Published in final edited form as:

J Fam Issues. 2019 December ; 40(17): 2359–2388. doi:10.1177/0192513x19856642.

The Influence of Developmental Idealism on Marital Attitudes, Expectations, and Timing

Keera Allendorf*,

Indiana University

Arland Thornton,

University of Michigan

Colter Mitchell,

University of Michigan

Linda Young-DeMarco

University of Michigan

Abstract

Recent theory suggests that developmental idealism (DI) is an important source of variation and change in family behavior, yet this suggestion is largely untested at the individual level. This study examines the influence of DI beliefs and values on individuals' entrance into marriage. We hypothesize that when individuals and their parents endorse DI, they enter into marriage later, or more slowly. We also hypothesize that two pathways connecting DI to marriage are the instillation of older timing attitudes and expectations of marrying at older ages. We test these hypotheses using panel data collected in Nepal from 2008 to 2014. When young people and their parents endorsed DI, the young people valued older ages at marriage and expected to marry later. Young people's own DI endorsement also delayed their entrance into marriage, but parents' DI did not.

Keywords

Marriage; Attitudes; Beliefs; Developmental idealism; Intergenerational; Nepal; Asia

Introduction

Developmental idealism (DI) is a collection of values and beliefs built upon a hierarchical and dynamic view of the world in which societies advance from traditional to modern. This DI worldview also posits the 'modern' family, as well as other 'modern' social structures, as both causes and consequences of development. Other important tenets include valuation of modern societies and modern families as inherently good, as well as broader valuations of individualism and freedom. We examine the influence of developmental idealism (DI) on entrance into marriage, as well as marital timing attitudes and expectations in Nepal.

*Corresponding author: 1020 E. Kirkwood Ave., Bloomington, IN 47405, Phone: (812) 855-1540, Fax: (812) 855-0781, kallendo@indiana.edu.

With DI theory, Thornton (2001, 2005) argues that DI has been disseminated widely around the world and has great potential to affect family behaviors by motivating people to emulate 'modern' family behaviors. A growing number of studies confirm that DI has been widely disseminated, although with variance between and within groups. Ethnographic research shows that ordinary people in a range of contexts have ideas about development and the ways in which certain family types are related to development that are consistent with DI (Allendorf, 2013; Ferguson, 1999; Frye, 2012; Osella & Osella, 2006; Yount & Rashad, 2008). Further, surveys from 14 countries, ranging from Argentina, to China, to Iran, document widespread acceptance of DI in populations (Abbasi-Shavazi, Askari-Nodoushan, & Thornton, 2012; Binstock & Thornton, 2007; Lai & Thornton, 2015; Thornton, Ghimire, & Mitchell, 2012; Thornton, Pierotti, Young-DeMarco, & Watkins, 2014). The spread of DI around the world is especially important because social scientists increasingly recognize that structural models, important as they are, cannot explain behavior by themselves. Cultural or ideational factors must also be taken into account in studies of family behavior (Bumpass, 1990; Coale & Watkins, 1986; Johnson-Hanks, Bachrach, Morgan, & Kohler, 2011; Lesthaeghe, 2010; Van de Kaa, 1996).

While a growing literature documents the dissemination of DI, little research has used the DI framework to examine the influence of DI beliefs and values on family behavior. A few studies suggest that the spread of DI is an important influence on aggregate family and demographic change in the Middle East, North Africa, Indonesia, and Central and Eastern Europe (Cammack & Heaton, 2011; Kavas & Thornton, 2013; Thornton & Philipov, 2009; Yount & Rashad, 2008). These macro-level studies rely on national and regional trends in family behaviors, in combination with social histories.

Numerous studies have investigated the influence of values on family behavior at the individual level, but with the exception of Allendorf and Thornton (2015), they have not investigated the influence of DI values and beliefs. Allendorf and Thornton used the DI perspective to study the influence of DI beliefs and values on family behavior in Nepal at the individual level. They found that DI influences *how* people marry. When young people endorsed DI highly they were more likely to choose their own spouse, including a different caste spouse, rather than having an arranged marriage.

Our study takes a next step in using the DI perspective to evaluate the influence of DI at the individual level. Using the same data from Nepal as Allendorf and Thornton (2015), we address whether DI influences *when* people marry. We also examine whether DI influences marital timing attitudes and expectations, two potential mechanisms linking DI to entrance into marriage. Further, we consider not only individuals' own endorsement of DI, but that of their parents.

Before proceeding, it is important to note that our interest in investigating the effects of DI on marital timing is not motivated by the belief that the modernization model is correct. This model has been strongly critiqued among social scientists in recent decades (Escobar, 1995; Szreter, 1993; Tilly, 1984). We do not take a position concerning whether DI itself is good or bad, or true or false. Our expectation is that DI is powerful and it is important to understand how it influences the decisions and behavior of ordinary people.

Background, Conceptual Framework, and Hypotheses

Following Geertz (1973), we argue that cultural models provide people frameworks for understanding the world and living in it (see also d'Andrade, 1984; Fricke, 1997). In other words, cultural models specify what is good, provide goals, and specify the means to achieve those goals. Others have conceptualized these models and their components as mental maps, schemas, and scripts, as well as other elements (Johnson-Hanks et al., 2011; Sewell, 1992; Thornton, Axinn, Fricke, & Alwin, 2001). These frameworks highlight that schemas can be changed by groups and individuals and can be in conflict or complement each other. The many schemas that are available to people provide a set of strategies, or tool kits, that individuals can draw on in guiding their own lives (Swidler, 1986, 2001).

Developmental idealism

DI is one such cultural model that tells people how the world works, the goals they should have, and how to reach those goals (Thornton, 2001, 2005). The content of DI can be summarized in three propositions (Thornton, Dorius, & Swindle, 2015). First, modern society – which includes the modern family, as well as other modern institutions and characteristics – is good and attainable. Second, societies are at different levels of development and move from being traditional to modern. Third, many elements of modern society have reciprocal, causal relationships. Included in this last proposition is the belief that development causes people to engage in modern family behaviors and, conversely, engaging in modern family behaviors hastens development. As these three broad propositions imply, DI encompasses a large number of individual schemas. We conceptualize these many schemas as being connected together in a network with connections of varying strength (Allendorf & Thornton, 2015; Bachrach, 2014).

DI emerged from the developmental thinking of elites living in northwest Europe and has been important in the social sciences and in the programs and policies of other elites for centuries (Mandelbaum, 1971; Nisbet, 1975/1969; Thornton, 2001, 2005; Thornton et al., 2015). It has long been thought that societies naturally move along a ladder from low to high development— from traditionality to modernity. Scholars have argued since the eighteenth century that developed or modern families differ substantially from families in less-developed or traditional societies (Hajnal, 1982; Macfarlane, 1986; Malthus, 1896 [1803]; Thornton, 2005; Westermarck, 1894 [1891]). This framework also suggested that people in traditional societies contracted marriages at relatively young ages, had arranged marriages, generally organized life around families, had strong family solidarity, lived in large and complex households, and had little gender equality. By contrast, people in modern societies were perceived as marrying at more mature ages, having more say in the mate selection process, being more individualistic, having smaller and simpler households, having less parental authority, and displaying greater gender equality.

Like other cultural models that originated in the West, DI has been disseminated around the world, both among elites and ordinary people (Abbasi-Shavazi et al., 2012; Binstock & Thornton, 2007; Lai & Thornton, 2015; Meyer, Boli, Thomas, & Ramirez, 1997; Thornton, 2005; Thornton et al., 2012; Thornton et al., 2014). Mechanisms include travel, missionaries, mass media, Western education, migration, and governmental and

nongovernmental organizations that promoted raising the age at marriage and spread family planning, among other family-related programs and policies (Escobar, 1995; Meyer et al., 1997; Thornton et al., 2015).

The spread of DI is an uneven and varied process. The contradictions between many local cultures and DI means that when DI is introduced into populations, there is potential for tension and clashes (Escobar, 1995; Thornton, 2005; Watkins, 2000). Given these clashes, some DI schemas may be rejected and others may be abandoned as irrelevant to a particular context. Nevertheless, DI is often accompanied with considerable international legitimacy, the support of powerful international organizations, and financial backing (Finnemore & Sikkink, 1998; Luke & Watkins, 2002; Thornton et al., 2015). Thus, many DI schemas may, at least eventually, be generally accepted or accepted in a modified form. Local schemas that contradict DI schemas may also be retained. Thus, as DI is adopted into local networks of schemas, it is shaped by the context (Allendorf & Thornton, 2015). While the adoption of DI varies across contexts, it also varies among individuals within a particular context. When DI is introduced into a society, its spread and endorsement is uneven; there is a continuum of endorsement, with some people rejecting it, others accepting it, and most being scattered between these extremes (Abbasi-Shavazi, McDonald, & Hosseini-Chavoshi, 2008; Lai & Thornton, 2015; Thornton et al., 2012).

Connecting Developmental Idealism to Marital Timing

We draw on the theory of reasoned action to connect DI to marriage (Fishbein & Ajzen, 2010). The theory conceptualizes individuals' behavior as emerging from their beliefs and values. Individuals are more likely to engage in a behavior when they perceive the behavior to be good or hold beliefs that are consistent with performing it. Expectations are an important pathway linking beliefs and values to behavior (Fishbein & Ajzen, 2010). Based on their beliefs and values, individuals form expectations about their behavior and these expectations, in turn, influence whether they actually engage in the behavior.

We also incorporate the role of parents into our theoretical framework. Marriage, especially in South Asia, is fundamentally intergenerational. Thus, people's own beliefs and values likely influence their entrance into marriage, but those of their parents are likely to do so as well.

Drawing on this framework, we conceptualize three pathways through which DI beliefs and values likely influence entrance into marriage. The first pathway is through an individual's attitudes about marital timing, which comprise valuations of particular ages as good, or acceptable, ages to marry. As noted above, DI positively values marrying at relatively mature ages. Other DI schemas include the beliefs that late marriage will become more common over time and is causally related to development. These DI schemas are connected to marital timing attitudes and, specifically, valuing older ages as good, or at least acceptable, times for marriage. Thus, individuals' endorsement of DI and their parents' endorsement of DI likely motivate them to value older ages at marriage. Previous research indicates that individuals' own marital timing attitudes, as well as those of their parents, do influence their entrance into marriage (Allendorf, Thornton, Mitchell, Young-Demarco, & Ghimire, 2015). Thus, the

first pathway likely leads from endorsement of DI through marital timing attitudes to behavior.

It is important to note that there is a conceptual overlap between DI schemas and timing attitudes. As described above, DI identifies marrying at older ages as inherently good. Valuing a relatively old age at marriage is a DI schema, while valuing young ages at marriage is not. For example, a person who believes the ideal age at marriage for a woman is 30 is endorsing a DI schema, while someone who believes the ideal age at marriage is 15 is not. Overall, some, but not all timing attitudes comprise DI schemas, but there are also many DI schemas that do not comprise timing attitudes. To distinguish between marital timing attitudes and DI schemas that are not about timing, we use the term DI to refer only to schemas that are *not* timing attitudes.

The second pathway linking DI endorsement to marriage behavior is through individuals' marriage expectations, which can range from unconscious desire to a well thought out plan. An individual's endorsement of DI, as well as that of their parents, likely influences their expectations of when they will marry and, in turn, these expectations likely influence their entrance into marriage. It is important to note that expectations are similar to intentions to perform a behavior and are likely to have similar effects on behavior (Fishbein & Ajzen, 2010, pp. 40–42).

The final pathway connecting DI to entrance into marriage is a direct, or residual, pathway that operates net of marital timing attitudes and expectations. Since the process of marriage is complex, it is likely that at least part of the effect of DI on entrance into marriage operates through other mechanisms. For example, endorsement of DI may lead to greater aspirations for marrying a highly educated person with a salaried job, which would lead to a longer search for an acceptable mate. DI may also heighten young people's preferences for spending more time in leisure or nonfamily work before taking up the responsibilities of marriage and, for daughters, leaving their natal homes to reside with their husbands.

Based on this conceptualization, we have one guiding hypothesis, as well as underlying hypotheses. Our guiding hypothesis is that the degree of DI endorsement affects entrance into marriage. Specifically, individuals with higher degrees of DI endorsement marry later, or more slowly, than those with a lower degree of endorsement. We also expect that individuals' whose parents have a higher degree of DI endorsement will marry later or more slowly. More broadly, we expect that higher degrees of DI endorsement lead to lower rates of marriage in most settings, including Nepal.

We further expect that two ways in which DI affects entrance into marriage are through marital timing attitudes and expectations. We hypothesize that when individuals and their parents have a high degree of DI endorsement, they are more likely to value older ages at marriage than those with a low degree of endorsement. Similarly, we hypothesize that when individuals and their parents have a high degree of DI endorsement, they expect to marry at older ages than those with a low degree of endorsement.

Which Developmental Idealism Schemas?

It is also important to address which aspects of DI influence entrance into marriage. As noted above, DI encompasses many schemas about modern society, modern family, the nature of development, and reciprocal relationships between modern society and family. Even when limiting our focus to schemas about the modern family there are a host of “modern” attributes, including nuclear families, low fertility, choosing one’s own spouse, and parents’ supporting themselves in old age. As noted above, DI schemas are interconnected and people who endorse one DI schema are more likely to endorse others. However, DI is not a cohesive, singular package; some DI schemas are strongly linked, while others have only weak connections (Allendorf & Thornton, 2015). Thus, some aspects of DI likely have sizeable effects on entrance into marriage, while others have weak effects or none at all.

We expect that DI schemas about marriage will be more influential than DI schemas about other family behaviors. Specifically, we expect that DI schemas about age at marriage and never marrying will have the largest effects. These include beliefs that age at marriage and never marrying will increase in the future and such increases are consequences and causes of development. Compared to non-Western contexts with early and universal marriage, Northwest Europe had relatively mature ages at marriage and relatively large proportions of individuals who never married at all (Thornton, 2005, pp. 86–87, 146). In turn, late marriage and never marrying were classified as ‘modern’ within DI. In keeping with this placement in DI, majorities of Nepalis perceived late marriage and never marrying as characteristic of a ‘developed’ country and more common in the United States than Nepal (Thornton et al., 2012).

In addition, DI has evaluated late marriage not only as a pathway to development, but as an inherently good behavior. In the formulation of DI in the 19th and early 20th centuries, the valuation of never marrying was probably better described as acceptable, or *not* bad, rather than good. In recent decades, however, alternatives to marriage, like cohabitation and non-marital childbearing, have grown and become increasingly acceptable in some Western countries. In turn, the valuation of never marrying as good, rather than just acceptable, seems to have grown as well (Hiekel & Keizer, 2015; Klaener, 2015; Treas, Lui, & Gubernskaya, 2014).

We also expect that DI schemas about a complementary behavior, namely fertility, will be influential. Schemas about competing alternatives also influence behavior (Barber, 2001). Barber (2001) found that attitudes towards childbearing influenced the timing of fertility, but so did attitudes towards the competing alternatives of pursuing a career and owning luxury goods. If schemas about competing behaviors can reduce the likelihood of a behavior, then schemas about complementary behaviors should increase the likelihood. In Nepal, marriage is closely related to childbearing. Marriage is the setting in which childbearing is supposed to take place and many Nepalis view childbearing as an essential part of marriage (Fricke & Teachman, 1993; Jennings, Axinn, & Ghimire, 2012; Stone, 1978). Further, using earlier data from the Chitwan Valley Family Study, Jennings and colleagues (2012) found that parents’ ideal family size influenced their sons’ marital timing. Their findings are consistent with schemas about fertility influencing marriage.

DI schemas about other aspects of the family, such as old age support or living arrangements, are likely too peripheral to marriage to affect marriage behavior. The theory of reasoned action predicts that schemas that are more closely related to a behavior are the most influential (Fishbein & Ajzen, 2010). Further, Allendorf and Thornton (2015) found previous evidence for this pattern. DI schemas about intercaste marriage and spouse choice had relatively large effects on Nepalis choosing their own, sometimes different caste, spouses, while other aspects of DI had little to no effect.

Methods

Data

Our data come from a panel study conducted as part of the Chitwan Valley Family Study in 2008–14. The data were collected from individuals residing in a sample of 148 neighborhoods. A neighborhood was defined as a geographic cluster of five to fifteen households. These neighborhoods were chosen based on an equal probability, systematic sample of neighborhoods in Western Chitwan, and the characteristics of the sample are very similar to those of the Chitwan Valley population (Barber, Shivakoti, Axinn, & Gajurel, 1997).

The main universe of the study comprised individuals aged 15–59 living in the sample neighborhoods in 2008. Non-resident parents of unmarried people aged 15–34 and non-resident spouses of married people aged 15–34 that were not living in the sample neighborhoods were also interviewed, as long as they lived in the country. Respondents were all administered a baseline survey with a large number of ideational questions in 2008. Individuals that were 12–14 years old in 2008 and residing in the sample neighborhoods were also interviewed, but not until after they reached 15 years of age in 2008 to 2012. The total baseline sample size is 5,802 individuals. All respondents were interviewed in face-to-face interviews in the Nepali language and the response rate was 97.1 percent.

Our analytical sample includes 1,562 never married individuals aged 15–24 at the time of interview whose mother and father were also interviewed. Since our target population is young people at risk of a first marriage, we first limited our sample to the 1,770 individuals aged 15–24 who had never married. To ensure that all the children in our sample had data from both parents, we further dropped 208 children whose mother or father was not interviewed. (972 of the children in the analytical sample were 15–24 years old in 2008 and were administered the baseline survey in 2008. The remaining 590 children were 12–14 years old in 2008 and were interviewed on an ongoing basis after they reached 15 years of age in 2008–2012.)

Data about children's subsequent marriages were collected through a household registry that was updated through 2014. Household registries were updated via interviews with any available household member four times a year.

Since any household member completed these interviews, data on marriages were captured even for those who migrated away from Chitwan Valley, or even Nepal, after the baseline interview. Young people who migrated before the baseline interview and were not residing

in Chitwan Valley in 2008 were not part of the target population though. This omission could present a bias if substantial numbers of young people migrated prior to 2008 and differed systematically from those who did not migrate. It is unlikely that sizeable numbers of previous residents were lost to migration prior to 2008 however. Our target population were those never married and aged 12 to 24 in 2008 and a majority of the resulting sample (57.7%) was only 12 to 16 years old. Given these young ages, our target population did not have much time to (yet) migrate before 2008.

Independent Variables: Measures of Developmental Idealism

The individual DI items used in the analysis are shown in Table 1. The nine marriage DI items focus on age at marriage and never marrying. The items measure whether respondents believe older age at marriage and never marrying are causes and consequences of development, if they will increase in the future, and if future increases would be good. One item also refers to not marrying being better than marrying. On average, children, mothers, and fathers endorsed roughly four of the nine marriage DI items (Table 1).

We also include comparable DI measures for fertility. Namely, whether fertility decline is a consequence of development, if fertility will decline in the future, if a future decline would be good, and if having one child is better than having three children. Five additional fertility items assess beliefs about the consequences of a small family program – whether the success of such a program would lead to increases in wealth, television ownership, and education, as well as decreases in infant mortality and use of traditional healers. Endorsement of fertility DI is roughly double that found for marriage DI. On average, children endorsed eight of the fertility items, while their parents endorsed just over seven (Table 1).

We investigated the extent to which the marriage and fertility DI items form scales with Cronbach's alphas and exploratory factor analyses. Cronbach's alphas indicate that additive DI scales have limitations, at least for marriage DI. The alphas for the marriage items are 0.43 for children, 0.31 for mothers, and 0.30 for fathers (Table 1). Conceptually, these low alphas indicate that the marriage DI items are not all measuring a single underlying concept, but neither are they unrelated to each other. This is consistent with DI comprising a network of schemas with connections of varying strength. Cronbach's alphas for the fertility DI items are higher at 0.64, 0.56, and 0.77 respectively for children, mothers, and fathers (Table 1). These higher alphas suggest that fertility DI does comprise a single underlying construct.

Exploratory factor analyses reinforce the conclusion that the fertility DI items fit together better than the marriage DI items. We conducted exploratory factor analyses separately for marriage and fertility DI items for children, mothers, and fathers respectively (results not shown). For marriage DI, the eigenvalues were 1.44 for children, 1.11 for mothers, and 1.17 for fathers. While the eigenvalues were all above the typical 1.0 threshold, the marriage items had low loadings. For children and fathers, half of the loadings were at or just below the common cutoff of 0.5, while the other half were in the 0.1 to 0.2 range and even slightly negative in two cases. For mothers, the loadings were uniformly low, with the exception of two items at or above 0.5. By contrast, the fertility DI items had high eigenvalues and nearly all loaded well onto a single factor. Specifically, the eigenvalues for fertility DI were 3.93, 2.87, and 4.38 respectively for children, mothers, and fathers. Apart from two of the

mothers' items and one of the fathers' items, the loadings of the fertility items ranged from 0.5 to 0.9.

We also explored whether fertility and marriage DI comprise a single underlying construct. We put all 18 of the marriage and fertility DI items together in the same factor analyses for children, mothers, and fathers. The fertility and marriage DI items did not load together onto single factors. Instead, for all three family members, the eigenvalues suggested retaining two factors with the first factor capturing variance in fertility items and the second factor variance in marriage items. The fertility items had high loadings on a first factor, while marriage items had uneven loadings onto a second factor.

These results led us to follow a dual strategy in our DI measurement. We present results that measure DI with aggregate scales, one for marriage and one for fertility, but we also show results using the original, individual items. In order to constrain the scales to be the same across children, mothers, and fathers, we added the items together rather than using scores retained from the factor analyses. Both marriage and fertility DI scales range from zero to nine with the scores denoting the total number of responses that were consistent with DI.

We also considered the influence of other dimensions of DI that focused on spouse choice, intercaste marriage, individualism, respect for parents, old age support, and premarital sex. None of these other aspects of DI had statistically significant effects on marital timing attitudes, expectations, and behavior (results not shown). Apparently, these aspects of DI are indeed distal enough from marital timing attitudes, expectations, and behavior that they are not influential.

Measures of Dependent Variables

Timing attitudes—We measure timing attitudes with children's ideal age at marriage for a person of their gender. Daughters' timing attitudes comprise their ideal age at marriage for a woman, while for sons' it is their ideal age at marriage for a man. These ages were responses to the question, "What do you feel is the ideal age for a [woman/man] to get married these days?" Children's ideal age at marriage for a person of their gender ranged from 16 to 40 with a mean of 24 (Table 2).

Marriage expectations—The measure of expectations comprises the age at which the child expected to marry. Children were asked directly "At what age do you expect to marry?" Responses ranged from 17 to 40 years of age with a mean of 25 (Table 2). Only one child said he never expected to marry and his response was recoded to 40, the oldest expected age.

Marriage behaviour—Marriage behavior is operationalized as the rate of children entering marriage. Children's person-months were coded 1 if they married, while earlier person-months, in which they remained unmarried, were coded 0. For those ages 15–24 in 2008, the period of risk started in 2008. For those aged 12–14 in 2008, the period of risk started just after their fifteenth birthday. 39% of children in the sample married during data collection (Table 2). The rest were censored in 2014 when data collection ended.

Analytical Strategy

We evaluate the influence of marriage and fertility DI on three dependent variables: marital timing attitudes; marital timing expectations; and entrance into marriage. First, using ordinary linear regression models, we examine the effect of DI on marital timing attitudes. Specifically, we examine whether children were more likely to value older marriage ages when they and their parents had higher endorsement of marriage and fertility DI. Second, again using linear regression models, we examine the effect of DI on marital expectations. We evaluate whether children were more likely to expect to marry at older ages when they and their parents had higher endorsement of marriage and fertility DI.

Finally, we turn to behavior, testing whether DI influences children's entrance into marriage. We use a discrete time hazard approach using logistic regression with person-months as the unit of analysis (Petersen 1993). In these event history models, the odds ratios are interpreted as speeding up or slowing down entry into marriage. Since our hypotheses concerning the effects of DI are directional, we use one-tailed tests to evaluate the statistical significance of the effects of DI across models. We also assess whether the influence of DI is mediated by timing attitudes and expectations, by adding ideal age at marriage and expected age at marriage to models of marriage behavior.

We included DI measures for all three family members, including children's DI, mothers' DI, and fathers' DI, in each model. This approach could present multicollinearity problems if there were sizeable correlations between family members' DI endorsement. However, correlations among family members' DI are modest, ranging from 0.05 to 0.08 for marriage DI and from 0.11 to 0.19 for fertility DI. Moreover, when all three family members' DI are together in a model the standard errors are not substantially larger relative to those from models that include only one family member's DI. We should note, however, that point estimates of coefficients for DI are often one or two hundredths larger in models with just one family member's DI. Since our models estimate the influence of each family member's DI net of the other two members' DI, the influence of DI across family members are additive.

The connections we examine could be influenced by associations with other factors that are correlated with DI. So, we controlled for gender, caste/ethnicity, education, nonfamily work experience, age, and household distance from the urban center (Table 2). The caste/ethnicity measure denotes four major categories in Chitwan, including 1) Chetri-Bahun, 2) Dalit, 3) Hill Janajati, and 4) Terai Janajati. Chetri-Bahuns, the reference category, are the numerically most common group in Chitwan, occupy the highest position in the caste hierarchy, and often have socio-economic advantages as well. Dalits are the smallest group in Chitwan and occupy the lowest position in the caste hierarchy. Hill and Terai Janajati include castes (ethnic groups) with intermediate positions in the caste hierarchy and are originally native to the hills and Terai (or southern plain) respectively. All control variables are fixed at baseline, except age. Age is fixed at the baseline interview in models of timing attitudes and expectations, but is time-varying in models of marriage behavior. All models are also adjusted for the survey design and clustering within households with the use of robust standard errors.

It is important to emphasize that our research design includes both panel and cross-sectional aspects. Our ideational measures – DI, timing attitudes, and marital expectations – were collected in the baseline survey, while data on marriage behavior were collected later in time. Thus, our analysis of the influence of DI on timing attitudes and marital expectations draws on cross-sectional data, while our analysis of the influence of DI on entrance into marriage uses panel data. The use of panel data rules out the possibility of reverse causation for entrance into marriage – in which marriage behavior may influence endorsement of ideational items.

By contrast, we cannot use panel data to untangle temporal ordering when examining links among DI, timing attitudes, and expectations. For this, we rely on Fishbein and Ajzen's (2010) theory of reasoned action in which beliefs and values influence expectations, but not vice versa. In keeping with this framework, we assume that the bulk of causal influence moves from DI beliefs and values and marital timing attitudes to expectations, but it is possible that this assumption is not correct. The theoretical model also suggests that more general beliefs and values usually precede and influence more specific ones. This indicates that DI beliefs and values, which are more general in nature, influence marital timing attitudes, which are more specific. However, we recognize that there may well be some influence in the opposite direction. It is also possible that these ideational items are all reflections of individuals' underlying views about DI and marital timing overall. Indeed, as noted above, we conceptualize marital timing attitudes to be a part of the broader collection of DI schemas. So, the equations with timing attitudes may well have DI on both the left and right sides.

Before turning to results, it is important to reflect on potential differences in the effects of DI by gender. Influences on entrance into marriage often do differ by gender. Further, six of the nine marriage DI items refer to women, rather than people in general (Table 1). So, it is possible, if not likely, that the influence of marriage DI might be larger for women. To assess this possibility, we ran all models separately for men and women and tested whether interactions of gender and DI scales were statistically significant in pooled models with both men and women. However, the point estimates of the effects of DI on women were not consistently larger than those from the men's models. The point estimate for the effect of fertility DI on entrance to marriage did point to a delay for women and no effect for men, but this gender difference was not statistically significant. Further, only one of the 18 tests of the interaction of gender and DI was statistically significant at the .05 level (3 family members * 2 DI scales * 3 dependent variables = 18 tests). We would expect about one test out of 18 to be statistically significant just by random chance. Moreover, the one interaction of DI and gender that was significant was for the effect of father's fertility DI on expected marriage age. So, the statistically significant interaction was for fertility DI, not marriage DI. Given that these results did not support gender differences in the effects of DI, we present pooled models with both men and women (without interactions) for the sake of parsimony. These results also indicate that men who endorse DI about women's marriage also want later marriages for themselves and perhaps men in general.

Results

Does Developmental Idealism Affect Marital Timing Attitudes?

The models that examine if children value older ages at marriage when they or their parents endorse DI are presented in Table 3. Model 1 shows the estimated effect of marriage DI on timing attitudes. The coefficient for children's marriage DI is a statistically significant 0.13, indicating that each additional marriage DI item a child endorses is associated with 0.13 additional years of ideal age at marriage (Model 1). A child whose marriage DI endorsement is one standard deviation *above* the mean has an ideal marriage age that is 0.44 years older than a child that is one standard deviation *below* the mean (1.7×0.13). The maximum effect is just over one year; a child who endorses all nine marriage DI items has an estimated ideal marriage age that is 1.17 years older than a child who endorses none of them (9×0.13).

The coefficient for fathers' marriage DI on children's timing attitudes is also positive and statistically significant, but mothers' marriage DI is not. Specifically, the coefficient for father's marriage DI is 0.08, indicating that each additional marriage DI item a father endorses is associated with his child endorsing an ideal age at marriage that is 0.08 years older (Table 3, Model 1). At most, a child whose father endorses all nine marriage DI items would value an ideal age at marriage, which is 0.72 years older than a child whose father's endorses none of the DI marriage items (9×0.08). By contrast, the coefficient for mother's marriage DI of -0.03 is neither statistically significant, nor in the hypothesized direction (Table 3, Model 1).

When taken collectively, the maximum effect of all three family members' marriage DI on children's ideal age at marriage is 1.62 years ($1.17 + 0.72 + (-0.27)$). In other words, a child who endorses all nine marriage DI items and their mothers and fathers also endorse all nine items will value an ideal age at marriage that is 1.62 years older than a child from a family in which none of the members endorse any of the DI marriage items. The point estimates suggest that children's own marriage DI is more influential ($\beta = 0.13$) than father's marriage DI ($\beta = 0.08$), but this difference is not statistically significant according to an adjusted Wald test. By contrast, both children's and father's marriage DI is significantly more influential than mother's marriage DI.

Model 2 in Table 3 shows the estimated effect of fertility DI on children's marital timing attitudes. Children's, mothers', and fathers' fertility DI all have statistically significant effects on children's timing attitudes. Children's fertility DI has a coefficient of 0.11, while the coefficients for mothers and fathers are both 0.10. These coefficients translate into modest sized effects of fertility DI on children's timing attitudes. The maximum possible effect is nearly one year for each family member (e.g. 0.11×9). When the effects of each family member are added together it results in an increase in ideal age of nearly three years [$(0.11 \times 9) + (0.10 \times 9) + (0.10 \times 9)$].

Does Developmental Idealism Affect Marital Expectations?

Next, we examine whether children expect to marry at older ages when they or their parents endorse DI. Estimated effects of marriage DI on marital expectations are shown in Model 1 of Table 4. Children's marriage DI has a modest, statistically significant effect on marital

expectations. Each additional marriage DI item that a child endorses is associated with expecting to marry 0.14 years later. At most, a child who endorses all nine marriage DI items expects to marry 1.26 years later than a child who endorses none (9×0.14). The coefficient for fathers' marriage DI is a similar and statistically significant 0.12, while for mothers the coefficient is about half the size and not statistically significant at 0.06. (The effects of children's, mothers', and fathers' marriage DI on expectations do not differ significantly from each other though.) Collectively, the maximum effect of all family members' marriage DI on children's marriage expectations equates to a delay of 2.88 years $[(0.14 \times 9) + (0.06 \times 9) + (0.12 \times 9)]$.

Estimates of the effects of fertility DI on children's marital expectations are presented in Model 2 of Table 4. Like marriage DI, children's fertility DI has a modest, statistically significant effect on marital expectations; each additional fertility DI item that a child endorses is associated with expecting to marry 0.14 years later. At most, a child who endorses all nine fertility DI items expects to marry 1.26 years later than a child who endorses none (9×0.14). The effect of mother's fertility DI is not statistically significant and smaller with a coefficient of 0.06, which translates to a maximum effect of just over half a year (0.06×9). With a coefficient of 0.00, the model indicates that there is no effect of father's fertility DI on their children's marriage expectations. These point estimates suggest relatively large differences in the effects of children's, mothers', and fathers' fertility DI, but only the difference between children and fathers is statistically significant.

Does Developmental Idealism Affect Entrance into Marriage?

Finally, we turn to behavior and examine whether children enter into marriage more slowly when they or their parents endorse DI. Odds ratios from logistic regression models of the hazard of marriage are shown in Table 5. Children's own DI endorsement does slow entrance into marriage. The statistically significant odds ratio of 0.94 for children's marriage DI indicates that each one-unit increase in marriage DI reduces children's marriage rate by 6% (Model 1). In turn, the marriage rate for children who endorse all nine marriage DI items is 57% of the rate of children who endorse none of the marriage DI items (0.94^9). The odds ratio for children's fertility DI is 0.96, suggesting that children's endorsement of fertility DI delays their entrance into marriage slightly less. However, the effect of children's fertility DI is not statistically significant.

Parents' DI does not appear to slow children's entrance into marriage though. The odds ratios for mothers' and fathers' DI are 1.04 and 0.98 respectively for the marriage scale and 0.98 and 0.99 for the fertility scale (Table 5). These point estimates suggest that, at most, a parents' endorsement of DI would decrease a child's entrance into marriage by only 1–2%. Further, one of the odds ratios is above one, indicating that children whose mothers have greater endorsement of marriage DI enter into marriage earlier, rather than later, than those whose mothers have low endorsement of marriage DI. However, with one exception, these small effects of parents' DI on children's entrance into marriage do not differ significantly from the larger effects of children's DI. The exception is for the effect of mother's marriage DI, which has the odds ratio above one and does differ significantly from that for children's marriage DI.

These results estimate the total effects of DI on children's entrance into marriage. We also expected DI to influence children's marital timing by increasing children's ideal age at marriage and their expectations of when they will marry. Above, we described how marriage and fertility DI endorsement are indeed associated with older ideal ages at marriage and expected marriage ages. Thus, to assess these theorized pathways, we also show that children with older ideal ages at marriage and expected marriage ages did enter into marriage significantly more slowly. Specifically, each additional year of ideal age at marriage delays children's entrance into marriage by 3%, while each additional year of expected age at marriage delays children's entrance into marriage by 9% (Models 1 and 2, Table 6).

To provide a simple assessment of the extent to which timing attitudes and expectations mediate the influence of DI on entrance into marriage, we also examined how the odds ratios for children's DI changes when these potential mediators are added to the model. When ideal age at marriage and expected marriage age are included, the odds ratio for children's marriage DI does move closer to one, increasing slightly from 0.94 (Model 3, Table 6) to 0.96 (Model 4, Table 6). However, the odds ratio is still slightly below one and retains statistical significance. This result suggests that some, but not all, of the influence of children's marriage DI operates through timing attitudes and expectations. The result is similar for children's fertility DI, which rises from 0.95 (Model 5, Table 6) to 0.96 when timing attitudes and expectations are added to the model (Model 6, Table 6).

Discussion and Conclusion

This study uses individual-level data to examine the influence of DI on entrance into marriage, as well as marital expectations and timing attitudes. Marriage is a core social institution and source of population renewal in much of the world. Thus, understanding when and how individuals marry is of profound importance. Further, recent theoretical advances suggest that DI beliefs and values are important sources of variation and change in family behavior on a global scale (Thornton, 2001, 2005), but only one other empirical study has examined this claim at the individual level. Using panel data, this study takes an important step in understanding the family by evaluating the intergenerational influences of DI on individuals' entrance into marriage.

Individuals' own endorsement of DI did delay their entrance into marriage. Children with greater endorsement of DI schemas about age at marriage and never marrying entered into marriage more slowly than children with little endorsement of marriage DI. Specifically, the marriage rate of children with the maximum endorsement of marriage DI was roughly half the rate of children with no endorsement of marriage DI. Children with greater endorsement of DI schemas about fertility also delayed entrance into marriage with nearly the same magnitude, but this effect of fertility DI was not statistically significant. By contrast, we did not find compelling evidence of a parental effect of DI on children's entrance into marriage. Parents' DI resulted in slight delays, but these intergenerational effects were smaller and not statistically significant.

We also found that DI beliefs and values have statistically significant, modest sized effects on marital timing attitudes and expectations. When children and their parents endorse DI, children were more likely to value older marriage ages and expected to marry later in life. Children and parents' endorsement of DI is associated with increases of roughly a year and a half to three years in children's ideal marriage age at most. Similarly, DI endorsement is associated with a maximum increase of just under two years in the age at which children expect to marry. Further, these older marital timing attitudes and expectations do delay children's entrance into marriage.

Overall, it appears that children's own DI is more influential than that of their parents. Children's fertility and marriage DI had consistently larger and statistically significant effects on timing attitudes, expectations, and behavior. The effects of parents' DI were smaller – even at or below zero in a few cases – and sometimes lacked statistical significance. Most notably, neither mothers' nor fathers' DI had a statistically significant direct effect on marriage behavior. Apart from a couple of exceptions, however, the seemingly larger effects of children's DI did not differ significantly from that of parents' DI.

When comparing the relative influence of DI about marriage versus fertility, marriage DI appeared to have a slight edge in influencing marital expectations and behavior, but not timing attitudes. These differences were not substantial and often did not rise to the level of statistical significance, but they are consistent with our expectation that DI about the behavior in question, namely marriage, is more influential than DI about the complementary behavior of fertility. This result matches the theory of reasoned action, which predicts that schemas that are the most closely related to a behavior are the most influential. It is also consistent with the Allendorf and Thornton's (2015) study on spouse choice and intercaste marriage, which found that DI schemas about those two marriage behaviors were more influential than DI schemas about other family attributes.

Future research should further investigate the links between DI beliefs and values and entrance into marriage examined here. The connections among DI, marital timing attitudes, expectations, and entrance into marriage should be examined in other contexts. Research on other places will flesh out more broadly the extent to which DI influences marital timing on a global scale. It will also enrich our understanding of when and why the strength of the influence of DI on entrance into marriage may vary. Ideally, such future studies will also draw on better measures of marriage DI, a limitation of this study. Future research should also assess how delays in marriage due to DI would, in turn, influence fertility and population trends. Since age at marriage is a key determinant of fertility, delays in marriage due to growth in endorsement of DI over time could contribute to fertility decline and, thus, slower population growth.

Acknowledgments

We thank the Institute for Social and Environmental Research in Chitwan, Nepal, which collected and processed the data. The data collection, management, and analysis for this article were supported by the Eunice Kennedy Shriver National Institute of Child Health & Human Development of the National Institutes of Health under Award Numbers R01-HD-054847 and R24-HD041028. The content of the article is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health or the Institute for Social and Environmental Research.

References

- Abbasi-Shavazi MJ, Askari-Nodoushan A, & Thornton A (2012). Family life and developmental idealism in Yazd, Iran. *Demographic Research*, 26, 207–237. doi:10.4054/DemRes.2012.26.10 [PubMed: 22942772]
- Abbasi-Shavazi MJ, McDonald P, & Hosseini-Chavoshi M (2008). Modernization or cultural maintenance: The practice of consanguineous marriage in Iran. *Journal of Biosocial Science*, 40(6), 911–933. doi:10.1017/s0021932008002782 [PubMed: 18346301]
- Allendorf K (2013). Schemas of marital change: From arranged marriages to eloping for love. *Journal of Marriage and Family*, 75(2), 453–469. doi:10.1111/jomf.12003 [PubMed: 27147752]
- Allendorf K, & Thornton A (2015). Caste and choice: The influence of developmental idealism on marriage behavior. *American Journal of Sociology*, 121(1), 243–287. doi:10.1086/681968
- Allendorf K, Thornton A, Mitchell C, Young-Demarco L, & Ghimire DJ (2015). A good age to marry? Marital timing values and their influence on marriage. Paper presented at the Annual Meeting of the American Sociological Association, Chicago, IL.
- Bachrach CA (2014). Culture and demography: From reluctant bedfellows to committed partners. *Demography*, 51(1), 3–25. doi:10.1007/s13524-013-0257-6 [PubMed: 24338643]
- Barber JS (2001). Ideational influences on the transition to parenthood: Attitudes toward childbearing and competing alternatives. *Social Psychology Quarterly*, 101–127.
- Barber JS, Shivakoti GP, Axinn WG, & Gajurel K (1997). Sampling strategies for rural settings: A detailed example from Chitwan Valley Family Study, Nepal. *Nepal Population Journal*, 6(5), 193–203.
- Binstock G, & Thornton A (2007). Knowledge and use of developmental thinking about societies and families among teenagers in Argentina. *Demografía English Edition*, 50(5), 75–104.
- Bumpass LL (1990). What's happening to the family? Interactions between demographic and institutional change. *Demography*, 27(4), 483–498. [PubMed: 2249741]
- Cammack M, & Heaton T (2011). Explaining the recent upturn in divorce in Indonesia: Developmental idealism and the effect of political change. *Asian Journal of Social Science*, 39(6), 776–796. doi:10.1163/156853111x619229
- Coale AJ, & Watkins SC (1986). *The decline of fertility in Europe*. Princeton University Press Princeton.
- d'Andrade RG (1984). Cultural meaning systems In Shweder RA & LeVine R (Eds.), *Culture theory: Essays on the social origins of mind, self, and emotion* (pp. 88–123). Chicago: University of Chicago Press.
- Escobar A (1995). *Encountering development: The making and unmaking of the third world*. Princeton, NJ: Princeton University Press.
- Ferguson J (1999). *Expectations of modernity: Myths and meanings of urban life on the Zambian copperbelt*. Berkeley, CA: University of California Press.
- Finnemore M, & Sikkink K (1998). International norm dynamics and political change. *International organization*, 52(04), 887–917.
- Fishbein M, & Ajzen I (2010). *Predicting and changing behavior: The reasoned action approach*. New York: Psychology Press, Taylor & Francis Group.
- Fricke T (1997). Culture theory and demographic process: Toward a thicker demography In Kertzer DI & Fricke T (Eds.), *Anthropological demography: Toward a new synthesis* (pp. 248–278). Chicago: The University of Chicago Press.
- Fricke T, & Teachman JD (1993). Writing the names - marriage style, living arrangements, and 1st birth interval in a Nepali society. *Demography*, 30(2), 175–188. [PubMed: 8500635]
- Frye M (2012). Bright futures in Malawi's new dawn: Educational aspirations as assertions of identity. *American Journal of Sociology*, 117(6), 1565–1624. doi:10.1086/664542
- Geertz C (1973). *The interpretation of cultures: Selected essays*. New York: Basic books.
- Hajnal J (1982). Two kinds of preindustrial household formation systems. *Population and Development Review*, 8(3), 449–494. doi:10.2307/1972376

- Hiekel N, & Keizer R (2015). Risk-avoidance or utmost commitment? Dutch focus group research on cohabitation and marriage. *Demographic Research*, 32, 311–340. doi:10.4054/DemRes.2015.32.10
- Jennings EA, Axinn WG, & Ghimire DJ (2012). The effect of parents' attitudes on sons' marriage timing. *American Sociological Review*, 77(6), 923–945. doi:10.1177/0003122412464041 [PubMed: 23483623]
- Johnson-Hanks JA, Bachrach CA, Morgan SP, & Kohler H-P (2011). *Understanding family change and variation: Toward a theory of conjuncture action*. Dordrecht: Springer.
- Kavas S, & Thornton A (2013). Adjustment and hybridity in Turkish family change: Perspectives from developmental idealism. *Journal of Family History*, 38(2), 223–241.
- Klaener A (2015). The low importance of marriage in Eastern Germany - social norms and the role of peoples' perceptions of the past. *Demographic Research*, 33, 239–272.
- Lai Q, & Thornton A (2015). The making of family values: Developmental idealism in Gansu, China. *Social Science Research*, 51, 174–188. [PubMed: 25769860]
- Lesthaeghe R (2010). The unfolding story of the second demographic transition. *Population and Development Review*, 36(2), 211–251. [PubMed: 20734551]
- Luke N, & Watkins SC (2002). Reactions of developing-country elites to international population policy. *Population and Development Review*, 28(4), 707–733.
- Macfarlane A (1986). *Marriage and love in England: Modes of reproduction 1300–1840*. Oxford: Blackwell.
- Malthus TR (1803). *An essay on the principle of population*. In Wrigley EA & Souden D (Eds.), *The works of Thomas Robert Malthus*. London: William Pickering.
- Mandelbaum M (1971). *History, man, and reason: A study in nineteenth-century thought*. Cambridge, MA: Harvard University Press.
- Meyer JW, Boli J, Thomas GM, & Ramirez FO (1997). World society and the nationstate. *American Journal of Sociology*, 103(1), 144–181.
- Nisbet RA (1975/1969). *Social change and history*. New York: Oxford University Press.
- Osella C, & Osella F (2006). Once upon a time in the west? Stories of migration and modernity from Kerala, South India. *Journal of the Royal Anthropological Institute*, 12(3), 569–588.
- Sewell WH (1992). A theory of structure: Duality, agency, and transformation. *American Journal of Sociology*, 98(1), 1–29.
- Stone L (1978). Cultural repurcussion of childlessness and low fertility in Nepal. *Contribution to Nepalese Studies*, 5(2), 1–36.
- Swidler A (1986). Culture in action: Symbols and strategies. *American Sociological Review*, 51(2), 273–286.
- Swidler A (2001). *Talk of love: How culture matters*. Chicago: University of Chicago Press.
- Szreter S (1993). The idea of demographic transition and the study of fertility change: A critical intellectual history. *Population and Development Review*, 19(4), 659–701.
- Thornton A (2001). The developmental paradigm, reading history sideways, and family change. *Demography*, 38(4), 449–465. doi:10.2307/3088311 [PubMed: 11723944]
- Thornton A (2005). *Reading history sideways: The fallacy and enduring impact of the developmental paradigm on family life*. Chicago: The University of Chicago Press.
- Thornton A, Axinn WG, Fricke T, & Alwin DF (2001). Values and beliefs in the lives of children and families In Thornton A (Ed.), *The well-being of children and families: Research and data needs* (pp. 215–243). Ann Arbor, MI: The University of Michigan Press.
- Thornton A, Binstock G, Abbasi-Shavazi MJ, Ghimire D, Gjonca A, Melegh A,... Yang L.-s. (2012). Knowledge and beliefs about national development and developmental hierarchies: The viewpoints of ordinary people in thirteen countries. *Social Science Research*, 41(5), 1053–1068. [PubMed: 23017917]
- Thornton A, Dorius SF, & Swindle J (2015). Developmental idealism: The cultural foundations of world development programs. *Sociology of Development*, 1(2), 277–320. [PubMed: 26457325]
- Thornton A, Ghimire DJ, & Mitchell C (2012). The measurement and prevalence of an ideational model of family and economic development in Nepal. *Population Studies-a Journal of Demography*, 66(3), 329–345. doi:10.1080/00324728.2012.714795

- Thornton A, & Philipov D (2009). Sweeping changes in marriage, cohabitation and childbearing in Central and Eastern Europe: New insights from the developmental idealism framework. *European Journal of Population-Revue Européenne De Demographie*, 25(2), 123–156. doi:10.1007/s10680-009-9181-2 [PubMed: 19498956]
- Thornton A, Pierotti RS, Young-DeMarco L, & Watkins S (2014). Developmental idealism and cultural models of the family in Malawi. *Population Research and Policy Review*, 33(5), 693–716. [PubMed: 25197155]
- Tilly C (1984). *Big structures, large processes, huge comparisons*. New York: Russell Sage Foundation.
- Treas J, Lui J, & Gubernskaya Z (2014). Attitudes on marriage and new relationships: Cross-national evidence on the deinstitutionalization of marriage. *Demographic Research*, 30, 1495–1525. doi:10.4054/DemRes.2014.30.54 [PubMed: 26052248]
- Van de Kaa DJ (1996). Anchored narratives: The story and findings of half a century of research into the determinants of fertility. *Population Studies*, 50(3), 389–432. [PubMed: 11618375]
- Watkins SC (2000). Local and foreign models of reproduction in Nyanza province, Kenya. *Population and Development Review*, 26(4), 725–759. doi:10.1111/j.1728-4457.2000.00725.x [PubMed: 18348360]
- Westermarck EA (1894 [1891]). *The history of human marriage*. New York: Allerton.
- Yount KM, & Rashad H (Eds.). (2008). *Family in the Middle East: Ideational change in Egypt, Iran, and Tunisia*. London: Routledge.

Figure 1.

Children's, mothers', and fathers' individual DI items predicting children's ideal age at marriage ($n = 1,562$).

Note: We present 90% confidence intervals for the coefficients. All models also include controls for gender, caste/ethnicity, education, nonfamily work experience, distance from urban area, and age at the baseline interview.

Figure 2.

Children's, mothers', and fathers' individual DI items predicting children's expected age at marriage ($n = 1,562$).

Note: We present 90% confidence intervals for the coefficients. All models also include controls for gender, caste/ethnicity, education, nonfamily work experience, distance from urban area, and age at the baseline interview.

Figure 3.

Children's, mothers', and fathers' individual DI items predicting children's entrance into marriage (person-months $n = 82,953$).

Note: We present 90% confidence intervals for the odds ratios. All models also include controls for gender, caste/ethnicity, education, nonfamily work experience, distance from urban area, and time-varying age.

Table 1.

Percent of respondents giving responses that agree with DI schemas about marriage and fertility (n = 1,562).

	Child %	Mother %	Father %
Marriage DI			
<i>Age at marriage DI</i>			
If Nepal becomes richer, people marrying before age 18 will decrease	55.3	33.7	44.1
If fewer people marry before age 18, Nepal will become richer	50.1	52.0	52.9
Women's age at marriage will increase in the future	73.1	75.8	73.2
If women's age at marriage increases, it will be good	63.8	65.9	67.3
<i>Never marrying DI</i>			
If Nepal becomes richer, women never marrying will increase	36.1	39.9	38.7
If women never marrying increases, Nepal will become richer	37.4	46.4	39.4
Women never marrying will increase in the future	36.9	45.7	47.0
If women never marrying increases in the future, it will be good	22.0	36.2	17.8
To not get married is better than marrying	4.8	12.3	3.3
Marriage DI scale mean	3.8	4.1	3.8
(Standard deviation)	(1.7)	(1.6)	(1.6)
Cronbach's alpha	0.43	0.31	0.30
Fertility DI			
If Nepal becomes richer, fertility will decrease	88.3	78.9	79.9
Fertility will decrease in the future	81.5	74.1	78.9
If fertility declines in the future, it will be good	70.7	67.3	75.0
One child is better than three children	78.3	42.2	49.9
If a small family program is successful, wealth will increase	94.6	90.9	91.4
If a small family program is successful, families having TVs will increase	96.7	96.4	93.0
If a small family program is successful, infant mortality will decrease	92.4	80.1	80.5
If a small family program is successful, being educated will increase	98.0	97.4	95.1
If a small family program is successful, traditional healer use will decrease	95.7	90.7	90.7
Fertility DI scale mean	8.0	7.2	7.3
(Standard deviation)	(1.4)	(1.6)	(1.9)
Cronbach's alpha	0.64	0.56	0.77

Table 2.

Descriptive statistics for controls and dependent variables (n = 1,562).

	%	Mean	Standard deviation
Married (during study period)	38.7		
Ideal age at marriage		23.8	3.1
Expected marriage age		25.0	3.2
Child's gender			
Male	51.2		
Female	48.9		
Caste/ethnicity			
Chettri-Bahun	46.4		
Dalit	10.8		
Hill Janajati	20.9		
Terai Janajati	21.9		
Child's education			
0–6 years	17.4		
7–9 years	53.5		
10–11 years	19.4		
12+ years	9.7		
Child's nonfamily work experience			
None	61.9		
Unsalaries work	31.4		
Salaried work	6.7		
Distance from urban area		8.4	4.0
Child's age at baseline interview		17.0	2.4

Table 3.

Children's, mothers', and fathers' DI predicting children's ideal age at marriage (n = 1,562).

	Model 1	Model 2
	β (SE)	β (SE)
Child's marriage DI	0.13*** (.04)	
Mother's marriage DI	-0.03 (.04)	
Father's marriage DI	0.08* (.04)	
Child's fertility DI		0.11* (.07)
Mother's fertility DI		0.10* (.05)
Father's fertility DI		0.10*** (.03)
Child is female	-3.18*** (.12)	-3.22*** (.12)
Caste/ethnicity (ref = Chetri-Bahun)		
Dalit	-0.63* (.25)	-0.62** (.24)
Hill Janajati	-0.62*** (.19)	-0.53** (.19)
Terai Janajati	-0.54** (.21)	-0.44* (.20)
Child's education (ref = 0–6 years)		
7–9 years	0.45* (.20)	0.21 (.20)
10–11 years	0.78*** (.24)	0.49* (.24)
12+ years	1.37*** (.31)	1.12*** (.32)
Child's nonfamily work experience (ref = none)		
Unsalaries work	-0.47*** (.13)	-0.39** (.13)
Salaried work	-0.48 (.29)	-0.42 (.30)
Distance from urban area	-0.07*** (.02)	-0.08*** (.02)
Child's age at baseline interview	0.03 (.03)	.04 (.03)
R ²	.357	.360

*
p<=.05**
p<=.01***
p<=.001

one-tailed tests for DI, two-tailed tests for controls

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 4.

Children's, mothers', and fathers' DI predicting children's expected age at marriage (n = 1,562).

	Model 1	Model 2
	β (SE)	β (SE)
Child's marriage DI	0.14** (.05)	
Mother's marriage DI	0.06 (.04)	
Father's marriage DI	0.12** (.05)	
Child's fertility DI		0.14** (.06)
Mother's fertility DI		0.06 (.06)
Father's fertility DI		0.00 (.04)
Child is female	-2.70*** (.16)	-2.70*** (.16)
Caste/ethnicity (ref = Chetri-Bahun)		
Dalit	-0.32 (.35)	-0.28 (.34)
Hill Janajati	-0.63*** (.19)	-0.54** (.19)
Terai Janajati	-0.37 (.23)	-0.26 (.24)
Child's education (ref = 0–6 years)		
7–9 years	0.89*** (.27)	0.66* (.27)
10–11 years	0.80** (.30)	0.56 (.32)
12+ years	0.75 (.40)	0.55 (.43)
Child's nonfamily work experience (ref = none)		
Unsalaries work	-0.53*** (.14)	-0.52*** (.14)
Salaried work	-0.81** (.31)	-0.78* (.31)
Distance from urban area	-0.08*** (.02)	-0.08*** (.02)
Child's age at baseline interview	0.32*** (.05)	0.33*** (.05)
R ²	.282	.275

*
 $p < .05$ **
 $p < .01$ ***
 $p < .001$

one-tailed tests for DI, two-tailed tests for controls

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 5.

Children's, mothers', and fathers' DI predicting children's entrance into marriage (person-months $n = 82,953$).

	Model 1 OR	Model 2 OR
Child's marriage DI	0.94 *	
Mother's marriage DI	1.04	
Father's marriage DI	0.98	
Child's fertility DI		0.96
Mother's fertility DI		0.98
Father's fertility DI		0.99
Child is female	2.69 ***	2.69 ***
Caste/ethnicity (ref = Chetri-Bahun)		
Dalit	0.99	1.01
Hill Janajati	0.92	0.91
Terai Janajati	0.68 **	0.68 **
Child's education (ref = 0–6 years)		
7–9 years	0.74 *	0.78
10–11 years	0.80	0.84
12+ years	0.71	0.75
Child's nonfamily work experience (ref = none)		
Unsalaries work	1.52 ***	1.49 ***
Salaried work	1.28	1.24
Distance from urban area	1.03 *	1.03
Child's time-varying age	1.22 ***	1.22 ***

* $p < .05$

** $p < .01$

*** $p < .001$

one-tailed tests for DI, two-tailed tests for controls

Table 6.

Children's marital timing attitudes, expectations, and DI predicting entrance into marriage (person-months $n = 82,953$).

	Model 1 OR	Model 2 OR	Model 3 OR	Model 4 OR	Model 5 OR	Model 6 OR
Child's marriage DI			0.94 **	0.96 *		
Child's fertility DI					0.95	0.96
Child's ideal age at marriage	0.97 *			1.02		1.02
Child's expected age at marriage		0.91 ***		0.91 ***		0.90 ***
Child is female	2.42 ***	2.16 ***	2.69 ***	2.28 ***	2.68 ***	2.26 ***
Caste/ethnicity						
Chetri-Bahun (ref)	1.00	1.00	1.00	1.00	1.00	1.00
Dalit	0.99	1.01	1.01	1.02	1.01	1.02
Hill Janajati	0.93	0.93	0.92	0.93	0.93	0.93
Terai Janajati	0.69 **	0.69 **	0.68 **	0.68 **	0.69 **	0.68 **
Child's education						
0–6 years (ref)	1.00	1.00	1.00	1.00	1.00	1.00
7–9 years	0.75 *	0.77	0.74 *	0.77	0.77	0.79
10–11 years	0.80	0.82	0.79	0.82	0.82	0.85
12+ years	0.73	0.75	0.70	0.74	0.73	0.77
Child's nonfamily work experience						
None (ref)	1.00	1.00	1.00	1.00	1.00	1.00
Unsalariated work	1.47 ***	1.47 ***	1.50 ***	1.48 ***	1.50 ***	1.48 ***
Salaried work	1.25	1.20	1.27	1.22	1.24	1.19
Distance from urban area	1.03 *	1.02	1.03 *	1.02	1.03 *	1.02
Child's time-varying age	1.22 ***	1.26 ***	1.23 ***	1.26 ***	1.22 ***	1.26 ***

* $p < .05$

** $p < .01$

*** $p < .001$

one-tailed tests for ideal and expected age at marriage, two-tailed tests for controls