting without first being engaged reported more thoughts and more talk of divorce than either of the other groups for first marriages. In second marriages, the pattern was consistent with the means that showed that those cohabiting after engagement reported more thoughts and talk of divorce than those not cohabiting until marriage.

Only a few control variables were significantly related to marital quality variables in the regression equations. Higher income was associated with less negative interaction and divorce proneness. Younger age was associated with more negative interaction. Traditionality was associated with greater marital positivity. Higher global religiosity was associated with greater marital quality across the three variables. Being African American was associated with lower marital positivity and higher divorce proneness.

#### *Premarital Cohabitation History and Marital Stability*

To assess the association between cohabitation history and divorce, we relied on a discrete-time event history model (Allison, 1984). The sample consisted of all individuals who married for the first time in the 1990s. A person-year file was constructed in which individuals contributed one observation for each year of marriage, beginning with year one. Individuals who divorced in a given year were censored from the file (stopped contributing observations) in the year following divorce. Individuals who lost a spouse through death were similarly censored. Individuals who remained continuously married contributed observations until the survey date (2001). As mentioned earlier, this level of detail was available only for the first marriage. Duration of marriage (in years) was the single time-varying covariate. In principle, having a first child also should be time-varying, but we could not determine the year in which children were born with the available data. Similarly, education was measured at the year of the survey; consequently, our measure underestimates education for respondents who returned to school

following marriage or divorce.

The power of a discrete-time event history model is largely determined by the number of individuals who experience the event (divorce). Because only 124 divorces occurred during this period, we did not want to lose cases from the analysis due to missing data on the covariates. Consequently, we used multiple imputation (with 10 repetitions) to impute missing values for all cases on such variables.

With respect to bivariate relationships, 28% of individuals who cohabited prior to marriage without being engaged had divorced by 2001. This figure compares with 21% of individuals who cohabited after engagement and 20% of individuals who did not cohabit until after marriage. A preliminary event history analysis based on the person-year file without controls indicated that individuals who cohabited without being engaged were more likely to divorce than were individuals who cohabited after engagement ( $b = -.38, SE = .23, p < .10$ ) and those who did not cohabit premaritally ( $b = -.63, SE = .20, p < .001$ ).

Table 4 displays the results of the event history analysis with the full set of covariates. Individuals who cohabited after engagement, and individuals who did not cohabit prior to marriage, were less likely to divorce than were individuals who cohabited without first becoming engaged (the comparison group), although the rankings of the first two groups were reversed compared with the model without covariates. Specifically, the odds of divorcing in a given year were 45% lower among individuals who cohabited after engagement ( $p < .05$ ) and 30% lower among individuals who did not cohabit before marriage ( $p < .10$ ); the latter can be considered significant since the direction was predicted (These percentage estimates are based on the formula  $[\text{odds ratio} - 1] * 100$ .) The difference between the group not cohabiting prior to marriage and the group cohabiting only after engagement was not significant. With all covariates

set at their means, the annual probability of divorce for individuals who cohabited without being engaged was .027. This figure compares with .019 for individuals who did not cohabit prior to marriage and .015 for individuals who cohabited after engagement. With respect to the control variables, the findings were generally in line with prior research. The duration of marriage was related to divorce in a curvilinear fashion, rising in the earlier years of marriage and then declining. The odds of divorce were significantly less likely among those who married at older ages or had children from their marriages. In contrast, the odds of divorce were elevated among individuals who had a child with a different partner prior to marriage.

### Discussion

This paper addressed whether premarital cohabitation, particularly without first being engaged, was related to lower marital quality and increased risk for divorce in first and second marriages. The findings presented here confirm the existence of a cohabitation effect among people who married in the 1990s. For first marriages, we found that the risks associated with cohabiting were consistently greater for those who were not engaged when they began cohabiting. Those who cohabited prior to engagement reported, on average, lower levels of positive attributes about their marriages, more negative interactions, and more proclivity toward divorce compared to those who cohabited after making a clear and public commitment to the future (engagement or marriage). Analyses also indicated that cohabiting without first being engaged was associated with a higher likelihood of divorce in comparison to the other two groups. In contrast, the likelihood of divorce did not differ between individuals who did not cohabit and those who cohabited after engagement. For self-report variables, effect sizes were larger and more consistent for findings regarding negative interaction and divorce proneness than for positivity, with moderate effect sizes being observed for the former. Overall, these findings



replicate prior work (Kline et al., 2004; Rhoades et al., 2009) and extend it by also showing an association between pre-engagement cohabitation and divorce in first marriages.

In second marriages, we found evidence for the premarital cohabitation effect regardless of engagement status at the time cohabitation began. While there were fewer significant coefficients, the effect sizes suggest this was mostly due to having less power for the analyses in second marriages. These findings are consistent with the findings of Xu et al. (2006), who found that the cohabitation effect was not limited to first marriages. Unexpectedly, we found that those who cohabited after engagement and before a second marriage reported lower, not higher, marital quality. While this finding could be an artifact of this sample, we suspect the pattern may replicate because the meaning of engagement differs in first and second marriages. In first marriages, engagement is a step that leads to marriage in short order. Among those who are divorced, however, some people may have long engagements that reflect a desire to declare a higher level of commitment but with a concomitant reluctance to marry, or marry soon.

Gender did not moderate any of the patterns examined here. Although we did not predict gender differences, prior studies suggested they might have been found (Rhoades, Stanley, & Markman, 2006; Stanley et al., 2004). (Direct tests of the interaction between gender and the timing of cohabitation were included in the analyses of covariance underlying the planned comparisons presented in Table 2, and these interactions were not significant. They are not reported for sake of space.) It may be that the present methods were not sensitive enough to pick up such differences if they exist.

Controlling for variables such as religiosity, traditionality, education, income, employment, and children lessened but did not eliminate the risks associated with cohabiting without first being engaged in first marriages or before marriage in second marriages. (Compare

the unadjusted and adjusted results in Table 2.) These results parallel other studies in which variables associated with selection did not explain all of the risk associated with cohabitation (e.g., DeMaris & MacDonald, 1993; Cohan & Kleinbaum, 2002; Kamp Dush et al., 2003; Kline et al., 2004; Rhoades et al., 2009).

Stanley et al. (2006) hypothesized a causal mechanism in explaining the cohabitation effect that focuses on the nature of commitment at the time of transitions into more constrained relationship conditions, like cohabitation. That inertia hypothesis suggests that the constraints of cohabitation may lead some lower quality relationships to continue into marriage when they may have otherwise broken up. This theory includes elements of both selection (prior risk) and experience (the timing of cohabitation relative to the development of commitment). While parts of this theory cannot be tested directly here, our findings for first marriages are consistent with a key prediction from the inertia hypothesis and our findings for second marriages are not. One possible reason for the difference is that those in higher order marriages are more experienced at ending relatively constrained relationships and are not as affected by such a deterrent.

The findings also draw attention to what different types of relationship status comparisons may tell the field going forward. Thornton, Axinn, and Xie (2007) argued that there are a number of possible groupings when comparing relationship dynamics, such as combining cohabiting and dating couples to form a comparison group for married couples. In the study of premarital cohabitation effects, an important comparison may turn out to be between cohabiters and daters who have comparable levels of commitment to marry but different levels of constraints based on whether or not they share a single address.

This study has several limitations. First, the data are cross-sectional rather than prospective. The data set contains enough information to conduct the analyses presented here

with confidence, but refined analyses and inferences require longitudinal sampling. Related to this point, variables such as traditionality and religiosity were measured at the time of the survey rather than at the time of cohabitation or marriage; assessing how these variables change over time would be useful in future studies. Second, the sample was obtained by surveying several states in only one region of the United States, possibly limiting generalization. Third, the sample is not adequate for analyses of how the cohabitation effects may be moderated by race or ethnicity because the sample is not large to provide the necessary statistical power for such tests. Fourth, because of data limitations, we were not able to assess the association between cohabitation and divorce in second marriages. Fifth, the findings on marital quality are limited because many of those with the lowest quality marriages would have divorced prior to the date of the survey, and the analyses may underestimate the size of the predicted effects as a result.

Despite these limitations, among those who married in the 1990s, we found evidence of a pre-engagement cohabitation effect in first marriages and a pre-marital cohabitation effect in second marriages. Especially for first marriages, our findings suggest that it is important to study the timing of cohabitation with regard to the development of a clear and mutual commitment to marry. If beginning cohabitation without plans for marriage is consistently associated with a greater risk for divorce, this implies that sliding into cohabitation without deliberating about the meaning of the step being taken (Manning & Smock, 2005), or doing so quickly (Sassler, 2004), could be problematic for relationships that turn into marriages. Both emerging theory and methodological considerations suggest the need to increase understanding of the nature and conditions of relationship transitions, and not merely relationship statuses (Casper & Bianchi, 2002; Stanley et al., 2006).

## References

- Allison, P. D. (1984). *Event history analysis: Regression for longitudinal data*. Beverly Hills, CA: Sage.
- Allison, P. D. (2002). *Missing Data*. Thousand Oaks, CA: Sage.
- Amato, P. R., Booth, A., Johnson, D., & Rogers, S. J. (2007). *Alone together: How marriage in America is changing*. Cambridge, MA: Harvard University Press.
- Axinn, W. G., & Thornton, A. (1992). The relationship between cohabitation and divorce: Selectivity or causality? *Demography*, 29(3), 357-374.
- Booth, A., Johnson, D., & Edwards, J. N. (1983). Measuring marital instability. *Journal of Marriage and Family*, 45(2), 387-394.
- Brown, S. L. (2004). Moving from cohabitation to marriage: effects on relationship quality. *Social Science Research*, 33, 1 – 19.
- Brown, S. L., & Booth, A. (1996). Cohabitation versus marriage: A comparison of relationship quality. *Journal of Marriage and Family*, 58(3), 668-678.
- Bumpass, L. L., & Lu, H. H. (2000). Trends in cohabitation and implications for children's family contexts in the United States. *Population Studies*, 54(1), 29-41.
- Casper, L. M., & Bianchi, S. M. (2001). *Continuity and change in the American family*. Thousand Oaks, CA: Sage.
- Cohan, C. L., & Kleinbaum, S. (2002). Toward a greater understanding of the cohabitation effect: Premarital cohabitation and marital communication. *Journal of Marriage and Family*, 64(1), 180-192.
- DeMaris, A., & MacDonald, W. (1993). Premarital cohabitation and marital instability: A test of the unconventionality hypothesis. *Journal of Marriage and Family*, 55(2), 399-407.

- Glenn, N. D. (2002). A plea for greater concern about the quality of marital matching. In A. J. Hawkins, L. D. Wardle & D. O. Coolidge (Eds.), *Revitalizing the institution of marriage for the twenty-first century: An agenda for strengthening marriage* (pp. 45-58). Westport, CT: Praeger.
- Johnson, C. A., Stanley, S. M., Glenn, N. D., Amato, P. R., Nock, S. L., Markman, H. J., et al. (2002). *Marriage in Oklahoma: 2001 baseline statewide survey on marriage and divorce (S02096 OKDHS)*. Oklahoma City, OK: Oklahoma Department of Human Services.
- Kamp Dush, C. M., Cohan, C. L., & Amato, P. R. (2003). The relationship between cohabitation and marital quality and stability: Change across cohorts? *Journal of Marriage and Family*, 65(3), 539-549.
- Kline, G. H., Stanley, S. M., Markman, H. J., Olmos-Gallo, P. A., St. Peters, M., Whitton, S. W., et al. (2004). Timing is everything: Pre-engagement cohabitation and increased risk for poor marital outcomes. *Journal of Family Psychology*, 18(2), 311-318.
- Lillard, L. A., Brien, M. J., & Waite, L. J. (1995). Premarital cohabitation and subsequent marital dissolution: A matter of self-selection? *Demography*, 32, 437-457.
- Manning, W. D., & Smock, P. J. (2005). Measuring and modeling cohabitation: New perspectives from qualitative data. *Journal of Marriage and Family*, 67, 989-1002.
- Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2009). The Pre-engagement Cohabitation Effect: A Replication and Extension of Previous Findings. *Journal of Family Psychology*, 23, 107-111.
- Sassler, S. (2004). The process of entering into cohabiting unions. *Journal of Marriage and Family*, 66(2), 491-505.
- Schoen, R., Landale, N. S., & Daniels, K. (2007). Family transitions in young adulthood.

- Demography*, 44(4), 807-820.
- Smock, P. J. (2000). Cohabitation in the United States: An appraisal of research themes, findings, and implications. *Annual Review of Sociology*, 26, 1-20.
- Stanley, S. M., & Markman, H. J. (1992). Assessing commitment in personal relationships. *Journal of Marriage and Family*, 54, 595-608.
- Stanley, S.M., Markman, H.J., & Whitton, S. (2002). Communication, conflict, and commitment: Insights on the foundations of relationship success from a national survey. *Family Process*, 41, 659-675.
- Stanley, S. M., Rhoades, G. K., & Markman, H. J. (2006). Sliding vs. deciding: Inertia and the premarital cohabitation effect. *Family Relations*, 55, 499-509.
- Stanley, S. M., Whitton, S. W., & Markman, H. J. (2004). Maybe I do: Interpersonal commitment and premarital or nonmarital cohabitation. *Journal of Family Issues*, 25(4), 496-519.
- Teachman, J. (2008). Complex life course patterns and the risk of divorce in second marriages. *Journal of Marriage and Family*, 70(2), 294-305.
- Thornton, A., Axinn, W. G., & Xie, Y. (2007). *Marriage and cohabitation*. Chicago: Chicago University Press.
- Xu, X., Hudspeth, C. D., & Bartkowski, J. P. (2006). The role of cohabitation in remarriage. *Journal of Marriage and Family*, 68(2), 261-274.

Table 1

*Sample Descriptives for Variables in Analyses*

<u>Variable</u>	<u>Marital Quality</u>		<u>Marital Instability</u>	
	<u>n = 637</u>		<u>n = 645</u>	
	<u>M or %</u>	<u>SD</u>	<u>M or %</u>	<u>SD</u>
Marital positivity	-0.04	0.92	--	--
Negative interaction	5.93	2.10	--	--
Divorce proneness	0.40	0.14	--	--
First marriage	69%	--	100%-	--
Second marriage	31%	--	0%	--
Male	30%	--	29%	--
Female	70%	--	71%	--
Traditionality	3.30	0.73	--	--
Income	2.96*	1.43	--	--
Age	34.04	10.67		
Age at marriage	--	--	23.51	5.64
Years married	5.52	3.64	5.16	3.61
Any child(ren) from previous union	33%	--	12%	--
Religiosity	3.23	0.73	--	--
Education	3.47	1.50	3.31	1.47
Child(ren) from current relationship	66%	--	74%	--
Employment status	67%	--	--	--

Married in religious setting	75%	--	--	--
White	89%	--	86%	--
Black or African American	6%	--	7%	--
Native American	4%	--	5%	--
Other race	1%	--	2%	--
Latino	6%	--	7%	--
Oklahoma	69%		72%	
Arkansas	10%	--	9%	--
Kansas	11%	--	9%	--
Texas	10%	--	10%	--

---

*Note.* Standard deviations are not reported for binary or categorical variables. Descriptive statistics are shown only for variables used in the analysis for each subsample.

\* The modal category of income was \$ 20,000 to \$ 40,000.



Table 2

*Marital Quality Means, Standard Deviations, and Effect Sizes by Premarital Cohabitation History and First or Second Marriages (N = 637)*

Variable	(A) Without Engage M (SD)	(B) After Engage M (SD)	(C) Not until Marriage M (SD)	A vs. B	Effect sizes	
					B vs. C	A vs. C
<u>Zero-Order Results: First Marriages</u>						
Marital positivity	-0.35 (1.23)	-0.11 (0.76)	0.06 (0.81)	-.24	-.22	-.40***
Negative interaction	6.83 (2.56)	6.06 (2.12)	5.73 (1.73)	.33*	.17	.51***
Divorce proneness	0.47 (0.16)	0.41 (0.13)	0.39 (0.13)	.41*	.13	.53***
Percentage	25%	24%	50%			
<u>Zero-Order Results: Second Marriages</u>						
Marital positivity	-0.14 (0.95)	-0.11 (1.09)	0.22 (0.67)	-.03	-.38*	-.44*
Negative interaction	5.75 (2.15)	6.22 (2.34)	5.20 (1.71)	-.21	.50**	.28
Divorce proneness	0.39 (0.15)	0.42 (0.17)	0.36 (0.11)	-.19	.43*	.23
Percentage	32%	24%	44%			
<u>Adjusted Results (with Control Variables): First Marriages</u>						
Marital positivity	-0.22	-0.02	-0.04	-.20	.03	-.18
Negative interaction	6.67	5.95	5.86	.31*	.05	.38**
Divorce proneness	0.45	0.40	0.40	.34*	.00	.34**

Adjusted Results (with Control Variables): Second Marriages

Marital positivity	-0.06	-0.06	0.14	.00	-.23	-.25
Negative interaction	5.49	6.04	5.49	-.24	.27	.00
Divorce proneness	0.37	0.41	0.38	-.25	.21	-.08

*Notes.* For analysis, total  $N = 586$  after listwise deletion. Effect sizes are Cohen's  $d$  values. Adjusted Results are the means and effect sizes controlling for the variables that were controlled for in the regressions reported in the text and Table 3. T-tests were used to test for significant differences between groups and are reported in the Effect Sizes column.

\*\*\* $p < .001$ , \*\*  $p < .01$ , \* $p < .05$ .

Table 3

Summary of Regression Analyses Predicting Marital Positivity, Negative Interaction, and Divorce Proneness from Cohabitation History ( $N = 637$ )

Variables	Marital Positivity						Negative Interaction						Divorce Proneness					
	Model 1			Model 2			Model 1			Model 2			Model 1			Model 2		
	<u>B</u>	<u>SE B</u>	<u>β</u>	<u>B</u>	<u>SE</u>	<u>β</u>	<u>B</u>	<u>SE</u>	<u>β</u>	<u>B</u>	<u>SE</u>	<u>β</u>	<u>B</u>	<u>SE</u>	<u>β</u>	<u>B</u>	<u>SE</u>	<u>β</u>
(Constant)	-1.15	.34		-1.16	.35		-9.63	.79		9.97	.81		.62	.05		.64	.06	
Cohab. w/o engagement	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cohab. after engagement	.13	.10	.06	.21	.13	.10	-.29	.24	.06	-.74*	.30	-.15	-.02	.02	-.06	-.05*	.02	-.15
No cohab. until Marriage	.22*	.10	.12	.23*	.12	.12	-.60**	.22	.14	-.89**	.26	-.21	-.04*	.02	-.13	-.06**	.02	-.20
1 <sup>st</sup> vs. 2 <sup>nd</sup> marriage	.23*	.11	.12	.29	.15	.15	-.14	.26	-.03	-.71*	.35	-.16	-.03	.02	-.12	-.07**	.02	-.24
1 <sup>st</sup> vs. 2 <sup>nd</sup>				-.21	.21	-.06				1.23*	.49	.16				.08*	.03	.15

marriage by cohab. after engagement																			
1 <sup>st</sup> vs. 2 <sup>nd</sup>																			
marriage by no cohab.				.00	.19	.00				.79	.43	.14					.05	.03	.14
Gender	-.11	.09	-.06	-.11	.09	-.06	-.14	.20	-.03	-.16	.20	-.03	.00	.01	.01	.00	.01	.00	
Tradition.	.13*	.06	.11	.13*	.06	.11	-.19	.13	-.07	-.19	.13	-.07	-.01	.01	-.07	-.01	.01	-.07	
Income	.04	.03	.06	.04	.03	.06	-.16*	.07	-.11	-.15*	.07	-.10	-.01*	.01	-.10	-.01*	.01	-.10	
Age	-.01	.01	-.08	-.01	.01	-.09	-.02*	.01	-.12	-.03*	.01	-.13	.00	.00	-.06	.00	.00	-.07	
Yrs. married	-.01	.01	-.04	-.01	.01	-.04	.02	.03	.03	.02	.03	.03	.00	.00	.06	.00	.00	.06	
Prev. child	-.05	.11	-.03	-.04	.11	-.02	-.06	.26	-.01	-.17	.26	-.04	.02	.02	.07	.02	.02	.05	
Religiosity	.19**	.06	.15	.19**	.06	.15	-.30*	.13	-.10	-.30*	.13	-.10	-.02**	.01	-.12	-.02**	.01	-.12	
Education	.04	.03	.07	.04	.03	.06	-.06	.07	-.04	-.06	.07	-.04	-.01	.00	-.06	-.01	.00	-.06	
Current child	-.03	.09	-.02	-.03	.09	-.02	.13	.22	.03	.12	.21	.03	.01	.01	.02	.00	.01	.01	
Employment	.02	.08	.01	.03	.08	.01	-.16	.19	-.04	-.15	.19	-.03	-.01	.01	-.02	-.01	.01	-.02	
Rel. wedding	.17	.09	.08	.17	.09	.08	-.12	.21	-.02	-.15	.21	.03	-.01	.01	-.03	-.01	.01	-.03	
Black	-.46**	.17	-.11	-.47**	.17	-.11	.67	.39	.07	.71	.39	.08	.07**	.03	.11	.07**	.03	.11	

Native Am.	.09	.19	.02	.09	.19	.02	-.56	.43	-.05	-.56	.43	-.05	-.01	.03	-.01	-.01	.03	-.01
Latino	-.21	.16	-.06	-.22	.16	-.06	.14	.36	-.02	-.14	.36	-.02	.02	.02	-.04	-.02	.02	-.04
Other race	-.02	.28	.00	.01	.28	.00	.71	.64	.05	.74	.64	.05	-.02	.04	.02	-.02	.04	-.02
Arkansas	.08	.12	.03	.07	.12	.02	.25	.28	.04	.25	.28	.04	.01	.02	.01	.01	.02	.01
Kansas	-.06	.12	-.02	-.06	.12	-.02	-.33	.27	-.05	-.26	.27	.04	-.02	.02	-.04	-.01	.02	-.03
Texas	.05	.13	.02	.05	.13	.02	.11	.29	.02	.13	.29	.02	.01	.02	.02	.01	.02	.02
Model Fit	F(21,564) =			F(23,562) =			F(21,564) =			F(23,562) =			F(21,564) =			F(23, 562) =		
Statistics	4.32*** R <sup>2</sup> = .14			4.00*** R <sup>2</sup> = .14			3.66*** R <sup>2</sup> = .12			3.67*** R <sup>2</sup> = .13			3.63*** R <sup>2</sup> = .12			3.59*** R <sup>2</sup> = .13		

*Notes.* For analysis, total  $N = 586$  after listwise deletion. For each outcome variable, in Model 1, the interaction terms were excluded.

Cohabitation after engagement was coded as 1 if the individual lived together only after engagement and 0 if he/she either cohabited without first being engaged or not until marriage. No cohabitation until marriage was coded 0 if the individual did not wait until marriage to cohabit (i.e., cohabited without or after engagement) and 1 if he/she waited until marriage. First versus second marriage was coded 0 for first, 1 for second marriage. The interaction terms are for marriage number (1<sup>st</sup> vs. 2<sup>nd</sup>) by cohabitation type (cohabitation after engagement and no cohabitation before marriage, respectively). Gender was coded 0 for male and 1 for female. All dichotomous control variables (employment status, children from prior relationship (prev. child), children from present relationship (current child), married in a religious setting (rel. wedding), ethnicity and race variables, and state of residence) were coded such that 0 means not true for the participant and 1 means true for the participant. \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ .

Table 4

*Event History Analysis of Predictors of Divorce (First Marriages Only) (N = 645)*

<u>Predictors</u>	<u>B</u>	<u>SE</u>	<u>Odds ratio</u>
Cohabitation without engagement	---	---	---
Cohabitation after engagement	-0.59*	0.24	0.55
No cohabitation until marriage	-0.36†	0.21	0.70
Marital duration	0.16†	0.09	1.18
Marital duration <sup>2</sup>	-0.02†	0.01	0.98
Age at marriage	-0.11***	0.02	0.89
Had children with spouse	-1.23***	0.18	0.29
Had children with prior partner	0.66**	0.25	1.93
Education	-0.03	0.06	0.97
Gender	0.18	0.21	1.19
White	---	---	---
African American	-0.28	0.36	0.76
Native American	-0.28	0.35	0.75
Hispanic	-0.44	0.44	0.65
Other race	0.05	0.53	1.05
Oklahoma	---	---	---
Arkansas	0.19	0.30	1.20
Kansas	-0.33	0.41	0.72
Texas	0.21	0.33	1.23
Intercept	0.02	0.50	

*Notes.* Number of divorces = 124. Number of person-years = 4,343.  $\chi^2(16) = 124.39, p < .001$ .

Pseudo  $R^2 = .10$ . For coding of variables, see text of paper and also note for Table 3.

† $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .