

# **Social Change, Premarital Nonfamily Experience, and Spouse Choice in an Arranged Marriage Society<sup>1</sup>**

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This article examines the influences of nonfamily experiences on participation in the selection of a first spouse in an arranged marriage society. The authors developed a theoretical framework to explain how a broad array of nonfamily experiences may translate into greater participation in the choice of a spouse. Analyses show that premarital nonfamily experiences, in general, and media exposure and participation in youth clubs, in particular, have strong positive effects on individual participation in the choice of a spouse. These findings suggest new ways of thinking about the relationship between social change and the transition away from arranged marriage. Overall, changes in these nonfamily experiences can account for a substantial fraction of the historical increase of youth involvement in mate selection.

The links among social change, the social organization of families, and family-formation processes have been of central interest to social scientists for some time. Because marriage is fundamental to both the social or-

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ganization of families and the formation of families, the study of marriage has received great attention in this research literature. Moreover, as social scientists discovered the many different forms of marriage processes around the world, the study of how social change promotes changes in marital processes became a central focus of research (Goode 1970; Thornton 2001, 2005; Thornton and Lin 1994). In fact, perhaps no transition in marital processes has been more closely studied than the transition from arranged marriage, with the choice of spouse determined primarily by parents, to love marriage, with the choice of spouse determined primarily by the individuals to be married (Caldwell, Reddy, and Caldwell 1983, 1988; Goode 1970; Rindfuss and Morgan 1983; Thornton, Chang, and Lin 1994). Here we use a detailed combination of measures from an arranged marriage society undergoing rapid social change to explore and answer several previously unanswered questions about this transformation.

Our work builds on the family mode of social organization approach to studying social change and the family (Thornton and Fricke 1987; Thornton, Fricke et al. 1994). A good deal of research documents important transformations in marital processes reducing the prevalence of parentally controlled arranged marriages and increasing the prevalence of individually chosen love marriages (Caldwell et al. 1983; Goode 1970; Smith 1973; Thornton, Chang, and Lin 1994; Tilly and Scott 1978; Tsuya and Choe 1991; Whyte 1990). Despite the now-widespread prevalence of individual-choice love marriage, arranged marriages are still quite common in large parts of the world, including South Asia (Caldwell 1982; Caldwell et al. 1983; Dyson and Moore 1983; Fricke 1986; Macfarlane 1986; Malhotra 1991). Previous studies of mate selection indicate that individuals whose daily activities are more organized outside of the family before marriage are more likely to participate in the choice of their marital partner (Fricke and Thornton 1991; Goode 1970; Macfarlane 1986; Thornton, Chang, and Lin 1994; Thornton and Fricke 1987). We build on these findings by examining how the impact of premarital nonfamily experience may depend on gender and by expanding the scope of premarital nonfamily experiences included in theoretical and empirical models.

First, this study adds early-life media exposure to the set of nonfamily experiences likely to affect marriage processes. Previous studies focus on the importance of nonfamily education and work (Caldwell et al. 1983; Macfarlane 1986; Thornton, Chang, and Lin 1994). We also examine the consequences of premarital nonfamily education and work for marital behavior. However, many theorists argue that exposure to new ideas through media plays an important role in shaping individuals' attitudes, beliefs, and values (Caldwell 1982; Janowitz 1981; Macfarlane 1986; McQuail 1985; Thornton 2005). Others argue these ideational changes

have important consequences in individuals' demographic behaviors such as choice of marriage partner, age at marriage, age at first birth, birth spacing, and number of children (Caldwell 1982; Caldwell et al. 1983; Lesthage 1983; Macfarlane 1986; Preston 1989; Thornton 2001, 2005). Thus, the addition of media exposure is likely to generate a more comprehensive understanding of the links between premarital nonfamily experience and participation in the choice of a spouse.

Second, changes in family organization such as an increase in nonfamily work and education may stimulate new venues of social interaction, such as youth clubs. Such clubs serve as forums for social interaction for unmarried youths, where they may spend their spare time with other unmarried youths. These clubs increase social interactions among young people and open opportunities for the spread of new ideas and the creation of shared experiences. As individuals participate in youth clubs, the experience may alter their views about marriage, in general, and the choice of a marital partner, in particular. Thus, by including participation in youth clubs in our model, we both provide a more comprehensive understanding of the relationship between nonfamily activity and spouse choice, and we expand our understanding of the ways that nonfamily work and education may affect family formation.

Finally, some previous studies indicate that nonfamily living may alter individuals' attitudes and values in ways that promote new family-formation behavior across generations (Axinn and Barber 1997; Waite, Goldscheider, and Witsberger 1986). In general, however, such studies do not examine the potential impact of the number of residential moves, *per se*, on family-formation values. This is important because there is reason to believe that the instability associated with multiple moves, at least as represented by parental family transitions, may have strong effects on children's family-formation behavior (Wu 1996; Wu and Martinson 1993). Because the experience of premarital nonfamily living is closely associated with the experience of residential moves, examination of either factor requires consideration of the other. Here we examine the impact of both nonfamily living and the number of residential moves on individual involvement in spouse choice in order to understand the joint impact of these important early life experiences.

These advances are possible because of the data from a setting in Nepal where arranged marriage has been predominant. As described below, this study area is currently undergoing rapid socioeconomic changes that shift the organization of individuals' daily activities outside the domestic sphere. This setting provides an opportunity to study both changes in individuals' nonfamily experiences and changes in the level of participation in spouse choice. The study includes multiple measures of a broad array of nonfamily experiences among both young women and young

men. This data set also includes information from several cohorts of individuals that allows the examination of changes across time. Together these measures provide an opportunity to conduct a more comprehensive examination of premarital nonfamily experiences of unmarried youths and their participation in the choice of their first spouse.

#### THEORETICAL FRAMEWORK

Marriages in Hindu areas of South Asia have a long history of being arranged by parents and the parental family, with no involvement of the husband and wife-to-be in the choice of the spouse (Banerjee 1984; Berreman 1972; Majupuria and Majupuria 1989). In fact, numerous Hindu religious doctrines prohibit the involvement of young people themselves in the choice of a spouse, appealing to both spiritual and social reasons (Majupuria and Majupuria 1989; Banerjee 1984; Berreman 1972). However, during the period of British colonization of the Indian subcontinent, Hindus began to interact with people who had vastly different beliefs about marriage—people who believed spouse choice should be based on love, and that two individuals to be married should choose each other freely and independently (Macfarlane 1986; Smith 1973; Tilly and Scott 1978; Tsuya and Choe 1991; Whyte 1990). Nepal, however, was never a colony, and Hindus in this country had little exposure to such alternative views of marriage until the very recent past. In fact, Nepal remained politically and economically isolated from other countries until the mid-1950s, when Nepal's king first opened the country to interact with non-Hindu nations and peoples (Bista 1972; Blaikie, Cameron, and Seddon 1980). Since that time, and particularly beginning in the mid-1970s, Nepal has experienced social and economic change, including the spread of formal education, wage work, government services, transportation and communication infrastructure, and the mass media. The result has been a reorganization of individuals' daily social lives within the lifetimes of Nepal's current population. The first signs of the impact of these social changes on marriage, in the form of increasing prevalence of individual spouse choice, are already apparent.

Note that the processes of arranged marriage in Nepal vary greatly by ethnic group, with a range that includes bride price, dowry, exogamous marriage, endogamous marriage, and polygyny and polyandry (Acharya and Bennett 1981; Bennett 1983; Fricke 1986; Gurung 1980; Macfarlane 1976). It is common for exchanges to flow in multiple directions—from bride's family to groom's family, from groom's family to bride's family, and from bride's and groom's families to the bride and groom—but many of these exchanges are symbolic in nature and do not represent the transfer

of great wealth. The most common scenario among the Hindus of central Nepal is exchanges between families in multiple directions, with the majority of wealth transferring from bride's family to groom's family (Acharya and Bennett 1981; Bennett 1983; Fricke and Thornton 1991). Among Tibeto-Burmese ethnic groups, on the other hand, majority transfer from the groom's family to the parents of the bride is more common. Although this heterogeneity of process is also changing over time, the focus of our study is on the changes over time in choice of a spouse as the first step in these processes.

To guide our investigation of the links between the social change in Nepal and individual participation in the choice of a spouse, we use the family mode of social organization framework (Thornton, Fricke et al. 1994; Thornton and Fricke 1987). This framework focuses on the extent to which the activities of daily social life, including authority patterns, information flow, living arrangements, production, consumption, socialization, leisure, and reproduction, are organized by the family versus other nonfamily social institutions and organizations. Rural Nepal has experienced a rapid increase in access to new social organizations and services such as schools, employment centers, marketplaces, bus services, movie halls, dormitories, and government services. The proliferation of these new social organizations significantly increased the locus of individuals' daily activities outside the domestic sphere. The result has been widespread experience, even in youth, with new nonfamily activities, including education, work, nonfamily living, residential change, exposure to mass media, and participation in youth clubs. The key prediction from the family mode of organization framework is that increased exposure to nonfamily social activities among youths will create greater independence between youths and the parental generation (Thornton, Fricke et al. 1994; Thornton and Fricke 1987). Three specific mechanisms operate together to produce this relationship: increased parental respect for children, children's changing attitudes toward family formation, and children's opportunities to interact with new same-generation people.

#### Increased Parental Respect for Children

As children's daily activities are more organized outside the domestic sphere, the parent-child bond changes significantly. The child who would otherwise be a junior partner in her or his parents' domestic chores becomes a source of new ideas and resources. Thornton, Fricke, et al. (1994) suggest that exposure to schooling substantially modifies the authority of parents over their children. Once children are exposed to schools, they acquire knowledge and information that are not commonly available within the family. The new knowledge and information may lead parents

to view their authority over their children differently than they would if their children had not gone to school. Similarly, as children start to work for pay, their contribution to household economic resources may increase substantially. This increased contribution to household resources may increase parents' willingness to listen to their children and respect their ideas. This increased willingness of parents then encourages children to make more independent decisions about their life in general. Caldwell (1982) argues, "Power in economic decision-making usually means power in demographic decision making" (p. 161). In particular, this power may include more freedom for children to choose their marriage partners.

#### Children's Changing Attitudes toward Family Formation

The new information children learn outside the domestic sphere may also have important consequences for the way they view family and marriage. Previous studies of education and attitudes in Asia indicate that schooling fosters an independent outlook in children, which may include more positive attitudes toward individuals choosing their spouse (Thornton, Chang, and Sun 1984; Thornton and Lin 1994). This is likely to be particularly true in South Asia, where educational materials themselves often include British-based examples of family life and individual choice (Caldwell 1982; Caldwell et al. 1988). Caldwell (1982) and Thornton (2005) argue that present-day schooling and mass media in many settings outside the West are crucial factors in changing cultures and values toward those in the West. In fact, multiple mechanisms may link media exposure to new, more Western ideas about marriage. First, some scholars suggest that the media usually tends to favor the elite and represents their views of social issues (McQuail 1985). Mass media such as radio, television, and movies in Nepal overwhelmingly represent Western worldviews (Axinn and Barber 2001), including positive views of love marriage. Second, there is also a long-standing argument that the media encourages a breakdown of social control (Janowitz 1981). In Nepal, since the public was allowed to open schools by the Ranas in the 1950s, virtually all schools use Indian- and British-model curricula (Beutel and Axinn 2002) with very limited teaching in religious schools. Thus, increased awareness of Western views that are not compatible with the common values in Nepalese society may encourage the breakdown of historical social control mechanisms. Therefore, more education and exposure to the media are likely to promote Western views in this setting. As a result, we expect that both formal education and media exposure encourage Western ideas such as love marriage and the involvement of individuals in their choice of a spouse in this setting.

Children's experiences with nonfamily living may also promote new

ideas about family and marriage (Thornton and Lin 1994; Thornton et al. 1984). Research from other settings demonstrates that early adult experiences in nonfamily living stimulate changes in attitudes away from historically held family-formation values and toward new alternative values (Axinn and Barber 1997; Waite et al. 1986). Key mechanisms producing this effect are social learning, from interactions with new individuals, and cognitive consistency, creating more positive attitudes toward alternatives to family life because of the nonfamily living experience (Axinn and Barber 1997). However, experiences with nonfamily living are likely to be closely tied to residential moves, because nonfamily living implies a move out of the parental household for children and young adults. Further, residential moves may themselves stimulate new family-formation attitudes and values, because the moves are likely to alter the group of individuals with whom the mover interacts (Hagan, MacMillan, and Wheaton 1996). Thus both nonfamily living experiences and residential moves may stimulate new attitudes toward family formation and produce more positive attitudes toward individual participation in spouse choice in this setting.

#### New Opportunities to Interact with Similar-Age People

Before the spread of mass education, transportation, employment centers, and markets, most personal interactions in Nepal were limited to those who lived within walking distance. In most cases, social interactions among close family members, extended family, and other relatives predominated over interaction with nonrelatives. As a result, young people had relatively little interaction with others of the same age—others who might include potential spouses. But with the spread of mass education, employment opportunities outside of home, more reliable and regular transportation, and marketplaces, there has been a significant increase in the number and kinds of people with whom young people have access to interact. Evidence from other settings is consistent with the conclusion that these new interaction patterns may influence marriage. In Taiwan, Thornton, Chang, and Yang (1994) found that, compared to an older marriage cohort (1955–59), a significantly large proportion of a younger marriage cohort (1980–84) met their spouses at school and through work. Improved access to schooling, nonfamily employment, better transportation facilities, and marketplaces substantially broadens the pool of potential social contacts available to an individual. This contact is likely to stimulate greater participation in spouse choice.

In rural Nepal, participation in youth clubs is a nonfamily activity especially likely to produce this effect (Macfarlane 1976). Nepalese youth clubs are often designed around a specific set of activities, such as sports,

music, or politics, but they are reserved as social organizations for the never married. Furthermore, most of these clubs allow both male and female members. So, participation in these clubs during childhood and early adulthood is quite likely to give individuals access to social interaction with others of similar age, of the opposite sex, and not of the immediate family. We predict that participation in these types of youth clubs is likely to increase the chances that young people have some involvement in the choice of a spouse.

#### Summary

Thus, the model we propose identifies potential changes among both the parental generation and the children's generation resulting from the children's participation in social activities organized outside the family. In the past, parents usually controlled the choice of spouse for their children in rural Nepal. However, the more children are involved in nonfamilial activities, the more parents are likely to become willing to allow children's participation in spouse choice, the more children themselves are likely to prefer to participate in spouse choice, and the more children are likely to actually interact with potential spouses whom they might choose. The result is that greater participation in nonfamily activities during childhood and early adulthood, including education in schools, nonfamily work, nonfamily living, interaction with the media, and participation in youth groups, will increase the likelihood that young people have some input into the choice of their spouse.

#### Age at Marriage and Spouse Choice

Unfortunately, all efforts to study the determinants of participation in spouse choice face a common empirical problem: the correlation between age at marriage and spouse choice. Those who have marriages arranged by their parents tend to have early marriages, and those who choose their own spouse tend to have late marriages. Waiting for a later marriage gives an individual more opportunity to meet a spouse on his or her own, without assistance from parents. Moreover, waiting for a later marriage also gives individuals more opportunity to experience the same nonfamily activities that we predict will increase the chances they participate in the choice of their spouse. Thus, both age at marriage and spouse choice may be codetermined, and, in fact, one can observe neither age at marriage nor spouse choice without the other also occurring. Thus, it is virtually impossible to separate effects on age at marriage from effects on spouse choice. Our primary aim in this article is to examine the determinants of spouse choice, not the determinants of age at marriage. Therefore, we



first test models of the total effects of nonfamily activities on spouse choice, ignoring age at marriage. We then add age at marriage to our model of spouse choice to determine the extent to which our initial estimates are robust even when this potentially confounding mechanism is included. Although this approach does not solve the basic empirical problem of the association between age at marriage and spouse choice, we believe that the two estimates of influence on spouse choice we calculate are good bounds on the true causal effects. By omitting age at marriage, we calculate one bound under the assumption that spouse choice is exogenous of marital timing. By including age at marriage, we calculate a second bound under the assumption that marital timing is exogenous of spouse choice. Though neither assumption is totally correct, these two bounds determine the range of magnitude for the effect of each determinant considered.

As a further refinement, we also test the effects of nonfamily experiences on the rate of marriage using hazard models. These models focus on the timing of the transition from single to married, but separate the transition to marriage into two competing risks: the hazard of arranged marriage and the hazard of marriage involving some individual participation. Although this approach focuses on effects on the timing of marriage, it allows us to estimate separate effects for the timing of arranged marriage and the timing of marriage that involves some choice. Factors that affect the timing of marriage via these alternative routes differently also affect the likelihood of an arranged versus a choice marriage. Thus we expect to find substantive results in this analysis that are consistent with the results from our other analyses of spouse choice, and this consistency increases our confidence that variations in age at marriage do not explain the observed associations with spouse choice. As described in our discussion of results, this competing-risks hazard formulation of the problem has other advantages as well.

## DATA AND METHODS

### Setting and Data

This study uses data collected by the Chitwan Valley Family Study (CVFS) in 1996. The Chitwan Valley in rural Nepal provides an ideal setting for tests of the theoretical framework outlined above. Until the early 1950s, this valley was completely covered with dense forest and populated only by sparsely settled groups of hunter-gatherers. Around the mid-1950s, the Nepalese government opened this valley for settlement by people from the neighboring hills and mountains. But it was not until the late 1970s that the valley was connected to the rest of the country by

all-weather roads (Shivakoti et al. 1997). As a result, over time, there has been a massive expansion of schools, health services, markets, bus services, and employment centers in Chitwan (Axinn and Yabiku 2001). This massive expansion of services resulted in more young people going to school, working outside the family, living away from family, interacting with mass media, and participating in youth clubs. For example, among those born between 1936 and 1945, only 31% ever attended school, whereas among those born between 1966 and 1975, fully 84% had ever attended school. Likewise, among those born between 1936 and 1945, only 5% ever participated in youth clubs, whereas among those born between 1966 and 1975, 14% ever participated in youth clubs, nearly a threefold increase. In another example, rates of nonfamily living more than doubled between the same birth cohorts.

Even more important, virtually all marriages in this setting were arranged by parents up until the recent past. Ethnographic evidence from Nepal indicates arranged marriage was normative in most ethnic groups in the region before the 1950s (Acharya and Bennett 1981; Ahearn 1994, 2004; Bennett 1983; Bista 1972; Fricke 1986; Macfarlane 1976). Survey data from the CVFS support this conclusion and indicate a rise in individual participation in spouse choice. The proportion of individuals in each marriage cohort who participated in the choice of a spouse rose from virtually zero in the 1936–45 marriage cohort to approximately 50% in the 1986–95 marriage cohort (not shown in tables). This trend was monotonic and virtually linear. Thus, this study area offers an opportunity to test hypotheses regarding the relationship between individuals' premarital nonfamily experiences and their participation in the choice of their own spouses.

The CVFS selected a systematic probability sample of 171 neighborhoods in western Chitwan (Barber et al. 1997). The CVFS defined a neighborhood as a geographic cluster of 5–15 households. Once a neighborhood was selected, all individuals ages 15–59 residing in the sampled neighborhood were interviewed. If any of these study respondents had a spouse living elsewhere, that spouse was interviewed as well. A total of 5,271 individuals were interviewed with a 97% response rate. This study provides rich retrospective measurement of the occurrence and timing of individual life events collected using a life-history calendar and linked measures of the characteristics of those events using a structured questionnaire. The life-history calendar method provides more accurate retrospective measurement of life events and the characteristics of those events (Belli 1998; Freedman et al. 1988). Moreover, the life-history calendar used in the CVFS was specially designed to use local events to help respondents recall the timing of personal events and to allow respondents to report their recall of marital events in a manner most consistent with

local practices (Axinn, Pearce, and Ghimire 1999). We rely on the special strengths of this method to measure the sequences of events in individuals' lives and to develop models of the impact of premarital nonfamily experiences on the likelihood that individuals participate in the choice of their first spouse. For our estimation of the likelihood of participation in spouse choice, we use information from the 2,788 ever-married individuals ages 25–54 in the CVFS data. For the estimation of hazards of exiting from single status to married status, we use information from all 3,018 individuals ages 25–54. Note that all interviews were conducted in Nepalese, so question wordings provided below are English translations of the original text.

### Measures

*Marriage.*—Historically in Nepal virtually all marriages were arranged by parents. Instead of using a dichotomy of arranged marriage versus individual choice, we treat the process of transformation from arranged marriage to individual-choice marriage as a continuum, and we focus on the level of respondent participation in the choice of her or his spouse. The study measured spouse choice using responses to a question that asks, “People marry in different ways. Sometimes our parents or relatives decide whom we should marry, and sometimes we decide ourselves. In your case, who selected your (first) spouse? Your parents or relatives, yourself, or both?” We coded our measure of participation in spouse choice as one if a respondent answered “parents or relatives” and five if the respondent answered “myself.” If the respondent answered with “both” she or he was asked a follow-up question, “Although both of you may have decided, one of you may have had a little more influence than the other. Who had more influence in choosing your spouse? You or your parents and relatives?” If the respondent answered with “parents or relatives,” we coded that answer as two; if he or she responded with “myself,” we coded that answer as four; and if the respondent answered with “both equally,” we coded that answer as three. This gives us an ordinal scale of one to five, in which one means respondent did not participate in the choice of her or his spouse (arranged marriage), and five means respondent solely chose her or his spouse (individual-choice marriage). Out of 2,788 ever-married respondents interviewed, 65% reported that their first marriages were solely arranged by parents or relatives, and the remaining 35% reported they have either participated to some degree in the choice of spouse or solely chose their spouse.<sup>2</sup>

<sup>2</sup> Note that we also examine a dichotomous summary measure of this ordinal scale. The dichotomous measure is coded one if the respondent had any say in the choice

The study also collected a complete marital history using the life-history calendar method (Axinn et al. 1999). These histories provide a measure of the timing of first marriage, which we use to operationalize the discrete-time hazard rate of first marriage. By combining these marital history measures with respondents' answers to the questions regarding their participation in spouse choice, described above, we are able to further subdivide first marriages into those in which respondents had no choice (values of one on the measures described above) and those in which the individual had some choice (values of two, three, four, or five on the measures described above). This information gives us the means to estimate the hazard of first marriage by an arrangement, treating first marriage in which an individual has some choice as a competing risk, and the hazard of first marriage through some individual choice, treating arranged marriage as a competing risk. Thus, we conceptualize arranged and individual-choice marriage as two different ways to exit from the single state and treat these two ways of exiting the single state as competing risks.

In order to capture the multidimensional nature of nonfamily experiences, we focus on five nonfamily experiences: schooling, employment, nonfamily living, exposure to media, and participation in youth clubs. Below we describe the measurement of each of these nonfamily experiences. Descriptive statistics for each of these measures are displayed in table 1.

*Educational experiences.*—The CVFS collected a complete history of respondents' educational experiences using life-history calendar methods. Every year the respondent was in school was recorded on the life-history calendar. This procedure allows us to record both the respondent's school enrollment and the total length of time she or he spent in school. In addition, respondents were also asked whether they ever attended adult education (basic literacy programs for adults), and this is included in our measures of educational experiences. The great flexibility of these life-history-calendar-based measures allowed us to investigate many different potential functional forms for the effects of education on marriage.<sup>3</sup> Based

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of a spouse (two to five on the ordinal scale), and zero if the respondents had no choice. Results from models of this dichotomous outcome are exactly parallel to those presented for the ordinal outcome.

<sup>3</sup> In fact, we used this flexibility to investigate a wide array of functional forms for all of our measures of nonfamily experiences. Our investigation included linear, quadratic, log, categorical, and dichotomous forms. Using model-fit criteria, these investigations led us to choose dichotomous indicators for ever having experienced work or nonfamily living arrangements and the separated enrollment and attainment measures for education. In fact, varying functional form assumptions produce equivalent substantive results for these measures, but the dichotomous form yields both simplified interpretation and superior model fit for work and living arrangements.

on that investigation we chose to follow the previous literature on the effects of education on marriage and separate the total effects of education into effects of education enrollment and effects of educational attainment (Thornton, Axinn, and Teachman 1995; Yabiku 2005). Enrollment is coded as one for years respondents enrolled in school, and zero otherwise. Years of schooling is the cumulative total of the years respondents spent in school or adult education up to one year before the particular time a person was at risk of marriage. The value for years of schooling ranges from 0 to 22 (see table 1). For the event-history models, our measures of education include time-varying measures of school enrollment and number of years of schooling.

*Nonfamily work.*—Our measure of nonfamily employment before marriage also uses information from the life-history calendar. All years that a respondent was employed outside the family were recorded in the life-history calendar. From this record we created a dichotomous measure of whether or not the respondent ever worked for pay outside of home. In the event-history models, the measure of employment is a time-varying measure of whether or not a respondent was ever employed in nonfamily work before the year of risk of marriage.

*Nonfamily living.*—Young people who leave their parents' homes either for higher education or for nonfamily work have adopted new living arrangements away from family, such as living in school dormitories or renting an apartment. Others who choose the military live in army barracks. Our measure of exposure to these nonfamily living arrangements before marriage comes from the life-history calendar. Respondents were asked, "Have you ever lived separately from your parents for six months or more?" If the respondent answered yes to this question then they were asked "In which year did you start living away from your parents for six months or more for the first time?" Next, respondents were asked a series of questions about all the other living arrangements they had ever experienced. Spells of each different living arrangement were recorded on the life-history calendar (Axinn et al. 1999). From this record we created a dichotomous measure of whether or not a respondent ever lived in a nonfamily living arrangement. In the event-history models, the measure of nonfamily living is a time-varying measure of whether or not a respondent ever lived away from family members (alone, in a dormitory or barracks, or with unrelated housemates) prior to the risk of getting married.

*Media exposure.*—In our study area, the first movie hall was established in late 1969. Television first began to appear in Chitwan in the late 1980s. However, once these new media technologies arrived, they drew tremendous attention among the population of Chitwan, so that many, many people traveled to nearby theaters, listened to friends' radios, or watched

TABLE 1  
 DESCRIPTIVE STATISTICS OF MEASURES USED IN THE ANALYSIS OF THE EFFECTS OF PREMARITAL NONFAMILY EXPERIENCES ON THE  
 PARTICIPATION IN THE SELECTION OF FIRST SPOUSE ( $N = 2,788$ )

Variable	Coding	Mean	SD	Min	Max
Participation in spouse selection .....	1 = low, 5 = high	2.13	1.69	1	5
Premarital nonfamily experiences:					
School enrollment .....	0 = no, 1 = yes	.53	.50	0	1
Educational attainment (years of schooling) .....	Total years	4.19	5.17	0	22
Ever had nonfamily work .....	0 = no, 1 = yes	.34	.47	0	1
Ever lived in nonfamily living .....	0 = no, 1 = yes	.18	.38	0	1
Media exposure .....	Index 0-3	1.34	1.09	0	3
Participation in youth clubs .....	(0 = no, 1 = yes)	.06	.24	0	1
Gender:					
Female .....	0 = male, 1 = female	.51	.50	0	1
Age at marriage .....	Age in years	18.38	4.53	5	45
Family background:					
Mother's no. of children .....	Total no.	6.04	2.75	1	19

Mother's work for pay .....	0=no, 1=yes	.21	.38	0	1
Mother's education .....	0=no, 1=yes	.02	.14	0	1
Father's education .....	0=no, 1=yes	.19	.39	0	1
Residential moves .....	No. of moves	.82	1.10	0	9
Ethnicity:					
High-caste Hindus .....	0=no, 1=yes	.46	.50	0	1
Low-caste Hindus .....	0=no, 1=yes	.12	.32	0	1
Newar .....	0=no, 1=yes	.06	.24	0	1
Hill Tibeto-Burmese .....	0=no, 1=yes	.18	.38	0	1
Terai Tibeto-Burmese .....	0=no, 1=yes	.18	.38	0	1
Birth cohort:					
Born 1962-71 (ages 25-34, cohort 1) .....	0=no, 1=yes	.42	.49	0	1
Born 1952-61 (ages 35-44, cohort 2) .....	0=no, 1=yes	.33	.47	0	1
Born 1942-51 (ages 45-54, cohort 3 ) .....	0=no, 1=yes	.25	.43	0	1

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a neighborhood television. Our measure of media exposure is an index constructed from responses to three sets of questions in the individual interview. Respondents were asked, "Have you ever listened to radio?" If the respondent said yes, they were asked, "How old were you when you listened to a radio for the first time?" We only include experiences of listening to the radio that occurred before marriage in our measure of premarital media exposure. Similar questions were asked about watching television and seeing movies. We coded each item one if the respondent has been exposed to radio, television, or movies before marriage, and zero otherwise. Because responses to these questions are correlated, and in order to avoid problems of multicollinearity, we sum these three variables to a scale with values ranging from zero to three. In this scale, zero means the respondent was exposed to none of the media sources before her or his marriage, whereas a value of three means the respondent was exposed to all three media sources. In addition, for the event-history models, we coded exposure to media as zero for all the years before the respondent was exposed to any of the media sources, one when exposed to any one source of media for the first time, two when exposed to any second media source, and three when exposed to all three media sources. Thus, the measure of exposure to media varies by time, and the values again range from zero to three.

*Participation in youth clubs.*—The expansion of mass education, employment opportunities outside the family, transportation, and communication have recently created new venues for social interactions: youth clubs. These youth clubs may be organized with a wide range of objectives, including 4-H clubs to help young farmers to learn new agriculture technology, cultural youth clubs to preserve the heritage and culture of a specific ethnic group, or political youth clubs designed to support one of Nepal's many political parties. However, the most common feature of these clubs is that they bring together unmarried youth with varied backgrounds including different sexes, ethnic groups, and education. Our measure of participation in youth clubs comes from responses to a question asking, "Have you ever been a member of a youth club?" If respondent answered "yes" then she or he was asked, "How old were you when you became a member of a youth club for the first time?" We only include participation in youth clubs that occurred before marriage in our measure of premarital participation in youth clubs. We coded this measure one if the respondent became a member of a youth club before she or he got married, and zero otherwise. For the event-history models, we coded this measure as zero for all the years before the respondent became a member of a club, and one for the years after she or he became a member of a club.

*Controls.*—An individual's ethnicity, gender, birth cohort, and family



background may also affect the level of participation in the choice of a spouse in this setting. Because these factors may also influence an individual's level of participation in nonfamily activities, it is important to control for these factors in examining the impact of nonfamily activities on individual variations in involvement in spouse choice. In fact, precisely because of this problem, many previous studies are limited to a single ethnic group, a single gender, or a single birth cohort. For example, even among studies of marital processes in Nepal most studies focus on a single ethnic group: Macfarlane's (1976), Fricke's (1986), and Ahearn's (1994) studies on the Gurung, the Tamang, and the Magar, respectively. Our research extends this previous work by examining spouse choice among the general population, but this design requires individual models to include controls for these subgroup distinctions.

Nepalese society consists of many ethnic and linguistic subgroups (Bista 1972; Dahal 1993; Gurung 1980, 1998). These subgroups differ in many respects that have important consequences for both premarital nonfamily experiences and participation in spouse choice. Although ethnicity in Nepal is complex, scholars have often categorized ethnicity into five major groups for analytical purposes: high-caste Hindus, low-caste Hindus, Newar, Hill Tibeto-Burmese, and Terai Tibeto-Burmese (Axinn and Yabiku 2001; Blaikie et al. 1980). We have adopted the same categories. Although the first two groups, high-caste Hindus and low-caste Hindus, have the same Indian origin and both practice Hinduism, the first group has historically had much more control over political decisions and access to opportunities in both the formal and informal sectors. Hill Tibeto-Burmese are of Tibetan origin and tend to practice Buddhism. This category includes groups such as the Tamang, the Gurung, and the Magar (Fricke 1986). The Terai Tibeto-Burmese people are the original inhabitants of the Chitwan Valley (Guneratne 1994). They were jungle dwellers before the valley was opened for settlement, and they adopted farming only after the people from surrounding areas started growing crops in this valley. Newars are distinct from all of these other groups in the sense that they practice a mixture of Hinduism and Buddhism and are heavily involved in the business sector of the country. High-caste Hindus and Newars are groups who hold more restrictive values about an individual's choice of marriage partner, whereas low-caste Hindus, Hill Tibeto-Burmese, and Terai Tibeto-Burmese are groups who have more relaxed attitudes toward an individual's choice of marriage partner. (For more information about these ethnic groups, see Fricke [1986], Gurung [1980], Macfarlane [1976], and Bista [1972].) We coded individuals one if they are members of a specific category, and zero if not, and treated high-caste Hindus as a reference group for comparison. We also tested for interactions between ethnic group and exposure to nonfamily experiences.

As elsewhere, gender inequalities in various aspects of social life are deeply rooted in Nepalese society (Acharya and Bennett 1981; Bennett 1983; Morgan and Niraula 1995; UNICEF 1998). Compared to men, women have lower social status in South Asian societies in general (Caldwell et al. 1983; Dyson and Moore 1983; Morgan and Niraula 1995). Most women, regardless of their ethnic group, wealth, and age, are constrained from participation in various activities, such as education, employment, politics, and business. This disadvantaged position of women has substantially reduced their ability to voice their wishes freely. As a result, we expect that compared to men, women have fewer premarital nonfamily experiences and also participate less in spouse choice. We included gender as a control in our analysis, coded one if the respondent is female, and zero if male. We also test for interactions between gender and nonfamily experiences.

The intergenerational transmission literature suggests that there is a significant parental influence on child outcomes. Parental resources (both economic and human capital resources) during childhood are positively related to children's psychological and behavioral outcomes later in life (Axinn, Clarkberg, and Thornton 1994; Bengtson 1975; Cooksey, Mengaghan, and Jekielek 1997; Sewell, Hauser, and Wolf 1980). Because parental experiences may affect both children's nonfamily experiences and their participation in the choice of a spouse, we controlled for a number of parental characteristics in our multivariate models. These include mother's work for pay during respondent's childhood, mother's total number of children, and parents' education. The measure of mother's work comes from a response to the question, "Did your mother ever work for pay outside your home before you were 12 years old?" We coded "yes" responses one, and "no" responses zero. The total number of mother's children comes from the response to the question, "How many children did your mother have?" The measure of parental education comes from the response to a series of questions beginning, "Did your father ever go to school?" Positive responses are coded as one, and negative responses are coded zero. The same question was asked regarding the mother's education and coded exactly the same as father's education.

Because residential moves alter the group of people with whom unmarried youth have an opportunity to interact, this may have important influence in spouse selection. However, because the decision about residential moves is primarily associated with parents' decisions, we considered residential move as related to family background and treated it as a control. Our measure of residential moves comes from the migration history included in the life-history calendar. Each respondent was asked a series of questions beginning with: "In what year did you move to this neighborhood? How many years have you lived in this neighborhood?"

Where did you live before moving to this neighborhood? How many years did you live in that place?" A completed record of all places of residence was gathered. From this record, we calculated the total number of residential moves before marriage and also a time-varying cumulative number of residential moves prior to the year in question.

Previous studies suggest significant differences between birth cohorts both in terms of nonfamily experiences and participation in mate choice (Goode 1970; Thornton, Chang, and Lin 1994). Compared to older cohorts, more recent cohorts have a significantly higher level of nonfamily experiences and participate more in the choice of their spouses (Thornton, Chang, and Yang 1994). Therefore, we include a control for the respondent's birth cohort. Respondent's birth cohort is coded in three categories—cohorts born 1962–71, 1952–61, and 1942–51. We treated the oldest cohort born 1942–51 as the reference group in our analyses. We also test for interactions between cohort and exposure to nonfamily experiences.

We also use the birth cohort variable as an indication of social change in this population. We do so by both examining the overall effect of birth cohort on trends in mate choice and the extent to which the effect of this historical change can be accounted for by trends in the nonfamily experiences of young people. Our expectation is that the introduction of nonfamily experiences of young people into the analysis explains much of the historical change in mate choice, thereby suggesting that changes in nonfamily activities have played a substantial role in the tremendous historical increase in the involvement of young people in mate choice.

#### Analytical Strategy

In order to estimate multivariate models of our ordinal measure of participation in spouse choice, we use an ordered logistic regression technique. Ordered logit estimates the relationship between an ordinal dependent variable and a set of independent variables (Agresti 1990, 1996; Demaris 1992). We use the cumulative logit function to calculate these estimates. Cumulative logits are particularly appropriate when the ordinal measure being used actually reflects an underlying factor that is believed to be continuous (Agresti 1990) as in the case of our measure of participation in spouse choice.

We estimate cumulative logits for four out of five levels of participation, treating no participation (arranged marriage) as the reference category. The interpretation of the estimates of effect parameters in terms of log odds is not entirely intuitive. In order to make the interpretation of the results more intuitive, we present coefficients as odds ratios, which are antilogs of the raw coefficients. These odds ratios then can be interpreted as the amount by which the odds are multiplied for each unit change in

the respective independent variable. If the coefficient is greater than one, the effect is positive, and every unit change in the independent variable increases the odds of being in the next-higher category of participation in spouse choice. If the coefficient is less than one, then every unit change in the independent variable decreases the odds of participation in spouse choice.

As a refinement of our analysis, we also estimate the effects of nonfamily experiences on the rate of marriage using discrete-time hazard models. These models focus on the timing of the transition from single to married, but separate the transition to marriage into two competing risks: the hazard of arranged marriage and the hazard of marriage involving some participation.

Our time-varying measures of characteristics of the respondents are measured in the year *prior* to the current year of exposure to marriage. In other words, all time-varying covariates are lagged by one year. We adopt this strategy to guard against the possibility of reciprocal causation within a particular year. Person-years of exposure are the unit of analysis. We use logistic regression to estimate these discrete-time hazard models. The tables present exponentiated log-odds coefficients, which can be interpreted as the multiplicative effect of a one-unit change in the independent variable on the odds of marrying. Also note that because the probability of marrying is so small within each year, the *odds* of marrying are similar to the *rate* of marrying. Thus we sometimes refer to the effects of the covariates on the rate of marriage.

## RESULTS

We present our findings in three steps. First, we present results from our ordered logistic regression estimates of the degree of participation in selection of a spouse. Second, we describe our analysis of historical trends in the participation of spouse selection. Third, we present our results from discrete-time hazard analyses of marriage timing. As we discuss above, the empirical relationship between premarital experiences and participation in spouse choice is complicated by the fact that choice of a spouse cannot be observed independently from marriage timing. Although all studies of spouse choice face this problem, we take advantage of our detailed measures of marital processes to estimate these relationships four different ways. First, we estimate the impact of premarital experiences on the degree of participation in spouse choice, ignoring age at marriage. Second, we estimate the impact of premarital experiences on the degree of participation in spouse choice, controlling age at marriage. Third, we estimate the impact of premarital experiences on the hazard of first mar-

riage in which the individual had some say in the choice of a spouse. Fourth, we estimate the impact of each premarital experience on the hazard of first marriage in which the individual had no say in the choice of a spouse (fully arranged marriage). None of these four analyses solve the empirical problem of the association between spouse choice and age at marriage. However, when a specific experience has a similar impact on spouse choice across these four different types of analysis, our confidence in the results is greatly increased.<sup>4</sup>

#### Ordered Logistic Estimates of the Degree of Participation in Spouse Choice

Table 2 presents our estimates of the effects of premarital nonfamily experiences on the degree of participation of unmarried youth in the selection of their first spouse.<sup>5</sup> We begin by presenting the effects of controls, including respondent's gender, parental characteristics, ethnicity, and birth cohort.<sup>6</sup>

Table 2 also presents our estimate of the effects of premarital nonfamily experiences, ignoring age at marriage. In other models not shown in this table, we estimated the impact of all five nonfamily experiences separately, but because these effects are largely independent of one another, in table 2, we display the effects estimated in a single model. First, we present our estimates of effects of school enrollment and educational attainment on participation in spouse choice. Unlike the findings from other settings, we find no evidence of schooling effects on the participation of spouse choice in our analyses. Although this result seems surprising, as discussed

<sup>4</sup> Note that the discrete-time hazard formulation of the spouse-choice outcome avoids problems associated with the censoring of those who have not yet married, but who may eventually go on to marry, from our analyses.

<sup>5</sup> Because the sample design generating these data included clustering by neighborhood, we reestimated all of our models of degree of participation in spouse choice using multilevel ordered logistic regression technique in hierarchical linear modeling (HLM). This alternative estimation technique yielded the same results as those presented in table 2. Because the sample also includes husbands and wives, we also reestimated our models using this same technique to allow for couple-level clustering. This alternative estimation sometimes yielded somewhat smaller estimates of specific parameters, but in no case altered the substantive conclusion based on these results.

<sup>6</sup> Recall that 35% of our respondents reported that they participated to some degree in the choice of their first spouse, whereas the remaining 65% reported that their first marriages were solely arranged by parents or relatives. Among the 35% who reported some degree of participation, 6% reported that although they had participated, their parents or relatives had more influence on the decision, 2% reported that both parents or relatives and the respondent equally participated in the choice, about 5% said that although their parents or relatives had participated it was mostly their decision, and the remaining 22% reported that they solely chose their spouse.

TABLE 2  
 ORDERED LOGIT ESTIMATES OF IMPACT OF PREMARITAL NONFAMILY EXPERIENCES ON  
 THE DEGREE OF PARTICIPATION IN THE SELECTION OF THE FIRST SPOUSE

VARIABLE	DEGREE OF PARTICIPATION IN SPOUSE SELECTION		
	Controls Only	Without Age at Marriage	With Age at Marriage
Premarital experiences:			
School enrollment (enrolled in school) .....		.93 (.54)	1.06 (.38)
Educational attainment (years of schooling) .....		1.00 (.00)	.99 (.85)
Ever had nonfamily work .....		1.53*** (3.99)	1.33*** (2.60)
Ever lived in nonfamily living .....		1.03 (.24)	.97 (.18)
Media exposure (index values range 0-3) .....		1.19*** (3.90)	1.10** (1.65)
Participation in youth clubs .....		1.40** (1.91)	1.37** (1.77)
Controls:			
Age at marriage .....			1.08*** (5.57)
Gender: <sup>a</sup>			
Female .....	.28*** (13.79)	.35*** (9.74)	.40*** (8.45)
Family background:			
Mother's no. of children .....	.98 (1.11)	.98 (1.23)	.98 (1.29)
Mother's work for pay .....	1.29*** (2.43)	1.19* (1.56)	1.21** (1.72)
Mother's education .....	1.39 (1.17)	1.29 (.89)	1.22 (.70)
Father's education .....	1.15 (1.23)	1.09 (.78)	1.11 (.88)
Residential moves .....	1.19*** (4.33)	1.08* (1.62)	1.05 (1.12)
Ethnicity: <sup>b</sup>			
Low-caste Hindus .....	1.35** (2.12)	1.38** (2.21)	1.43*** (2.44)
Hill Tibeto-Burmese .....	3.76*** (11.64)	3.79*** (11.41)	3.50*** (10.65)
Newar .....	1.67*** (2.90)	1.58*** (2.57)	1.51** (2.28)
Terai Tibeto-Burmese .....	2.05***	2.18***	2.18***

TABLE 2 (Continued)

VARIABLE	DEGREE OF PARTICIPATION IN SPOUSE SELECTION		
	Controls Only	Without Age at Marriage	With Age at Marriage
	(6.07)	(6.23)	(6.20)
Birth cohort: <sup>c</sup>			
Born 1962–71 (ages 25–34, cohort 1) .....	1.81*** (5.36)	1.36*** (2.38)	1.56*** (3.34)
Born 1952–61 (ages 35–44, cohort 2) .....	1.15 (1.23)	1.03 (.29)	1.13 (1.04)
–2 log <i>L</i> .....	507.72	551.83	582.79
<i>df</i> .....	12	18	19
<i>N</i> .....	2,788	2,784	2,784

NOTE.—Odds ratios are reported on the first line, with *Z*-statistics in parentheses on the second line. All models were estimated using multivariate ordered logistic regression.

<sup>a</sup> Male as reference group.

<sup>b</sup> High-caste Hindus as reference group.

<sup>c</sup> Born 1942–51 (ages 45–54, cohort 3) as reference group.

\*  $P < .10$ , one-tailed tests.

\*\*  $P < .05$ .

\*\*\*  $P < .01$ .

below, the hazard model format reveals important differences in the effects of enrollment and attainment on rates of marriage via different arrangements.

Second, we present estimates of the effects of nonfamily work on the degree of participation in spouse choice. Nonfamily work has a strong statistically significant, positive effect on participation in spouse choice, as predicted. The odds ratio of 1.53 indicates that the odds of being in a higher category of participation in the choice of spouse for an unmarried youth who had ever worked for pay outside of home is 53% greater than that for a young person who had never worked for pay outside of home. This finding is consistent with our hypotheses and the findings of previous studies from other settings (Thornton, Chang, and Yang 1994).

Third, we present estimates of the effects of nonfamily living. Although previous studies from other settings suggest nonfamily living may be an important influence on marital behavior, we find no evidence for this effect in any of our models (including those not shown here). However, because changes in living arrangements generally include residential moves, and we control for residential moves, the effect of residential moves eclipses the effect of nonfamily living. In fact, residential moves have a statistically significant, positive effect on participation in spouse choice, as predicted. The odds ratio of 1.08 indicates that the odds of being in a higher category of participation in the choice of spouse for an unmarried

youth who had made at least one residential move is 8% greater than that for a young person who never experienced a residential move.

Next, we present estimates of the effects of media exposure (see table 2). Previous studies have rarely had an opportunity to examine the influence of media exposure on participation in the choice of a spouse. We find that exposure to media has a positive, significant effect on participation in spouse choice. Every one-unit increase in the media exposure index increases the odds of higher participation in the choice of spouse by 19%. The media exposure index is the sum of three dichotomous measures: listening to the radio, watching television, and seeing movies. The odds ratio of 1.19 means that the odds of participation in a higher category of spouse choice for those who have listened to a radio, watched television, and seen a movie (all three experiences) are 69% greater than for those who had never listened to a radio, watched television, or seen a movie before their marriage (none of the three experiences).<sup>7</sup> This is a large effect on the variations in individual participation in the choice of a first husband or wife, an effect that is also not statistically different for men and women (not shown in tables).

Finally, our estimates of the effects of participation in youth clubs on spouse choice are presented in table 2. We find that participation in youth clubs has a strong influence on the degree of participation in the choice of a spouse. The odds of greater participation in spouse choice for those who participated in youth clubs are 40% higher than for those who did not participate in youth clubs. Several scholars have argued that such relationships between media exposure, participation in youth clubs, and marital behaviors are likely to exist (Caldwell 1982; Caldwell et al. 1983; Macfarlane 1986), but few have actually had the opportunity to test these hypotheses empirically. We find that these relationships are, in fact, substantial.

*Controlling for age at marriage.*—Table 2 displays our estimates of the effects of premarital nonfamily experiences, controlling for age at first marriage. As we indicated above in our theoretical framework, all studies of spouse choice face the potential problem that the selection of a spouse may be closely associated with age at marriage, and later marriage creates more time to be exposed to nonfamily experience. Because neither age at marriage nor participation in the selection of a spouse can be observed without the occurrence of the other, it is not possible to estimate the independent effects of one on the other. This makes separation of effects on participation in selection of a spouse from effects on age at marriage particularly difficult. To address the issue, we reestimate all the models

<sup>7</sup> This is calculated by taking the odds ratio of 1.19 to the third power, yielding an estimated difference of 1.69, or 69%.



calculated without age at marriage in table 2 over again, this time including a control for age at marriage. Age at marriage is operationalized as age in years at the time the respondent first married, as established by the life-history calendar method.

First, notice that age at marriage does have a strong positive association with participation in spouse selection, as expected (see table 2). In fact, according to these estimates, a one-year increase in age at first marriage increases the odds of participation in spouse choice 8%. Thus, a five-year increase in age at marriage increases the likelihood of participation in spouse selection by about 47% (1.08, raised to the fifth power; see table 2). Note that our focus on participation in spouse selection leads us to include age at marriage as a predictor of participation in spouse selection. It may also be that participation in spouse selection actually determines age at marriage. If this is the case, then the appropriate estimates of the total effects of nonfamily experience on spouse selection are presented in table 2.

In general, we find that including age at marriage in these models leads to a reduction in total effects of each nonfamily experience. This reduction suggests that part of the total effect we observed may work through age at marriage, if age at marriage determines participation in spouse choice. However, even after we control for the age at marriage, all three nonfamily experiences—nonfamily work, media exposure, and participation in youth clubs—that have statistically significant effects continue to have statistically significant, positive effects on the odds of participation in the selection of spouse. Thus, overall, treating age at marriage as a control in this model still leads us to the conclusion that several different dimensions of premarital nonfamily experience have important implications for the participation of individuals in the selection of their spouses.

*Differences by gender and ethnicity.*—Because gender and ethnicity condition so many aspects of marriage processes in Nepal, and because we find substantial effects of gender and ethnicity on spouse choice, we also investigated variations in the effects of nonfamily experiences on spouse choice by gender and ethnicity. Separate analyses of males and females do show differences in the effects of nonfamily experiences, but when tested in a model that includes a term for the interaction between gender and nonfamily experiences, none of these interactions were statistically significant (analyses not shown in tables). For example, the odds multipliers for the effects of media exposure on spouse choice are 1.24 and 1.15 for females and males, respectively, in separate models. However, this difference is not statistically significant when tested formally using an interaction term in a pooled model (analysis not shown in tables). Overall, we find that all of the important determinants of spouse choice

we document in table 2 influence the marital process similarly among both men and women in this setting.

We also investigated differences by ethnic group, including high-caste Hindus, low-caste Hindus, Hill Tibeto-Burmese, Newar, and Terai Tibeto-Burmese. Again, we investigated both separate models and interactions in our main pooled model. These analyses suggest that among low-caste Hindus, Hill Tibeto-Burmese, and Newar, nonfamily experiences—particularly nonfamily work and exposure to mass media—tend to lower the degree of participation in spouse choice.<sup>8</sup> These somewhat surprising interactions with ethnicity may be the result of lower-caste and non-Hindu groups who have access to more nonfamily experiences modeling their marital behavior on the behavior of high-caste Hindu groups. This process is sometimes described as Hinduization in Nepal and is thought to exist because the country has been a Hindu monarchy ruled by high-caste Hindu groups for centuries (Dastider 1995; Hofer 1979; Srinivas 1956). A comprehensive explanation of these interactions clearly requires a detailed investigation of these ethnic groups, their identity, and their marital behavior within the specific cultural context of our study site.

Finally, we also investigate the possibility of interactions between age at marriage and our measures of nonfamily activities. This is a particularly interesting extension of our overall concern about the relationship between age at marriage and arrangement of marriage. The results from models testing the interaction between age at marriage and nonfamily activities show that except for school enrollment, all of the interactions between nonfamily activities and age at marriage have statistically significant, negative effects on the odds of being in the next-higher category of participation in the selection of spouse (not shown in tables). This means with an increase in age at marriage, the effect of each nonfamily activity decreases. This interesting finding has a sensible substantive interpretation that extends what we have learned about the relationship between age at marriage and participation in spouse choice. Premarital nonfamily experiences increase the likelihood of participation in selection of one's own spouse, and these effects are particularly strong for marriages at young ages. Premarital nonfamily experiences have much less influence on participation in the selection of a spouse among marriages that take place at older ages—ages at which individuals are more likely to participate in

<sup>8</sup> Among low-caste Hindus, schooling, nonfamily work, and exposure to mass media each significantly reduce participation in spouse choice. Among Hill Tibeto-Burmese groups, education, nonfamily work, media exposure, nonfamily living, and participation in youth clubs all have negative and statistically significant effects on participation in spouse choice. Among Newars, only the interactions with nonfamily work and media exposure are statistically significant.

the selection of spouse no matter what their premarital experiences have been.

#### Understanding Historical Trends

As we explained earlier, there have been enormous historical increases in the involvement of young people in the spouse choice process in this setting. This process can also be seen in the results for cohort presented in table 2. More recent cohorts are substantially more involved in spouse choice than were the earliest cohorts (at the bottom of table 2).

As shown in model 1 of table 2, in an equation containing only birth cohort, gender, mother's number of children, mother's work for pay, mother's education, father's education, number of residential moves, and ethnicity, we found that people born 1962–71 were 81% more likely to have greater participation in the choice of spouse than were those born 1942–51. With the introduction of all of the young individual's nonfamily experience measures in model 2, this difference was reduced to 36%. One of the informal ways to calculate this change is  $(81 - 36)/81 = .56$ . This means that 56% of the total trend in spouse choice can be explained by these changes in nonfamily experiences. Thus, our expectation that the changing individual family experience has played a significant role in changing marriage patterns in Nepal is strongly supported by these data.<sup>9</sup>

Further analysis shows that exposure to mass media is a central force in explaining these changes in the mate-choice process. Adding exposure to mass media to the equation reduces the cohort effect for those born 1942–51 from 81% to 39% or a reduction of 52% of the original differences,  $(81 - 39)/81 = .52$  (not shown in tables). Thus, this one factor alone can explain as much of the cohort trends in spouse choice as all of the nonfamily experiences together. This is because mass media exposure has a large effect on participation in spouse choice, and because mass media exposure has changed substantially. For example, the number of people with no mass media exposure declined from 61% to only 15% between the earliest and most recent cohort, while exposure to all three forms of media increased from 2% to 32%. It appears that these large trends in mass media exposure have had an important influence on trends in participation in spouse choice.

<sup>9</sup> Of course, some effects of cohort remain even after adding nonfamily experiences to the model. Other changes over the same period, beyond individuals' own nonfamily experiences, may influence participation in spouse choice. Studies of fertility limitation, first-birth timing, and marriage timing in this setting suggest that community context, neighbors' nonfamily experiences, and neighbors' attitudes may all be historical changes that contribute to these cohort differences (Axinn and Yabiku 2001; Ghimire 2004; Yabiku 2004).

Despite having statistically important effects on participation in spouse choice, trends in other nonfamily experiences could individually explain only a small proportion (less than 10%) of the trends in spouse choice. The strength of mass media in explaining marital trends is especially important. Of all the nonfamily experiences evaluated here, mass media is designed explicitly for disseminating information and ideas. Although exposure to mass media has structural components, it is a strong conduit for new ideas and knowledge (Thornton 2001, 2005). The strength of this ideational element of nonfamily experiences is consistent with the conclusion that changing ideas have been especially important in transforming marital processes in Nepal. That is, new ideas have been widely disseminated through the mass media, and these new ideas have had substantial influence in changing participation in spouse choice.

#### Hazard Model Estimates of Timing of Choice and Arranged Marriage

Two concerns motivate us to reexamine the estimates presented in table 2 using a much different analytic technique. The first concern is the potential association between arrangement of marriage and age at marriage discussed at length above. By reframing the spouse-choice question in terms of the hazard of marrying, with competing alternatives for marrying by parental arrangement and marrying with some involvement in the choice of one's spouse, we recast the problem explicitly in terms of marriage timing. This event-history-analysis approach focuses on the timing of marriage via these two alternative processes and draws our attention to factors that affect the timing of arranged marriage differently than the timing of choice marriage. The second concern is the potential censoring problem characterizing the models displayed in table 2, which only include those who have married by the date of the survey. Event-history analysis is particularly useful in addressing this type of problem because it allows us to include everyone in our models, even those who have not yet married but may eventually go on to marry. In order to learn the extent to which this alternative estimation strategy yields results consistent with those in table 2, we estimate the effects of nonfamily experiences on the rate of marriage using discrete-time hazard models. Again, these models focus on the timing of the transition from single to married, but separate the transition to marriage into two competing risks: the hazard of arranged marriage and the hazard of marriage involving some participation.

Table 3 displays these alternative estimates. We begin with estimates of models of the hazard of first marriage by individual choice, treating first arranged marriage as a competing risk. Table 3 also presents our estimates of models of the hazard of first arranged marriage, treating first marriage by individual choice as a competing risk. The contrast between

results for choice marriage and the results for arranged marriage highlight factors which contribute to differences in these two routes of exiting the single state for marriage.

This event-history specification of the problem also allows us to investigate the potentially independent consequences of educational enrollment and educational attainment. Results displayed in table 3 show that enrollment in school dramatically reduces the hazard of first marriage via either route, with a somewhat stronger influence delaying choice marriage. The odds multiplier of .56 indicates that those who are enrolled in school have rates of individual-choice marriage 44% lower than those who are not enrolled in school. Comparison to the results for arranged marriage shows enrollment reduces the rate of arranged marriage by 41%. Thus, enrollment in school reduces the overall rate of marriage via either process and contributes little to the difference between marriages via parental arrangement versus marriage involving some individual choice. This finding is consistent with previous research demonstrating important effects of school enrollment on marriage timing (Thornton et al. 1995; Yabiku 2005), but it tells us little about the factors promoting an increase in individual choice of first spouse.

By contrast, educational attainment (table 3) significantly increases rates of first marriage involving some individual choice, but has no significant effect on rates of the first marriage by parental arrangement. The comparison of these two sets of effects is evidence that educational attainment promotes individual participation in the choice of first spouse. The educational attainment effect of 1.03 means that those who have completed five years of schooling enter choice marriage at approximately a 16% higher rate than those who have no schooling. Nonfamily work, on the other hand, has no significant effect on rates of marriage via either route of marrying.

Table 3 presents our estimates of the effects of nonfamily living. Nonfamily living has a strong statistically significant, negative influence on rates of first marriage arranged by parents, but no statistically significant influence on rates of first marriage by choice. The odds multiplier of .82 indicates that those who lived in nonfamily living arrangements have rates of arranged marriage 18% lower than those who never lived away from their family. This finding is consistent with findings from other settings (Thornton and Lin 1994)—young people who experience nonfamily living are less likely to follow historical family-formation patterns (Axinn and Barber 1997; Waite et al. 1986). Residential moves, on the other hand, have a strong, statistically significant influence on rates of first marriage via both routes. In fact, residential moves increase the overall rate of marriage via either process and contribute little to the difference between marriages via parental arrangement versus marriage

TABLE 3  
 DISCRETE-TIME HAZARD MODEL ESTIMATES OF EFFECTS OF PREMARITAL NONFAMILY EXPERIENCES ON ODDS OF TIMING OF FIRST MARRIAGE

VARIABLE	TIMING OF FIRST MARRIAGE (Treating Choice and Arranged Marriage as Competing Risks)			
	Choice Marriage		Arranged Marriage	
School enrollment (time-varying currently in school) .....	.56***		.59***	
	(5.36)		(5.74)	
Educational attainment (time-varying no. of years) .....	1.03***		1.01	
	(2.89)		(.87)	
Ever had nonfamily work (time varying) .....	1.11		.93	
	(1.13)		(.96)	
Ever had nonfamily living (time varying) .....	1.06		.82**	
	(.60)		(1.85)	
Media exposure (time-varying index) .....	.98		.92**	
	(.41)		(2.13)	
Participation in youth clubs (time varying) .....	1.23**		.78*	
	(1.69)		(1.55)	
Controls:				
Gender: <sup>a</sup>				
Female .....	1.36***	1.41***	5.32***	4.73***
	(3.74)	(3.86)	(27.08)	(22.72)
Family background:				
Mother's no. of children .....	.99	.99	1.00	.99
	(.63)	(.46)	(.13)	(.14)
Mother's work for pay .....	1.03	1.01	.86**	.85**
	(.39)	(.06)	(2.09)	(2.11)
Mother's education .....	.64**	.62***	.40***	.43***
	(2.22)	(2.37)	(4.37)	(3.93)
Father's education .....	.97	.96	.87**	.91
	(.32)	(.40)	(1.88)	(1.21)

Residential moves .....	1.41*** (4.45)	1.11*** (3.12)	1.05** (1.67)	1.09*** (2.53)
Ethnicity: <sup>b</sup>				
Low-caste Hindus .....	1.50*** (3.41)	1.45*** (2.96)	.99 (.09)	.89 (1.23)
Hill Tibeto-Burmese .....	1.34*** (3.23)	1.30*** (2.85)	.38*** (11.84)	.34*** (12.45)
Newar .....	1.02 (.16)	.97 (.20)	.58*** (4.91)	.57*** (5.10)
Terai Tibeto-Burmese .....	1.74*** (5.60)	1.72*** (5.08)	.81*** (2.77)	.76*** (3.26)
Birth cohort: <sup>c</sup>				
Born 1962–71 (ages 25–34, cohort 1) .....	1.36*** (3.15)	1.30** (2.28)	.58*** (7.64)	.70*** (4.05)
Born 1952–61 (ages 35–44, cohort 2) .....	1.20** (1.81)	1.16* (1.40)	.95 (.68)	.99 (.06)
Time (in years):				
Age .....	1.70*** (19.31)	1.63*** (16.17)	1.44*** (18.58)	1.45*** (17.00)
Age squared .....	.98*** (13.78)	.98*** (12.43)	.98*** (12.94)	.98*** (12.48)
–2 log <i>L</i> .....	976.02	997.55	1,239.04	1,251.82
<i>df</i> .....	14	20	14	20
Person-year .....	21,766 <sup>d</sup>	20,982 <sup>d</sup>	21,766 <sup>d</sup>	20,982 <sup>d</sup>

NOTE.—Odds ratios are reported on the first line, with *Z*-statistics in parentheses on the second line. Coefficients come from combined models. These models were estimated using multivariate discrete-time hazard models.

<sup>a</sup> Male as reference group.

<sup>b</sup> High-caste Hindus as reference group.

<sup>c</sup> Born 1942–51 (ages 45–54, cohort 3) as reference group.

<sup>d</sup> 21,766 is the no. of person-years in the discrete-time hazard models. The high no. of person-years does not artificially deflate the SEs (Allison 1982; Petersen 1991).

\*  $P < .10$ , one-tailed tests.

\*\*  $P < .05$ .

\*\*\*  $P < .01$ .

involving some individual choice. It is important to note that the observed effect of nonfamily living is independent of this effect of residential moves.

Exposure to mass media has no statistically significant negative impact on rates of the first marriage involving some individual choice, but media exposure has a statistically significant negative impact on rates of the first marriage arranged by parents (see table 3). The odds multiplier of .92 means that those who are exposed to at least one source of media have rates of arranged marriage 8% lower than those who have not had exposure to any of the media sources before their marriage. This finding is consistent with our findings from the ordered logistic regression analysis and with the idea that mass media promotes the breakdown of existing social norms favoring arranged marriage (McQuail 1985).

The effects of participation in youth clubs are also consistent with our previous findings. The odds multiplier of 1.23 suggests that young people who are members of youth clubs have rates of choice marriage 23% higher than do those who never became members of youth clubs (see table 3). On the contrary, the odds multiplier of .78 (table 3) indicates that young individuals who are members of youth clubs have rates of arranged marriage 22% lower than do those who are not members of youth clubs. Again, the impact of participation in youth clubs is in the direction our theoretical framework predicted—it speeds up rates of choice marriage and slows down rates of arranged marriage. These effects of participation in youth clubs are particularly important because the consequences of this type of premarital nonfamily experience have not been documented in previous research.

#### Parental Influences on Marital Arrangement

Of course, an important alternative explanation for the results we present above is that various parental characteristics that were not included in our analysis produce both greater exposure to premarital nonfamily experience and greater participation in the selection of a spouse. We followed a number of strategies to investigate this possibility. First, we explored the influence of a broader set of parental characteristics on both the younger generation's participation in nonfamily experience and their participation in spouse choice. These characteristics included both mother's and father's exposure to movies, both mother's and father's experiences with travel outside of Nepal, father's work for pay, and parents' use of contraceptive methods. Although these measures capture a number of additional dimensions of parental experience, they do not add significantly to the explanatory power of models using parental experiences to predict children's exposure to premarital nonfamily experiences (results not shown in tables). Adding these measures of parental experiences to our



models of participation in the selection of a spouse also does not change the relationships we observe between young people's premarital nonfamily experiences and their participation in choosing a spouse (not shown in tables). Second, we investigated interactions between birth cohort and exposure to premarital nonfamily experiences, because unobserved variation in parental characteristics may be correlated with the birth cohort of their children. However, this investigation did not produce any evidence of significant interactions between birth cohort and young people's premarital nonfamily experiences (not shown in tables). Thus, our investigation did not identify empirical evidence of parental-generation explanations for the effects of premarital nonfamily experiences on marital arrangement that we observe. Of course, as with all observational study designs, we cannot eliminate the possibility that other parental characteristics we have not observed produce the relationships we do observe—investigation of this possibility remains an important subject for future research.

However, the history of the setting we study may provide part of the explanation for our failure to identify parental characteristics that explain the relationship between premarital nonfamily experience and participation in spouse choice. Because our study site has only recently begun to experience a wide array of contextual changes, these changes have created a great deal of variance across the generations. In one generation neither the parents nor children had the opportunity to experience these changes, in the next generation parents did not have the opportunity but some of their children did, and in the following generation both the parents and their children will be exposed to these changes. Our study of this setting corresponds to a historical period in which the parents of our respondents (who were born in 1971 and earlier) are characterized by little exposure to nonfamily experiences. As a result there is little variance in nonfamily experience among the parental generation to explain variations in their children's behavior. As this generation of young people ages and becomes parents themselves, stronger intergenerational influence on behavior may be observed.

Ethnographic evidence from rural Nepal is consistent with this explanation. Detailed studies of the courtship behavior of young people indicates that the shift from arranged marriage to love marriage is associated with the young people's exposure to formal schooling, magazines, love letters, novels, and watching Hindi and Nepali films (Ahearn 2004). These findings are quite consistent with the empirical results we summarized in tables 2 and 3.

CONCLUSION

To summarize, we expected positive effects of nonfamily experiences on the participation of unmarried youth in the choice of their spouse, and that is what we found. The results from both ordered-logistic-regression models and discrete-time hazard models provide strong evidence of a positive association between nonfamily experiences and greater participation in the choice of a spouse. The findings associated with nonfamily schooling, nonfamily employment, and nonfamily living are consistent with previous studies of mate choice in Taiwan, Japan, China, Europe, and India (Caldwell et al. 1983; Smith 1973; Thornton and Lin 1994; Tilly and Scott 1978; Whyte 1990). However, we have gained a number of insights into the processes of social change that may drive changes from arranged marriage to individually chosen consensual unions by exploring the effects of media exposure and participation in youth clubs.

Increasingly, both social scientists and policy makers are beginning to argue that exposure to the mass media may have important consequences for family formation and dissolution processes. The evidence we present is consistent with that idea. In this rural agrarian setting, in which virtually all marriages were arranged by parents only decades ago, exposure to the media increases the chances that young adults will themselves participate in the choice of their future husband or wife. The fact that this strong effect is independent of a broad range of other nonfamily experiences and other individual and family characteristics only serves to underscore the importance of this mechanism of change. It is quite likely that those who are exposed to the media in this setting, through radio, television, or the movies, are coming in contact with new ideas and foreign examples of behavior, originating predominantly in Western Europe and the United States. These messages from Western countries include the information that those who are the very richest in today's world chose their own spouse and do not necessarily marry a person of their parents' choosing. These messages may also indicate that independence from parents and exercising one's own decision-making prerogatives may help in the goal of social mobility and achievement of the good life. These powerful messages may have important implications for behavior producing the relationship between media exposure and the participation in spouse choice we document here (Thornton 2001, 2005). This message also appears to be an important element in leading many more young people to be involved in the choice of their spouse.

Youth clubs provide a venue for interaction among same-age unmarried youths. Participation in these clubs may be stimulated by other nonfamily experiences, such as school or work, but the clubs themselves provide an opportunity for the discussion and exchange of ideas, as well as an op-

portunity for meeting potential spouses, that probably goes beyond what comes from school and work alone. So, it is not surprising to find that in models that combine the effects of multiple nonfamily experiences, participation in youth clubs remains an important determinant of participation in spouse choice even when the effects of nonfamily school and work are greatly reduced. The ideas about alternative forms of marriage and feelings of independence that may be fostered in these groups probably fuel young peoples' drive to have some say in the choice of their marital partner. The exposure to potential mates undoubtedly increases the chances that club participants will have their own ideas about a likely spouse as well. Together, it is not surprising that the various dimensions of participation in these clubs increases the chances that young adults will have some input into the choice of their spouses. Social changes that stimulate the proliferation of such youth clubs, are, thus, quite likely to reduce the prevalence of parental-arranged marriage.

We began by expanding our focus on the relationship between nonfamily experiences and participation in the choice of a spouse. Unlike most of the previous studies that focus on only a few nonfamily experiences, such as schooling and employment, this study examines the effects of five nonfamily experiences on participation in the choice of spouse. We examine the effect of schooling experiences, nonfamily employment, nonfamily living, exposure to media, and participation in youth clubs before marriage. The results of our analyses broadly support our hypotheses that nonfamily experiences increase the participation in the choice of first spouse. However, our analyses also reveal that the new nonfamily experiences, which we added in this study, have robust effects on the choice of spouse. In fact, the effects of nonfamily living, media exposure, and participation in youth clubs documented here lead us to argue that future research on a wide variety of family formation and dissolution processes should include consideration of these same factors.

Finally, the strong influence of mass media and schooling trends in bringing changes in mate choice is important in interpreting marital trends. It suggests that ideational forces have been especially important elements of marital change and should play a more central and significant role in studies of family change.

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