Sexual Frequency and the Stability of Marital and Cohabiting Unions[*]

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Abstract

Prior research on marriage shows that lower sexual frequency or lower sexual satisfaction is associated with higher rates of divorce. Scant research, however, has addressed the role of sexual activity in the dissolution of cohabiting unions. Researchers have shown that marriage and cohabitation are different institutional family forms. Thus, there are good reasons to expect that the link between sexual activity and stability will differ across marriage and cohabitation. We draw upon social exchange theory to develop our hypotheses. Our theoretical framework proposes several reasons why sexual frequency is more important in cohabitation: lower costs to ending the union for cohabitors, cohabitors' lack of union-specific emotional and non-emotional relationship capital, and cohabitors' higher demands for sexual activity. In other words, sexuality occupies a more prominent role in cohabitation than marriage, and poor sexuality within cohabitation is more likely to lead to dissolution. Using the National Survey of Families and Households (NSFH), we use discrete-time event history models to examine the relationships between sexual frequency and union dissolution. Results indicate that low sexual frequency is associated with significantly higher rates of union dissolution in cohabitation than in marriage.

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Introduction

Prior research finds that sexuality within marriage is an important component of marital quality and stability. Typically, studies find that higher sexual satisfaction or frequency is positively associated with marital stability (Yeh, Lorenz,, Wickrama, Conger, & Elder 2006; Edwards & Booth, 1994, Oggins, Leber, & Veroff, 1993; Veroff, Douvan, & Hatchett, 1995; White and Keith, 1990). The relationship between sexual activity and union stability in cohabitations has been studied less, but the existing research finds that sexual satisfaction in nonmarital unions also promotes stability (Sprecher, 2002).

Although prior research in separate studies has established that sexual activity is associated with union stability for both marriage and cohabitation, no studies have compared the importance of sexual activity in marital and nonmarital unions. Because partners in these two types of unions have different expectations, histories, and responsibilities (Giddens, 1992), there is good reason to believe that sexuality within these unions may have differential stabilizing role. It is important to study the role of sexual frequency and satisfaction as recent research finds that sexual relations ranked as the second most problematic issue among a national sample of young married couples (Risch, Riley, & Lawler, 2003).

In this paper, we develop and present a theoretical framework that links sexual activity to union stability. We examine how the importance of sexual activity varies across marital and cohabiting unions. We use the first and second waves of the National Survey of Families and Households (NSFH) to empirically test our hypotheses.

Theoretical Issues

It has been well-established in the literature that positive, healthy sexuality within marriage is positively associated with several dimensions of marital well-being including marital satisfaction and happiness (Edwards & Booth, 1994; Henderson-King & Veroff, 1994; Perlman & Abrahmson, 1982; Blumstein & Schwartz, 1983). Research has also found that low sexual satisfaction can promote marital instability (Edwards & Booth, 1994; Oggins, Leber, & Veroff, 1993; Veroff, Douvan, & Hatchett, 1995; White & Keith, 1990). For example, Edwards and Booth (1994) found that declines in sexual satisfaction among married couples from 1980 to 1983 were associated with a higher likelihood of divorce 5 years later. White and Booth (1991) find that reports of sexual problems among married couples increased the likelihood of divorce, net of other relationship quality variables. Fewer studies have focused on the role of sexual satisfaction in cohabiting or dating relationships. One exception is Sprecher's (2002) study of the quality and stability of dating couples. She finds that couples who reported higher sexual satisfaction scores were more likely to stay together than couples with lower scores.

There are several explanations linking lower sexual frequency or lower sexual satisfaction to higher rates of union dissolution. One explanation is selection. It may not be that reduced sexual activity causes union dissolution, but as partners experience other non-sexual problems and difficulties in the relationship, their level of intimacy and sexual activity drops. Findings from prior studies are consistent with this reasoning. For example, alcoholism is likely to cause both low sexual frequency and higher rates of dissolution (O'Farrell, Choquette, & Birchler, 1991). Also, much research has demonstrated that poor communication is linked to low levels of sexual satisfaction. Poor communication may also account for higher rates of relationship dissolution (Thachil & Bhugra, 2006). In sum, this literature suggests that any

research studying the relationship between sexual activity and union stability must control for potential causes of both sexual frequency and dissolution in order to avoid spurious associations.

A second explanation of the relationship between sexual frequency and union stability is a causal relationship: the sexual act promotes social attachment between participants. Research from both the biological and social sciences also is consistent with this explanation. The social sciences usually focus on behavioral models of attachment, while biological sciences have investigated neuroendocrine models (Carter, 1998). Neuroendocrine models of attachment point to neurochemical mechanisms that help to form social bonds. Neurochemicals such as Oxytocin and vasopressin, for example, are released during sexual activity and may help to increase social attachment (Carter, 1998; Insel, 1997). While these processes have not been conclusively identified in humans, animal studies strongly suggest that that neurochemical released during sex do cause social attachment to increase (Insel, 1997).

From a social science perspective, the relationship between sexual activity and union dissolution can be studied with social exchange theory. Social exchange theory has been used to analyze a broad range of social interactions (e.g., Blau, 1964; Homans, 1961; Sprecher, 1998), based on the assumption that in an interaction, each individual gives something and gets something in return. Analyzing the costs and benefits of various interpersonal behaviors provides a useful basis for making predictions about how people will choose to act. Specifically, social exchange theory can help explain how sexual interaction occurs or not (Lawrance & Byers, 1995), and more generally how sexual interactions may influence relationship disruption decisions (Levinger & Moles, 1979).

Capitalizing on the strengths of exchange theory, Lawrance and Byers (1995) developed the Interpersonal Exchange Model of Sexual Satisfaction (IEMSS). This model takes into

account the level of rewards and the level of costs that partners exchange in their sexual relationship. Rewards are defined as exchanges that are pleasurable while costs are defined as exchanges requiring physical or mental effort or those that produce pain, embarrassment, or anxiety (Thibaut & Kelley, 1959). The IEMSS also accounts for an individual's comparison level (CL) -- the standard against which individuals judge the attractiveness of their rewards and costs (Kelley & Thibaut, 1978). In other words, the individual evaluates the level of rewards and costs that the individual expects to receive in a sexual relationship.

Combining this theory with the concept that individuals invest less in cohabitation than in marriage helps to explain why low sexual frequency may be more detrimental to break ups among cohabitors compared to married couples. In addition to a satisfying sex life, couples receive many rewards from marriage but also face costs. Social exchange theory holds that as the costs of a given interaction, for example having sex, begin to outweigh the rewards, an individual will not engage in the interaction. Social exchange theory suggests that partners weigh the costs and benefits of a marriage in deciding whether to dissolve it or not. For example, spouses may weigh the attractiveness of their current marriage in comparison to being divorced or compare the barriers to leaving their current marriage to entering an alternative one (Levinger & Moles, 1979). When the costs of staying in a relationship consistently outweigh the rewards, and barriers are seen as surmountable, individuals may seek to end the relationship.

Using social exchange theory, we generate hypotheses that predict why the impact of sexual frequency on union stability will differ for cohabitation and marriage. To better understand this specific difference between cohabiting and marital unions, we first need to explicate the broader differences between marriage and cohabitation that relate to this more specific difference. Most broadly marriage and cohabitation involve different time horizons

(Waite & Joyner, 1992). In other words, married couples expect to and do stay together longer than cohabiting couples (Bumpass & Lu, 2000; Bumpass, Sweet, & Cherlin, 1991). Cohabitation, unlike marriage, carries no explicit commitment to stay together for the long term. Additionally, cohabitation, similar to remarriage, has been described as a less complete institution compared to marriage (Cherlin, 1978; Duncan, Wilkerson, & England, 2003). Using this institutions approach, Cherlin (1978) has argued that the norms surrounding marriage are clearer than those for remarriage, for example regarding the role of a step-parent in rearing step-children. Duncan et al. (2003) have taken this idea a step further to argue that cohabitation also falls within the definition of an incomplete institution. The norms about marriage are clearer and more specific than those surrounding cohabitation, because cohabitation is a much newer relationship form. For example, they argue that while both marriage and cohabitation are viewed as monogamous relationships, cohabiting involves less long-term commitment compared to marriage. Further there are less clear cut rules governing cohabiting relationships and thus partners face greater negotiations than married couples.

Several explanations point to a differential effect of sexual frequency on union stability. First, while the sexual act and emotional intimacy are linked, cohabitors might not have developed as much deep emotional attachment as married spouses. Given the expectation of a long-term contract, married couples are more likely to have invested more heavily in their emotional commitment to the relationship than cohabitors. For example, they may be more likely to develop what economists have called marriage-specific capital (Becker, 1991). Waite and Joyner (1992) also suggest that a long-term marital contract facilitates emotional investment, but that cohabitors may be less likely to make such emotional investments in general thus hindering the development of relationship-specific capital in particular. One aspect of this might be

investing in learning skills that make a particular union more enjoyable and thus more stable. Scanzoni, Polonko, Teachman, and Thompson (1989) proposed that initially, intimate relationships are often based on extrinsic rewards—partners continue the relationship in order to obtain sex—but over time the relationships develop intrinsic rewards—partners continue the relationship out of feelings of commitment and solidarity. These intrinsic rewards help to maintain the relationship by diversifying the factors in partners' cost/benefit calculations (Scanzoni et al., 1989). Compared to marriage, cohabitation may be more heavily based on extrinsic rewards, and sex may play a greater role. Thus, cohabitors might rely more upon sexual activity as opposed to long-term emotional attachment to keep their unions together. In contrast to married couples, when sexual activity decreases in cohabitation, there is a lack of emotional investment to keep the partners together.

Second, cohabitors have lower investments in non-emotional union-specific capital, which lowers the cost of ending the union. Cohabiting couples are less likely to have children present in the household compared with married couples. For example, 39 percent of cohabiting couples have children compared to 45 percent of married couples who have children present (U.S. Bureau of the Census, 2003). However, in married couples with children, the children are more likely to be the biological offspring of both parents compared with children in cohabiting families. In sum, it is still the case that cohabitors are less likely to have children than married couples, and that a larger proportion of these cohabiting couples did not have these children together. Thus, compared to married couples, it may be easier to dissolve a cohabiting union because of a higher likelihood of no children present or that only one of the partners is the child's biological parent.

Home ownership is another area in which cohabiting partners have less union-specific capital that would have to be divided if the union were to end (Rindfuss & Van den Heuvel, 1990). In general, cohabitors do not pool together financial resources to the same degree as married partners (Morrison & Ritualo, 2000). In terms of social exchange, while poor sexual frequency may lower the benefits of the union for both marriage and cohabitation, married individuals will have higher costs to leaving the relationship, and the impact of poor sexual frequency is weakened.

Third, cohabitors might have higher expectations and demands for sexual activity than married partners. The literature suggests multiple dimensions on which cohabitors' values, expectations, and norms differ from married spouses. For example, cohabitors are usually more individualistic than people in marital unions (Teachman, 2003), and these individualistic tendencies can interfere with the development of commitment to the relationship and its intrinsic rewards (Scanzoni et al., 1989). An additional dimension might be the expectation of sexual frequency. Michael et al. find that cohabitors report higher sexual frequency per month compared to married couples. For example, while over 40 percent of married couples report having sex 2 - 3 times per week, well over 50 percent of cohabiting couples have sex 2 - 3 times per week (Michael, Gagnon, Laumann, & Kolata, 1994). Prior research on marital sexual frequency documents that sexual activity declines with age and relationship duration (James, 1974; Jasso, 1985; Klusmann, 2002; Rao & DeMaris, 1995; Udry 1993; Udry & Morris, 1978; Westoff, 1974). For example, Klusmann (2002) reports that sexual activity and sexual satisfaction decline among women and men as the duration of partnership increases and that sexual desire declines in women as well. Overall, norms and expectations for sexual activity are

lower for marriages than cohabitations, and we expect that the disruptive impact of low sexual frequency in marriage also will be weaker than in cohabitation.

In sum, we expect that higher sexual frequency will decrease the rate of union disruption in both marriage and cohabitation. We hypothesize, however, that higher sexual frequency will have a stronger effect at maintaining union stability in cohabitation than marriage. Potential reasons include lower costs to ending the union for cohabitors, cohabitors' lack of union-specific emotional and non-emotional capital, and cohabitors' higher demands for sexual activity.

Data and Methods

To test our hypotheses, we use data from the first two waves of the National Survey of Families and Households (NSFH). Wave 1 of the NSFH collected a variety of family, household, and demographic data from a nationally representative sample of individuals in 1987-1988. NSFH data were collected from a randomly selected adult in each household surveyed and from the respondent's spouse or partner. Respondent data were collected through both face-to-face interviews and self-administered questionnaires; spouses and partners were asked to complete a shorter, less detailed questionnaire (Sweet, Bumpass, & Call, 1988). Wave 2 was collected in 1992-1994, and wave 3 was collected in 2001-2003. Our analysis is based on the wave 1 sample of married and cohabiting respondents who were reinterviewed at wave 2. This includes 5440 marital unions and 328 cohabiting unions. We take advantage of the couple data by including measures of variables for both partners.

Dependent variable: Union dissolution. We use discrete-time event history analysis to model the rate of union dissolution for marriages and cohabitation between wave 1 and wave 2. Because the couple's union dissolution is measured to the nearest month, the time unit of risk is

the couple-month. As is typical in discrete-time event history, the couple contributes observations to the data for each month they are at risk. In order to preserve the proper time-ordering of independent variables measured at wave 1, couples become at risk of dissolution and contribute observations starting at NSFH wave 1. This arrangement can be described as left truncation or delayed entry (Allison, 1995). For months in which they are together, the dependent variable is coded 0. In the month in which they either divorce (marriage) or dissolve (cohabitations), the dependent variable is coded 1, and they no longer contribute observations to the dataset. Couples that remain together until wave 2 are censored. Cohabiting couples that marry are censored at the time of marriage. It is necessary to specify the functional form of the hazard in a discrete time model, and we use a quadratic function of the duration since the date of marriage or date of the beginning of cohabitation. We also estimated an alternative specification using dummies variables to represent time periods of risk, which does not force the hazard into a pre-determined shape. This alternative specification yielded similar results, and thus we present the quadratic models.

Independent variable: Sexual Frequency. Our primary independent variable of interest is sexual frequency. Although subject to social desirability bias (Leridon, 1996), researchers have gained confidence that reports of coital frequency are valid and fairly reliable (Smith, Morgan, & Gager, 1994). This confidence comes from a set of empirical observations. First, respondents have been willing to provide answers. Second, frequency distributions seem reasonable and consistent with distributions obtained using other data collection procedures such as diaries or interviews (Kinsey et al., 1948, 1953). Some expected correlates of coital frequency are confirmed across studies using a variety of data collection techniques. For instance, in all surveys, mean coital frequency declines with age and marital duration.

Recall is one potential problem with these retrospective reports of coital frequency. For example, Udry (1993) has argued that the use of a diary for data collection is superior to retrospective reports, especially when trying to map out the rhythmic aspects of coitus. He contends that respondents answer the retrospective question concerning monthly coital frequency by looking back over the past week, counting how often they had intercourse and then multiplying that number by 4. Although retrospective recall of sexual frequency will contain measurement error, this error is most likely to introduce Type II error (failing to reject the null when the null hypothesis is false), thus making our estimates of effects more conservative.

The NSFH question on sexual frequency asked married respondents, "About how often did you and your husband/wife have sex during the past month?" A similar question was asked of cohabiting respondents. The scale for this survey question is the number of times, from 0 up to a maximum of 95. Because the NSFH interviewed partners of respondents, answers to these questions are also available from the partners. When both partners provided information on sexual frequency, we took the average of both partners' responses because Smith, et al., (1994) find little difference between husbands' and wives reports of sexual frequency. When both partners' reports were not available, we used the response from only one partner. In addition, we transform this frequency measure with a logarithmic function by adding 1 and taking the natural log. The log transformation compresses the distribution at the higher range more than at the lower range. In other words, a difference between 10 and 20 times per year is given more importance than the difference between 90 and 100 times per year.

Controls. Age of each partner is included given the consistent findings that older age is associated with less coital frequency. Lower coital frequency occurs among older couples and those in longer marital unions (James, 1974; Jasso, 1985; Rao & DeMaris, 1995; Udry, 1993;

Udry & Morris, 1978; Westoff, 1974). Declines in coital frequency by age and marital duration are attributed to the aging process and include increases in illness and decreases in male physical ability and male and female hormone levels, but cannot adequately explain the pattern of the decline (Greenblat, 1983; Udry, Deven, & Coleman, 1982). For example, research suggests that much of the decline occurs early in marriage (even in the first year) and is attributed to habituation, which is defined as the loss of interest or novelty of a sexual partner (James, 1974, 1981).

We also include control variables previously shown to be correlated with sexual frequency and divorce or the dissolution of cohabitation, including religion, race and ethnicity, couple income, education level, presence of children, relationship satisfaction, and self-rated health, and hours in the paid workforce (Call, Sprecher, & Schwartz, 1994; Michael et al., 1994; Teachman, 2003). Because prior work has found differences in sexual frequency and divorce by religious affiliation (Call et al., 1995; Lehrer & Chiswick, 1993), we include the religion of the couple. We base our measurement of religion on the work of Lehrer and Chiswick (1993) who used the NSFH to study marital stability. Taking advantage of couple-level data, we measure whether both partners are 1) ecumenical Protestant, 2) exclusivist Protestant, 3) Catholic, 4) an interfaith marriage involving two different religion categories, or 5) all other categories. While not ideal, it was necessary to combine categories such as “both Jewish” and “both Mormon” into an “all other category” because the sample of cohabitors was not large enough to distinguish between these different faiths. The race and the ethnicity of the couple are coded as 1) both non-Hispanic white, 2) both non-Hispanic black, 3) both Hispanic, 4) both other race/ethnicity, or 5) interracial marriage. Income is measured as the couple’s total income, including investments, as reported by the respondent. Because this measure is skewed, we use a log transformation.

Education of the partners is measured in years, with a maximum of 17 for respondents who achieved more than a Bachelor's degree. Hours per week spent in paid work force is measured with a continuous variable, and the presence of children is measured with two dichotomous variables indicating if the household has younger children (ages 0-4) or older children (ages 5-18).

Relationship happiness has been shown to be positively correlated with sexual frequency and divorce (Blumstein & Schwartz, 1983; Edwards & Booth, 1994; Sprecher, 2002), and we include this measure as a control. Respondents were asked, "Taking things all together, how would you describe your marriage?" Responses were on a seven point scale, from very unhappy to very happy. A similarly worded question was asked of respondents in cohabiting relationships. We include two different measures of health and well-being. Research finds that poor physical health interferes with the ability to engage in sexual activity, while depression and anxiety may inhibit desire for sex (Channon & Ballinger, 1986; Heiman, 2000; Laumann, Paik, & Rosen, 1999). The overall health measure asked, "Compared with other people your age, how would you describe your health?" Respondents replied on a 1 to 5 scale, from very poor to excellent. Mental well-being was assessed with a global happiness question that asked, "First taking things all together, how would you say things are these days?" Respondents answered on a 1 to 7 scale, from "very unhappy" to "very happy." Although the NSFH contains more detailed measurement of mental well-being using a more standard assessment of mental health, this more detailed measurement is available only for the primary respondent, not spouses and partners. Thus we use a general measure of overall well-being, which was asked of both partners.

An additional methodological concern in our analysis is missing data. There are many ways to handle missing data, and Call et al. (1995) try numerous strategies for dealing with

missing reports of sexual frequency. Currently, the best-accepted practice is to use multiple imputation techniques (Allison, 2002). The critical assumption for this missing data is that the data are missing at random (MAR), conditional on other non-missing attributes. Although this assumption cannot be tested, the assumption can be strengthened by including all relevant predictors in an imputation model. In our multiple imputation approach to deal with item missing data, we created 5 complete datasets for wave 1 respondents who were also interviewed at wave 2. We then analyzed the imputed datasets with complete-data methods. The results of these complete-data analyses were combined to arrive at a single estimate that properly incorporates the uncertainty in the imputed values. We used SAS PROC MI and PROC MIANALYZE to create the datasets and combine the multiple analyses.

Results

(Table 1)

Descriptive statistics are presented separately for cohabiting and marital unions in Table 1. From NSFH wave 1 to wave 2, 53% of cohabitations dissolved, while only 12% of marriages did. Sexual activity is higher in cohabitation, at about 12 times per month compared to only 7 times per month for marriages. Many of the remaining differences between the two types of unions are expected and consistent with the prior literature, and we do not discuss them in detail. For example, compared to married partners, cohabitors are younger, had lower income, worked more hours in the labor force, are less likely to have children in the household, and have less traditional gender ideology.

(Table 2)

Table 2 presents the multivariate analyses of sexual frequency and union dissolution. Model 1 examines the relationship between the control variables and the rate of dissolution among cohabitors. Significant predictors include men's age, which significantly reduces the rate of dissolution, and relationship happiness. As expected, when partners are more happy with their relationship they are less likely to break up ($p<.001$ for women, $p=.06$ for men). When both partners are ecumenical Protestant, the cohabitation is significantly more likely to dissolve, compared to the reference group (both partners another religion). In model 2, wave 1 logged sexual frequency is added as a predictor. Sexual frequency has a significant negative relationship with the dissolution of cohabitation: when partners have higher sexual frequency, the rate of cohabitation dissolution is significantly lower.

Models 3 and 4 repeat the analyses for married couples. Model 3 examine the relationship between control variables and the rate of divorce. Significant predictors include the woman's age, men's education, and both female and male relationship happiness. Having a young child (defined as a child between age 0 and 4) also significantly reduces the rate of divorce. In model 4, wave 1 logged sexual frequency is added. While the coefficient is negative, it is not significant at the .05 level. This coefficient suggests that the impact of sexual frequency in marriage is less important than it is in cohabitation.

(Table 3)

The sexual frequency coefficient is significant for cohabitation but not for marriage, which supports our hypothesis, but comparing this coefficient in models 2 and 4 is not a formal statistical test. To properly test if the coefficient significantly varies across marriage and cohabitation, we estimated a full interaction model in which all predictors are interacted with a dichotomous indicator of cohabitation (coded as 1=cohabitating union, 0=marital union). The

hypothesis can be tested by the significance of the sexual frequency * cohabitation coefficient. This is presented in model 1 of Table 3. This coefficient is significant ($p<.05$), which is evidence that the relationship between sexual frequency and union dissolution varies for marriage and cohabitation. The coefficients in model 1 exactly replicate the coefficients from Table 2: the main effect of sexual frequency in model 1 of Table 3 (.91) is the effect of sexual frequency for married couples in Table 2 model 4. In addition, the effect of sexual frequency for cohabiting couples in Table 2 model 2 (.70) can be derived through the coefficients in Table 3 (.91 * .77 = .70). Table 3 simply allows us to formally test if the coefficient for sexual frequency in cohabitation (.70) significantly differs from the coefficient for sexual frequency in marriage (.91)—which it does.

Note that in Table 2, some control variables in our models are not significant or have effects somewhat weaker than what has been found in the literature. This may be due to over-controlling our models: we included relationship happiness as a control, and it had strong effects on dissolution. Relationship happiness is likely a mediator through which other mechanisms operate, and thus the significance of these other predictors is weakened (e.g., employment, gender ideology). We control for relationship happiness in order to reduce possible spurious relationships between sexual frequency and union dissolution: it is important to control for all predictors that might be related to both sexual frequency and dissolution, and relationship happiness is a key factor.

A selection explanation might be proposed as a counter argument to our findings. The argument would state that sexual frequency is not causally linked to union dissolution, but that low sexual frequency is the consequence of some other relationship problem. While observational data cannot conclusively answer these questions, we argue that a simple selection

argument is not sufficient to completely explain our results. We found that that the effect of sexual frequency significantly varied across marriage and cohabitation. Thus, even if it were true that selection drives almost all of the effect between sexual frequency and dissolution, the degree of selection apparently varies between marriage and cohabitation. Even if not causal, this difference across the two types of unions still points to important differences in the role of sexual frequency in marriage and cohabitation.

Discussion/Future Steps

Drawing upon social exchange theory, we developed a theoretical framework and hypothesized that sexual frequency would have a stronger influence on the dissolution of cohabitation than marriage. The results indicated that while sexual frequency was negatively associated with dissolution for both types of unions, the effect was significantly more negative for cohabitations. These initial findings support our hypotheses.

Our findings are part of a larger debate in the research literature that has identified the important differences between cohabitors and spouses but has recently documented more and more commonalities (for a review, see Smock, 2000). For example, research has documented differences as varied as the ideal fertility -- cohabitors expect to have fewer children than married couples -- (Rindfus & Van den Heuvel, 1990) to attitudes about sexual fidelity and gender roles -- cohabitors expect less fidelity and more equality -- (Clarkberg, Stolzenberg, & Waite, 1995; DeMaris & McDonald, 1993). However, most importantly, cohabitors are less likely to view their relationship as one that will last a lifetime and few cohabiting couples continue for a lifetime without marriage (Bumpass, Sweet, & Cherlin, 1991; Bumpass & Lu, 2000). Secondly, cohabitors tend to be more liberal and less religious than noncohabitors. Thus,

cohabitation, as a newer relationship form, has been described as less institutionalized compared to marriage (Waite & Joyner, 2001) and as an incomplete institution (Duncan et al., 2004).

Our next step will be to empirically test the mechanisms that link sexual frequency to union dissolution. Our theoretical framework proposed several reasons why sexual frequency is more important in cohabitation: lower costs to ending the union for cohabitors, cohabitors' lack of union-specific emotional and non-emotional capital, and cohabitors' higher demands for sexual activity. Using the rich measurement available in the NSFH, we will operationalize these concepts and test if including these measures helps to explain the relationship between sexual frequency and union dissolution. Our initial findings have established important differences between cohabitors and married spouses, and our next analyses will attempt to document the mechanisms behind these differences.

We also plan several technical improvements to the models. In the current models, cohabitors are censored once they marry. A variation on this approach is to let the cohabitors remain at risk of dissolution via divorce once they marry, but include a time-varying covariate to indicate that the union is now a marriage. A second possible improvement is to use data from the NSFH wave 3. Although this wave has some peculiar sample restrictions, these restrictions are known because they were part of the design. NSFH 3 interviewed only respondents older than the age of 45 or respondents with NSFH focal children. Thus, this censoring mechanism can be measured for respondents not chosen for interview in wave 3. If these factors (greater than age 45 or having focal children) are included in the model, the censoring due to study design will be non-informative and not violate necessary assumptions of event history modeling (random, non-informative censoring).

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Table 1: Descriptive Statistics

	Cohabiting Unions		Marital Unions	
	Mean	Std. Dev.	Mean	Std. Dev.
Experienced dissolution by wave 2	.53	.50	.12	.32
Sexual frequency (prior month)	12.12	10.92	7.14	6.77
Woman's age	29.50	9.52	40.42	14.26
Man's age	32.21	9.56	43.02	14.71
Woman's education	12.19	2.43	12.76	2.65
Man's education	12.16	2.60	12.81	3.02
Couple's income	$33,792	$43,123	$43,221	$44,336
Woman's paid work hours	25.35	19.50	20.42	19.35
Man's paid work hours	36.10	18.42	35.25	19.93
Household has child age 0-4	.26	.44	.27	.45
Household has child age 5-18	.32	.47	.43	.49
Couple both White	.66	.47	.80	.40
Couple both Black	.18	.39	.10	.31
Couple both Hispanic	.05	.22	.05	.22
Couple both other race	.01	.09	.01	.09
Couple both ecumenical Protestant	.07	.26	.22	.42
Couple both exclusivist Protestant	.17	.38	.22	.42
Couple both Catholic	.17	.37	.18	.39
Couple interfaith	.50	.50	.29	.45
Woman's relationship happiness	5.73	1.41	6.01	1.26
Man's relationship happiness	5.71	1.21	6.08	1.19
Woman's self-rated health	3.93	.85	4.08	.78
Man's self-rated health	4.01	.78	4.07	.82
Woman's global happiness	5.39	1.32	5.62	1.28
Man's global happiness	5.25	1.28	5.59	1.25
Woman's traditional gender ideology	11.29	2.97	12.20	2.89
Man's traditional gender ideology	12.48	2.74	13.20	2.79
Duration of union as of wave 1 (years)	3.17	3.53	16.23	14.18
N	328		5440	

Table 2: Relationships Between Sexual Frequency and Union Dissolution

	Models			
	1	2	3	4
	Cohabiting Unions		Marital Unions	
Logged sexual frequency		0.70**		0.91
		(-2.93)		(-1.56)
Controls				
Woman's age	1.01	1.00	0.95***	0.95***
	(0.44)	(0.21)	(-4.64)	(-4.80)
Man's age	0.95**	0.95**	1.00	1.00
	(-2.74)	(-3.00)	(0.30)	(0.20)
Woman's education	0.95	0.95	0.97	0.97
	(-1.05)	(-1.12)	(-1.46)	(-1.52)
Man's education	1.09	1.08	0.95*	0.95*
	(1.69)	(1.36)	(-2.07)	(-2.07)
Couple's income, logged	1.01	1.03	0.96	0.96
	(0.12)	(0.23)	(-0.58)	(-0.57)
Woman's paid work hours	1.00	1.00	1.00	1.00
	(-0.57)	(-0.80)	(-0.01)	(0.10)
Man's paid work hours	0.99	0.99	1.00	1.00
	(-1.29)	(-1.71)	(-1.56)	(-1.55)
Household has child age 0-4	0.86	0.79	0.81*	0.80*
	(-0.73)	(-1.08)	(-2.34)	(-2.46)
Household has child age 5-18	1.06	1.10	1.00	1.01
	(0.32)	(0.50)	(-0.03)	(0.13)
Couple both White †	1.25	1.13	0.81	0.80
	(0.70)	(0.37)	(-1.31)	(-1.40)
Couple both Black †	1.19	0.96	0.96	0.95
	(0.46)	(-0.11)	(-0.21)	(-0.29)
Couple both Hispanic †	1.02	0.83	0.68	0.66
	(0.03)	(-0.35)	(-1.46)	(-1.61)
Couple both other race †	0.96	0.49	0.59	0.59
	(-0.03)	(-0.51)	(-1.00)	(-1.03)
Couple both ecumenical Protestant ‡	2.72*	2.82*	0.94	0.93
	(2.33)	(2.48)	(-0.35)	(-0.42)
Couple both exclusivist Protestant ‡	1.53	1.60	0.90	0.90
	(0.87)	(0.91)	(-0.63)	(-0.62)
Couple both Catholic ‡	1.19	1.18	0.79	0.77
	(0.44)	(0.41)	(-1.36)	(-1.47)
Couple interfaith ‡	1.76	1.86	0.91	0.90
	(1.65)	(1.83)	(-0.57)	(-0.60)
Woman's relationship happiness	0.76***	0.78**	0.75***	0.76***
	(-3.47)	(-2.92)	(-9.16)	(-8.93)
Man's relationship happiness	0.86	0.89	0.85***	0.86***
	(-1.90)	(-1.45)	(-4.63)	(-4.30)
Woman's self-rated health	1.13	1.14	1.05	1.06
	(1.11)	(1.14)	(0.87)	(0.93)
Man's self-rated health	0.93	0.93	1.02	1.02
	(-0.54)	(-0.59)	(0.34)	(0.36)

Table 2: Relationships Between Sexual Frequency and Union Dissolution (continued)

	1	2	3	4
	Cohabiting Unions		Marital Unions	
Woman's global happiness	1.02	1.03	0.95	0.96
	(0.22)	(0.40)	(-1.33)	(-1.14)
Man's global happiness	1.05	1.08	0.96	0.96
	(0.52)	(0.78)	(-1.11)	(-1.08)
Woman's traditional gender ideology	1.00	0.99	0.97	0.97
	(-0.07)	(-0.23)	(-1.95)	(-1.89)
Man's traditional gender ideology	0.99	0.99	0.99	0.99
	(-0.28)	(-0.27)	(-0.43)	(-0.40)
Duration of union	0.98***	0.98***	1.00	1.00
	(-3.99)	(-3.77)	(0.76)	(0.70)
Duration of union-squared	1.00**	1.00*	1.00**	1.00*
	(2.86)	(2.56)	(-2.60)	(-2.57)
Intercept	0.37	0.97	1.76	2.08
	(-0.87)	(-0.02)	(1.01)	(1.30)
N (couple months)	13363	13363	355705	355705

† Reference is interracial
‡ Reference is both other religion

Coefficients are odds ratios, with t-statistics in parentheses
*p<.05, **p<.01, ***p<.001, two-tailed tests

Table 3: Interaction model of Relationships Between Sexual Frequency and Union Dissolution

	Model
	1
Logged sexual frequency	0.91
	(-1.56)
Cohabitation	0.47
	(-0.55)
Logged sexual frequency * Cohabitation	0.77*
	(-2.04)
N (couple months)	369068

Note: Although not shown, all variables from Table 2 are also interacted with cohabitation

Coefficients are odds ratios, with t-statistics in parentheses
*p<.05, **p<.01, ***p<.001, two-tailed tests