Parents' Emotional Bond and Children's Marriage Timing

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ABSTRACT

We present new research investigating the relationship between parents' emotional bond and their children's marriage timing. We use longitudinal survey measures created by extensive ethnographic research, focus groups, and pilot studies to devise a general population measure of the emotional bond between husbands and wives for Nepal. We then test hypotheses predicting that positive emotional bonds between parents will slow children's marriage through both more attractive parental home environments and the emotional nucleation of families. Our analyses use multi-level discrete time hazard models to estimate the effect of parents' emotional bond on the timing of their children's marriage. We find that children whose parents report a strong emotional bond to their spouse marry earlier than children whose parents do not report as strong a bond. These results hold for both sons and daughters, with no statistically significant differences by the gender of the child.

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No where is the absence of research on emotional factors more striking than in the study of marriage. Though many societies historically view the marital relationship as a functional dimension of social networks, for centuries the Western European view emphasized the emotional basis for the formation of marital relationships (Goode 1970; Thornton, Axinn and Xie 2007). Moreover, these Western views of marriage have been so powerful that by the 20th century they spread rapidly through parts of the world not historically characterized by this emotional view of marriage (Ghimire et al 2006; Rindfuss and Morgan 1983; Thornton and Lin 1994). Yet little research investigates links between emotional factors and marital processes. Here we present new research designed to open empirical investigation into the relationship between emotional factors and marital behavior.

Of course a key reason there has been little of this research is that suitable measurement has proved a formidable obstacle to empirical investigation. Measurement of the emotional bond is not well defined or simple to execute. In fact, the lack of standardized measures of emotional variation in the general population is undoubtedly a key reason that population based social sciences have given little empirical attention to the emotional basis for behavior (Massey 2002). The study we describe here is the product of several years of ethnographic, focus group, survey design, and pilot study research to devise a general population measure of the emotional bond between husbands and wives for a specific South Asian setting. The setting is Nepal and this measurement provides a rare opportunity to investigate empirical dimensions of the spread of this view of marriage in a previously arranged marriage society.

We launch investigation of the relationship between emotional factors and marital behavior by investigating the effects of the emotional bond between mothers and fathers on the speed of their children's entrance into marriage. Research on marriage reveals that parental family factors constitute a powerful, long lasting influence on their children's marriage behavior (Thornton, Axinn and Xie 2007). Strong evidence from the United States demonstrates that a positive parental home environment greatly reduces the speed at which their children exit the parental home and the speed at which children marry (Goldscheider and Goldscheider 1993; Goldscheider and Waite 1993; Thornton, Axinn and Xie 2007). Here we consider the emotional dimension of the parental home environment in a radically different social context – a setting in which processes of "emotional nucleation" are changing the role of marriage from a connection to kin networks to an expression of individual emotion. The Nepalese setting, which historically was characterized by arranged marriage designed to promote alliances between families (Fricke 1986; Ghimire et al 2006), provides a population with substantial variation in the extent to which parental generation marital relationships are characterized by an emotional bond. The result is an unprecedented window into the link between this emotional dimension of parental marriages and the speed of their children's entry into marriage.

Empirical testing of this hypothesis demands measures of variation across married couples in their level of emotional bond linked to a subsequent record of their children's timing of marriage. By integrating this measure into the Chitwan Valley Family Study in Nepal we are able to describe the observed empirical relationship between variations in the husband-wife emotional bond and their children's subsequent marital behavior. This

specific panel study is ideal for the task because it was designed to measure community, family, and individual influences on marital behavior and it features multilevel, comprehensive baseline measurement combined with a detailed record of children's behaviors spanning more than ten years after the baseline. This tool allows us to establish the hypothesized time order between measures of parents' emotional bond and their children's subsequent marital behaviors and to control for a broad range of key determinants of children's marriage timing that could produce a spurious relationship between measures of the emotional bond and those marital behaviors. Also important, this unique panel study features measures of other subjective phenomena that may co-vary with variations in the emotional bond, including spousal conflict. By adding measures of these factors to the test we are able to examine the extent to which variation in the emotional bond has an independent influence on subsequent behavior. Together these empirical resources provide an unprecedented examination of the hypothesis that positive emotional bonds between parents speed their children's entry into marriage.

Theoretical Framework

Though our objective is to test one hypothesis, the complexity of empirical research on the behavioral consequences of emotional variation requires specific theoretical guidance to formulate an appropriate empirical test. The framework we propose is simple, but it establishes three crucial steps. The first step is conceptualization of the specific emotional dimension we investigate. The second step is consideration of the mechanisms likely to link that emotional dimension to the specific subsequent behavior we investigate. The third step is consideration of the known determinants of the behavior to be studied that may also shape the emotional dimension being studied. This

step is crucial because without randomization of emotional states—a research tool likely to remain unavailable to general population research for the foreseeable future—all observational studies must address the potential that observed associations with emotional states are the spurious product of other strong associations. In the framework presented below we discuss each of these three steps in detail – first conceptualizing the husband-wife emotional bond between parents, then considering mechanisms that may link this bond to their children's timing of marriage, and finally considering determinants of children's marriage timing that may also shape the husband-wife emotional bond.

Conceptualizing the Husband-Wife Emotional Bond

Research on the husband-wife relationship identifies many different dimensions, but the dimension of positive emotional bond, affect, or love is commonly identified as one of the most important elements of marriage. Research on marriage in the Western European past often treats the emotional bond as a prerequisite and the singular core defining feature of marriage, around which social institutions like church and state build other dimensions of marriage (Goode 1959; Hart 2007; Hamon and Ingoldsby 2003; Khandelwal 2009; Patico 2010; Thornton, Axinn, and Xie 2007). Thus literature on Western marriage not only identifies "love" as unique to Western marriage (Coontz 2005; Goode 1959; Khandelwal 2009; Thornton and Lin 1994) but also characterizes non-Western, arranged marriage as loveless, empty, patriarchal, and without choice (Khandelwal 2009; Patico 2010; Pasupathi 2002).

However, recent critics of the ethnocentric characterization of arranged marriage recognize "love" in general and "husband-wife bond" in particular as universal psychological phenomena. These scholars see the characterization of arranged marriage

presented above as "discourse of exaggerated difference" that incorrectly renders romance unique to Western modernity (Khandelwal 2009; Pasupathi 2002). Conclusions of these scholars are consistent with the Hindu philosophy of arranged marriage that dominates the central parts of South Asia. Hinduism defines marriage as the union of two individuals for life, so that they can pursue *dharma* (duty), *artha* (possessions), *kama* (physical desires, sexual pleasure), and *moksa* (ultimate spiritual release) together. In fact, Hinduism glorifies the idea of love between the sexes extensively. This is evident from the amazing variety of mythical love stories that abound in Sanskrit literature, which is a rich treasure trove of exciting love tales. In Hinduism, "love" consists of four components: *kama* (pleasurable, sexual love), *prema* (elevated love), *karuna* (compassion and mercy), and *bhakti* (devotion). *Kamasutra,* the oldest text on human sexual behavior—written by Vatsyayana in about the 4th century AD—is further evidence of the glorification of love and sex in Hinduism.

Although Hinduism glorifies "love" between the sexes, it conflicts with the Western notion of love in one important way. Though the Western notion of love purports that romantic love springs out of an individual's desire and attraction for another and is considered a prerequisite for marriage, Hinduism asserts that the bond between husband and wife (love) starts after marriage and grows with years of collaborative life struggle (Goode 1959; Medora 2003; Pasupathi 2002; Fuller and Narasimhan 2008). In the Hindu belief system, marriages are made in heaven and celebrated on earth. According to this philosophy, arranged marriage is explicitly designed to enhance the growth of the emotional bond between husband and wife, or to foster love.

In this paper we follow the key foundational schema of the universality of love (not limited to those situations understood as modern, individualistic, or capitalistic) with cultural variability (Patico 2010). As in many other societies, Nepali society has a long history of cultural practices, music, folklore, poetry, and literature that glorifies the emotional bond between marriageable youths or between husbands and wives (Bennett 1976; Fricke 1986; Macfarlane 1976; Matthews 1989; Pasupathi 2002).

Recent ethnographic research from Nepal and the Nepali-speaking population in India provides important insights about cultural construction, meaning, and centrality of love or husband-wife bonding (Ahearn 2001; Allendorf 2009; Fricke 1986; Macfarlane 1976; Pasupathi 2002). In her recent narrative of marital relationships, Allendorf (2009) asserts that "people conceive of love between a husband and wife as a powerful emotion, felt inside heart and mind (*man).*" In a question about how people showed love for their spouses, one individual replied: "Well, how do I show my love? Love is inside." Confirming the internal nature of marital love, another individual added: "Love comes from the heart/mind (*man*). Love cannot be seen. It is from the heart/mind (*man*), after marriage there will be love. After marrying with someone else son or daughter, if there is no love then we cannot live our life."

Emphasizing the centrality of love in marriage, Allendorf reports that another individual added: "Of course husbands and wives do love each other. If there is no love, how can they live?" Indeed one of Allendorf's informants believed that her son-in-law died because of the loss of his wife. After her daughter's death, her son-in-law began drinking heavily and subsequently died. This woman believed that her "son-in-law took up drinking and ultimately died because he could not live without his wife. His wife died.

So he missed her. He loved her. He must have died of worrying." Although these individuals also mentioned lifelong togetherness (married for life), understanding, and peace as other essential elements of a successful marriage, none were given greater importance than love.

These ethnographies also highlight the relationship between cultural variability—more specifically, ethnic variation, intersections between cultures, and social change—and love (Ahearn 2001) and expression of love (Bennett 1976; Fricke 1986; Macfarlane 1976). In her seminal book, *Invitations to Love: Literacy, Love Letters, and Social Change in Nepal,* Ahearn (2001) eloquently presents detailed accounts of love in daily social interactions in Nepal. Ahearn not only unpacked the meaning and centrality of love but also vividly illustrated how the recent dramatic changes that Nepali society is undergoing—especially changes in education—have shaped this emotional phenomenon. However, she unsurprisingly focuses on *romantic love before marriage* as most of the western ethnographers have done. An important, but missing, component of the literature is the presence of love within marriage and understanding how that love influences the couple's children.

Mechanisms Linking Parents' Emotional Bond to Children's Marriage Timing

Multiple mechanisms may connect parents' emotional bond to their children's marital timing. Here we identify two potentially powerful forces – one that has already been identified in research on marriage timing in Western settings and another that may be specific to the South Asian context. The first focuses on the quality of the parental home environment and children's desires to leave home. The second focuses on

variations in parental views of children as an expression of their emotional bond rather than a means to connections with wider groups of kin. We elaborate both here.

In settings like the United States, marriage confers a level of independence strongly associated with separating from the parental home (cite marriage books). Research on leaving the parental home and living arrangements identifies the quality of the parental home as a potentially powerful influence on the speed of children's exits from the parental home for alternative living arrangements (Goldscheider and Goldscheider 1993). Of course many different dimensions of the parental home may be relevant, including affluence, education, religion, conflict, and parent-child relationship quality. For example, high parental affluence is expected to reduce the motivation to exit the parental home but high parental relationship conflict is expected to increase the motivation to exit the parental home. More broad factors, such as value orientations, may also be at work. For example, Goldscheider and Goldscheider identify a set of values and beliefs about family, which they describe as familism, such that strong beliefs in the importance of family relationships may promote a more positive family environment that is attractive to children and reduces their motivation to exit the parental home (Goldscheider and Goldscheider 1993). The emotional dimension of the mother-father relationship may be an important predictor of children's motivation to exit the parental home either because positive parental relationships indicate a high level of a more general set of values and beliefs like familism or because positive parental relationships reduce the level of more specific factors like parental conflict. Motivation to leave the parental home increases the speed of marriage because marriage is an important way

children leave home and secure living arrangements away from parents (Goldscheider and Waite 1993; Thornton, Axinn and Xie 2007).

In settings like Nepal both forces may be at work and motivations to leave the parental home are particularly likely to shape the speed of marriage. Variations across households in the level of positive affect in the parental bond are likely to be associated with both general positive values about family and with specific family relationships like parental conflict. But in contrast to settings like the United States in which young people enjoy many different options for alternative living arrangements outside the parental home, in Nepal marriage looms as the only long term viable option for living outside the parental home (Bennett 1976; Fricke 1986; Macfarlane 1976; Yabiku 2004). It is rare that young people live alone, with housemates, or in either school or work dormitories. It does happen some, but when it happens it is much more likely men try living in these other arrangements than women (Beutel and Axinn 2002). Moreover, in Nepal young people who test these alternative arrangements do not spend long in them and transition rapidly to marriage. So to the extent a positive mother-father emotional bond creates a more attractive parental home environment, we expect children in those families to be slower to marry, and in Nepal there is reason to expect this consequence could be stronger for daughters than for sons.

A different kind of powerful force may also be at work. Scholars studying South Asia have long identified larger kin networks and relationships with broad kinship groups as a crucial dimension of marriage in that setting (Fricke 1986; Dyson and Moore 1983; Caldwell, Ready and Caldwell 1984). Such studies identify many social and economic factors that may promote transitions from prioritizing extended family to prioritizing

close family, including colonialization, education, industrialization, and media based diffusion of ideas. Caldwell's hypotheses regarding the implications of variations in family level ties to extended kin for marriage and family are particularly relevant to the South Asian setting. Caldwell (1982) argues that a closer emotional bond between husband and wife—or "emotional nucleation" of the family—helps to reverse intergenerational wealth flows so that couples are more likely to spend on their children than on their parents and extended kin (Caldwell 1982; Degler 1980). He argues that close emotional connections between husband and wife change the way they view childbearing and childrearing, from an obligation to a larger kin network to an expression of their love and affection for each other. As childbearing and childrearing become an expression of conjugal love and affection, couples invest more time and resources into their children and begin trading low investments in many children for high investments in a small number of children (Caldwell 1982). Thus Caldwell's argument is that this key emotional change promotes what economists have described as the "Quality-Quantity" tradeoff in childbearing and childrearing (Becker 1991; Easterlin and Crimmins 1985; Willis 1973). The implications for children's marital behavior are particularly strong.

Parental investments in the "quality" of their children have wide ranging potential to delay children's marriage, and education in schools is the leading example. A broad range of scholars identify education of children in schools as the leading form of parental investment in the quality of their children (Becker 1991; Caldwell 1982; Willis 1973). In fact many other forms of investment of both time and money into children's lives take the form of activities ultimately aimed at enhancing children's performance in school, educational enrolment and educational attainment. This includes everything from reading

to young children, to buying school supplies, to providing lessons or enrichment activities (Caldwell 1982; Caldwell, Reddy and Caldwell 1987). All of these investments likely delay marriage. In fact rarely has the social science literature been as clear as in the evidence that enrolment in schools delays marriage (Hogan 1978; Marini 1978; Thornton, Axinn and Teachman 1995; Yabiku 2004). Enrolment in school delays the transition to marriage among both men and women and across a wide range of settings, including South Asia (Caldwell, Reddy and Caldwell 1987; Thornton and Lin 1994; Yabiku 2004). So if the variation in emotional bond between mothers and fathers reflects variations in the emotional nucleation of families that are associated with investments in children, then we have every reason to expect positive emotional bonds between parents to slow children's marriages through this mechanism as well.

Thus both these potentially powerful mechanisms work in the same direction. Though this makes it difficult to adjudicate between the two mechanisms, it does lead us to a clear empirical prediction:

Young people with parents who express a more positive emotional bond will marry at lower rates than young people with parents who do not.

Empirical evidence of this includes estimates of a strong association between a measure of the mother-father emotional bond at one point in time and the speed of their children's marriages after that time, especially in the context of comprehensive controls for known influences on children's marital timing. Of course, if one were to document such an association and then control for children enrolment in school and the marriage delaying effects of enrolment in school substantially reduced the estimated magnitude of this overall association, it may be reasonable to interpret the result as consistent with the

emotional nucleation mechanism. However, if the introduction of subsequent school enrolment does not reduce the observed association between parental bond and child marital timing it remains difficult to adjudicate these two mechanisms. Both motivations to remain in a pleasant parental home environment and other forms of emotional nucleation based investments in children may be at work.

Finally, it is likely that positive dimensions of the husband-wife emotional bond co-vary with other dimensions of this bond, including negative dimensions of the husband-wife bond. Conflict or disagreement is a dimension of the husband-wife relationship that is also likely to influence children's marriage timing. As described above, high levels of marital conflict between parents is known to motivate children to leave home, and in the South Asian context marriage is by far the most common route out of the parental home. High levels of conflict within marriage are also associated with high levels of marital instability (Amato & Rogers 1997; Kitson 1992). Parental marital instability may speed children's marriage. In Western settings parental divorce accelerates children's formation of co-residential relationships with members of the opposite sex (Thornton 1991). In the South Asian context these relationships are much more likely to be marriage than pre-marital cohabitation. As a result of these mechanisms, high conflict parental marriages are likely to speed children to marriage, the opposite of positive emotional bonds between parents. Of course parental conflict is also likely to be negatively associated with positive emotional bonds between parents. Again, because positive emotional bonds and conflict are likely to co-vary, albeit inversely, it is crucial to consider parents' husband-wife conflict in evaluating the consequences of the parents' husband-wife emotional bond.

Factors known to shape marriage timing

As discussed above, in order to estimate the relationship between parents' emotional bond and children's marriage timing in an observational study design we must consider other aspects of the parental family which are known to shape children's marriage timing which may also shape the parents' emotional bond. Fortunately, parental influences on children's marriage timing are among the most highly investigated topics in the social sciences. Entire 35 year intergenerational panel studies have been devoted to the topic (Thornton, Axinn and Xie 2007). Moreover, many of the known intergenerational influences on marriage timing have been investigated and documented within the same rural Nepalese study population we examine here (Yabiku 2004).

Parents' Ethnicity and Cultural Background. A key component of family life and the intergenerational transmission of marriage related values and beliefs is ethnicity and cultural background. Empirical research in Western and non-Western settings has documented substantial variation in marriage timing by race, ethnicity and religion (Goldscheider and Goldscheider 1993; Goldscheider and Waite 1993; Goode 1959; Thornton, Axinn and Xie 2007; Caldwell, Reddy and Caldwell 1987; Thornton and Lin 1994; Yabiku 2004). In Nepal, these three characteristics are intricately connected and typically manifest themselves in terms of ethnicity. This paper focuses on five ethnic groups: high-caste Hindus, low-caste Hindus, Hill Tibeto Burmese, Newar, and Terai Tibeto Burmese. High and low caste Hindus are the most ardent followers of Hinduism in the country and with high caste Hindus holding a privileged position in society. Hinduism's marriage related teachings include encouraging fathers to arrange their daughter's marriages soon after puberty (Benerjee 1984; Bennett 1983), the

"householder's path" to enlightenment which requires marriage and childbearing (Gray 1995), and the pervasiveness of fatalism (Bista 1991). All three of these encourage earlier marriage.

The other ethnic groups in Nepal follow Hinduism less closely, but all have been Hinduized to some extent (Guneratne 1994, 1998, 2002). Newars and Hill Tibeto Burmese tend to be followers of Buddhim and Terai Tibeto Burmese practice indigenous animist religions. Buddhism has fewer direct messages related to marriage and these ethnic groups are generally more gender equitable and children typically have more control over their marriages. The indigenous groups in Nepal have incorporated many Hindu practices and tend to think of Hindu ways as being more progressive. But, they are also more gender egalitarian than Hindus. But, because Hindus have controlled Nepal for much of its recent past, Hindu ideology is prevalent and influences many areas of daily and family life (Pearce 2002). Overall, we expect that Hindus will marry earlier than non-Hindus and the more Buddhist ethnic groups will marry latest.

Another important dimension of parental cultural background is exposure to non-family organizations. Much theoretical and empirical research has shown that neighborhood characteristics influence a range of family formation behaviors (Thorton and Fricke 1987; Thornton and Lin 1994) and that the parents' childhood neighborhood is particularly influential (Axinn and Yabiku 2001). In Nepal schools are likely to be an important feature of neighborhoods. They were generally the first non-family organization that to appear in a community and are centers for the transmission of new, often Western, ideas. Schools are also a critical component of Caldwell's emotional

nucleation theory—the spread of mass education is one factor that leads to increased emotional nucleation and investment in the quality of a fewer number of children.

Parents' Choice of Community. Community context later in life may also influence children's marriage timing. Parents make many choices in their early life course that result in them residing in specific communities by the time their children are born and raised. A great deal of evidence indicated these communities of origin shape young people's marriage timing and they may also affect the emotional relationship between parents.

Parental Experiences with Marriage and Childbearing. Parents own family experiences are a widely documented source of influence on children's marriage timing that may also shape the emotional bond between parents. Parental age at marriage has consistently been found to influence children's family formation behaviors, across geographic settings. In a setting like Nepal, marital arrangement is also likely important. Both characteristics may be related to the strength of the parental emotional bond. Marriages that occurred at younger ages or that resulted with little input from the couple may have weaker emotional attachments (Ghimire et al 2006).

Parental divorce and remarriage are commonly identified as influencing children's family formation with children whose parents divorced are less positive about marriage and marry later (Thornton, Axinn and Xie 2007). Divorce is virtually non-existent in Nepal and was official illegal until recently. However, multiple marriages still occurred with polygamy and polyandry both occurring. In some situations one spouse will live with multiple partners (this typically occurs when a husband takes on an additional wife), in others one spouse may leave and start a new household with a new

spouse. It is not immediately clear how remarriage in the Nepalese setting will influence children's marriage timing. It may be that children who see a parent marry a new partner, perhaps because they hope to find a stronger emotional bond in the new marriage, have a more positive attitude toward marriage and therefore will marry earlier. These children may also not see marriage as a life time commitment and therefore will be less intimidated about selecting a spouse. On the other hand, witnessing the marital upheaval and instability of the first marriage ending may instill less positive attitudes towards marriage leading the children to delay their own marriage. Because remarriage, parental emotional bond, and children's marriage timing are so complicatedly and intricately connected it will be important to investigate the role of additional parental spouses.

Finally, parental childbearing may influence children's marriage timing. Because childbearing is more socially acceptable when it occurs within marriage (this norm is even stronger in Nepal than in Western settings), parental attitudes towards childbearing and their own behaviors may be related to their children's family formation. Parents who are strongly pro-natalist are likely to socialize their children to hold similar attitudes (Barber 2000, 2001). In fact, parental preferences for grandchildren are related to children's family formation attitudes and behaviors (Axinn, Clarkberg, and Thornton 1994).

The number of siblings someone has may also be related to their family formation. In a setting like Nepal where children are expected to support and care for their aging parents, children who do not have many siblings may want to marry earlier. Sons may want a wife to take on the majority of this care responsibility and daughters

may want to marry to leave the parental home and avoid that work. Additional siblings may mean the care work is distributed to more people, lowering the incentives to marry.

Parents' Non-family Experiences. Parents' non-family experiences may influence both their emotional bond and their children's marriage timing. Parents with more education and media exposure have likely been more influenced by Western ideas of love which may influence the strength of the emotional bond they report having towards their spouse. Sociology has a long history of researching the influence of parental education on children's outcomes. This mainly occurs because of the correlation between parents' and children's own education. Parents with more education may hold higher educational expectations for their children. They may instill a stronger desire for additional education into their children. They may also use employ more direct ways of increasing their children's education by monitoring their behavior or making parental support contingent on educational outcomes. These children are then likely to marry later, at least partly because they are unlikely to marry while enrolled in school.

Data

To test our predictions we use data from the Chitwan Valley Family Study (CVFS) conducted in rural Nepal. The CVFS is an ideal study to use for this study because of the extensive ethnographic work done to develop culturally appropriate measures of the emotional bond within marriage and because separate, individual interviews were conducted with children, mothers and fathers. In 1996 the CVFS collected information from residents of a systematic sample of 151 neighborhoods, or *tols,* in Western Chitwan Valley. Every resident between the ages of 15 and 59 in the sampled neighborhoods and their spouses were interviewed. This means that children

(over age 14) and their parents—both mothers and fathers—were respondents in our individual interviews yielding identical information collected from children, mothers and fathers. These interviews collected a wide range of demographic, economic, social and attitudinal information, including measures of martial emotional bond, from each respondent. We link our measures of the parental family to measures of children's behavior using a household relationship grid also collected in 1996.

Following the 1996 individual interviews, the CVFS began collecting a prospective monthly demographic event registry from February 1996 through 2007 for every individual interviewed in 1996, even if they left Chitwan, yielding 126 months of data. Interviewers made monthly visits to each household to collect information about marriages occurring in the previous month. This prospective monthly demographic event registry is our main source for measures of the children's marriage between the 1996 baseline interviews and the present.

Because this paper focuses on the intergenerational influences on first marriage our analyses are based on young people living with their parents at the initial (1996) observation and we estimate their subsequent transition rates. Our analysis sample consists of 541 young people under age 24, 271 men and 270 women, who were interviewed, living with at least one parent and were not yet married at the time of the 1996 interview. We restrict the sample to these young people because we can only link children to their parents if all three were officially living in the same household when the interviews occurred.[1] We excluded children if they were already married at that point to ensure proper temporal ordering in our analysis. Finally, to maintain consistency and

[1] Children or parents who were temporarily away at the time of the 1996 survey but who typically lived at that residence were tracked down and interviewed. They are included in this sample.

comparability across models comparing the influence of mother's and father's religiosity we excluded the 102 children who were only living with one parent.

Of course, these sample restrictions can introduce bias into the models. If our hypothesis is correct and young people marry later if they grow up in a family where the parents have a strong emotional bond with each other, then excluding those who marry early from our sample would misestimate the relationship between parents' emotional bond and children's marriage timing. On the flip side, limiting our sample to young people in their teens and early twenties means we are limiting our analysis to those who may not marry for some time, raising other methodological concerns (e.g. increased time since measurement of the key independent variable increases the likelihood that the characteristic being measured has changed). We assess the sensitivity of our results to these age restrictions, and find that our estimates are stable across age ranges.

Measures

Marriage timing. To investigate the marriage transition we estimate hazard models of the rate of entrance into first marriage following the 1996 interview. Our analysis of entrance into first marriage takes into account the fact that in Nepal there historically was often a significant period of time between the marriage being legally and socially contracted and the couple beginning to live together. Because this time can vary across couples, it is important to ascertain both the time the marriage was contracted and the time the couple started to live together. The household registry ascertains both events. We define and use two marriage variables—both the legal contraction date and the date of coresidence—to ascertain if the estimated influence of intergenerational factors varies by the definition of the date of marriage.

We create a time-varying, dichotomous variable equal to 1 the month the respondent marries and 0 in months prior. We use this dichotomous measure in our hazards of marriage timing discussed below. Table 1 presents descriptive statistics for this and all other measures used in the analyses. Almost 80% of the sample, 71% of men and 86% of women, married at some point in the prospective data.

(Table 1, about here)

We also create a time-varying, dichotomous variable equal to 1 the month the respondent first lives with his/her spouse and 0 in months prior. For nearly all respondents (93%) the date of marriage and coresidence are the same (among those who do both). Among the 37 respondents who did not start living with their spouse the day they marry, the mean length of time between marriage and coresidence was almost 5 and a half months. 1 woman had married, but had not yet lived with her husband and 3 men had not yet lived with their wives in the data collection period. Because there is little difference between the dates of legal marriage and initiating cohabitation our results are consistent across dependent variables.

Parents' Emotional Bond

Prior to fielding the 1996 study, great effort was taken to construct measures of attitudes specific to the rural Nepalese context. Five pilot studies were used in sequence with ethnographies and cognitive interviews to arrive at Nepalese language measures of attitudes, some of which are often measured in US studies of family attitudes and some of which are designed to be completely specific to the Nepalese context. Our key independent variable is one of the later. What we present here are English language

translations of the items actually used in Nepal. The original Nepalese question wordings and response alternatives can be found at perl.psc.isr.umich.edu.

All currently married respondents were asked: “How much do you love your (most recent) (husband/wife)? Very much, some, a little, or not at all. The item was coded 1 (a little or not at all) to 3 (very much) so that a higher value indicates a stronger emotional bond. We create three measures, one for father’s emotional bond to his wife, one for mother’s emotional bond to her husband, and one that is the mean of the father’s and mother’s responses. We use the mean of this scale for full models that include both mothers’ and fathers’ attitudes because, although they are in the same marriage, they hold different levels of affection toward each other. Respondents whose parents did not provide a valid answer to this question are removed from the analysis sample. Overall, mothers reported a stronger emotional bond to their husbands than fathers reported to their wives and this difference was greater between sons’ parents. Interestingly, father’s and mother’s affection were not significantly correlated with each other.

Parents’ Marital Conflict

One mechanism through which parental emotional bond delays children’s marriage timing is by creating a comforting or happy home life children are hesitant to leave. We operationalize this aspect of home life as the amount of marital conflict present. Fathers and mothers were each asked how often they have disagreements with their current spouse. Answers are coded on a scale of 1, never, to 4, frequently. As with the measures of parental emotional bond we investigate fathers’ and mothers’ responses separately and a combined measure that is the mean for both parents.

The information used to create these variables was collected during the 1996 interviewers, the same time the information on parental emotional bond was collected. This creates some problems with temporal ordering—it is not possible to determine if the amount of affection between parents is caused by or causing the marital conflict. However, including these measures in the models will still allow us to assess the relative independence of these two aspects of the parental marital experience.

Children's Education

To explore the connection between marital affection and Caldwell's emotional nucleation hypothesis we include measures of the children's education. If parental marital affection and increasing investment in the quality of children are both manifestations of emotional nucleation, and if emotional nucleation leads to children delaying marriage, we would expect the estimated effect of parental emotional bond to decrease once we account for the educational investments parents make in their children. To test this we include two, time-varying measures of children's education—one for enrollment (enrolled in school in that specific year) and one for attainment (total number of years enrolled in school). Educational information was obtained for a yearly basis for respondents. Because we do not know the specific month a respondent started or stopped attending school a respondent was considered enrolled in school for a specific year if he/she attended school at all that year. To ensure proper temporal ordering between these yearly measures and the monthly measure of marital status the education measures are lagged by one year. That is, we use a measure of whether the respondent was enrolled in school in year X and the number of years of education by year X to predict the hazard of marriage for all twelve months in year X+1.

Controls

As with virtually all social science research, these analyses face threats to the validity of conclusions about causal connections. Of concern here is that parental bond and children's marriage timing are both influenced by other individual, family and community characteristics yielding a spurious relationship. Fortunately for us, marriage timing has been studied extensively and we use this prior research to identify necessary controls. Our approach to including controls is to create maximum and minimum boundaries for the effect estimate of our key independent variable, parental emotional bond. For the maximum, we identify factors that may have influenced the parents' marriage, but are not in any way influenced by that marriage. This includes the experiences both parents had before marrying and characteristics of the marriage formation. However, parental affection is likely influenced by many shared marital experiences such as the births of children, marriages by other household members, and non-family experiences that occurred following marriage and these experiences may also influence children's marriage timing. Therefore, we estimate models that also include this type of control to reveal a minimum estimate for the effect of parents' emotional bond.

Parents' Ethnicity and Cultural Background.

To control for factors that may influence the parents' marriage we start with controls for ethnicity of the family using dummy variables for the different ethnic groups in Chitwan: High caste Hindus (Bhramin/Chhetri), low caste Hindus (Dalit), Newars, and two indigenous groups, terai- and hill-Tibeto Burmese.

We also control for the mother's and father's childhood community—childhood community may influence one's experiences with non-family institutions and marriage

behaviors. Because schools were often the first non-family institution in a neighborhood and they are crucial vectors for transmitting new ideas, we create two dichotomous variables equal to 1 if the mother or father had a school within an hour's walk of her neighborhood before age 12 and 0 otherwise. We then sum these measures to create an index of the number of parents living near a school.[2] Because we are studying the mother-father couple this combined approach is most appropriate and we follow it for all the control measures.[3]

Parents' Choice of Community. Just as childhood community context may be important, later life exposure to non-family organizations may influence marital relationships. Choice of later life community may also be related to parents' emotional bond, and excluding it may result in Type I error. We also created a measure of the family's community context in 1995 (recall that all three family members, child and both parents, were living together in 1995 by sample design). Because schools have become more common since the parents' childhood we create a dichotomous measure equal to 1 if the family lived within a 5 minute walk of a school and zero otherwise.[4] This radius has been documented as an important area of influence in this setting (Axinn and Yabiku 2001). With more exposure to nonfamily services, children may place less value on families and therefore marry later.

Parental Experiences with Marriage and Childbearing. We control for two characteristics of the parental marriage formation. First, we control for whether the

[2] We also explored similar measures of living near a market, employer, health service provider, or bus stop. None were statistically significant and we present models with only the measure of school exposure for parsimony.

[3] We tested models with separate measures for mothers and fathers and found no differences from the key findings presented below.

[4] As with parental childhood community context we explored measures of exposure to other community organizations, but none were statistically significant when we controlled for childhood community so we exclude them from our analyses.

parents had an arranged marriage. Following previous research, a scale from 1 to 5 was created to indicate the level of arrangement of mothers' and fathers' marriage, from them having no choice of their spouse (1) to having complete choice (5) (Ghimire et al. 2006; Jennings, Axinn and Ghimire 2011) This indicator is taken from parents' own reports of their marital arrangement. In our models we use the mean of this scale for both mothers' and fathers' attitudes because they may have each had different levels of choice in marrying their spouse. These experiences with their own marriage may influence the level of spousal choice that they give their sons, so that parents who had more choice may also give their children greater choice, leading the children to delay their entrance into marriage. As expected given previous research on marital arrangement (Ghimire et al. 2006), fathers reported more involvement in the choice of their spouse than mothers. The two measures were only slightly correlated with each other and not at all correlated with parental emotional bond.

In order to control for parents' own marriage timing, which could have a negative influence on children's marriage timing (Thornton 1991), we control for parents' age at marriage, as reported by the parents themselves. On average, fathers were almost 5 years older than mothers. Again, we use the mean of mothers' and fathers' age at marriage in our models. In line with what we know about assortative mating, mothers' and fathers' age at marriage were slightly correlated with each other and with marital arrangement, but not at all with parental spousal emotional bond.

We also control for whether either parent had multiple marriages. We create separate measures for whether the respondent's father had multiple wives and mother had multiple husbands. This includes situations where one parent is living with multiple

spouses, where one parent has a living spouse who resides in a different home, and where a previous spouse died and the parent remarried the respondent's other parent.[5] Because multiple parental marriages were rare among this sample, it is not possible to further differentiate among these types of family structures.

In addition to parents' marriage, parents' fertility may also influence marriage timing, as people who were raised to value large families will be likely to marry sooner in order to produce many children of their own (Thornton et al. 2007). To control for this possibility we add a measure of the parents' total number of children, which is the mean number of children reported by each parent. The mean was just over 5 children or 4 siblings. We include an indicator of whether respondents had a same-sex sibling in our sample for two reasons. First, children who have a same sex sibling may feel less pressure to marry. Second, having multiple sons or daughters of the same parents would confound our results.

Parents' Non-family Experiences. Previous research on marriage in this setting has demonstrated that non-family experiences are an important influence on marriage timing (Ghimire et al. 2006; Yabiku 2004, 2005). We control for parents' education, living away from family, and exposure to media, specifically watching TV, all before the marriage occurred. For all three non-family experiences we create categorical measures equal to 2 if both parents had the experience, 1 if one parent did, and 0 if neither parent had the experience before marriage.

We create a series of measures parallel to those of parental experiences before marriage described above, but encompassing each parents' life up to 1996 (the start of the child's marriage hazard).

[5] The CVFS does not ask whether parents are biological, adopted, or stepparents.

Finally, in all our models we also control for respondents' gender and age in 1996, as women and older respondents are likely to marry sooner than the younger respondents. In order to control for the duration of the exposure to marriage risk we use a control for time, which is the duration of time since the first monthly interview, and this same number squared. These controls should be positively related to marriage timing, as respondents are under more pressure to marry as time passes. Previous research shows this functional form fits the baseline hazard of marriage in Nepal well (Yabiku 2004, 2005, 2006).

Analytic Strategy

Our models treat marriage as a transition occurring over time, from being never married to marrying for the first time. We use event history, or hazard modeling, techniques to estimate these discrete-time hazard models (Allison 1982). Because the outcome in question has only one destination state and is measured as a dichotomous variable, logistic regression is an appropriate estimation technique (Allison 1982; Guilkey and Rindfuss 1987). Person-months of exposure are the unit of analysis, and we start the hazard the first month of the prospective data collection.

To estimate the discrete-time hazard models, we use logistic regression of the form:

$$\ln\left(\frac{p}{1-p}\right) = a + \sum (\beta_k)(X_k),$$

where p is the monthly probability of marrying, $p/1\text{-}p$ is the odds marrying, a is a constant term, β_k represents the effects parameters of the explanatory variables, and X_k represents the explanatory variables in the model.

Because individuals are clustered within neighborhoods we estimate multi-level

hazard models as described by Barber et al. 2000. For estimation of intergenerational effects we must also address the issue that some households contribute one child to our analysis and others contribute more than one. We also address this household-level clustering with a multilevel modeling approach, yielding three-level models. Standard techniques are available for estimating three-level models that simultaneously account for two levels of clustering, they have been widely applied in previous research (Bhalotra & Soest 2005; Duncan et al 2003; Kim et al. 2006; Pong & Hao 2006; Sastry et al. 2005).

We estimate a series of nested models, first estimating the separate effects of father's and then mother's reported spousal affection children's marriage timing. We then investigate the simultaneous effect of both parents' measures of affection to ascertain whether mother's and father's have independent effects on their children and finally we explore the combined parental affection measure.

Analyses of Gender Differences. We also investigate the potential gender differences in these intergenerational effects. To accomplish this we estimate separate models of the relationship between parental variables and children's family formation outcomes for sons and daughters as well as pooled son-daughter models that include interaction terms for potential interactions between the gender of the child and each specific intergenerational influence. Models with interaction terms will be particularly important because the significance tests for the coefficients on these interaction terms provide a statistical test for the significance of observed gender differences.

Results

Table 2 shows the models of the relationship between parental spousal affection

and children's marriage timing. The coefficients displayed are the multiplicative effects on the odds of contraceptive use (the odds ratios). An exponentiated coefficient greater than 1.00 represents a positive effect, less than 1.00 a negative effect, and equal to 1.00 no effect. Because the frequency of events, marriage, in any one-month interval is quite small, the odds of marrying are very similar to the rate, and we discuss the results in terms of rates.

(*Table 2, about here)*

In Model 1 we see that the parental emotional bond is negatively and significantly related to children's marriage timing. The stronger the attachment between the parents the later children married. This finding is what we would expect if parental marriages with a stronger emotional bond create a more pleasant home life from which children are reticent to leave or if strong emotional bond is due to emotional nucleation.

This model includes the basic controls ethnicity, age and gender of the respondent, and the baseline hazard timing controls—all of which are significantly related to the timing of marriage.

In Model 2 we add in the measures of things that occurred at the time of or before the parents' marriage: parents' age at marriage, marital arrangement, childhood community context, and their non-family experiences before marriage. The effect of parental emotional bond on children's marriage timing decreases by 8 percent when we include these controls.[6] Most of this decrease is due to controlling for non-family experiences. Children who had more parents who went to school or lived away from the family married later than children whose parents did not go to school or always lived in the family household. Note, the results for the factors that influence the parental marriage

[6] This calculation is based on the effect estimates (not shown in tables), not the odds ratios.

are the same when entered into the model without the characteristics of the parental marriage formation.

We do not show the results from models that include the post-marriage factors. The measures of 1995 community context, other marriages, and the mean number of children the parents had were not statistically significant. Having a same sex sibling was negatively and significantly related to the hazard of marriage timing. Children who had a same sex sibling married later than those who did not. Including this measure did not yield a different estimate for parental emotional bond. This is what we would expect if having a same sex sibling takes off some of the pressure from parents to marry. In contrast to the findings for the parental experiences before marriage, having gone to school or lived away from home by 1996 were not statistically significant, but having watched TV by 1996 was. Again, including these measures did not yield a different estimate for the effect of parental emotional bond so we elected to show the most parsimonious models, with the cleanest temporal ordering.

In Model 3 we test the degree to which the quality of the home experience may be pulling children to stay in the home as opposed to marry. As predicted, children whose parents disagree more marry earlier. The parental conflict essentially pushes the children out of the home. Furthermore the effect estimate for parental emotional bond increases by 14 percent when we add this measure to the model (moving from Model 2 to 3). This is a substantial change from Model 2 where the effect estimate actually decreased from Model 1.

Model 4 adds in the measure of the respondent's school enrollment to assess how our measure of parental emotional bond fits within Caldwell's emotional nucleation

theory. Respondents who are currently enrolled school are less likely to marry.

Finally in Model 5 we add in the measure of children's educational attainment. As in other research, being enrolled in school delays marriage, but having more education speeds marriage up. Perhaps most importantly, we see here that the effect of parental emotional bond increases by another 10 percent when you add in these controls moving from Model 3 to 5 for an almost 30 percent increase from Model 1. This supports our hypothesis that higher parents' emotional bond is a reflection of emotional nucleation, as is investing in children's education, and that all of these serve to delay children's marriage.

When we estimate models with the separate measures of mother's and father's emotional bond we find stronger associations with the father's measure than with the mother's. For parsimony, we do not present those models in tables

Gender was significantly related to the hazard of marriage with daughters marrying earlier than sons. We estimated all models separately by gender and with interaction terms between gender and parental spousal emotional bond but found no significant differences in the relationship between parental spousal emotional bond and children's marriage timing by gender.

Finally, we estimated models that used coresidence instead of date of marriage ceremony as the dependent variable. Not surprisingly given how few people did not immediately start living with their spouse, these models were virtually the same as those presented in Table 2.

Conclusion

A key reason there is so little research on the emotional basis for human behavior in the social sciences is the complexity of creating standardized measures of emotional variation in the general population (Massey 2002). Here we use a general population measure of parents' husband-wife emotional bond that is the product of several years of setting specific ethnographic, focus group, survey design, and pilot study research. With this measure imbedded in a 15-year panel study of families and marriage, we are able to investigate the association between variations in parents' emotional bonds and variations in the timing of their children's marriages. This investigation provides a new window into the mechanisms that may link emotional factors in the parental generation to marital behavior in the children's generation. This new window provides some evidence that parental investments in their children's education, though a human capital dimension of social life, maybe an important mechanism linking emotional factors in the parental generation to children's marital behaviors.

Theory identifies at least two important mechanisms likely to link emotional dimensions of the parental family to children's marital decisions. First, positive emotions in the parental home slow children's exits to other living arrangements because the parental home environment is more attractive (Goldscheider and Goldscheider 1993). Though this mechanism was originally conceptualized in the United States, it may well apply to South Asia, but in South Asia exits from the parental home are most likely to be marriages. There is a good deal of evidence from the US consistent with this mechanism (Goldscheider and Goldscheider 1993; Goldscheider and Waite 1993; Thornton, Axinn, and Xie 2007), and our evidence from Nepal is consistent with this mechanism too. We

find children with parents who express a positive emotional bond marry more slowly than children with parents who express a less positive emotional bond. As expected, parental positive emotions covary with negative emotions, and those parents who express lower levels of positive bond also express higher levels of disagreements. Consistent with the parental home environment hypothesis, children with parents who express high levels of disagreements marry more quickly than children with parents who express a low level of disagreements.

Second, in settings in which marriage historically played a key role in kinship alliance building and extended family social networks, transitions to marriage based on emotional bonds is expected to alter relationships between parents and children in substantial ways (Caldwell 1982). This is Caldwell's "emotional nucleation" hypothesis, and though the relevance of this mechanism may be low in settings like the United States, it is quite relevant in South Asian settings like Nepal (Caldwell, Reddy and Caldwell 1987). In Caldwell's intergenerational wealth flows theory of family change, the transition from marriage based on kin network alliances to marriage based on emotional relations between husbands and wives changes the way parents view the relations of their children to their wealth. He argues that when marriages are arranged as alliances between families parents tend to view their children as a means to continue those alliances and build the flow of wealth to parents (Caldwell 1982). But as marriages transition to a basis in love, affection, romance, and positive emotional bond between two individuals, he argues that parents begin to view their children as an expression of their own emotional bond and invest in the lives of those children as an expression of that emotional bond (Caldwell 1982). These investments reverse wealth flows as parents spend more on their

children than they acquire from their children, consistent with the "quantity-quality" transition in childrearing hypothesized in economics (Becker 1991; Willis 1973). The evidence we find – delayed marriage among those children with parents who express a positive emotional bond – is also consistent with this "emotional nucleation" hypothesis.

Of course because mechanisms of the parental home environment and mechanisms of emotional nucleation both lead us to expect the same outcome, we cannot use our observational evidence to adjudicate between them. However, children's education is frequently identified as the most common form of parental investments in children (Becker 1991; Caldwell 1982; Willis 1973). To examine this mechanism of emotional nucleation we investigate the potential of children's education to attenuate the association between variations in the parental emotional bond and variations in children's subsequent marital timing. We find that the known association between children's schooling and their marital timing does indeed explain a portion of the association between variations in the parental emotional bond and their children's marital timing. Of course parents have many reasons to invest in their children's education, including the expectation that more highly educated children will earn more and bring their parents greater wealth. Nevertheless, our results are consistent with the emotional nucleation prediction of mechanisms linking emotional changes in the parental family with family related behaviors in the next generation.

Our study is designed to stimulate new research on the emotional dimensions of human behavior, especially marital behaviors. Investigation of the long term consequences of parents' emotional bond to each other for their children's marital timing simply adds one more dimension to the long list of parental family factors already known

to constitute a powerful, long lasting influence on their children's marriage behavior (Thornton, Axinn and Xie 2007). Given the known mechanisms linking the parental home environment to the speed at which their children exit the parental home, and the strong link between marriage and parental home leaving in the South Asian context, our findings are not surprising (Caldwelll, Reddy and Caldwell 1987; Goldscheider and Goldscheider 1993; Goldscheider and Waite 1993; Yabiku 2004). It is noteworthy that this emotional dimension of parental influence is independent of a wide range of other factors known to link parents to their children's marriage timing, including parental ethnic background, choice of community, family experiences and non-family experiences that produce family-level variations in a wide range of conditions. The independent effects of parents emotions is intriguing, but not paradigm shifting.

The potential for emotional nucleation of the parental family to have wide ranging consequences for the next generation, however, goes beyond intriguing. South Asia and many other highly populated regions of the world are experiencing dramatic transitions in the ways that marriages are formed. The widespread change from "arranged" marriage to "love" marriage maybe the most dramatic of these transitions (Ghimire et al 2006; Rindfuss and Morgan 1983). Our findings are consistent with the conclusion that variations in parental emotional relationships may affect parental investments in their children with wide ranging implications for their children's life courses. Education is a crucial domain of investment in children, but it is only one domain. It is beyond the scope of our study of children's marital behavior to offer a comprehensive investigation of the potential connections between parental emotions and investments in their children's education, let alone the full range of investments parents may make in their children. But

such investigation is a high research priority. It may be that shifts in the emotional basis of marriage in one generation produce change in the second generation much broader than marriage itself. These changes may include second generation behavior in many domains of social life including education and all the other domains education can shape, such as work, family, recreation, and ideation. Thus we argue the findings described here should motivate a broad range of research into the emotional basis of behavior that extends well beyond the domain of marital behavior.

References

Ahearn, Laura. 2001. Invitations to Love: Literacy, Love Letters, and Social Change in Nepal. Ann Arbor: University of Michigan.

Allendorf, Keera. 2009. "The Quality of Family Relationships, Women's Agency, and Maternal and Child Health in India." Sociology, University of Wisconsin-Madison, Madison, WI.

Allison, Paul D. 1982. "Discrete-Time Methods for the Analysis of Event Histories." Sociological Methodology 13:61-98.

Amato, Paul and S. J. Rogers. 1997. "A longitudinal study of marital problems and subsequent divorce." Journal of Marriage and Family 59:612-624.

Axinn, William G., Marin E. Clarkberg, and Arland Thornton. 1994. "Family Influence on Family Size Preferences." Demography 31:65-79.

Axinn, William G. and Scott T. Yabiku. 2001. "Social Change, the Social Organization of Families, and Fertility Limitation." American Journal of Sociology 106:1219-1261.

Barber, Jennifer S. 2000. "Intergenerational Influences on the Entry into Parenthood: Mothers' Preferences for Family and Nonfamily Behavior." Social Forces 79:319-348.

—. 2001. "Ideational Influences on the Transition to Parenthood: Attitudes Toward Childbearing and Competing Alternatives." Social Psychology Quarterly 64:101-127.

Barber, Jennifer S., Susan A. Murphy, William G. Axinn, and Jerry Maples. 2000. "Discrete-Time Multilevel Hazard Analysis." Sociological Methodology 30:201-235.

Becker, Gary S. 1991. Treatise on the Family, Enlarged Edition. Chicago: University of Chicago Press.

Bennett, Lynne 1976. "Sex and motherhood among the Brahmins and Chhetris of east-central Nepal." Journal of the Institute of Nepal and Asian Studies: Contributions to Nepalese Studies-Anthropology, Health and Development 3:1-52.

Beutel, Ann M. and William G. Axinn. 2002. "Gender, Social Change, and Educational Attainment." Economic Development and Cultural Change 51:109-134.

Bista, Dor Bahadur. 1991. Fatalism and Development: Nepal's Struggle for Modernization. Calcutta: Orient Longman Limited.

Caldwell, John C. 1982. Theory of Fertility Decline. New York: Academic Press.

Caldwell, John C., P. H. Reddy, and Pat Caldwell. 1984. "The Determinants of Family Structure in Rural South India." Journal of Marriage and the Family 46:215-229.

Coontz, Stephanie. 2005. Marriage, a History: From Obedience to Intimacy, or How Love Conquered Marriage. New York: Viking.

Degler, Carl N. 1980. At odds: Women and the family in America from the Revolution to the present. New York: Oxford University Press.

Dyson, Tim and Mick Moore. 1983. "On Kinship Structure, Female Autonomy, and Demographic Behavior in India." Population and Development Review 9:35-60.

Easterlin, Richard and Eileen Crimmins. 1985. "Theoretical Framework." Pp. 12-31 in The Fertility Revolution: A Supply-Demand Analysis, edited by R. A. Easterlin and E. M. Crimmins. Chicago: The University of Chicago Press.

Fricke, Thomas E. 1986. Himalayan Households: Tamang Demography and Domestic Processes. Ann Arbor, MI: UMI Research Press.

Fuller, C. J. and Haripriya Narasimhan. 2008. "Companionate marriage in India: the changing marriage system in a middle-class Brahman subcaste." Journal of the Royal Anthropological Institute 14:736-754.

Ghimire, Dirgha J., William G. Axinn, Scott T. Yabiku, and Arland Thornton. 2006. "Social Change, Premarital Non-family Experiences and Spouse Choice in an Arranged Marriage Society." American Journal of Sociology 111:1181-1218.

Goldscheider, Frances K. and Calvin Goldscheider. 1993. Leaving Home Before Marriage: Ethnicity, Familism, and Generational Relationships. Madison: University of Wisconsin Press.

Goldscheider, Frances K. and Linda J. Waite. 1993. New Families, No Families? The Transformation of the American Home. Berkeley: University of California Press.

Goode, William J. 1959. "The Theoretical Importance of Love." American Sociological Review 24:38-47.

—. 1970. World Revolution and Family Patterns. New York: Free Press.

Guilkey, David K. and Ronald R. Rindfuss. 1987. "Logistic Regression Multivariate Life Tables: A Communicable Approach." Sociological Methods and Research 16:276-300.

Guneratne, Arjun. 2002. The Making of Tharu Identify in Nepal. Ithaca, NY: Cornell University Press.

Guneratne, Upali Arjun. 1994. "The Tharus of Chitwan: Ethnicity, Class and the State in Nepal." University of Chicago.

Hamon, R.R. and B.B. Ingoldsby. 2003. Mate selection across cultures. Thousand Oaks, CA: Sage Publications.

Hogan, Dennis. 1978. "The Effects of Demographic Factors, Family Background, and Early Job Achievements on Age at Marriage." Demography 15 161-75.

Kitson, G. C. 1992. Portrait of Divorce. New York: Guilford Press.

Macfarlane, Alan. 1976. Resource and Population: A Study of the Gurung of Nepal. London: Cambridge University Press.

Marini, Margaret. 1978. "The Transition to Adulthood: Sex Differences in Educational Attainment and Marriage." American Sociological Review 43:483-507.

Massey, Douglas S. 2002. "A Brief History of Human Society: The Origin and Role of Emotions in Social Life." American Sociological Review 67:1-29.

Pasupathi, Monisha 2002. "Women and arranged marriages: What's love got to do with it?" Pp. 211-235 in Rethinking the couple: Some feminist answers, edited by M. Yalom and L. L. Carstensen. Berkeley, CA: University of California Press.

Pearce, Lisa D. 2002. "The Influence of Early Life Course Religious Exposure on Young Adults' Dispositions Toward Childbearing." Journal of the Scientific Study of Religion 41:15.

Rindfuss, Ronald R. and S. Philip Morgan. 1983. "Marriage, Sex, and the First Birth Interval: The Quiet Revolution in Asia." Population and Development Review 9:259-278.

Thornton, Arland. 1991. "Influence of the Marital History of Parents on the Marital and Cohabitational Experiences of Children." American Journal of Sociology 96:868-894.

Thornton, Arland, William G. Axinn, and Jay D. Teachman. 1995. "The Influence of School Enrollment and Accumulation on Cohabitation and Marriage in Early Adulthood." American Sociological Review 60:762-774.

Thornton, Arland, William G. Axinn, and Yu Xie. 2007. Marriage and Cohabitation. Chicago: University of Chicago Press.

Thornton, Arland and Hui-Sheng Lin. 1994. Social Change and the Family in Taiwan. Chicago: The University of Chicago Press.

Willis, Robert J. 1973. "A New Approach to the Economic Theory of Fertility Behavior." The Journal of Political Economy 81:s14-64.

Yabiku, Scott T. 2004. "Marriage Timing in Nepal: Organizational Effects and Individual Mechanisms." Social Forces 83:559-586.

—. 2005. "The Effect of Non-family Experiences on Age of Marriage in a Setting of Rapid Social Change." Population Studies 59:339-354.

—. 2006. "Neighbors and Neighborhoods: Effects on Marriage Timing." Population Research and Policy Review 25:305-327.

Table 1. Descriptive Statistics, Chitwan Valley Family Study, N=541

Variable	MEAN	STD	MIN	MAX
Respondent married	0.79		0	1
Parents' emotional bond (3=love very much, 2=love some, 1=love a little/not at all)				
Father's emotional bond to mother	1.98	0.64	1	3
Mother's emotional bond to father	2.03	0.59	1	3
Mean of both parents	2.01	0.44	1	3
Parents' marital conflict (frequency of disagreements; 4=frequently, 1=never)				
Father's disagreements with wife	0.75	0.65	0	3
Mother's disagreements with husband	0.82	0.65	0	3
Mean of both parents	0.78	0.51	0	3
Children's education (lagged 1 year)				
Enrolled in school	0.73		0	1
Years of education	12.72	4.85	0	26
Controls				
Parents' ethnicity and cultural background				
Ethnicity (High caste Hindu is reference group)				
High caste Hindu	0.56		0	1
Low caste Hindu	0.09		0	1
Hill Tibeto Burmese	0.11		0	1
Newar	0.07		0	1
Terai Tibeto Burmese	0.17		0	1
Childhood community context: school w/in 1 hour walk (2,1, no parents)	0.90		0	1
Parents' choice of community				
1995 community context: school w/in 5 min walk	0.52		0	1
Parental experiences with marriage and childbearing				
Characteristics of parental marriage formation				
Parents' had arranged marriage (1=parents,5=self; mean of both parents' responses)	1.83	1.19	1	5
Parents' age at marriage (mean of both parents' responses)	17.44	2.74	9.5	25.5
Other marriages				
Father had multiple wives	0.21		0	1
Mother had multiple husbands	0.04		0	1
Fertility				
Mean of parents children ever born	5.25	1.93	1	12.5
Has same sex sibling in the household registry	0.42		0	1
Parents' non-family experiences				
Parents' experiences before marriage (2, 1, or no parents)				
Went to school	0.87	0.71	0	2
Watched TV	0.09	0.32	0	2
Parents' experiences by 1996 (2, 1, or no parents)				
Went to school	1.13	0.77	0	2
Watched TV	1.74	0.55	0	2
Respondent's age in 1996	17.35	2.21	15	24
Gender	0.50		0	1
Time in hazard	69.10	41.75	2	126

Table 2. Multilevel hazard models: Parents' love for one another predicting children's marriage timing[a]

Percent change in effect estimate from Model 3				5%	**10%**
Percent change in effect estimate from Model 2			**14%**	19%	23%
Percent change in effect estimate from Model 1		**-8%**	21%	26%	29%
Model	1	2	3	4	5
Parents' emotional bond					
Mean of both parents (3=love very much, 2=love some, 1=love a little/not at all)	0.72**	0.74*	0.77*	0.78*	0.79*
	(-2.51)	(-2.23)	(-1.86)	(-1.72)	(-1.66)
Respondent's education					
In school previous year				0.67**	0.51***
				(-2.69)	(-3.65)
Years of education (lagged 1 year)					1.05**
					(2.44)
Parents' marital conflict					
How often do you have disagreements with spouse? (3=frequently, 2=sometimes, 1=seldom,			1.22*	1.2	1.21
			(1.73)	(1.53)	(1.62)
Controls					
Parents' experiences (2,1,no parents experienced before marriage)					
Went to school		0.82*	0.82*	0.84*	0.81*
		(-2.15)	(-2.08)	(-1.81)	(-2.17)
Watched TV		1.09	1.10	1.07	1.05
		(0.45)	(0.52)	(0.38)	(0.25)
Characteristics of parental marriage formation					
Parents' had arranged marriage		1.00	1.00	0.99	1.00
(1=parents,5=self; mean of both parents'		(-0.01)	(-0.07)	(-0.23)	(-0.07)
Parents' age at marriage (mean of both parents'		0.98	0.98	0.98	0.97
responses)		(-0.97)	(-0.91)	(-1.02)	(-1.12)
Parents' choice of community					
1995 community context: school w/in 5 min			0.94	0.94	0.95
walk			(-0.52)	(-0.48)	(-0.46)
Parents' ethnicity and cultural background					
Childhood community context: school w/in 1		0.92	0.92	0.94	0.93
hour walk (2,1, no parents)		(-0.89)	(-0.87)	(-0.61)	(-0.71)
Ethnicity (High caste Hindu is reference group)					
Low caste Hindu	1.04	1.00	0.99	0.89	0.92
	(0.21)	(0.01)	(-0.04)	(-0.54)	(-0.36)
Hill Tibeto Burmese	1.37*	1.42*	1.42*	1.35	1.35
	(1.65)	(1.71)	(1.71)	(1.42)	(1.45)
Newar	0.70	0.76	0.72	0.72	0.75
	(-1.49)	(-1.10)	(-1.27)	(-1.29)	(-1.12)
Terai Tibeto Burmese	0.79	0.72*	0.71*	0.66**	0.76
	(-1.40)	(-1.90)	(-1.96)	(-2.35)	(-1.46)

(cont.)

Table 2 continued. Multilevel hazard models: Parents' love for one another predicting children's marriage timing

Model	1	2	3	4	5
Respondent's age in 1996	1.10***	1.10***	1.11***	1.07**	1.04
	(3.98)	(3.87)	(3.98)	(2.57)	(1.34)
Gender	2.11***	2.12***	2.14***	2.16***	2.27***
	(6.82)	(6.77)	(6.86)	(6.87)	(7.22)
Time in hazard	1.02***	1.02***	1.02***	1.02***	1.02***
	(3.66)	(3.86)	(3.89)	(4.15)	(3.73)
Time in hazard squared	1.00*	1.00*	1.00*	1.00*	1.00*
	(-1.85)	(-1.94)	(-1.94)	(-2.11)	(-2.04)
Intercept	0***	0***	0***	0***	0.01***
	(-11.96)	(-8.42)	(-8.30)	(-6.65)	(-6.36)
Number of observations (person months)	37381	37381	37381	37381	37381

[a]Includes dummies for calendar month and year and for first month of prospective data collection.

* P < .05, one tailed test; ** P < .01, one tailed test; *** P < .001, one tailed test