Divorce and Subjective Well-Being: A Counterfactual Approach

Lance D. Erickson
Department of Sociology
Brigham Young University

Kevin Shafer
School of Social Work
Brigham Young University

Abstract

Using the National Survey of Families and Households, we examine the effect of divorce on subjective well-being by applying the counterfactual model of causal inference using propensity score matching (PSM). In accordance with the counterfactual model, we argue that the effect of divorce from traditional methods is biased because the effect of divorce for those who divorce is different than the effect of divorce would be for those who do not divorce. It is likely impossible to know what the effect of divorce would be for those who don't divorce but using PSM a reliable estimate is achievable for those who do. After matching on an estimate of the propensity to divorce, we find that the effect of divorce on divorcès is negligible. In other words, among those who divorce, divorce neither has a positive or negative effect on subjective well-being.

Divorce and Subjective Well-Being: A Counterfactual Approach

Couples in low quality or unhappy marriages have two choices—they can either remain married "for worse," as a common wedding vow suggests, or divorce. As marriage has become increasingly individualized and couples' satisfaction with their relationships more and more about personal fulfillment (Cherlin 2004; Clarke-Stewart and Brentano 2006), divorce has become common. Either implicitly or explicitly, the expectation among divorcès[1] is that the dissolution of their marriage will increase their short-term and/or long-term happiness and well-being (Amato, Booth, Johnson, and Rogers 2007). One prominent theory suggests that divorcès are wrong. The *marital decline* perspective contends that, in spite of individualistic tendencies toward divorce, dissolution has negative consequences because the benefits of marriage are lost when a union ends. Alternatively, the *marital resilience* perspective argues that divorce can be positive because it provides individuals with a second chance at life when first marriages don't meet expectations.

Both sides have compelling arguments, although accordant with the marital decline perspective, the empirical literature suggests that divorce is often a stressful, dramatic, significant life-event with wide-ranging negative effects on quality-of-life (e.g., Amato 2010; Amato and Hohmann-Marriott 2007b; Bierman, Fazio, and Milkie 2006; Hohmann-Marriott and Amato 2008; Hughes and Waite 2009b; Lorenz, Wickrama, Conger, and Elder 2006; Umberson and Williams 2005; Waite, Luo, and Lewin 2009; Williams and Dunne-Bryant 2006; Williams and Umberson 2004; Williams 2009; Zhang and Hayward 2004; Zhang and Hayward 2006). Yet, the question of how divorce affects individual well-being is far from resolved. Prior findings may be inaccurate because they are based on comparisons of the divorced to the continuously-married. Thus, any negative effect of divorce on well-being may be due to the inability to control for or inattention to selection processes that make it more or less likely that a couple will divorce.

[1] We refer to both divorced men and women with this universal term in our paper.

Because of the difficulty of addressing selection issues using traditional regression approaches, few studies have adequately addressed this thorny issue (but see Johnson and Wu 2002; Overbeek, Vollebergh, de Graaf, Scholte, de Kemp, and Engels 2006; Wade and Pevalin 2004). While most studies include various statistical controls in an effort to account for pre-existing characteristics that might bias estimates of the effect of divorce, this approach is problematic for two reasons. First, although regression should provide unbiased causal estimates if *all* relevant alternative causes of well-being are controlled for, the data to do this are unavailable. Even if all theoretical alternatives were known and could be included in models of the effect of divorce, the assumption guiding this method (i.e., omitted variable bias) cannot be tested in regression. Second, and more importantly, two potentially distinct effects are embedded in traditional regression estimates—the effect of divorce for those who divorce and the potential effect of divorce for those who do not divorce. If these two effects are identical, regression estimates may be unbiased. However, it is unlikely that this assumption can be maintained with respect to divorce. Because of these shortcomings, we use the counterfactual model of causal inference via propensity score matching to revisit the relationship between divorce and well-being. Using Waves I and II of the National Survey of Families and Households (NSFH) and propensity score matching, we find that any effect of divorce on subjective well-being is negligible after matching on an estimate of propensity to divorce. In addition to this analysis, we are currently exploring a similar model in the Marital Instability in the Life Course data and will have analyses completed to present at the PAA meetings in April.

Background and Theoretical Framework

Recent trends in American marriages and family life are often attributed to increasingly individualized goals and attitudes surrounding romantic partnerships. For example, these changes help explain why the divorce rate increased rapidly in the 1960s and 70s. The shift from

companionship to individualized marriages consists of two main components (Cherlin 2004). First, the benefits individuals sought from marriage changed significantly. Instead of socially-oriented rewards associated with marital roles or relationship quality, marriage in the individualized era became a place for self-fulfillment. The second major change which precipitated individualized marriage was greater choice in managing personal lives and intimate relationships in an environment of relaxed social norms. Although marital alternatives (e.g., cohabitation, single parenthood, etc.) have become increasingly common over time, divorce has become more acceptable, as well. Consequently, a lack of personal growth or fulfillment—which essentially indicates a poor marriage to many individuals (Amato, et al. 2007)—signals to men and women that they should divorce because high individual well-being is not being achieved in the marriage. In such an age of individualized marriages, subjective well-being becomes an important correlate of marriage because in the individualized era, a marriage is successful to the extent that it maximizes subjective well-being (i.e., is personally fulfilling, maximizes personal growth, makes them happy, etc.).

It is within this broad context that two contrasting theories have been applied to understand family change. The central argument of the marital decline perspective (e.g., Popenoe 1993) is the institution of marriage is substantially weaker today than in the past because people have increasingly focused on their own individual needs and well-being. According to this perspective, marriage in an individualistic society is a vehicle for personal fulfillment reducing commitment to marriage as a long-term relationship or as an institution. As a result, divorce has become increasingly common and more likely if people become dissatisfied with their spouse or perceive little benefit to remaining married (Amato, Booth, Johnson, and Rogers 2007). Thus, the obligations and commitments made to a family and any consequences of divorce are often viewed as secondary to personal happiness.

Although divorcès may anticipate either immediate or long-term positive benefits from divorce, the marital decline perspective suggests that an increase in well-being is very rare. Instead,

divorcès not only lose the benefits associated with marriage, but also become vulnerable to the problems inherent to divorce. Married couples enjoy substantial benefits because of marriage's central role in American society. It is upheld by social norms, preferred legal status, and cultural tradition—all of which help produce economic, social, psychological, and physiological benefits (Waite 1995). Furthermore, marriage is coupled with high levels of social support which are institutionalized within the family including commitment, encouragement, service, and reinforcement of positive behaviors—which dissipate with divorce (Amato 2010). Divorce can be stigmatizing and stressful, despite its ubiquity, in part because divorce signals a transition away from the (relatively) clear norms and expectations present in the institutionalized family into a state where less of social life and interaction can be taken for granted (Cherlin 2004). Personal well-being is also affected by divorce. Divorcès exhibit more mental and physical health problems, addiction, and alcohol consumption than married men and women (e.g., Amato 2010; Amato and Hohmann-Marriott 2007b; Bierman, Fazio, and Milkie 2006; Hohmann-Marriott and Amato 2008; Hughes and Waite 2009b; Lorenz, Wickrama, Conger, and Elder 2006; Umberson and Williams 2005; Waite, Luo, and Lewin 2009; Williams and Dunne-Bryant 2006; Williams and Umberson 2004; Williams 2009; Zhang and Hayward 2004; Zhang and Hayward 2006). Many of these patterns can be manifested as long-term problems for divorcès (Cherlin, Kiernan, and Chaselansdale 1995; Kiernan and Cherlin 1999). Although there is some variation in the effect of divorce on well-being, it seems most divorcès will experience a decline.

In contrast to the marital decline framework, the marital resilience perspective argues that marriage is a changing institution, but not one necessarily in decline. Marital resilience scholars also reject the notion that marriage has become increasingly individualistic, pointing to studies which indicate that men and women highly value family life and view the family as an important societal institution (Edin and Kefalas 2005; Gibson-Davis 2007; Huston and Melz 2004). However, divorce

is sometimes made necessary because a union is dysfunctional and unhappy. Thus, divorce can provide an important second chance to individuals that would not have been available to them in the past. This positive view of marital dissolution is supported by the fact that most divorcès maintain positive attitudes about marriage even after divorcing and most eventually remarry (Sweeney 2010). Further, this trend suggests that most men and women continue to value marriage even after having negative experiences in marriage.

Some resilience scholars caution that the link between divorce and declining subjective well-being is spurious. In other words, the post-divorce decline in happiness is not caused by divorce, but by a myriad of other factors. For example, low subjective well-being among divorcès may be associated more with a bad marriage or life experiences than dissolution itself. In line with this thinking, some research indicates that the relationship between divorce and well-being is due to selection. One such study by Amato and Hohmann-Marriott (2007a) found that individuals who ended unhappy marriages experienced no negative effects of divorce, while people satisfied with their relationships saw a significant decrease in well-being. Yet, other studies suggest that both selection into divorce and divorce itself can negatively affect subjective well-being (Amato 2004; Johnson and Wu 2002; Klein and Brockmann 2002; Wade and Pevalin 2004).

The Divorce-Prone, Divorce, and Subjective Well-Being

Almost invariably, divorcès will have lower levels of subjective well-being than continuously married couples(Bierman, Fazio, and Milkie 2006; Hughes and Waite 2009a; Lorenz, Wickrama, Conger, and Elder 2006; Umberson, Williams, Powers, Liu, and Needham 2006; Waite, Luo, and Lewin 2009; Williams and Umberson 2004; Zhang and Hayward 2006). Perhaps the most important reason for this is the fact that most happy couples remain together, while unhappy couples eventually divorce (Amato, Booth, Johnson, and Rogers 2007). As a result, a comparison between the average continuously married person and the average divorcè seems to be weighted in favor of

married men and women. Yet, this comparison is the norm in the literature (see Amato, 2010 for a full discussion of such methodological choices). To better isolate the potentially causal effect of divorce on subjective well-being a better comparison needs to be made. We suggest that contrasting the subjective well-being of divorcès with that of the married, but divorce-prone, individuals at-risk for divorce according to their demographic profile, socioeconomic status, values, and divorce ideation, can better isolate the effects of marriage and divorce on happiness. Essentially, we focus on the idea that individuals who "should" divorce but do not may or may not have different levels of happiness than men and women who "pull the trigger." If individuals who remain married have higher levels of subjective well-being, then the marital decline perspective may be correct. In other words, marriage has substantial benefits that, even if the marriage is poor, are lost with divorce. Alternatively, no difference between divorce-prone marrieds and divorcès or higher well-being among divorced men and women would fit with the marital resilience perspective. As such, this would indicate that marriage, in and of itself, is not protective, but that subjective well-being is more strongly associated with individual relationships.

These comparisons could yield one of three results. First, divorce may be negatively associated with subjective well-being, even in comparisons with divorce-prone married individuals. This could be due to the loss of social support from a spouse, family members, and the community; and, the stress and acrimony associated with divorce; chronic economic, co-parenting, and emotional problems with an ex-spouse (Amato 2000; Amato 2010; Carlson and McLanahan 2010; Hetherington and Kelly 2003; McManus and DiPrete 2001; Waite, Luo, and Lewin 2009). Downwardly revised marital expectations among divorce-prone married men and women could yield similar results, as well (Fowers, Applegate, Olson, and Pomerantz 1994). Second, there may be no difference, especially if divorcès quickly adapt to their new circumstances and return to a predetermined set point of happiness (Lucas 2005; Lucas 2007; Lucas, Clark, Georgellis, and Diener

2003) [2]. Similarly, selectivity among unhappily married people who chose not to divorce may wipe out any observed differences between the two groups (Kaufman 2000). Finally, divorcès may have higher levels of well-being than the divorce-prone. For example, South, Trent, and Shen (2001) show that the presence of spousal alternatives leads to a view that divorce will increase happiness which, in turn, has a positive effect on the odds of divorce. Empirically, Gardner and Oswald (2006) report that after a brief period of adjustment divorce produces an upturn in psychological well-being for both men and women.

The Counterfactual Model

While empirical support exists for all three of the above scenarios, these differences may be the result of various analytic methods applied to understand the link between divorce and subjective well-being. Perhaps most problematically, many of these methods cannot properly account for the significant issue of selection. Similarly, many current methodologies make it difficult to make proper comparisons between divorcès and non-divorcès. The question at hand, whether divorce has an effect on well-being, is fundamentally a question of causality. Consequently, an approach focused on the potential causal effect of divorce on subjective well-being becomes an important part of the answer. We draw from the counterfactual model of causal inference to identify the shortcomings of past estimates of the relationship and to provide some clarity to the question of the causal effect of divorce on well-being. Our discussion of the counterfactual model closely follows that outlined by Morgan and Winship (2007).

For an individual, the causal effect of a treatment (the general term in the literature which represents divorce in this specific application) is the difference between the outcome assuming

[2] Yet, the concept of happiness set-points is not without controversy. Easterlin (2003) argues that evidence for a set-point model is weak. Indeed, several studies show that marriage and divorce have long-lasting effects on happiness that indicate it is unlikely that individuals completely adapt to significant life events (Lucas 2007; Zimmermann & Easterlin 2006).

exposure to the treatment (i.e., divorce) and the outcome assuming no exposure to the treatment (control, or no divorce) as expressed in the following equation:

$$\delta_i = y_i^1 - y_i^0$$

where y_i^1 is the individual's well-being having been divorced, y_i^0 is the individual's well-being having remained married, and δ_i is the effect of divorce on well-being. Often referred to as the fundamental problem of causal inference (Holland 1986), only one of these two potential states is ever observed for an individual. Consequently, attention is given to the estimation of average effects. Using this framework, the average effect of divorce for a population becomes the expected value of well-being for those who divorce minus the expected value of well-being for those who remain married as suggested by the following:

$$E[\delta] = E[Y^1] - E[Y^0].$$

The naïve approach to estimating this equation simply subtracts the mean of well-being for the continuously married from the sample mean of well-being for the divorced. One way to think about traditional regression is that this equation is estimated controlling for alternative causes of well-being (e.g., education, income, etc.). However, the equation can be decomposed to

$$E[\delta] = \{\pi E[Y^1|D = 1] + (1 - \pi)E[Y^1|D = 0]\} - \{\pi E[Y^0|D = 1] + (1 - \pi)E[Y^0|D = 0]\}$$

where π is the proportion of the population who are divorced (i.e., in the treatment state) and *D* is an indicator of divorce (*D* = 1 if divorced, *D* = 0 if not divorced). In this equation the expectations are conditional, where $E[Y^1|D = 1]$ is the expected well-being of the divorced conditional on being divorced, $E[Y^1|D = 0]$ is the expected well-being among the divorced conditional on their not having divorced (i.e., a counterfactual state), $E[Y^0|D = 1]$ is the expected well-being of the continuously married conditional on their being divorced (i.e., a counterfactual state), and $E[Y^0|D = 0]$ is the expected well-being of the divorced conditional on being divorced. These two

counterfactuals create a situation where only 3 of the 5 unknown quantities in the equation can be estimated from the data.

However, the equation can be identified if two assumptions are made. First, the counterfactual expectation $E[Y^1|D = 0]$ is equated with the observed quantity $E[Y^1|D = 1]$. In other words, the expected effect of divorce among those who remain married is assumed to equal the expected effect of divorce among those who do. Second, the counterfactual expectation $E[Y^0|D = 1]$ is equated with the observed quantity $E[Y^0|D = 0]$, or the expected effect of not divorcing among those who divorce is assumed to equal the expected effect of not divorcing among those who remain married. In one sense, most studies of the effect of divorce on well-being that employ survey data make both of these assumptions, which implies that the effect of divorce on well-being is independent of marital status. For these assumptions to hold, we would have to expect that the average well-being of those who divorce is equivalent to the average well-being of those who remain married *if they were to divorce*. The critical question, then, for causal inferences becomes to what extent do these two assumptions hold?

Counterfactual Models and the Effect of Divorce on Well-Being

In an experiment where married individuals were randomly assigned to divorce or remain married, these assumptions would seem reasonable. However, estimating the effect of divorce using survey data is not as straight forward—primarily because of selection. Individuals not only select themselves into divorce (Amato 2010), but they divorce because they *expect* that marital dissolution will have *positive* effects (Amato 2000; 2010; Sweeney 2010). These selection factors are problematic because they may mean one or both of the assumptions we note above will not or cannot be met. For example, a married couple does not consider getting divorced because their parents divorced, they have low socioeconomic status, or married young—although these characteristics may have color their decisions about divorce (Teachman 2011; Teachman 2002; Wolfinger 2007). Instead, this

couple might anticipate that splitting up will provide some sort of psychological relief to one or both partners (Sweeney 2002).

Yet, it is unlikely that the anticipated effect of divorce will be the same for every couple. Variability in the anticipated effect of divorce violates the first assumption we discussed above. For example, a couple's views about marriage and divorce can affect their view of divorce's impact on their well-being. Couples with positive attitudes toward the marital institution may have to rationalize and adjust to the idea of divorce. In turn, these individuals may anticipate lower subjective well-being after divorce. Conversely, couples who are less committed to the idea of marriage or with high divorce ideation may have little problem with their own divorce, require little adjustment, and anticipate stability or improvement in their well-being. Importantly, commitment to marriage appears to impact divorce decision-making. For example, Waite and colleagues (2002) found that individuals who remained in unhappy marriages were strongly marriage oriented. Similarly, pro-marriage social control, coming from the anticipation of negative sanctions for divorcing from a couple's social network, can affect expectations of post-divorce well-being (Waite et al. 2002). To this end, research shows individuals who divorce anticipate greater returns to marital dissolution and are less likely to experience negative sanctions than men and women who choose to remain married (Gardner and Oswald 2006; Gilbert, Pinel, Wilson, Blumberg, and Wheatley 1998; Morgan 2001; Morgan and Winship 2007). Thus, the first assumption described above does not hold, introducing bias in regression models that compare married and divorced individuals.

Despite the almost certain violation of the first assumption, it may still be reasonable to expect that the second assumption, that the anticipated effect of staying married is the same for divorcès and the continuously married, can be met. As a result, unbiased estimates for the treatment effect on the treated (e.g., the effect of divorce for divorcès) may still be obtained. In short, our models could determine if divorce improved subjective well-being compared to remaining married.

This may be achieved if the effect of divorce on well-being among the divorced was the same as the effect of divorce if couples that remained married actually dissolved their unions. Similarly, negative sanctions through social networks and divorce ideation might play a less significant role on individuals and couples if commitment to marriage is a non-significant factor for couples until they face the distinct possibility that they will divorce. If these conditions are met, the anticipated effect of remaining married for divorce prone couples and couples who eventually divorce should be the same.

However, if the second assumption is met *despite* the possibility of a selection effect due to the anticipated consequences of divorce, selection based on sociodemographic or other personal and couple characteristics may *still* result in biased estimates of divorce's effect on well-being. The problems associated with this form of selection have long been recognized as a drawback of using survey data. The divorce literature is replete with examples of family-level and individual-level characteristics positively associated with divorce. For example, age at marriage, pre-marital childbearing, having parents who divorced, long periods of unemployment, low educational attainment, and minority racial/ethnic status have all been linked to increased risk of marital dissolution (Teachman 2011; Teachman 2002; Wolfinger 2003; Wolfinger 2007; Wolfinger 2011). The counterfactual model can help account for these possible selection effects. If divorcès can reasonably be matched with continuously-married individuals via propensity score matching, we can obtain estimates of the counterfactual state of men and women who divorced. In total, the use of the counterfactual model (or, propensity score matching) provides us with an estimate of the effect of divorce on subjective well-being that, while narrower in scope than prior studies, is substantially less biased than estimates obtained via standard regression techniques which are common in the literature.

Methods

Data

This study is based on data from the National Survey of Families and Households (NSFH). The NSFH is a national, multi-stage area probability sample of adults 19 years old and older in the contiguous US in 1987 – 1988 (Sweet, Bumpass, and Call 1988). Oversamples were included for minority groups identified by race/ethnicity and family structure. The data provide in-depth information on family relationships, process, and structure. The NSFH1 (first wave) included a total of 13,007 respondents. NSFH2 (second wave) introduced a longitudinal component to the NSFH by assessing the original respondents five years later, between 1992 and 1994. Response rates for NSFH1, and NSFH2 were 74 and 82 percent, respectively. We limit the analyses to include only respondents who were married at T1 and were successfully followed up at T2, resulting in a sample size of 5,213.

Measures

Divorce and subjective well-being. The treatment variable in the propensity score matching analysis assesses whether the respondent was divorced or separated at T2 from their spouse at T1. The variable was coded 1 for divorced or separated and 0 for married. Subjective well-being was assessed at T1 and T2 with identical questions that asked, "Taking things all together, how would you say things are these days?" Available responses ranged from 1 "very unhappy" to 7 "very happy". Subjective well-being at T2 is the main outcome of this study and the measure at T1 is included as a predictor of the propensity to divorce.

Measures associated with marriage. Respondents reported their marital well-being at T1 by answering the following question, "Taking things altogether, how would you describe your marriage?" Responses ranged from 1 "very unhappy" to 7 "very happy". An individual's marital history likely conditions the effect of marital status transitions on subjective well-being. Consequently, we include variables indicating whether the marriage at T1 was the respondents' first

marriage, the number of years in the T1 marriage, and age at the start of T1 marriage. To assess experience with domestic violence in the marital relationship at T1 we combined both spouses' responses to a question about whether they had had arguments that became physical during the last year. If either spouse responded that they had, they were coded 1 "yes" and if neither reported violent argument they were coded 0 "no".

Propensity to divorce. We also included a number of measures that would directly impact the propensity to divorce. Respondents reported their disapproval of divorce by responding on a scale of 1 "strongly approve" to 7 "strongly disapprove" to the following statement: "A couple with an unhappy marriage getting a divorce if their youngest child is under 5." Respondents reported their estimate of the chances that they would divorce in the next year ranging from 1 "very low" to 5 "very high." The mean of responses to five items was used to measure having a positive view of what life might be like in the event of a separation. Responses ranged from 1 "much worse" to 5 "much better." The items included standard of living, social life, career opportunities, overall happiness, and sex life. Conservative values is the mean of 12 items that asked the level of agreement (from 1 "strongly agree" to 5 "strongly disagree"); examples include, "It is much better for everyone if the man earns the main living and the woman takes care of the home and family."; "It's better for a person to get married than to go through life being single."; and "It is all right for unmarried 18 year olds to have sexual relations if they have strong affection for each other." Responses were recoded so that higher values represented more conservative attitudes. Respondents were coded 1 if they lived in a single-parent home for at least part of the time before turning 19 and 0 if they always lived with both biological parents.

Control variables. Demographic control variables related to marital status and psychological well-being include sex (female = 1, male = 0), race (white = 1, black = 2, other = 3), years of education, employment status (1 = employed, 0 = not employed), the log transformation of

household income, the number of children in the household under age 6 and under age 18, all measured at T1. Because the deterioration of income after marital dissolution has negative effects on subjective well-being, we include the log of the ratio of total family income over poverty at T2 as a measure of income-to-needs.

Descriptive statistics for all study variables are presented in Table 1.

Table 1 about here

Analysis

We use propensity score matching in this paper, one of several of methodologies available to apply the counterfactual model of causal inference (Morgan and Winship 2007). There are two main steps to this method. First, we estimate a logistic regression model with the treatment identifier as the dependent variable. To satisfy the conditional independence assumption (CIA), all variables that are related to processes of selection into divorce need to be included in the model. The predicted value for each individual in the sample based on this regression model is the estimated likelihood of divorce based on predictors of divorce which is the estimated propensity to divorce. Second, we use the estimated propensity to divorce to match individuals in the control (i.e., continuously married) and treatment (i.e., divorce or separated) groups who are equally likely to divorce because of their background, attitudes, etc. The goal of matching is to achieve covariate balance, similar to the reason why experimental designs use randomization. If there are no mean differences for characteristics in the control and treatments groups then the characteristics cannot be responsible for differences in the outcome across groups. In other words, if the only difference between divorced and married individuals being compared is whether they are divorced or married, then any differences in an outcome of interest is due to being divorced or married. There are a number of different methods available to match like individuals across treatment and control groups. We use the method suggested by Guo and Fraser (Guo and Fraser 2010) which limits potential matches on the

propensity score to one quarter of a standard deviation of the propensity score. In other words, individuals can only be matched if they are within ¼ of a standard deviation of each other on the distribution of propensity scores. This assures that matches are reasonably similar. Also, we match 5 control cases to each treatment case to increase the reliability of the comparison across treatment and control cases.

Results

The propensity to divorce used in the matching procedure is the predicted values based on a logistic regression predicting divorce or separation. Results of the logistic regression, presented as alterations, are presented in Table 2. In propensity score matching analyses, these results tend not to be of substantive interest. However, we present the results here to confirm that the variables we used to predict the propensity to divorce are related to divorce as expected by the literature. We simply note here that these results do conform with expectations with characteristics of the marriage being significantly related to divorce or separation as well as a number of attitudes related to marriage and divorce. Based on this logistic regression, predictions of the probability of divorce were calculated for each respondent, which were then used to match respondents who had divorced by T2 with respondents with a similar likelihood of divorce based on T1 characteristics who remained married at T2.

Table 2 about here

We matched divorced respondents with up to five married respondents on their propensity to divorce using a quarter of a standard deviation of the estimated propensity scores of the sample as a caliper. In other words, a single divorcè would be matched with the five married respondents (or controls) who have the most similar propensity to divorce. Divorcès would be matched with fewer than five controls if there were fewer than five married respondents inside the caliper. There were 645 of the 653 divorcès who were matched with five controls. Three divorcès were matched

with fewer than five controls – two with three controls and one with two controls. There were five divorcès who could not be matched with controls or who were "off support." These cases all had a particularly high estimated propensities to divorce that ranged from .78 to .96. These cases were discarded for the matching analysis. This introduces a limiting scope to the generalizability of our analysis. Particularly, our estimate is only relevant in cases when the propensity to divorce is lower than about .8.

The postmatch covariate balance is a critical component of the matching procedure. Essentially, balance indicates that, similar to the expectation in randomized experiments, pre-existing characteristics of divorcès and continuously married do not, on average, affect differences in well-being between the two groups. There were substantive and statistically significant differences in most of the variables included in the logistic regression before matching but these differences became negligible and nonsignificant after (results not shown). Consequently, a simple test of the difference between the average well-being of divorced and the matched controls indicates whether the effects of divorce on well-being for those who divorced was positive, negative, or negligible.

Before matching, divorces reported .39 points lower on the subjective well-being measure than controls. This effect was statistically significant. However, after matching divorcès were only.13 points lower than the continuously married and the effect was not significant at $p < .05$ (see Table 3). Substantively, this means that, in terms of subjective well-being, divorcès are not worse off for having divorced than they would had they remained married. On the other hand, they are not better off either.

Discussion

Prior research on the relationship between divorce and well-being generally support the idea that marital dissolution has a negative impact on various dimensions of life including physical health,

mental problems, substance abuse, economic stability, and overall well-being (see Amato 2010 for a full discussion). Although a limited number of studies have focused on the possibility that the negative effect of marital dissolution is due to divorce (Johnson and Wu 2002; Overbeek et al. 2006; Wade and Pevalin 2004), these studies found some evidence for a causal effect of divorce. Yet, these studies did not address forms of selectivity outside of demographics and risk factors for divorce. In short, they did not address the anticipated effects of divorce, staying married, or make more balanced comparisons between individuals who divorce and a similar group who did not. Our paper contributes to the literature by taking up these very issues in an effort to better identify the possibility that the negative effects of divorce are attributable to selection.

Using propensity score matching and the NSFH, data which commonly utilized in studies of divorce and well-being (e.g., Hughes and Waite 2009b; Waite, Luo, and Lewin 2009), we matched divorce-prone currently married men and women with divorcès. In doing so, we made more balanced comparisons between married and divorced individuals. Thus, we accounted for selectivity by matching groups and then estimating the effect of divorce on subjective well-being. Our results, contrary to many studies of well-being and divorce, show no significant effect of divorce on well-being when using a counterfactual model. In other words, when divorcès are matched to and compared with divorce-prone married individuals, the effect of divorce on subjective well-being is non-significant.

Some divorcès may have seen an increase in happiness had they remained married. However, our findings suggest that the increase in happiness they would have received is not different from an increase they received by divorcing. Similarly, some divorcès would have had low happiness had they stayed married. Yet, happiness did not increase for these individuals because they divorced. Returning to the notion that many individuals project potential well-being after divorce, it appears that such projections typically fall short in reality. This is likely due to the lack of complete

information about dissolution decisions, poor prediction of happiness following important life-events, and a general underestimation of how stressful and difficult post-divorce life can be (Gilbert et al. 1998). This is not to suggest that marriage is better than divorce in all cases, only that any personal well-being benefit from divorcing will be minimal.

How do our results apply to the debate between scholars in favor of the marital resilience and decline perspectives? Marital resilience scholars would expect divorcès to see an improvement in subjective well-being following divorce. Conversely, the martial decline perspective would argue that divorce is causally related to decreased well-being. Neither perspective provides a complete picture of our findings, however. With respect to the marital resilience perspective, there appears to be little positive benefit inherent to divorce. However, there is no decline in well-being after divorce either, which contradicts the decline perspective. Yet, in one way, our results do support a decline perspective which suggests that lower levels of investment and satisfaction in marriages can lead to negative outcomes. But, the difference between divorcès and divorce prone married people is non-significant, indicating there is something about divorce-proneness, long-term marital quality, or other shared characteristics which leads to poor well-being among these men and women.

Like with any study, there are shortcomings in this research. For instance, the NSFH data we used here only two data points that are five years apart. The subjective well-being literature suggests that the effects of events like divorce may change over time. Also we did not test for different effects for men and women. The effect of divorce on subjective well-being may differ by gender because women are more likely to initiate a divorce than men and have lower marital satisfaction, while men rarely care for children after divorce, have fewer post-divorce economic problems than women, but are more likely to want to remain married than women (see Amato 2010 and Sweeney 2010 for a complete discussion). As a result, the potential difference between divorcès and the divorce prone may differ by gender. Moving forward for the PAA conference in April, we have two

goals to improve our paper and analysis from its current form. First, we will add, analyses comparable to those reported here, using the Marital Instability in the Life Course data set to have more robust findings regarding our propensity score models. We feel that an additional data set with similar findings would provide more substantial evidence for the results we cite in our paper as it is currently constituted. Also, the Marital Instability in the Life Course data span a longer time horizon, allowing us to examine longer-term implications of divorce on well-being. Second, we will look at similarities and differences in these effects by gender.

In total, our paper raises important questions about the effect of divorce on individuals, methodological choices in comparisons of family structure changes (e.g., new child births, family transitions, etc.), theoretical views of divorce, and the role of divorce-proneness for other adult and child outcomes.

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Table 1.
Means (or Proportions), Standard Deviation, Minimum, and Maximum of Study Variables

	Mean[a]	SD	Min	Max
Subjective well-being (T2)	5.44	1.29	1	7
Subjective well-being (T1)	5.58	1.28	1	7
Marriage Measures				
Marital well-being	.87		0	1
First union	.83		0	1
Age at marriage	25.36	7.96	14	75
Years married	15.37	13.66	0	64
Domestic violence	.11		0	1
Divorce Proneness				
Disapproval of divorce	3.90	1.90	1	7
Divorce likely in next year	1.41	.74	1	5
Positive view of separation	2.36	.71	1	5
Conservative values	2.80	.40	1	5
Single-parent before 18	.28		0	1
Controls				
White	.82		0	1
Educational (years)	13.00	2.99	0	20
Employment status	.76		0	1
Income (logged)	10.26	.96	3	14
Income/Needs	1.19	.88	-6	5
Child in home	.60		0	1

Note:
[a] Proportions shown for dichotomous variables.
N = 5213.
Source: *National Survey of Families and Households*.

Table 2.
Predictors of Divorce or Separation:
Odds Ratios from Logistic Regression

Subjective well-being	.906**
Marriage Measures	
Marital well-being	.698**
First union	.708**
Age at marriage	.973***
Years married	.929***
Domestic violence	1.397**
Divorce Proneness	
Disapproval of divorce	1.028
Divorce likely in next year	1.612***
Positive view of separation	1.419***
Conservative values	.814
Single-parent before 18	1.232*
Controls	
White	.954
Educational attainment	.953*
Employment status	1.176
Income (logged)	.898
Income/Needs	.982
Child in home	1.173

Note:
Divorce or Separation measured at T2, predictors at T1
N = 5213.
Source: *National Survey of Families and Households.*

Table 3.
Unmatched and Matched Estimates of the Effect of Divorce on Subjective Well-Being

	Divorcès	Controls	Difference
Unmatched	5.09	5.49	-.39***
Matched	5.09	5.22	-.13

Note: *** $p < .001$.
Source: *National Survey of Families and Households*