

Timing Is Everything: Pre-Engagement Cohabitation and Increased Risk for Poor Marital Outcomes

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Data from a longitudinal study were used to examine differences among couples that cohabited before engagement, after engagement, or not until marriage. Survey data and objectively coded couple interaction data were collected for 136 couples (272 individuals) after engagement (but before marriage) and 10 months into marriage. At both time points, the before-engagement cohabiters (59 couples) had more negative interactions, lower interpersonal commitment, lower relationship quality, and lower relationship confidence than those who did not cohabit until after engagement (28 couples) or marriage (49 couples), even after controlling for selection factors and duration of cohabitation. Our findings suggest that those who cohabit before engagement are at greater risk for poor marital outcomes than those who cohabit only after engagement or at marriage, which may have important implications for future research on cohabitation, clinical work, and social policy decisions.

keywords: cohabitation, marriage, engagement, couple interaction, communication, prevention

Gaining a better understanding of cohabitation is important given that cohabitation is becoming more common (Casper & Bianchi, 2001; Manning & Smock, 2002; Smock, 2000). In the United States, well over half of couples cohabit before getting married (Bumpass, Sweet, & Cherlin, 1991; Stanley, Whitton, & Markman, 2004). Some researchers conjecture that couples see cohabitation as a “trial run” for marriage (Bumpass et al., 1991; Cohan & Kleinbaum, 2002; Popenoe & Whitehead, 2002), and one survey indicated that 61% of young adults believe that cohabitation improves one’s chances in marriage (Johnson et al., 2002). Despite this commonsense view that cohabitation provides a useful test for compatibility, data suggest that, if anything, premarital cohabitation is associated with negative marital outcomes (the “cohabitation effect”). For example, premarital cohabitation (cohabitation that is fol-

lowed by marriage to the same partner) is associated with higher rates of divorce in many Western countries (DeMaris & Rao, 1992; Hall & Zhao, 1995; Kieran, 2002). In the United States, premarital cohabitation is also associated with lower marital satisfaction (Brown & Booth, 1996; Stanley et al., in press), lower interpersonal commitment among men (Stanley et al., in press), poorer perceived and observed communication in marriage (Cohan & Kleinbaum, 2002; DeMaris & Leslie, 1984), higher marital conflict (Thomson & Colella, 1992), higher rates of wife infidelity (Forste & Tanfer, 1996), and higher perceived likelihood of divorce (Thomson & Colella, 1992).

The cohabitation literature is beset by controversy as to why negative marital outcomes arise for some couples who cohabit before marriage. The dominant perspective is that selection effects are operating such that the differences in the marital outcomes of those who cohabit premaritally and those who do not are due to preexisting characteristics of the individuals rather than the cohabitation experience itself. For example, controlling for several selection factors (i.e., religiosity, number of previous marriages, education level, presence of children, and age) has been shown to eliminate the significant relationship between premarital cohabitation and marital instability (DeMaris & Leslie, 1984; Lillard, Brien, & Waite, 1995; Woods & Emery, 2002). Also, some theory and data suggest a causal effect of cohabitation. For example, there is evidence that cohabitation causes changes in attitudes about marriage and relationships (Axinn & Barber, 1997; Axinn & Thornton, 1992; DeMaris & Leslie, 1984; Hall & Zhao, 1995; Magdol, Moffitt, & Caspi, 1998; Thomson & Colella, 1992), and these changes may lead to lower marital satisfaction.

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Premarital cohabitation is not associated with negative marital outcomes for everyone, and we tested the hypothesis that engagement status at the point when a couple begins cohabiting is one key factor in determining who is at greatest risk. Specifically, we tested the hypothesis that cohabiting before making a formal commitment to marriage is associated with an increased risk for poor marital outcomes. The theory behind this hypothesis is based on theories of commitment that distinguish interpersonal dedication from constraint commitment (Stanley & Markman, 1992). We know from previous research that many young adults see cohabitation as a good test for marriage (Johnson et al., 2002). What we call inertia theory (see Stanley & Markman, 1997) suggests that some individuals want a test because they are aware of relationship problems or risks and that these individuals become more likely to marry by cohabiting, not because they solve problems or reduce risks, but because cohabiting makes it harder to break up. Those desiring a test likely cohabit before engagement because they want to test their relationships before committing to marriage. However, inertia theory suggests that sharing a household increases constraint commitment, making these undecided and risk-aware individuals more likely to marry someone they might not have married in the absence of cohabitation.

The data set used in the present study involved many advantages in terms of examining timing of cohabitation relative to engagement status, but the variables needed to directly test the underlying theory were not present in it. Nevertheless, we were able to test whether relationship quality varies according to engagement status at the time of cohabitation in ways directly suggested by the underlying theory. Research focusing on premarital cohabitation has largely neglected to distinguish premarital cohabiters who live together before engagement from those who live together only after engagement. In fact, even the most recent studies have combined before- and after-engagement cohabiters in one group (e.g., Cohan & Kleinbaum, 2002; Stanley et al., in press; Woods & Emery, 2002), when these two groups may vary substantially. One study divided cohabiters into two groups on the basis of whether they planned to marry their partners or not, though information on whether there were significant differences in relationship quality was not reported (Brown & Booth, 1996). In line with our predictions, the same study indicated that the relationship quality of cohabiters with plans to marry differed little from that of the married participants in the study.

Indirect support of a timing effect also emerges from studies showing that duration of premarital cohabitation is associated with divorce rates. For example, two studies have shown that marriages are more susceptible to divorce in the case of those who have cohabited for longer periods of time as opposed to shorter periods (Bennett, Blanc, & Bloom, 1988; Thomson & Colella, 1992). In these studies, duration of cohabitation may have been confounded by the timing of premarital cohabitation (before or after engagement), because it is likely that individuals who cohabit before engagement cohabit the longest. None of the studies on duration have examined commitment to marriage as a factor.

In the present study, we focused on three groups of cohabiters: those who lived together before engagement, those who lived together after engagement, and those who did not live together until marriage. The data set used here had three key advantages over many that have been used to study premarital cohabitation: (a) Information was gathered close in time to the couples' decisions about cohabitation and marriage; (b) a wide variety of constructs were included, including couple interaction patterns (self-report and objectively coded measures), confidence in the future of the relationship, overall relationship quality, and interpersonal commitment; and (c) although all of the couples eventually married, the data were longitudinal and included both premarriage and postmarriage assessments. This last consideration is very important, because including couples who cohabit but break up before marriage could skew the results of research focused on how cohabitation effects are manifested both before and after marriage (S. Nock, personal communication, May 7, 2003).

In general, we predicted that those who cohabited before engagement would have poorer relationships (both premarriage and postmarriage) than those who waited until after engagement or until marriage to move in together. We expected differences between after-engagement cohabiters and at-marriage cohabiters to be minimal, because both types of cohabiters had made a formal commitment to marry before cohabiting. Specifically, we expected that, in comparison with after-engagement cohabiters and at-marriage cohabiters, before-engagement cohabiters would (a) report more negative interactions, (b) exhibit more negative and less positive interactions during videotaped interactions, (c) report lower confidence in the future of the relationship, (d) report lower relationship quality, and (e) report lower interpersonal commitment. We also tested whether the predictions held up when controlling for selection factors and duration of premarital cohabitation.

Method

Participants

The present study was part of an ongoing project assessing the efficacy of a premarital training program: the Prevention and Relationship Enhancement Program. Couples ($N = 306$) were recruited through the religious organizations that provided their wedding services and were randomly assigned to one of three premarital training programs. The specific procedures of the larger study have been detailed elsewhere (see Stanley et al., 2001).

One hundred thirty-six couples from this larger study were included in the present study. Couples were included only if we had collected dates of cohabitation, engagement, and marriage from them (60 couples excluded); they were not married at the first assessment (11 excluded); and both partners spoke and read English (6 excluded), were entering a first marriage (18 excluded), and had provided both premarriage and postmarriage data (67 excluded). In addition, couples who cohabited before marriage but only after the premarriage assessment were excluded (14), because they would have been placed in the after-engagement group even though they were not living together at the first assessment, as were the other couples in that group.

The sample was 87.7% White and had a mean education level of

15.4 years. Participants ranged in age from 18 to 45 years ($M = 26.44$, $SD = 4.46$), and couples had been dating, on average, 37.05 months ($SD = 24.95$ months) when they came in for their premarriage assessment. At the premarriage assessment, 17 couples had one or more children from the current relationship or from a previous relationship. Chi-square analyses and analyses of variance (ANOVAs) revealed that there were no significant differences among those who cohabited before engagement, after engagement, and not until marriage in regard to ethnicity, education level, length of relationship, or presence of children. However, those in the before-engagement group reported higher incomes and were older than those in the at-marriage group. In addition, the at-marriage group reported higher religiosity than the before- and after-engagement cohabiters. The distribution of premarital training was not significantly different across the three cohabitation groups, $\chi^2(4, N = 136) = 2.75$, $p > .50$, indicating that no one group was more or less likely to have received any particular type of premarital training than any other group.

Procedure

Couples visited the laboratory before marriage and before premarital training (premarriage assessment) and after premarital training and marriage (postmarriage assessment). Couples had been married, on average, 9.67 months ($SD = 6.75$) at the postmarriage assessment.

During each visit to the lab, partners completed questionnaires individually on a computer or with paper and pencil and engaged in a videotaped 10–15-min problem-solving discussion together. The discussion was based on the couple's most problematic issue or area of conflict, as identified on the self-report Marital Agendas Protocol (Notarius & Vanzetti, 1983). These problem-solving discussions were later coded through the use of the Interaction Dynamics Coding System (described subsequently). Couples were paid \$40 at the premarriage assessment and \$50 at the postmarriage assessment. All study procedures were approved by a university institutional review board, and each individual taking part in the study provided written informed consent.

Measures

Demographic information. A demographics questionnaire gathered descriptive information about our sample (e.g., age, race, income, education, and presence of children). Partners were also asked for the length of the current relationship, the date of their engagement, and the date that they moved in together. Also, religiosity was measured with the simple question "All things considered, how religious would you say that you are?" Scores ranged from 1 (*not at all*) to 7 (*very religious*). These data were used for covariate analyses.

Couple interaction. Three measures were included to test the hypothesis that the before-engagement group would have poorer interactions than the after-engagement and at-marriage groups. First, the Minor Physical Assault and Minor Psychological Aggression subscales of the Revised Conflict Tactics Scale (Straus, Hamby, Boney-McCoy, & Sugarman, 1995) were used as measures of highly negative couple interaction. *Minor physical assault* refers to hitting, pushing, slapping, or kicking one's partner and was coded dichotomously to indicate whether or not the respondent had physically assaulted his or her partner in the past year. *Minor psychological aggression* refers to verbally insulting a partner; scores can range from 0 to 24, with higher scores indicating higher frequency of being verbally aggressive toward one's partner. Scores in the present study ranged from 0 to 20. Alpha

coefficients in our sample were .82 for women and .71 for men. Although we collected these data at premarriage only, we believed that it was important to include them because they tap more severe negative interaction behaviors than the Danger Signs Scale and the observational coding measures.

Second, the Danger Signs Scale was used to assess relationship characteristics predictive of relationship distress. It has demonstrated adequate validity and reliability in statewide and nationwide surveys (Johnson et al., 2002; Stanley et al., in press). Only the seven items related to frequency of negative interaction patterns (e.g., escalation, invalidation, and withdrawal) were used in the present study. An example item is "My partner criticizes or belittles my opinions, feelings, or desires." Respondents rated each item on a 1 (*almost never*) to 3 (*frequently*) scale. The mean item-level score was the basis for our analyses, with actual scores in the present study ranging from 1 to 3. Alpha coefficients in our sample were .74 for women and .82 for men.

Third, the Interaction Dynamics Coding System (Julien, Markman, & Lindahl, 1989; Kline et al., in press), a global coding system for couples' discussions of relationship problems, was used for our observational data on couple interaction. Four positive dimensions (i.e., communication skills, support/validation, problem solving, and positive affect) and five negative dimensions (i.e., withdrawal, denial, conflict, dominance, and negative affect) were coded for each partner. These are dimensions of communication identified by previous research as central components of constructive and destructive interactions (Gottman, Coan, Carrere, & Swanson, 1998; Markman & Hahlweg, 1993). These dimensions have been shown to discriminate between distressed and nondistressed couples (Julien et al., 1989; Prado & Markman, 1998), and intercoder reliability for the larger investigation from which the present study's data were drawn was high, with intraclass correlations ranging from .66 to .95 ($Mdn = .87$; Kline et al., in press). In the present study, Positive Interaction and Negative Interaction subscale scores (created on the basis of factor analyses) were used rather than the individual dimensions. The Positive Interaction subscale includes the positive affect, problem-solving skills, support/validation, and communication skills dimensions (alpha coefficients were .84 for women's subscale scores and .85 for men's scores). The Negative Interaction subscale includes the negative affect, denial, dominance, and conflict dimensions (alpha coefficients were .82 for women's subscale scores and .85 for men's scores). Scores on both subscales can range from 1 to 9. In the present study, Positive Interaction scores ranged from 1 to 8, and Negative Interaction scores ranged from 1 to 8.50.

Confidence. The Confidence Scale is a 10-item measure developed by Stanley, Hoyer, and Trathen (1994) to measure an individual's level of confidence that he or she and his or her partner can handle their future and stay together. Sample items are "I am very confident when I think of our future together" and "I believe we can handle whatever conflicts will arise in the future." Participants rated each item on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. In one study, this measure predicted breakup (Trathen, 1995), and in another, it was sensitive to changes resulting from marriage education participation (Stanley et al., 2003). Only premarriage data were available on this measure, but we decided to include it anyway because it measures a construct that has not, to our knowledge, been previously examined in cohabitation research. Alpha coefficients were .72 for women's scores and .85 for men's scores. Scores can range from 10 to 70, with higher scores indicating more confidence in the relationship. Scores in the present study ranged from 55 to 70.

Relationship quality. The Marital Adjustment Test (Locke & Wallace, 1959) is a widely used measure of relationship quality

with acceptable validity as well as the ability to discriminate between distressed and nondistressed couples (Gottman, Markman, & Notarius, 1977). Although this measure has historically demonstrated high levels of reliability, alpha coefficients in the present study were somewhat lower (i.e., .56 for both women and men). Sample characteristics (i.e., ceiling effects in a study of relatively happy couples) probably constrained the reliability estimates. Scores in the present study ranged from 35.23 to 158,¹ and the mean is consistent with the fact that premarital/newlywed couples are generally very happy ($M = 127.40$, $SD = 16.21$).

Interpersonal commitment. We used the 14-item Dedication scale from the revised Commitment Inventory to measure interpersonal commitment (Stanley & Markman, 1992). The Dedication scale has shown high levels of internal consistency across a range of samples and theoretically consistent relationships with many variables (Adams & Jones, 1997; Stanley & Markman, 1992; Stanley et al., 2004). Each item is rated on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. An example item is "My relationship with my partner is clearly part of my future life plans." Alpha coefficients were .54 for women's scores and .72 for men's scores. The low internal consistency for women is inconsistent with findings from other studies, and it may be an artifact of this sample being relatively happy and dedicated in their relationships. Scores on the Dedication scale can range from 14 to 98, with higher scores indicating more interpersonal commitment. Scores in the present study ranged from 55 to 98.

Results

Most of the analyses presented here involved 3 (cohabitation type) \times 2 (gender) \times 2 (time) ANOVAs or multivariate ANOVAs (MANOVAs) using the General Linear Model (GLM) routine of SPSS.² Because treating partners of one dyad as separate cases would violate the assumptions of ANOVA, we included scores from partners in single analyses and treated gender as a within-subject factor. The time factor represented premarriage and postmarriage data. Main effects for gender and time are reported only when significant. There were no significant interactions, so these results are not reported. Effect sizes (ESs; Cohen's d) are reported for all significant effects. Means, standard deviations, and ESs are presented in Table 1. In the case of all hypotheses, separate analyses of covariance or multivariate analyses of covariance were used to control for selection factors identified in previous research, including age, ethnicity, education, income, length of relationship, religiosity, and duration of premarital cohabitation. None of these variables were significant covariates for the main effects of premarital cohabitation; therefore, these results are not reported.

Couple Interaction

As a means of assessing differences among the three cohabitation groups on psychological aggression, a 3 (cohabitation type) \times 2 (gender) ANOVA was conducted. We used premarriage data only, because postmarriage data were not collected on this measure. There was a significant main effect for type of premarital cohabitation, $F(2, 125) = 11.21$, $p < .01$. Planned comparisons revealed that the before-engagement group ($M = 7.25$, $SD = 4.88$) reported

higher levels of minor psychological aggression than the after-engagement group ($M = 4.28$, $SD = 3.96$), $t(80) = 3.22$, $p < .01$, $ES = .69$, and the at-marriage group ($M = 3.89$, $SD = 4.23$), $t(103) = 4.44$, $p < .01$, $ES = .75$.

We applied 2 \times 3 chi-square analyses to the relationships between cohabitation group (before engagement, after engagement, or at marriage) and presence of physical assault in the past year (yes or no) as reported premarriage (postmarriage data were not collected). The chi-square value was significant for women, $\chi^2(2, N = 131) = 9.12$, $p < .01$. Thirty-one percent of women ($n = 18$) in the before-engagement cohabitation group reported minor physical assault against their partners in the past year, whereas 8% of women ($n = 2$) in the after-engagement group and 10% ($n = 5$) in the at-marriage group reported physically assaulting their partners. The chi-square value was marginally significant for men, $\chi^2(2, N = 132) = 4.91$, $p = .09$. Fourteen percent of men ($n = 8$) in the before-engagement cohabitation group reported minor physical assault against their partners in the past year, whereas 11% of men ($n = 3$) in the after-engagement group and only 1 man in the at-marriage group reported physically assaulting his partner.

Negative interaction ratings (Danger Signs Scale) were available both before and after marriage; therefore, a 3 (cohabitation type) \times 2 (gender) \times 2 (time) ANOVA was conducted. The ANOVA indicated a significant main effect of type of premarital cohabitation, $F(2, 105) = 6.36$, $p < .01$. Planned comparisons revealed that the before-engagement group ($M = 1.56$, $SD = 0.35$) reported higher levels of danger signs than the after-engagement group ($M = 1.38$, $SD = 0.29$), $t(67) = 2.39$, $p < .05$, $ES = .57$,

¹ Because of the format of the Marital Adjustment Test, some participants apparently mistook the first item for part of the instructions and therefore did not complete it (3 women and 11 men at the premarriage assessment and 18 women and 14 men at the postmarriage assessment). We used a regression imputation method based on participants' scores on Marital Adjustment Test items related to Item 1 (determined by factor analyses) to estimate these missing Item 1 data. In addition, one couple had particularly low relationship quality scores at the postmarriage assessment (35.23 for the male partner and 50 for the female partner). Analyses were conducted with and without this couple, and removing them yielded no appreciable change in results; therefore, we included them in the analyses presented in this article.

² There are many ways in which these data could be analyzed, including approaches based largely on ANOVA models or GLM and regression techniques more typically used in the literature on cohabitation effects. We chose to analyze these data using GLM instead of regression because (a) GLM more directly and fully handles various dependencies in data sets, such as having data from two partners; (b) in the form of a MANOVA, GLM allows multiple, presumably correlated dependent variables to be tested in the same overall analysis, whereas regression is usually used in tests of only one outcome variable at a time, a method that can be less sensitive to overall patterns of differences; and (c) whereas interaction terms can be difficult to properly specify (and often are not specified) when researchers use regression, interactions among factors in ANOVA models are clearly specified and tested in GLM.

Table 1
Means, Standard Deviations, and Effect Sizes

Measure	Before engagement		After engagement		At marriage		Effect size	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Before vs. after engagement	Before vs. at marriage
Psychological aggression	7.25	4.88	4.28	3.96	3.89	4.23	.69	.75
Self-reported negative interaction	1.56	0.35	1.38	0.29	1.36	0.28	.57	.71
Observed negative interaction	3.62	1.44	3.00	1.19	2.91	1.01	.47	.57
Observed positive interaction	3.97	1.18	3.87	1.17	4.35	1.14	<i>ns</i>	.32
Confidence	67.02	3.26	68.46	2.50	68.20	1.85	.41	.64
Relationship quality	120.92	14.92	129.18	10.84	132.11	11.76	.64	.84
Interpersonal commitment	87.61	6.48	88.95	6.15	90.84	5.70	<i>ns</i>	.51

Note. Effect sizes are Cohen's *d* values.

and the at-marriage group ($M = 1.36$, $SD = 0.28$), $t(89) = 3.33$, $p < .01$, $ES = .71$. The main effect of time approached significance, $F(1, 105) = 3.90$, $p = .05$, $ES = .16$, with the number of premarriage danger signs ($M = 1.40$, $SD = 0.33$) being lower than the number of postmarriage danger signs ($M = 1.46$, $SD = 0.41$).

For observational data on couple interaction, we conducted a 3 (cohabitation type) \times 2 (gender) \times 2 (time) MANOVA using the Positive and Negative Interaction subscales. Wilks's lambda criteria for the multivariate F statistic were used, and the MANOVA indicated significant main effects of type of premarital cohabitation, $F(4, 196) = 5.26$, $p < .01$; time, $F(2, 98) = 7.18$, $p < .01$; and gender, $F(2, 98) = 4.57$, $p = .01$. Planned comparisons revealed that the before-engagement group ($M = 3.62$, $SD = 1.44$) was coded as more negative than the after-engagement group ($M = 3.00$, $SD = 1.19$), $t(63) = 2.53$, $p = .01$, $ES = .47$, and the at-marriage group ($M = 2.91$, $SD = 1.01$), $t(82) = 3.53$, $p < .01$, $ES = .57$. The before-engagement group ($M = 3.97$, $SD = 1.18$) was also coded as less positive than the at-marriage group ($M = 4.35$, $SD = 1.14$), $t(82) = -2.07$, $p < .05$, $ES = .32$, and the after-engagement group ($M = 3.87$, $SD = 1.17$) was coded as less positive than the at-marriage group as well, $t(59) = -2.11$, $p < .05$, $ES = .41$. In addition, univariate tests indicated that premarriage scores ($M = 3.45$, $SD = 1.25$) were higher than postmarriage scores ($M = 2.90$, $SD = 1.29$), $F(1, 99) = 14.15$, $p < .01$, $ES = .43$. This main effect of time was probably due to the fact that, between the two assessment points, about two thirds of the sample underwent premarital training shown to be effective in reducing negativity in couple interactions (Stanley et al., 2001). Univariate tests also indicated that women ($M = 4.18$, $SD = 1.12$) were coded as more positive than men ($M = 3.95$, $SD = 1.26$), $F(1, 99) = 9.22$, $p < .01$, $ES = .19$.

In summary, in support of our hypotheses, the couple interaction measures indicate that the before-engagement cohabiters had more negative interactions than the after-engagement cohabiters and those who did not live together until marriage, and these differences were found before marriage (as well as before any premarital education experiences) and continued to be in evidence after marriage. Also in support of our hypotheses, the before-engagement

cohabiters had less positive interactions than the at-marriage group.

Confidence

A 3 (cohabitation type) \times 2 (gender) ANOVA on relationship confidence indicated a significant main effect for type of premarital cohabitation, $F(2, 124) = 8.75$, $p < .01$. Planned comparisons revealed that the before-engagement group ($M = 67.02$, $SD = 3.26$) reported lower confidence than the after-engagement group ($M = 68.46$, $SD = 2.50$), $t(79) = -2.43$, $p = .02$, $ES = .41$, and the at-marriage group ($M = 68.20$, $SD = 1.85$), $t(102) = -4.08$, $p < .01$, $ES = .64$, at the premarriage assessment. Postmarriage data were not collected.

Relationship Quality

A 3 (cohabitation type) \times 2 (gender) \times 2 (time) ANOVA on relationship quality indicated a significant main effect of type of premarital cohabitation, $F(2, 112) = 11.57$, $p < .01$. Planned comparisons revealed that the before-engagement group ($M = 120.92$, $SD = 14.92$) reported lower relationship quality than both the after-engagement group ($M = 129.18$, $SD = 10.84$), $t(92) = -2.85$, $p < .01$, $ES = .64$, and the at-marriage group ($M = 132.11$, $SD = 11.76$), $t(71) = -7.53$, $p < .01$, $ES = .84$.

Interpersonal Commitment

A 3 (cohabitation type) \times 2 (gender) \times 2 (time) ANOVA on interpersonal commitment indicated a significant main effect of type of premarital cohabitation, $F(2, 109) = 5.57$, $p < .01$. Planned comparisons revealed that the before-engagement group ($M = 87.61$, $SD = 6.48$) reported lower interpersonal commitment than the at-marriage group ($M = 90.84$, $SD = 5.70$), $t(91) = -3.33$, $p < .01$, $ES = .51$. There was not a significant difference between the before- and after-engagement ($M = 88.95$, $SD = 6.15$) groups on interpersonal commitment ($p > .10$), perhaps because of the lower internal consistency of the measure in this sample.

Discussion

We hypothesized that there would be substantial differences between couples who cohabited before engagement and those who waited to live together until after becoming engaged or married. All of the main hypotheses were supported in that those who began cohabiting before engagement scored more poorly than those who did not live together until marriage on all eight measures of relationship functioning and more poorly than those who cohabited only after engagement on six of these measures. There was only one significant difference between those who cohabited after engagement and those who did not cohabit premaritally. The findings held up both before marriage (as well as before any premarital education experiences) and after marriage (when postmarriage data were available).³ The results suggest that those who cohabit before engagement show the highest risk for relationship distress before marriage and that this risk is not likely to diminish after marriage. In addition, our results indicate few differences in risk for those who cohabit only after engagement and those who wait until marriage to move in together.

Overall, our data support and extend previous research on cohabitation and couple interaction. For example, our data on physical assault support Magdol et al.'s (1998) finding that cohabiters are at higher risk for physical violence than daters. Similarly, our observational data replicate research conducted by Cohan and Kleinbaum (2002), who found that married couples who had cohabited premaritally displayed more negative and less positive problem-solving and support behaviors than those who had not cohabited premaritally, as rated by objective coders. Our data extend these findings in that they suggest that premarital cohabiters may need to be examined as two separate groups according to their engagement status, with those who cohabit before a commitment to marriage being at greater risk for dimensions associated with marital failure. In addition, our findings extend previous research by indicating that the timing of cohabitation relative to engagement status may operate differently in regard to positive and negative aspects of interactions; we unexpectedly found that both types of premarital cohabitation (before and after engagement) were associated with less positive interactions than waiting until marriage to cohabit. Future research on cohabitation should assess both positive and negative dimensions of interactions to provide a better understanding of this discrepancy.

We speculate that negative interaction patterns may be part of the reason some couples decide to move in together before committing to marriage. These couples may be in love, but also may wish to "test" their relationships because they are having some trouble getting along. Their lower confidence and interpersonal commitment scores may reflect this sense of wanting to test the relationship. In contrast, couples who were less negative during dating may have decided to marry instead of cohabiting first, feeling less need to test their relationships. Of course, these potential explanations for the differences among cohabitation groups in regard to negative interactions cannot be tested with our data, because we did not directly examine individ-

uals' motives for cohabiting. Future research should examine the reasons why couples cohabit more systematically and how those reasons are related to risk.

If such findings were to be widely replicated in more diverse samples, it would suggest that early efforts aimed at the prevention of marital distress and divorce might need to help individuals at risk closely examine their reasons for major relationship decisions and help partners clarify their intentions with regard to marriage. Also, these efforts should place a higher priority on reaching members of this higher risk group, who, ironically, may be less likely than others to be religiously inclined and thus may be less likely to come into contact with premarital preventive education, because such programs are currently occurring primarily in religious organizations (e.g., Johnson et al., 2002). Such findings also reinforce the potential value of public efforts to disseminate empirically based knowledge that may challenge a myth many believe to be true: that living together before marriage lowers risk for marital problems.

Although there were significant differences among the three cohabitation groups in regard to religiosity, age, and income, we found no significant differences on other variables that have been simultaneously linked to premarital cohabitation and marital distress in previous research (i.e., ethnicity, education, and length of relationship). Further, in regard to the age and income differences, our findings suggested that the before-engagement group would be at lower risk for marital distress, rather than higher risk, since that group was older at the time of marriage and reported higher incomes than those who waited until marriage to cohabit. Nevertheless, we tested all of these selection variables, and they were not significant covariates in any analyses, suggesting that the effects of premarital cohabitation in our sample cannot be explained by the selection factors that we were able to assess. Thus, our data do not support the selectivity perspective.

Our data do, however, suggest that whereas religiosity does not explain the differences in relationship quality outcomes for the three cohabitation groups, it is probably an important predictor of which couples will decide to live together before marriage. These findings are consistent with the results of survey research conducted by Stanley et al. (2004) in that differences between couples who cohabited before marriage (especially among men) and those who did not remained consistent and large even when controlling for religiosity. Nevertheless, a more heterogeneous sample in terms of selection factors would provide the opportunity to better test whether selection factors are associated with the

³ We tested postmarriage outcomes while entering pre-marriage values as covariates to directly test whether there were any postmarriage differences that were not accounted for by the premarriage differences. Essentially, there were no postmarriage differences among the cohabitation groups once premarriage differences were controlled for. These findings further support the conclusion (based on the absence of significant time effects) that premarriage differences in risk levels are crucial and that these differences represent vulnerabilities for some couples in the before-engagement group that do not diminish with marriage.

timing of cohabitation relative to engagement status and whether certain such factors are moderators of the association between timing and relationship outcomes. It may also be important to examine selection factors that we were unable to assess in the present study, such as number of cohabiting unions with previous partners (Teachman, 2003) and family background characteristics (e.g., parental divorce status and the quality of one's relationship with one's parents).

Because previous research has suggested a link between the duration of premarital cohabitation and subsequent marital dissolution (Bennett et al., 1988), we controlled for duration of premarital cohabitation as a covariate in each of our hypotheses. Duration was not a significant covariate in any of our analyses. These findings are important because they suggest that results of previous studies in which duration of premarital cohabitation predicted marital instability (Bennett et al., 1988) may have been confounded by engagement status at the time of cohabitation. Future research on duration should include engagement status as a factor.

Although the present study highlights the importance of further examination of engagement status at the time of cohabitation, the study involved several limitations. One important limitation was the sample. A larger sample would provide more statistical power, allowing for more accurate assessments of differences among the three cohabitation groups. The after-engagement group's means were typically in between the other two groups' means, and more power might allow one to detect statistically significant differences between the after-engagement and at-marriage groups. However, regardless of significance level, the differences between the after-engagement and at-marriage groups were quite small in the present study, and researchers would need to evaluate whether these differences were truly meaningful.

Next, although our sample provided important information relevant to assessing the importance of engagement status at the time cohabitation, the generalizability of our findings postmarriage may be limited, owing to several factors. First, two thirds of our sample underwent premarital training after the premarriage assessment, training that has been shown to be effective in improving couple interaction and relationship quality (Stanley, Blumberg, & Markman, 1999). We do not think that this limit poses a serious threat to the generalizability of our findings, because the differences observed before marriage were also observed before any premarital preparation regimen; however, future research on marital outcomes should aim to include a sample that better represents typical premarital training experiences. Second, our sample was composed of individuals who married through religious organizations. On average, we do not expect that our sample was significantly more religious than most engaged or married individuals, as approximately 75% of couples marry through religious organizations (Johnson et al., 2002; Wirthlin Worldwide, personal communication, March 22, 2001). However, it will be important for future research to obtain a sample that is representative of national religious-affiliation statistics as possible. Third, although it is difficult to accurately compare the education level of our sample with the population from

which it was drawn, we know that our sample was fairly highly educated. It may be important to test hypotheses about the timing of cohabitation relative to engagement with a more diverse sample of individuals.

In conclusion, many couples may wish to test their relationships before deciding to marry. Our research, along with the work of others, suggests that cohabitation may not be the best avenue for such a test. In fact, our data suggest that relationship vulnerabilities that are present before marriage may persist into marriage. In the future, prevention programs could be designed with the aim of helping couples who want to test their relationships transform their recognition of risk into motivation to seek research-based relationship education programs. For example, our findings on negative interactions suggest that couples who cohabit before making a formal commitment to marriage may be particularly in need of help in reducing negative interactions. Preventive relationship education programs aimed at cohabiters could also address important factors such as the often unforeseen commitments associated with cohabitation, religious values concerning cohabitation, social pressure for cohabiters to marry, legal ramifications of cohabitation, and general risk factors for marital breakup. In short, couples who want to live together before deciding about marriage may want to carefully evaluate their reasons for this desire and weigh the costs and benefits of cohabitation before moving in together.

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