Published in final edited form as:

J Fam Psychol. 2012 June ; 26(3): 348–358. doi:10.1037/a0028316.

The Impact of the Transition to Cohabitation on Relationship Functioning: Cross-sectional and Longitudinal Findings

Galena K. Rhoades[*], **Scott M. Stanley**, and **Howard J. Markman**

University of Denver

Abstract

Most Americans now live together before they marry but little is known about how the transition from dating to cohabiting affects relationships. In two studies, we compared dating and cohabiting relationships in terms of commitment and several indices of relationship quality. In Study 1, we used a nationally-representative sample of 1294 unmarried individuals in opposite-sex relationships who completed surveys by mail. Findings showed that cohabiting relationships were characterized by more commitment, lower satisfaction, more negative communication, and more physical aggression than dating (non-cohabiting) relationships; controlling for selection factors mitigated some of these differences. Study 2 used a subsample of the Study 1 sample to longitudinally examine how transitioning from dating to cohabiting changes a relationship on the same dimensions. Six waves of mailed surveys spanning 20 months were employed. Findings of Study 2 indicated that individuals experienced declines in most indices of relationship quality as well as in interpersonal commitment after cohabitation began, though the frequency of sex increased temporarily. Constraints to stay together substantially increased with cohabitation and over time. Implications of these findings for future research and intervention are discussed.

Keywords

Cohabitation; unmarried relationships; commitment; within-subject; transitions; dating

The various ways that romantic relationships develop have changed significantly over the past several decades. One of the most marked changes in relationship development patterns is the dramatic increase in cohabitation. Most young adults today will, at some point, live with a romantic partner outside of marriage, and the majority of couples now cohabit before they marry (Goodwin, Mosher, & Chandra, 2010). With cohabitation becoming normative, understanding the characteristics of cohabiting relationships has become ever more important for social scientists. Using both cross-sectional and longitudinal designs, this paper examined how living together is different from dating (and living separately) in terms of several key dimensions of relationship quality.

Although it's now a common step before marriage in the United States, the role of cohabitation in romantic relationship development remains unclear in our society (Smock,

[*]Correspondence should be addressed to Galena Rhoades, University of Denver, Department of Psychology, 2155 S Race St., Denver, CO 80208-3500, grhoades@du.edu.

2000; Stanley, Rhoades, & Markman, 2006). Family developmental theories often fail to include cohabitation as a stage or transition period, focusing only on premarriage, early marriage, parenting, and subsequent events (e.g., Cowan & Cowan, 2003; McGoldrick & Carter, 2003). Further, some couples understand cohabitation as a step toward marriage, but, for other couples, partners themselves may not know what it means to each other (Manning & Smock, 2005; Rhoades, Stanley, & Markman, 2009). Thus, the meaning of cohabitation may be ambiguous both to individuals outside of the relationship as well as to partners inside the relationship (Lindsay, 2000). When societal or interpersonal roles are unclear or when relationship expectations are not communicated between partners, personal distress and relationship conflict are more likely (Markman, Stanley, & Blumberg, 2010; Nock, 1995).

A Developmental Perspective on Transitioning from Dating to Cohabiting

There may be different development tasks across different stages of relationships (e.g., establishing commitment in dating, maintaining a working partnership in marriage) and these development tasks may result in particular themes for conflict. For example, issues such as jealousy and friends tend to be more salient issues in the planning marriage stage whereas communication and sex are cited as larger problems in early marriage (Storaasli & Markman, 1990). Such a developmental perspective has implications for how we might understand cohabitation. Occurring between dating and marriage, it may represent a time when both the typical issues for dating couples (e.g., commitment, jealousy) as well as those common among married couples (e.g., money, division of household labor; Stanley, Markman, & Whitton, 2002) are simultaneously salient. Many cohabiting couples today are parents as well, which is a common source of conflict, at least among married couples with children (Stanley et al., 2002). Thus, the unclear roles and expectations described earlier, coupled with the sheer number of issues cohabiting couples need to grapple with, make cohabitation likely to be a relationship stage that is marked with more problems than dating or marriage.

Most prior studies have compared cohabiting relationships to marriage rather than to non-cohabiting dating relationships. Overall, this literature suggests that when compared to marriage, cohabiting unions tend to be less committed, less satisfying, more conflictual, and more physically aggressive (Brown & Booth, 1996; Brown, Bulanda, & Lee, 2005; Brownridge, 2004; Forste & Tanfer, 1996; Nock, 1995; Stafford, Kline, & Rankin, 2004; Stanley, Whitton, & Markman, 2004; Treas & Giesen, 2000). At the same time, as cohabitation becomes more normative, it is less often followed by marriage (Lichter, Turner, & Sassler, 2010). That is, more and more individuals live with multiple partners rather than only the one they marry. As cohabitation becomes less of a stepping-stone to marriage, it becomes as important to understand how it compares to dating without cohabitation rather than only to marriage.

The research that has compared dating and cohabiting relationships is scarce and has yielded findings that are more difficult to characterize than the findings regarding cohabitation versus marriage. Some earlier researchers concluded that cohabiting unions are more similar to dating relationships than to marriage (Forste & Tanfer, 1996; Rindfuss & VandenHeuvel,

1990), finding few differences in structural characteristics (e.g., employment, financial independence) between dating and cohabiting relationships. Studies have also found no differences in sexual exclusivity among dating versus cohabiting relationships (Forste & Tanfer, 1996), suggesting that they may be similar to one another in terms of commitment levels. The only other work that has examined relationship quality characteristics in dating versus cohabiting relationships has been focused on physical aggression. Several studies have found that cohabiting relationships are characterized by more violence than dating relationships (Brown & Bulanda, 2008; Magdol, Moffitt, & Caspi, 1998), which may be an extension of there being more potential areas for conflict during cohabitation as compared to dating, as discussed earlier.

The existing literature comparing dating and cohabiting relationships is further limited because the comparisons have all been cross-sectional. Cross-sectional data make it is hard to know if there is something truly different about the cohabiting stage or if observed differences between dating and cohabiting relationships merely reflect other differences between individuals who choose to cohabit or not. For example, being less religious or having experienced parental divorce are associated with a greater likelihood of cohabiting and also relationship quality (Stanley et al., 2006). Cross-sectional comparisons are also confounded by the fact that some dating relationships will become cohabiting relationships. The current studies used recently-collected, nationally-representative data to compare non-cohabiting dating and cohabiting relationships cross-sectionally (Study 1) and to examine how the transition from dating to cohabitation impacts relationship quality longitudinally (Study 2).

The Role of Commitment

Given that many see cohabitation as the “next step” toward marriage (Stanley, Rhoades, & Fincham, 2011), we assessed several dimensions of commitment and whether they are different in the dating versus cohabiting stage. Commitment theories typically distinguish the desire to be together for the long-term from external forces that may keep a couple together even when that desire wanes (e.g., M. P. Johnson, Caughlin, & Huston, 1999; Rusbult, 1980). Stanley and Markman (1992) referred to these constructs as interpersonal and constraint commitment. (Rhoades, Stanley, & Markman, 2010) further elaborated on the notion of constraint commitment to consider perceived constraints (e.g., recognizing the tangible investments one has made or the social pressure to stay together) versus material constraints, which are measured as more objective (rather than perceived) joint investments such as sharing car payments or adopting a pet. Each of these kinds of commitment uniquely predict relationship stability over time, though they are interrelated (Rhoades, Stanley, & Markman, 2010).

Little prior work on dating versus cohabitation has specifically examined commitment, particularly as commitment theories would suggest it should be defined. As much as sexual exclusivity is a proxy for commitment, there is evidence that there are no significant differences between dating and cohabiting (Forste & Tanfer, 1996). Another study found that cohabiting couples had lower relationship dedication than those not living together, but this work was limited to couples who already had plans for marriage (Kline et al., 2004). For the

current paper, we predicted that, in cross-sectional analyses, individuals in cohabiting relationships would report higher interpersonal commitment (measured as dedication and perceived likelihood of marriage) and more constraints (perceived and material) than those in dating relationships because cohabitation should be selective of more committed relationships. Longitudinally, we expected constraint commitment to increase over the transition from dating to cohabitation, as couples likely take on more joint investments when they begin living together, such as combining finances or entwining social networks. We did not, however, expect that transitioning from dating to cohabitation would be associated with an increase in interpersonal commitment because there is nothing inherent in the transition that should cause an increase in this type of commitment. In fact, because there is some evidence that dedication may decline over time for newlywed couples (Rhoades, Stanley, & Markman, 2006), we predicted a declining trajectory in dedication after cohabitation. On the other side of commitment, based on work showing that constraints increase over time during cohabitation (Rhoades, Stanley, & Markman, 2012), we predicted that constraints would continue to increase over time after cohabitation.

Other Dimensions of Relationship Quality

Because of the literature indicating lower relationship satisfaction and communication quality for married couples who cohabited premaritally compared to those who did not (Cohan & Kleinbaum, 2002; Jose, O'Leary, & Moyer, 2010; Kline et al., 2004; Stanley et al., 2004) as well as the research mentioned earlier indicating a heightened risk for physical aggression during cohabitation (e.g., Brown & Bulanda, 2008), we also decided to examine these components of relationship quality in the current studies. Based on our reasoning that cohabitation may represent a time when there are more potential areas for disagreement and conflict (vis à vis dating or marriage), we expected cohabitation to be associated with lower satisfaction with the relationship as well as more negative communication and more aggression. If it is true that conflict is higher during cohabitation than during dating, we would expect satisfaction to continue to decline over time after cohabitation, as negative communication and aggression would likely erode more positive aspects of the relationship over time (Markman et al., 2010).

Another component of relationship quality that we examined was the frequency of sex. We know of no prior research that has examined the frequency of sexual interactions in cohabiting versus dating relationships, but some work has found that cohabiting couples have more frequent sex compared to their married counterparts (Rao & DeMaris, 1995; Waite & Joyner, 2001). Other research found no significant differences between cohabiting and married couples, but also showed that the frequency of sex declined for both groups over time (Stafford et al., 2004). Based on this research, we expected that when controlling for length of relationship and using cross-sectional methods, cohabiting individuals would report more frequent sex than those in dating relationships. Longitudinally, we expected that beginning to cohabit would temporarily boost the frequency of sex (because of the increased availability associated with sharing a household rather than living separately) but that it would decline thereafter.

Present Studies

The purpose of this paper was to examine between and within-subject differences in dating versus cohabiting relationships. That is, we tested differences in commitment and relationship quality for cohabiting versus dating couples (between-subject analyses; Study 1) and how mean levels and trajectories of these variables changed across the transition to cohabitation and over six waves of assessments spanning 20 months (within-subject analyses; Study 2). We used a large, nationally-representative sample of unmarried 18 to 35 year-olds and tested the same variables in both studies, including four indices of commitment: dedication, perceived likelihood of marriage, material constraints, and perceived constraints, and four indices of relationship quality: satisfaction, aggression, negative communication, and frequency of sex.

In comparing dating and cohabiting relationships in Study 1 we conducted one set of basic, uncontrolled analyses and another set that controlled for a number of variables that have been found to be related both to the likelihood of cohabitation and to relationship quality in prior research, including length of relationship, age, religiosity, income, years of education, prior cohabitation partners, and children (together, from prior relationship, and partner's children) (Stanley et al., 2004; Tach & Halpern-Meekin, 2009; Teachman, 2003; Woods & Emery, 2002) as well as gender. We present both the controlled and uncontrolled analyses so that readers can see how adding these control variables impacts the raw differences between the groups.

Study 2 uses a within-subject design and so it naturally controls for these kinds of selection factors (D. Johnson, 2005). Individuals are only compared to themselves (before and after cohabitation) using an interrupted time-series design. An interrupted time-series design is a useful statistical approach when data are quasi-experimental. We cannot randomly assign couples to cohabit or not, but an interrupted time-series analysis allows us to draw conclusions about causality that are relatively strong (Shadish, Cook, & Campbell, 2002). The reason this design allows us to draw causal conclusions is that it compares the trajectory before an event to the trajectory after, essentially allowing for a test of whether the event impacts the general trend of pattern change over time. Thus, we can know where a relationship was headed before cohabitation and whether cohabitation changes the direction of its trajectory. The interrupted time-series design also provides information on whether the mean level of a given variable shifts when an event (i.e., cohabitation) occurs and, in combination with the information about trajectories over time, whether any changes in mean levels are sustained over time.

Study 1: Cross-sectional Sample

Method

Participants—Participants (N = 1294) in Study 1 were individuals who took part in the first wave of a longitudinal project on romantic relationship development. All participants were unmarried but in a romantic relationship with a member of the opposite sex at the time of recruitment. The sample was 63% female and 37% male. Participants ranged in age from 18 to 35 (M = 25.57 SD = 4.81), had a median of 14 years of education and made $15,000 to

$19,999 annually, on average. In this sample, 17.1% had children with prior partners, 13.5% had children with the current partner, and 19.6% had partners with children from prior relationships. In terms of ethnicity, this sample was 8.3% Hispanic or Latino and 91.7% not Hispanic or Latino. In term of race, the sample was 75.9% White, 14.4% Black or African American, 3.2% Asian, 1.1% American Indian/Alaska Native, and .3% Native Hawaiian or Other Pacific Islander; 3.8% reported being of more than one race and 1.2% did not report a race. When compared to U.S. Census (2000) figures, this sample is similarly in terms of race, ethnicity, and income to similarly-aged unmarried individuals who speak English.

Procedure—The sample for this project was recruited by a calling center using a targeted-listing sampling strategy. A survey firm began with a targeted (by age) list of 325,273 phone numbers of individuals in the contiguous United States. This contact information came from many different sources, such as the telephone white pages, warranty card information, public records, and magazine subscriptions. We did not ask for the specific individual whose name was on the sampling list, but rather allowed any person in the household who met criteria to participate (one per household). (Eligibility requirements included an age range of 18 to 34 and for the individuals to be in unmarried relationship with a member of the opposite sex that had lasted two months or longer.) Of this list of telephone numbers, 73,508 (23%) were disconnected, 186,647 were never answered live (57%), and 65,118 (20%) were answered. Of those who answered, 3,570 (5%) were ineligible due to not speaking English, 22,375 (34%) refused to answer any screening questions, 37,468 (56%) answered screening questions but were ineligible due to age or relationship status, and 2,658 (5%) were eligible. Of those who were eligible, 2,327 (88%) completed the phone survey and provided their contact information for the longitudinal study. Of those who provided their contact information, 2,213 (95%) provided complete and usable mailing addresses and were mailed forms (within two weeks of the phone screening). Of those who were mailed forms, 1,447 individuals returned them (65% response rate); however, 153 of these respondents indicated on their forms that they did not meet requirements for participation, either because of age, language, or relationship status, leaving a final sample of 1294.

Central Measures

Cohabitation status: Cohabitation status was assessed with the item: “Are you and your partner living together? That is, are you sharing a single address without having separate places to go to?” In this sample, 880 (68%) were not living together and 414 (32%) were cohabiting.

Dedication: We used the 14-item Dedication Scale from the Revised Commitment Inventory (Stanley & Markman, 1992) to assess dedication (or interpersonal commitment). The measure includes items such as “I want this relationship to stay strong no matter what rough times we encounter” and “I like to think of my partner and me more in terms of ‘us’ and ‘we’ than ‘me’ and ‘him/her.’” Each item was rated from 1 (*strongly disagree*) to 7 (*strongly agree*). Many studies have demonstrated this measure’s reliability and validity (e.g., Kline et al., 2004; Owen, Rhoades, Stanley, & Markman, 2011; Stanley & Markman, 1992). We used a mean of the items, with higher scores indicating more dedication; Cronbach’s alpha (α) = .88.

Perceived likelihood of marriage: A continuous item, "How likely is it that you and your partner will get married?" was used to assess perceived likelihood of marriage. Participants indicated their responses on a 5-point Likert scale. This item was based on one in the National Survey of Families and Households. Internal consistency cannot be calculated, but test retest reliability has been shown to be high in other research with a similar sample (Rhoades et al., 2012).

Perceived constraints: To measure perceived constraints, we used the total score from the constraint scale of the revised version of the Commitment Inventory (see above and Owen et al., 2011; Stanley & Markman, 1992). The total score included 25 items. Example items are: "It would be difficult for my friends to accept it if I ended the relationship with my partner," "The steps I would need to take to end this relationship would require a great deal of time and effort," "I could not bear the pain it would cause my partner to leave him/her even if I really wanted to," and "I have put a number of tangible, valuable resources into this relationship". The response scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). The mean score was used in analyses and higher scores reflect more perceived constraints; $\alpha = .80$.

Material constraints: To measure material constraints, we used the Joint Activities Checklist (Rhoades et al., 2012). It includes 25 external factors that may serve to reinforce individuals staying together, such as owning a house together, paying for each other's credit cards, having a pet, having paid for future vacation plans, making home improvements together, signing a lease, or having a joint-bank account. It was designed as an objective measure of constraints and Pearson correlations demonstrated high within-couple reliability ($r = .82$) in previous research (Rhoades et al., 2012). Internal consistency was high in the current sample, $\alpha = .85$. A sum of the items checked was used in the analyses, thus scores could range from 0 to 25.

Relationship satisfaction: We used one item from the Dyadic Adjustment Scale (DAS; Spanier, 1976) to measure relationship satisfaction: "Please indicate the degree of happiness, all things considered, of your relationship." We chose to use only this single item because we wanted a pure measure of satisfaction rather than a general measure of relationship adjustment. The full DAS includes items related to communication and commitment, but we are assessing these constructs with separate measures, as has been suggested by others (Fincham & Bradbury, 1987). The item was scored on a 0 *(extremely unhappy)* to 6 *(perfectly happy)* scale.

Negative communication: We used the 7-item Communication Danger Signs Scale (Stanley & Markman, 1997) to measure communication. The measure assesses different aspects of communication with items such as "Little arguments escalate into ugly fights with accusations, criticisms, name-calling, or bringing up past hurts" and "I hold back from telling my partner what I really think and feel." The measure is rated on a 1 (*never or almost never*) to 3 (*frequently*) scale. This scale has demonstrated adequate reliability and validity in previous work e.g., (Kline et al., 2004; Stanley et al., 2002). We used a mean of the items, with higher scores indicating more negative communication; $\alpha = .81$.

Physical aggression: We used the 5-item minor physical aggression subscale from the Revised Conflict Tactics Scale (Straus, Hamby, Boney-McCoy, & Sugarman, 1996) to measure physical aggression in the relationship. This subscale has demonstrated adequate validity and reliability in prior research (e.g., Straus et al., 1996). An example item is "I pushed or shoved my partner." Each item was rated from 0 *(this has never happened)* to 7 *(more than 20 times in the past year)*. The mean of the items was used for analyses; $\alpha = .81$.

Sexual frequency: Those who had had sexual intercourse with the current partner rated "If yes, about how frequently do you and your partner have sexual intercourse?" on a 1 (*less than once in 6 months)* to 7 *(once a day)* scale. (All the anchors in between were also labeled.)

Control Variables—We assessed the demographic variables (i.e., gender, age, length of relationship, number of prior cohabiting partners, children (together, by previous partner, or partner's previous partner), income, and years of education) with applicable, straightforward, single-item questions. We assessed religiosity with the item "All things considered, how religious would you say that you are?" It was rated on a 1 (*not at all*) to 7 (*very religious*) scale ($M = 4.00$, $SD = 1.74$).

Results

Preliminary Analyses and Data Analysis Plan—We tested for differences between dating and cohabiting individuals on the control variables prior to running the main analyses for Study 1; there were significant differences on all of them. Specifically, t-tests indicated that those who were cohabiting had been in their relationships for a longer time, were older and less religious, and had higher incomes, fewer years of education, and more prior cohabitation partners than those who dating but not living together (all t-values greater than or equal to 4.10, ps < .001). In addition, chi-squares indicated that cohabiting individuals were more likely than daters to have children of their own (either with the current partner or from a prior partner) and to be together with a partner who had children from a prior relationship (all χ^2 values greater than or equal to 26.42, ps < .001). Lastly, in this sample, women were more likely to be cohabiting than were men, $\chi^2(1, N = 1294) = 8.29$, $p < .01$). Given these differences, it seemed particularly important to run analyses with and without these variables as covariates. To test the significance of differences in raw means between those who were cohabiting vs. dating and not living together, we used t-tests. To control for the variables mentioned above, we ran analyses of covariance (ANCOVAs).

Hypothesis Tests—The t-tests of the raw means revealed support for seven of nine hypotheses about cross-sectional differences (see means, standard deviations, effect sizes, and significance levels in Table 1). Specifically, as expected, compared to those in dating relationships, individuals in cohabiting relationships reported higher dedication, greater perceived likelihood of marriage, more perceived and material constraints, lower relationship satisfaction, more negative communication, and more incidents of physical aggression. Contrary to our hypotheses, there were no raw differences between dating and cohabiting individuals on frequency of sex.

ANCOVAs controlling for length of relationship, age, religiosity, income, years of education, prior cohabitation partners, children (together, from prior relationship, and partner's children), and gender showed a similar pattern, with three exceptions (see Table 1 for significance levels, full results of ANCOVAs are available from the first author). First, the difference between cohabiting and dating individuals' reports of physical aggression was non-significant with control variables. Second, the direction of the difference between the groups on relationship satisfaction changed. That is, without control variables, those who were dating reported significantly higher relationship satisfaction, but with control variables, those who were cohabiting reported higher satisfaction. Third, where there had been no significant difference in frequency of sex, with control variables included, those in cohabiting relationships reported greater frequency than those in dating relationships. With regard to covariates related to these analyses, in the ANCOVA for physical aggression, length of relationship, age, education, and having a child together were significant covariates ($ps < .05$). In the ANCOVA for relationship satisfaction, age, education, having a child together, and partner's child(ren) from prior relationships were significant covariates ($ps < .05$). In the ANCOVA for frequency of sex, length of relationship and age were significant covariates ($ps < .05$).

Discussion

Based on existing literature that has compared dating and cohabiting relationships and the relationship-stage/conflict model discussed earlier, we expected those in cohabiting relationships to report more commitment and a higher frequency of sex, but also lower quality relationships in terms of patterns of interactions and satisfaction. These hypotheses were generally supported, though some of the differences in relationship quality were mitigated when control variables were included. Having children together was one of the strongest covariates and seemed to be most influential in reducing the association and between living together status and physical aggression to non-significance (i.e., couples with children were more likely to be cohabiting and they also reported more aggression; see Rhoades, Stanley, Kelmer, & Markman, 2010) and in reversing the direction of the difference in relationship satisfaction such that those cohabiting had higher relationship satisfaction than those who were dating and not cohabiting.

Ultimately, these results match up with prior research only to a degree. We found fewer differences between cohabiting and dating relationships than might have been expected based on prior work (e.g., Brown & Bulanda, 2008) and some findings suggest potential positive effects of cohabitation, particularly with regard to interpersonal commitment and satisfaction (when control variables were included). As with any cross-sectional design, neither causality nor the directionality of these effects can be determined in this study and although we controlled for several potential selection variables, selection may still account for a portion of these results. That is, we cannot rule out that there are differences between dating and cohabiting individuals for which we are not accounting and that may explain the findings. Study 2 addressed these limitations by using a within-subject design to examine how the transition from dating (and not cohabiting) to cohabiting impacts relationships over time.

Study 2: Longitudinal Sample

Method

Participants—Participants for Study 2 (N = 161) were drawn from the sample used in Study 1. The sample for Study 2 consisted of 103 women (64%) and 58 men. With regard to race, it was 82.6% White, 0.6% American Indian/Alaska Native, 2.5% Asian, 0.6% Native Hawaiian or Other Pacific Islander, and 9.3% Black or African American, with 3.7% reporting more than one race, and 0.6% not reporting race. For ethnicity, the sample was 11.2% Hispanic and 88.8% non-Hispanic. On average, they were 24.82 years old (SD = 4.47, *Range* = 18 – 34) and made a median income of $15,000–19,999 and had a median of 15 years of education.

Procedure and Measures—Because the Study 2 sample was drawn from the larger sample that was used in Study 1, the procedure for recruiting participants is the same, as are the measures. The longitudinal data used in Study 2 were drawn from the first six waves of the larger study. Waves were collected four months apart, representing 20 months from wave 1 to wave 6, and were collected by mail. Participants were paid $40 for each wave they completed. Response rates for are high in the larger study, with an average of 86% of participants completing each wave. For Study 2, we selected individuals who, over the course of the six waves transitioned from dating to cohabiting (with the same partner). Participants needed to have at least two data points in the same relationship to be included in Study 2 – one before cohabitation and one after, though the median number of time points contributed was five.

Results

Data Analytic Plan and Tests of Model Fit—To test the Study 2 hypotheses, we used longitudinal multilevel modeling (an interrupted time-series design) with the Hierarchical Linear Modeling 7.0 software. Following guidelines by Singer and Willett (2003), we approached testing our hypotheses by first examining model fit statistics and then examining the coefficients in the best fitting models.

For the examination of model fit statistics, we tested four potential models (see Figure 1) for each outcome variable: 1) no change across the transition to cohabitation, 2) change in slope only (e.g., satisfaction is steady before cohabitation and begins to decrease after cohabitation, but no change in mean level), 3) change in mean level only (e.g., dedication increases when cohabitation begins but there is no change in the slope), 4) change in slope and mean level with the transition to cohabitation. To determine the best fitting model for each outcome variable, we conducted deviance comparison tests. That is, we statistically compared the deviance statistics of the models to one another. For every outcome variable tested, we found that the best fitting model was the fourth one that included change in slope and mean level (model fit results are available from the first author). Thus, we present these models as the final models below under Hypothesis Tests and in Table 2.

The Level 1 equation for the change-in-slope-and-mean-level model was:

$$Y = \pi_0 + \pi_1(\text{Slope}_{\text{before}}) + \pi_2(\text{Slope}_{\text{after}}) + \pi_3(\text{Level Change}) + e$$

The level 2 equations are not presented because there were no variables entered as predictors at Level 2. In these models, slope is measured in months from the date of cohabitation. Because of the way time is centered (around the date of cohabitation) the Level Change is interpreted as a shift in the outcome variable at the time of the transition. That is, it represents the estimated mean difference in a variable from just before cohabitation to just after. In these models, the after-transition slope coefficient ($\text{Slope}_{\text{after}}$) represents the change in slope from before cohabitation. Thus, the true after-transition slope value is equal to the coefficient for the slope before cohabitation plus the coefficient for after cohabitation ($\boldsymbol{\pi}_1$+ $\boldsymbol{\pi}_2$).

Because the coefficient for the after-cohabitation slope does not represent the direct value of the slope after cohabitation in these models (they represents the change in slope from before to after cohabitation), we ran additional models to test whether the true coefficient was significantly different zero. That is, for models in which there was a significant difference between the before and after slope, we ran extra models with only the after-cohabitation time points to test if the after-cohabitation was increasing, decreasing, or remaining steady over time. These tests were only necessary in cases where the valence for $\boldsymbol{\pi}_2$ was different from the valence for $\boldsymbol{\pi}_1$. When the valence was the same, we could assume that adding $\boldsymbol{\pi}_1$ and $\boldsymbol{\pi}_2$ would result in a significant slope in the same direction. We describe the findings from these tests below when they are relevant to the hypothesis tests. They allow us to report, for example, that the after-cohabitation slope for dedication was steady, indicating that dedication did not change over time after cohabitation began (see test of first hypothesis below).

Because of the smaller sample size in Study 2 compared to Study 1, Study 2 had less statistical power; therefore, in Study 2, we used one-tailed tests for a priori hypothesis tests and reported coefficients as significant for alphas of .05 or less. This adjustment allowed us to detect approximately the same effect size in both studies. Effect sizes discussed below are Cohen's *d* estimates based on an adjustment for repeated measures (see Morris & DeShon, 2002).

Hypothesis Tests—See Table 2 for coefficients for the main hypothesis tests and Figure 2 for graphs.

Our first hypothesis was that dedication and perceived likelihood of marriage would increase over time before the transition to cohabitation and decline after cohabitation. This hypothesis was partially supported in that the trajectories before cohabitation were increasing over time and significantly different from the trajectories afterward, but the trajectories after cohabitation were steady rather than declining (dedication slope after cohabitation = −0.003, $p > .10$, likelihood of marriage slope after cohabitation = −0.01, $p = .10$).

The second hypothesis was that the accumulation of material and perceived constraints would increase over time before cohabitation, increase in mean level with cohabitation, and increase over time with a faster rate after cohabitation. This hypothesis was fully supported for material constraints, but perceived constraints only showed a mean level increase at the time of the transition. The effect size for the mean level increase for material constraints was 1.07 and the effect size for the level increase in perceived constraints was 0.37.

For the third hypothesis, we expected relationship satisfaction to remain steady over time before the transition to cohabitation and decrease over time following the transition. This hypothesis was supported as the slopes before and after cohabitation were significantly different, but the decline after cohabitation was only a trend (slope after cohabitation = −0.02, $p = .09$).

The fourth hypothesis was that negative communication and physical aggression would be steady before the transition to cohabitation and increase in level and slope after cohabitation. This hypothesis was generally supported. Negative communication and physical aggression were steady before cohabitation and increased in mean level at the time of cohabitation (negative communication effect size = 0.21, physical aggression effect size = 0.16). The slope for negative communication after cohabitation (but not physical aggression) was also significantly different from the slope before cohabitation and showed a significant increase in negative communication over time after cohabitation (slope after cohabitation = 0.01, $p < .05$).

The fifth hypothesis was that the frequency of sex would remain steady over time before cohabitation, increase in level at the time of cohabitation, and then decline after cohabitation. This hypothesis was fully supported. The effect size for the increase in mean level was 0.22.

Discussion

The model fit statistics for Study 2 suggest that although there is not always a uniform pattern of changes associated with the transition cohabitation, there is enough change in level and slope for the eight outcomes we examined that it is best to model the transition as one that entails both change in slope (trajectories) and mean level.

In general, we had expected relationship quality to deteriorate after cohabitation and this pattern is typically what we found in examining the coefficients associated with the slopes and meal levels of the outcomes we tested. In fact, there were some instances where the negative impact of the transition to cohabitation was more pronounced than we had expected based on the prior literature. As an example, in addition to a change in the slope in negative communication that we expected, there was also a mean level increase, or jump up, in negative communication after beginning to cohabit that we had not anticipated. Although we had not expected the increase in negative communication to be so immediate, this pattern does fit with the developmental perspective outlined earlier that suggests cohabitation may be a particularly high-conflict period in relationships. Only in terms of frequency of sex did there appear to be a benefit of cohabitation; it was short-lived, as frequency began declining after the initial increase.

General Discussion

This paper examined differences between individuals' reports of commitment and relationship quality in cohabiting versus dating relationships (Study 1) and tested how the transition from dating to cohabiting impacts trajectories and levels of these variables (Study 2). When differences in other characteristics between those in dating and cohabiting relationship were accounted for, cohabiting relationships appeared to have higher quality in most ways than dating relationships, with the exception of negative communication. At the same time, Study 2 indicated that several indices of relationship quality declined after cohabitation began, even though they had been increasing or steady during the time before cohabitation. The interrupted time-series methodology allows us to infer that these changes were additional to those that would have been expected over time without a transition into cohabitation.

Given that cohabitation is now a common step in the development of committed relationships, and because many individuals cite a desire for a step-up in commitment as one reason for cohabiting (Stanley et al., 2011), one goal of this research was to elucidate how commitment is affected by the transition to cohabitation. The results of the cross-sectional comparisons indicated that cohabitation was associated both with higher interpersonal commitment (i.e., dedication and perceived likelihood of marriage) as well as with higher perceived and material constraints. Longitudinally, however, we found little support for cohabitation representing a step-up in interpersonal commitment. The transition was not associated with a significant increase in mean level, and after the transition, both dedication and perceived likelihood of marriage stopped increasing over time. In some ways the longitudinal finding that the trajectory of perceived likelihood of marriage changes with cohabitation is in line with research indicating the experience of cohabitation leads to less esteem for marriage in general (Axinn & Barber, 1997). It may be that cohabiting leads some to see fewer reasons to formally marry and thus they perceive a lower likelihood that a wedding ceremony will happen over time. It may also be that declines in other indices of relationship quality after cohabitation lead some to be less interested in marrying the current partner.

The differences in interpersonal commitment patterns in Study 1 versus Study 2 may be due to the fact that the dating group in the cross-sectional analyses represents a wider (and less committed, on average) group than is represented by the dating (pre-cohabitation) stage among those who do transition to cohabitation in the longitudinal analyses. Some in the former group will break up and not make a transition into cohabitation. Thus, those in cohabiting relationships may be more dedicated than those in dating relationships but it can also be true that transitioning to cohabitation is not accompanied by an overall increase in interpersonal commitment. It is likely that an increase in commitment happened during dating, but before cohabitation began; this earlier increase would explain the cross-sectional findings. For some, increasing commitment may have been part of what motivated moving in together.

The pattern seen in both studies in which there are more constraints, but also some indications of lower relationship quality, during cohabitation compared to dating (particularly in the longitudinal study) is in line with inertia theory (Stanley et al., 2006).

Inertia theory suggests that one reason why premarital cohabitation is associated with divorce (see Jose et al., 2010) is that cohabitation creates conditions that favor a relationship continuing into marriage, even though the relationship may not have progressed into marriage if the couple had not lived together. Although we observed declines in relationship quality (e.g., communication, satisfaction) across the transition to cohabitation, we also saw increases in perceived and material constraints. These patterns are consistent with the idea that cohabitation may increase the likelihood of a relationship continuing even when relationship quality is deteriorating (also see Rhoades, Stanley, & Markman, 2010).

Most people say that they want to live together to spend more time together (Rhoades et al., 2009), but we found that this increase in time together may lead to more conflict, as cohabiting relationships were characterized by more negative communication and more physical aggression. We reasoned earlier in this paper that cohabitation may represent a relationship stage that is more prone to conflict partly because roles are less clear compared to other relationship stages and also because this stage likely incurs conflict issues from both the dating and marriage stages (e.g., commitment as well as managing money and household issues). These results support that perspective but further research is needed to better understand individuals' perspectives on relationship roles in various stages as well as the specific areas of conflict for couples who are dating versus cohabiting. Additional research could also help establish whether the transition truly increases the amount of conflict or if it merely increases the likelihood that conflict will be handled poorly. The change in context for cohabiting versus dating relationship may be important in understanding the increase in negative interactions, as the more isolated context may give way to handling conflict more negatively and/or aggressively. That is, there are likely fewer social constraints against negative or aggressive ways of handling conflict for cohabiting couples than there are for dating couples because they likely have more time alone (without parents or roommates) as well as more time at home (rather than in public). Others have argued that cohabitation may be more isolating than dating or marriage, making it a risky period for aggression (Magdol et al., 1998; Stets, 1991). Simply having more time together without separate residences to retreat to may also help explain the increases in negative interactions.

The change in context also appears to lead to more frequent sex, at least temporarily. This finding is in line with prior work (Stafford et al., 2004; Waite & Joyner, 2001), but is the first study to show that although cohabiting couples report more frequent sex soon after transitioning to cohabitation, frequency declines thereafter. Future work could examine whether the decline is a return to pre-cohabitation levels or if it stays higher than in dating relationships as the cross-sectional findings (with control variables) suggest.

Limitations and Conclusion—There were several strengths of this research, including the large, recent, and representative sample, the depth of measurement, as well as the longitudinal design. Nevertheless, limitations should also considered. First, the all measures were self-report which may introduce some bias. We also used a single item of satisfaction; a multi-item measure may provide a more valid and/or reliable assessment of satisfaction. Second, only opposite-sex relationships are represented in this sample. Future work should detail how these processes are similar or different in same-sex relationships. Finally, only linear change could be modeled given the number of time points available before and after

the transition to cohabitation. It could be that some variables change in other ways (e.g., quadratically) that we were unable to capture.

With these limitations in mind, this research remains the most comprehensive comparison of dating and cohabiting relationships to date. The findings suggest that the nature of differences between dating and cohabiting is complex, with some indices of relationship functioning appearing better in cohabiting versus dating relationships cross-sectionally (especially when controlling for other relationship characteristics), others looking worse, and the direct, longitudinal comparisons of before and after-cohabitation relationships generally indicating a negative effect of the transition for the relationship. Future work might consider under what circumstances these kinds of declines in relationship functioning are most likely as well as ways to educate couples about cohabitation and ease the transition should they choose to live together.

Acknowledgments

This project was supported by R01HD047564 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Eunice Kennedy Shriver National Institute of Child Health and Human Development or the National Institutes of Health.

References

Axinn WG, Barber JS. Living arrangements and family formation attitudes in early adulthood. Journal of Marriage and Family. 1997; 59:595–611. DOI: 10.2307/353948

Brown SL, Booth A. Cohabitation versus marriage: A comparison of relationship quality. Journal of Marriage and Family. 1996; 58:668–678. DOI: 10.2307/353727

Brown SL, Bulanda JR. Relationship violence in young adulthood: A comparison of daters, cohabitors, and marrieds. Social Science Research. 2008; 37:73–87. DOI: 10.1016/j.ssresearch.2007.06.002

Brown SL, Bulanda JR, Lee GR. The significance of nonmarital cohabitation: Marital status and mental health benefits among middle-aged and older adults. Journals of Gerontology. 2005; 60:S21. [PubMed: 15643043]

Brownridge DA. Understanding women's heightened risk of violence in common-law unions: Revisiting the selection and relationship hypotheses. Violence Against Women. 2004; 10:626–651. DOI: 10.1177/1077801204265017

Cohan CL, Kleinbaum S. Toward a greater understanding of the cohabitation effect: Premarital cohabitation and marital communication. Journal of Marriage and Family. 2002; 64:180–192. DOI: 10.1111/j.1741-3737.2002.00180.x

Cowan, PA., Cowan, CP. Normative family transitions, normal family processes, and healthy child development. In: Walsh, F., editor. Normal Family Processes: Growing Diversity and Complexity. New York: Guilford; 2003. p. 424-459.

Fincham FD, Bradbury TN. The assessment of marital quality: A reevaluation. Journal of Marriage and Family. 1987; 49:797–809. DOI: 10.2307/351973

Forste R, Tanfer K. Sexual exclusivity among dating, cohabiting, and married women. Journal of Marriage and Family. 1996; 58:33–47.

Goodwin, PY., Mosher, WD., Chandra, A. Vital Health Statistics. Vol. 23. National Center for Health Statistics; 2010. Marriage and cohabitation in the United States: A statistical portrait based on Cycle 6 (2002) of the National Survey of Family Growth; p. 1-55.

Johnson D. Two-wave panel analysis: Comparing statistical methods for studying the effects of transitions. Journal of Marriage and Family. 2005; 67:1061–1075. DOI: 10.1111/j.1741-3737.2005.00194.x

Johnson MP, Caughlin JP, Huston TL. The tripartite nature of marital commitment: Personal, moral, and structural reasons to stay married. Journal of Marriage and Family. 1999; 61:160–177. DOI: 10.2307/353891

Jose A, O'Leary DK, Moyer A. Does premarital cohabitation predict subsequent marital stability and marital quality? A meta-analysis. Journal of Marriage and Family. 2010; 72:105–116. DOI: 10.1111/j.1741-3737.2009.00686.x

Kline GH, Stanley SM, Markman HJ, Olmos-Gallo PA, St Peters M, Whitton SW, Prado LM. Timing Is everything: Pre-engagement cohabitation and increased risk for poor marital outcomes. Journal of Family Psychology. 2004; 18:311–318. DOI: 10.1037/0893-3200.18.2.311 [PubMed: 15222838]

Lichter DT, Turner RN, Sassler S. National estimates of the rise in serial cohabitation. Social Science Research. 2010; 39:754–765. DOI: 10.1016/j.ssresearch.2009.11.002

Lindsay JM. An ambiguous commitment: Moving into a cohabiting relationship. Journal of Family Studies. 2000; 6:120–134.

Magdol L, Moffitt TE, Caspi A. Hitting without a license: Testing explanations for differences in partner abuse between young adult daters and cohabitors. Journal of Marriage and Family. 1998; 60:41–55. DOI: 10.2307/353440

Manning WD, Smock PJ. Measuring and modeling cohabitation: New perspectives from qualitative data. Journal of Marriage and Family. 2005; 67:989–1002.

Markman, HJ., Stanley, SM., Blumberg, SL. Fighting for your marriage. San Francisco: Jossey-Bass; 2010.

McGoldrick, M., Carter, B. The family life cycle. In: Walsh, F., editor. Normal Family Processes: Growing Diversity and Complexity. New York: Guilford; 2003. p. 375-396.

Morris SB, DeShon RP. Combining effect size estimates in meta-analysis with repeated measures and independent-groups designs. Psychological Methods. 2002; 7:105–125. DOI: 10.1037//1082-989X.7.1.105 [PubMed: 11928886]

Nock SL. A comparison of marriages and cohabiting relationships. Journal of Family Issues. 1995; 16:53–76. DOI: 10.1177/019251395016001004

Owen JJ, Rhoades GK, Stanley SM, Markman HJ. The Revised Commitment Inventory: Psychometrics and use with unmarried couples. Journal of Family Issues. 2011; 32:820–841. DOI: 10.1177/0192513X10385788 [PubMed: 22582000]

Rao KV, DeMaris A. Coital frequency among married and cohabiting couples in the United States. Journal of Biosocial Science. 1995; 27:135–150. [PubMed: 7738077]

Rhoades GK, Stanley SM, Kelmer G, Markman HJ. Physical aggression in unmarried relationships: The roles of commitment and constraints. Journal of Family Psychology. 2010; 24:678–687. DOI: 10.1037/a0021475 [PubMed: 21171766]

Rhoades GK, Stanley SM, Markman HJ. Pre-engagement cohabitation and gender asymmetry in marital commitment. Journal of Family Psychology. 2006; 20:553–560. DOI: 10.1037/0893-3200.20.4.553 [PubMed: 17176189]

Rhoades GK, Stanley SM, Markman HJ. Couples' reasons for cohabitation: Associations with individual well-being and relationship quality. Journal of Family Issues. 2009; 30:233–258. DOI: 10.1177/0192513x08324388 [PubMed: 19756225]

Rhoades GK, Stanley SM, Markman HJ. Should I stay or should I go? Predicting dating relationship stability from four aspects of commitment. Journal of Family Psychology. 2010; 24:543–550. DOI: 10.1037/a0021008 [PubMed: 20954764]

Rhoades GK, Stanley SM, Markman HJ. A longitudinal investigation of commitment dynamics in cohabiting relationships. Journal of Family Issues. 2012; 3:367–388. DOI: 10.1177/0192513x11420940

Rindfuss RR, VandenHeuvel A. Cohabitation: A precursor to marriage or an alternative to being single. Population and Development Review. 1990; 16:703–726.

Rusbult CE. Commitment and satisfaction in romantic associations: A test of the investment model. Journal of Experimental Social Psychology. 1980; 16:172–186. DOI: 10.1016/0022-1031(80)90007-4

Shadish, WR., Cook, TD., Campbell, DT. Experimental and quasi-experimental designs for generalized causal inference. Boston: Haughton Mifflin Company; 2002.

Singer, JD., Willett, JB. Applied longitudinal data analysis: Modeling change and event occurrence. Oxford University Press; 2003.

Smock PJ. Cohabitation in the United States: An appraisal of research themes, findings, and implications. Annual Review of Sociology. 2000; 26:1–20. DOI: 10.1146/annurev.soc.26.1.1

Spanier GB. Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. Journal of Marriage and Family. 1976; 38:15–28. DOI: 10.2307/350547

Stafford L, Kline SL, Rankin CT. Married individuals, cohabiters, and cohabiters who marry: A longitudinal study of relational and individual well-being. Journal of Social and Personal Relationships. 2004; 21:231–241. DOI: 10.1177/0265407504041385

Stanley SM, Markman HJ. Assessing commitment in personal relationships. Journal of Marriage and Family. 1992; 54:595–608. DOI: 10.2307/353245

Stanley, SM., Markman, HJ. Marriage in the 90s: A nationwide random phone survey. Denver, CO: PREP; 1997.

Stanley SM, Markman HJ, Whitton SW. Communication, conflict and commitment: Insights on the foundations of relationship success from a national survey. Family Process. 2002; 41:659–675. DOI: 10.1111/j.1545-5300.2002.00659.x [PubMed: 12613123]

Stanley, SM., Rhoades, GK., Fincham, FD. Understanding romantic relationships among emerging adults: The significant roles of cohabitation and ambiguity. In: Fincham, FD., Cui, M., editors. Romantic relationships in emerging adulthood. New York: Cambridge University Press; 2011. p. 234-251.

Stanley SM, Rhoades GK, Markman HJ. Sliding vs. deciding: Inertia and the premarital cohabitation effect. Family Relations. 2006; 55:499–509. DOI: 10.1111/j.1741-3729.2006.00418.x

Stanley SM, Whitton SW, Markman HJ. Maybe I do: Interpersonal commitment and premarital or nonmarital cohabitation. Journal of Family Issues. 2004; 25:496–519. DOI: 10.1177/0192513X03257797

Stets JE. Cohabiting and marital aggression: The role of social isolation. Journal of Marriage and the Family. 1991; 53:669–680. DOI: 10.2307/352742

Storaasli RD, Markman HJ. Relationship problems in the early stages of marriage: A longitudinal investigation. Journal of Family Psychology. 1990; 4:80–98. DOI: 10.1037/0893-3200.4.1.80

Straus MA, Hamby SL, Boney-McCoy S, Sugarman DB. The Revised Conflict Tactics Scales (CTS2): Development and preliminary psychometric data. Journal of Family Issues. 1996; 17:283–316. DOI: 10.1177/019251396017003001

Tach L, Halpern-Meekin S. How does premarital cohabitation affect trajectories of marital quality? Journal of Marriage and Family. 2009; 71:298–317. DOI: 10.1111/j.1741-3737.2009.00600.x

Teachman J. Premarital sex, premarital cohabitation and the risk of subsequent marital dissolution among women. Journal of Marriage and Family. 2003; 65:444–455. DOI: 10.1111/j.1741-3737.2003.00444.x

Treas J, Giesen D. Sexual infidelity among married and cohabiting Americans. Journal of Marriage and Family. 2000; 62:48–60. DOI: 10.1111/j.1741-3737.2000.00048.x

Waite LJ, Joyner K. Emotional satisfaction and physical pleasure in sexual unions: Time horizon, sexual behavior, and sexual exclusivity. Journal of Marriage and Family. 2001; 63:247–264. DOI: 10.1111/j.1741-3737.2001.00247.x

Woods LN, Emery RE. The cohabitation effects on divorce: Causation or selection? Journal of Divorce and Remarriage. 2002; 37:101–119. DOI: 10.1300/J087v37n03_06

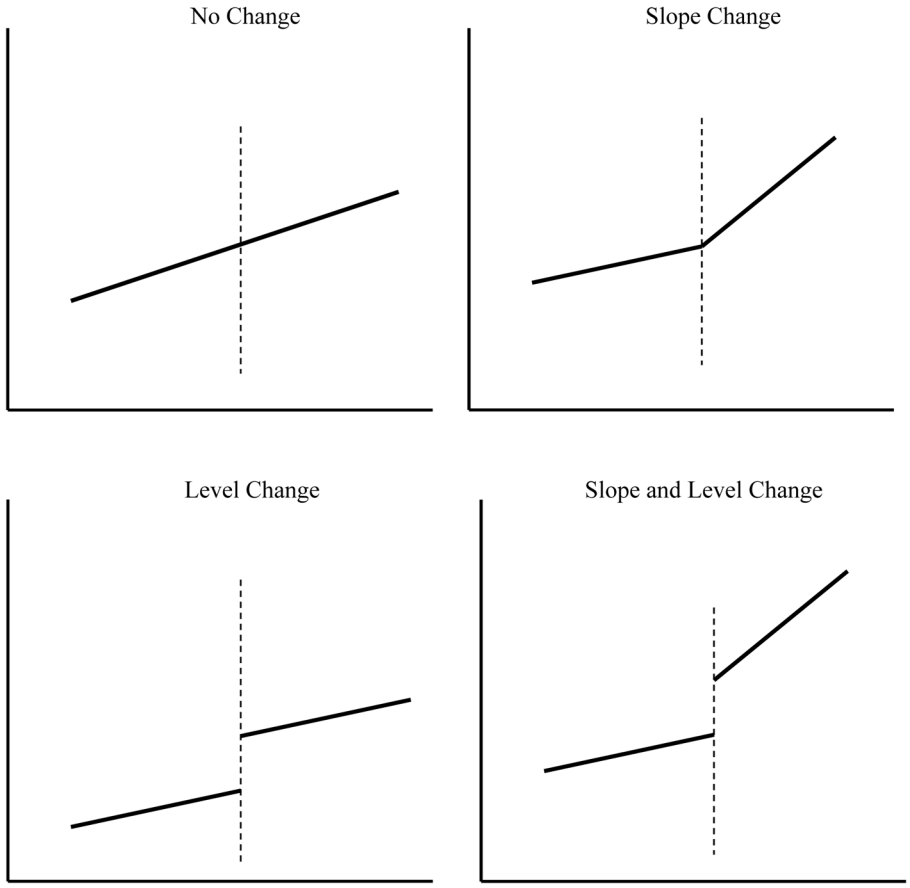

Figure 1. Four Hypothetical Models of Change across the Transition to Cohabitation

Notes. The dotted line represented the transition from dating to living together.

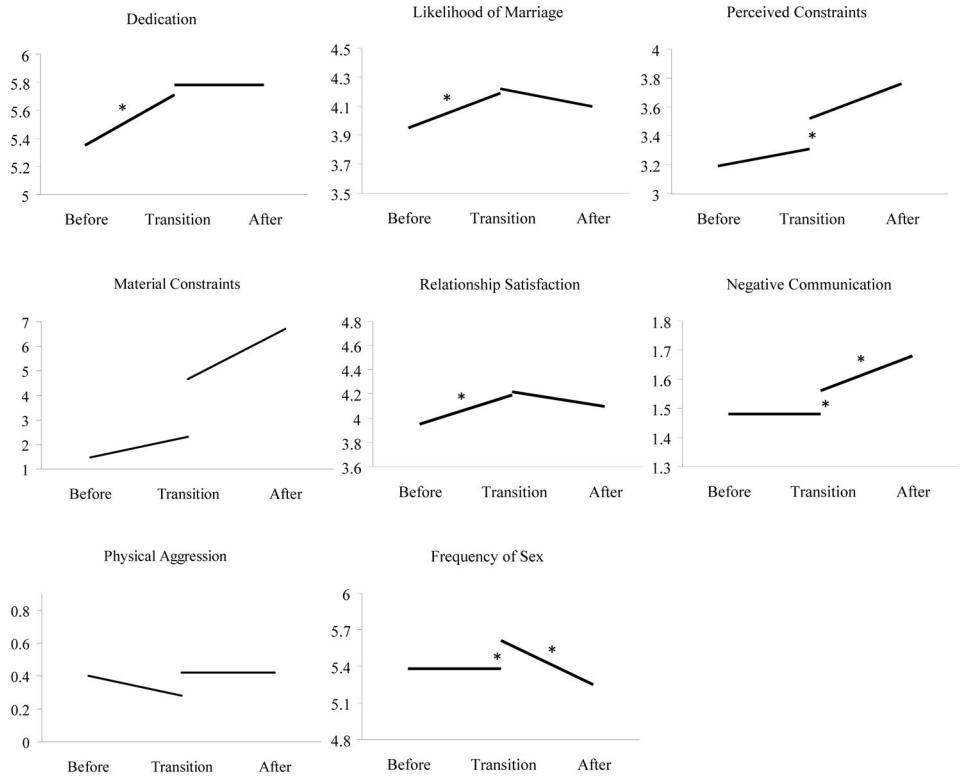

Figure 2. Changes from Before to After Cohabitation on Nine Variables

Notes. The X axis represent 1 year before the transition to cohabitation to 1 year after the transition. Y-axis represents 1 standard deviation except for the graphs for perceived and material constraints where the Y-axis represents 1.5 standard deviations. Asterisks indicate when the trajectories before/after cohabitation or mean levels were significantly different from zero ($p < .05$, one-tailed).

Table 1

Study 1: Means, Standard Deviations, Effect Sizes and Significance Levels for Dating vs. Cohabiting Relationships

Variable	Scale Range	Dating M (SD)	Cohabiting M (SD)	Raw ES	ES with Controls
Dedication	1–7	5.26 (1.25)	5.53 (1.19)	0.22***	0.37***
Likelihood of marriage	1–5	3.81 (1.11)	4.07 (1.14)	0.23***	0.44***
Perceived constraints	1–7	3.29 (0.73)	3.78 (0.70)	0.68***	0.63***
Material constraints	1–25	1.55 (2.16)	6.54 (3.99)	1.63***	1.36***
Relationship satisfaction	0–6	4.19 (1.28)	3.99 (1.44)	−0.15*	0.15*
Negative communication	1–3	1.60 (0.48)	1.79 (0.54)	0.38***	0.14*
Physical aggression	0–7	0.37 (0.79)	0.56 (1.00)	0.21***	0.08
Frequency of sex	1–7	5.26 (1.41)	5.31 (1.32)	0.04	0.21**

Notes.

*** $p < .001$,

** $p < .01$,

* $p < .05$ (based on t-tests).

ES = Cohen's d measure of effect size.

Control variables included length of relationship, age, religiosity, income, years of education, prior cohabitation partners, children (together, from prior relationship, partner's children), and gender.

Table 2

Study 2: Coefficients for Multilevel Models Examining the Effect of the Transition to Cohabitation

	Intercept (π_0)	**Slope$_{before}$ (π_1)**	**Slope$_{after}$ (π_2)**	**Level Change (π_3)**
Dedication	5.71*** (0.07)	0.03*** (0.01)	−0.03** (0.01)	0.07 (0.06)
Likelihood of Marriage	4.19*** (0.09)	0.02* (0.01)	−0.03* (0.01)	0.03 (0.06)
Perceived Constraints	3.31*** (0.06)	0.01 (0.01)	0.01 (0.01)	0.21*** (0.06)
Material Constraints	2.32*** (0.25)	0.07*** (0.02)	0.10** (0.04)	2.36*** (0.26)
Relationship Satisfaction	4.59*** (0.10)	0.01 (0.01)	−0.03* (0.01)	−0.02 (0.11)
Negative Communication	1.48*** (0.04)	0.00 (0.00)	0.01* (0.00)	0.08* (0.104)
Physical Aggression	0.28*** (0.07)	−0.01 (0.01)	0.01 (0.01)	0.14* (0.08)
Frequency of Sex	5.38*** (0.11)	−0.00 (0.01)	−0.03* (0.01)	0.23* (0.11)

Notes. The primary numbers in the table are the unstandardized coefficients for the fixed effects. Standard errors are in parentheses.

* $p < .05$,

** $p < .01$,

*** $p < .001$, one-tailed. Slope (time) was measured in months.