Do People Believe Modern Families and Modern Societies Are Causally Related?

By

Colter Mitchell

Population Studies Center,
Survey Research Center, and
Department of Sociology,
University of Michigan

Presented at the 2008 European Population Conference
9-12 July, 2008
Barcelona, Spain

Introduction

Theories of modernization or development have existed for centuries, and much like our colleagues in natural sciences attempt to trace out exact developmental stages of animals and plants, social scientists have worked to understand the causes and effects of social change. Unilinear modernization and development theories grew in number, complexity and popularity beginning in the 18th century and became mainstays of theories in sociology, economics, demography and anthropology until the early 20th century (Eisenstadt 1964). These theories, which often substituted geographical varying data for historically varying data, attempted to causally connect various aspects of life, from religion and family to education, work and economics (Moadell 1994; Crenshaw 1995; Smits, Ultee and Lammers 2000; Inglehart and Baker 2000; York, Rosa, Dietz 2003). They provided powerful models for why the world was in its current configuration, as well as how it would change (Geertz 1973). More importantly, however, it provided a framework by which people could, theoretically, induce certain social changes by modifying other social behavior. In other words, modernization theories provided possible ways for people to change the social world around them (Thornton 2005).

Of particular interest for scholars of modernization or development theories has been the connection between family life and modernization (Malthus 1986; Thornton 2005). As I will more fully examine below, scholars have theorized and researched how "modern" societies and "modern" families are causally related. Some have suggested that as families become more modern (i.e. later marriage, greater use of contraceptives, smaller families, etc) this encourages societies to become more modern (wealthier, more educated, etc). Others theorized and explored the reverse causal relationship. Certainly modernization theory has provided substantial volumes of research on both historical and present family change.

Despite the extensive research on development and family one key aspect has been left unexplored. Little is known of how the model is understood and believed by ordinary individuals. Due to the extent to which these models of development have been spread around the world, one component of social change may be due to W.I. Thomas' theorem that men's perceptions have real consequences

(Thomas and Thomas 1928). That is, if people believe these models to be true they would be expected to act according to these models (even if the models themselves were, in some way, false). Understanding the causal relationships people believe may, in fact, predict their attitudes, expectations and behavior.

As is often the case when addressing emerging theories, existing data and methods must be modified, or created, in order to examine the new hypotheses. In this case new data were collected from a unique sample in Nepal using a survey instrument intended to measure people's beliefs in the causal relationships between family and societal change. As well, a modification of the standard uses of the Multitrait-Multimethod (MTMM) analysis design affords greater flexibility and precision in examining this new survey instrument. Using these data and methods, this paper provides the first documentation of the extent to which a group of ordinary people expect certain family types (late marriage, small families, etc) to be in certain society types (developed, poor, educated, etc), and the extent to which people believe family change and societal change are causally related. Thus, this paper is attempting to document the extent to which the complex idea of modernization and development has cemented itself in the minds of ordinary people as a true model of how the world works.

BACKGROUND and THEORY

Perceptions, Values and Actions

During the early 20th century, as scholars became less enamored with grand theories of social change, social scientists began to turn from studying the direct effects of social structures on individuals, and instead began to look at how the individuals themselves interpreted their circumstances, and then, in turn, how those perceptions modified their values and behaviors (Collins and Makowsky 1998). A foundational statement for this work was given by W.I. Thomas when he wrote, "it is not important whether or not the interpretation is correct--if men define situations as real, they are real in their consequences" (Thomas and Thomas 1928:572). The key point of this statement, often called the Thomas Theorem[1], is that it is the belief, perception or definition of the event or issue that has its own effect on

1 Although the Thomas Theorem is initially presented in a jointly authored work, as Merton (1995) shows, this concept, as it is defined here, is the notion of W.I. Thomas alone.

the individual's later actions. In other words, it is the interpretation of a situation that causes, at least some of, the action.

To be clear this interpretation of the situation need not be correct. That is, by Thomas' theorem, once people are convinced, either by themselves or by others, that a situation is meaningful, that situation has significance regardless of whether it really should. Therefore, some of the behavior is due to the definition of the situation and whether or not the situation would have had an effect is possibly inconsequential because the definition of the situation has a real effect on actions. Thus, because the situation is meaningful it will result in real actions, in the end, making it a meaningful situation.

Merton (1968) expands on this theorem by suggesting that people can manipulate their future to be in line with a prediction by believing that the prediction is real. This "self fulfilling prophecy" requires that people define a situation (specifically a prediction or model) to be correct, regardless if it is or not. Then by acting in accordance with this situation, the individuals themselves cause the outcome that was predicted. The occurrence of the prediction then lends credence to the original prediction. As with the Thomas Theorem, the prediction need not be correct for the belief in the prediction to have an effect. In fact, it is possible that many more self fulfilling prophecies would be more evident if not for the fact that some of the predictions may have actually had the intended effect, thus obscuring the real effect and the effect of the perception of the situation.

Thomas' (1928) and Merton's (1968) work fits nicely with Geertz's conjecture that, beliefs and ideas provide models for both understanding reality and for dealing with the world (Geertz 1973; also see Fricke 1997a, 1997b, and D'Andrade 1984). Ideational frameworks help to describe, understand, and explain the world, by defining certain behaviors and institutions as meaningful. Ideational frameworks also identify what is important and good in life and what methods are appropriate and productive for achieving desired goals. Therefore, these values and perceptions not only specify what is moral, but they also establish specific mechanisms by which outcomes can be achieved. Thus understanding what ideational aspects believe, or rather what situations and predictions are defined as real may have important implications for family and demographic behavior.

There is substantial evidence that ideational frameworks have influenced people's family behaviors. For example, Goode (1970) identifies the conjugal family becoming preferred over the extended family as especially important for family changes. Lesthaeghe and his colleagues have argued that an increasing emphasis on egalitarianism, individualism, and individual freedom are important forces for worldwide family changes (Lesthaeghe 1980 1983; Lesthaeghe and Wilson 1986; Lesthaeghe and Surkyn 1988 (Lesthaeghe and Neels 2002; Lesthaeghe and Neidert 2006; Lesthaeghe and Surkyn 2004; Lesthaeghe and van de Kaa 1986; van de Kaa 1987). Similarly, Pritchett (1994) argued that declining family size preferences played a significant role in the decline in fertility around the world. Several scholars have emphasized the diffusion of Western family ideals around the world—particularly emphasizing preference for small families, older ages at marriage, youthful autonomy, egalitarianism, and individual autonomy (Caldwell 1982; Freedman 1979, 1987; van de Kaa 2001; Inglehart 1997; Inglehart and Baker 2000; Easterlin 1980; Freedman 1979, 1987; Thornton and Lin 1994; Bista 1991).

Although the studies mentioned above have provided powerful evidence that ideational frameworks are important they all lack an important element, motivation for why these values would be defined as real (to use Thomas's language) over previously held ideals. That is, prior to the introduction of new ideas (typically Western), there most certainly had to have been other models, values and perceptions that people believed were important and real thus requiring them to act in the way they acted before the introduction of the new values. So why would some redefine one set of beliefs, that were once real enough to require action, as no longer real? Also why do people accept the new ideas as real thus inducing the change (in both values and behavior) exhibited in the studies just mentioned? Understanding why people changed their perceptions of situations is fundamental to understanding their change in behavior.

Developmental Idealism

In a recent stream of theorizing, Thornton (2001, 2005) argues that a package of ideas he calls developmental idealism (DI) was disseminated widely around the world where it has been a major force for family and demographic change. The elements of developmental idealism can be defined broadly to

include most of the ideational factors posited in the literature as being important influences on family and demographic behavior. DI directly incorporates into its elements the Western and modern values and beliefs that are used either directly or indirectly in most of the ideational literature explaining family and demographic change. It also adds something that is missing from the literature—a reason why the non-Western world would care about, and be influenced by, Western and/or modern ideas. That is, it supplies a reason for why people would redefine their situations and therefore act in accordance with new values and predictions. It also brings into the picture such ideational forces as the desire for a higher standard of living, desires for freedom and equality, an emphasis on individual agency rather than fatalism, individualism, skepticism about authority and institutions, the empowerment of women and the younger generation, and desires for small families, mature marriage, and acceptance of fertility control.

In this section I briefly highlight the basic ideas underlying societal developmental models and explain how they provide important framework for understanding and dealing with the world, including family structure and relationships. It is important to note that I do not necessarily support or disagree with the ideas behind DI, but rather argue that they are a powerful set of models that when defined as real and important, may have significant effects on decisions that may lead to important family (and non-family) behaviors. A more comprehensive discussion of these central themes of developmental thinking is provided elsewhere (Thornton 2001, 2005).

I begin with a brief discussion of theories of modernization or development. These models of social change dominated much of Western thinking from the Enlightenment of the 1600s and 1700s to the present (Thornton 2005). The theories, initially, suggested that all societies progress or evolve through the same natural, universal, and necessary stages of development (Inglehart 2001). The speed of advancement was believed to vary so that at any one point in time societies at different developmental levels could be observed. Thus, societal evolution, development or modernization was unilinear. Scholars applying these theories believed that the most advanced societies were in northwest Europe and among the northwest European Diaspora, while other societies occupied less advanced positions of development (Thornton 2001, 2005; Inglehart 2001). Many of these scholars used the particularly dubious method of

substituting geographic variation for historical variation, by assuming that at some time in the past the developed nations had been like their less developed contemporaries and that at some point in the future the less modern nations would become like their modern neighbors (for detailed discussions, see Chapters 2 and 3 of Thornton 2005).

Applying the modernization theories to cross-sectional data on family and economic systems, these scholars postulated that the family and societal differences were due to modernization (Thornton 2001, 2005). That is, despite the large variation of family types, both within and without Northwest Europe, scholars summarized that the family formation patterns of Northwest Europe (less family solidarity, later marriage, less parental authority, greater status of women, etc) was causally connected to higher levels of other important social and economic characteristics (i.e. higher levels of industry, urban, education, consumption, geographic mobility, secularism, democracy, and religious pluralism). Although there was some debate as the direction of the causal arrows between cultural/family change and economic change, there was no doubt as to the correlation (Inglehart 2001). In fact, they argued that sometime before they wrote in the 1700s and 1800s, there had been a great family transition that had changed European families from being like the world outside of northwest Europe which they labeled as traditional to being like the families of northwest Europe that they labeled as developed or modern (Thornton 2001, 2005) .

These theories saturated social science literature from the 1700s through the middle 1900s, but in the second half of the 1900s studies using actual historical records exposed that there was no great family transition from family types outside of Northwest Europe to the family types in Northwest Europe (Laslett 1965; Macfarlane 1978; Hajnal 1965; Wrigley and Schofield 1981). This new research revealed that the family systems of northwest Europe observed in the 1700s and 1800s had been in place for centuries thus causing some scholars to doubt the idea that societies progressed over time from the traditional family systems outside of northwest Europe to the modern family systems of northwest Europe. It also cast doubt on the idea that modern family systems were the products of modern socioeconomic systems (Boas 1940; Eisenstadt 1964; Gusfield 1967; Portes 1976; Thornton 2005). These

theories, were at best, seen as too restrictive—leading to multilinear models (Steward 1955; van Nort and Karon 1955)—and vague (Gusfield 1967; Mills 1959; van Nort and Karon 1955) and at worst an ethnocentric historical fallacy (Boas 1940). Nevertheless many theories still discussed today maintain a strong developmental component (Crenshaw 1995; Smits, Ultee and Lammers 2000; Inglehart and Baker 2000; York, Rosa, Dietz 2003). In addition, the role of developmental models has been important in the documents of the United Nations, numerous governments, including those of China and the United States, and international nongovernmental organizations (Nisbet 1980; Latham 2000; Meyer et al. 1997; United Nations 1948, 1962, 1979; UNDP 2001, 2002). Thus the debunking of the developmental paradigm has not been brought to the attention of the world outside of academia (and to some extent it is still a major paradigm within academia) (Thornton 2005).

Thornton (2001, 2005) argues that the modernization and development theories used by past social scholars created a set of propositions that have been a force for family change during the last two centuries. These developmental models and their conclusions provided new rubrics for judging society, family life, and the rights of human beings. They showed a new predicted direction for future family and social change and the mechanisms that people should employ to facilitate progress, and in this way became the engine for many social, economic, and familial changes. More specifically, this set of four interrelated propositions, which he calls DI, states that: 1) a modern society that is industrialized, urbanized, highly educated, and with high levels of technology is good and to be sought after; 2) modern families, defined as having high levels of individualism, high status of women, mature marriage, marriage arranged by the couple, high youth-autonomy, small households, and controlled and low fertility are preferred family types; 3) modern society and modern family are causally connected, with a modern society being a cause and effect of a modern family system; and 4) individuals have the right to be free and equal. Thornton (2001, 2005) argues that DI was disseminated widely around the world—through a myriad of mechanisms such as scholarly publications, Christianity, political movements, US foreign policy programs, and the United Nations —and has been an exceptionally powerful force for family change during the 1800s and 1900s. He argues that it has been a particularly important force in many

family changes during this period, including declines in childbearing and increases in age at marriage, the autonomy of young people, egalitarianism, divorce, independent living, sexual activity and cohabitation outside marriage, and growing emphasis on individual rights.

Although all four propositions of the theory are important and necessary, this paper argues that the third proposition, that family change and societal change are causally related is a particularly beneficial theoretical contribution. Recall that in Thomas' Theorem when people define a situation—or in this case model of change—as real, then they will act as though that model is real. Thus even though, as more recent historical research has shown, the powerful models of development are not accurate, people will act as though they are. If people expect family change, from historical family types to "modern" family types (later marriage, fewer children, more egalitarian gender roles, less parental control, etc) to increase development, then they will change their families to be more modern. Similarly if people believe modernization makes families more developed, they will change their families to be inline with their more developed society.

Merton's self fulfilling prophecy is also applicable in this situation. For example, if a group of people are taught, and believe, that family change and development are causally related some families may change their behavior (or more likely the younger generation will change their behavior from the previous generation). These changes, over time, may not ever lead to substantial economic gains. However, because there has been substantial family change, people may see the change to a more modern family as evidence that the developmental model was correct and that that group of people are developed. This would therefore promote additional changes as more people are persuaded to believe the model is correct.

Due to the universal nature of the model, evidence from one place can be used as evidence in another location. When introducing the developmental model, those teaching it had (and still have) substantial evidence to show they were, in fact, more "developed"—which was certainly a powerful indicator that the model of development was true. Using the same methods as scholars before, people provide evidence that the family changes they experienced seemingly caused their development. Thus it is

reasonable to assume that at some point the self-fulfilled prophecy of one group lead to the self-fulfilling prophecy of another.

Particularly powerful for our study, an important concept in Nepali culture is fatalism. Bista (1994) has argued that development has been slow because people tend not to take the action necessary to cause change[2]. In fact, however, I argue that the reliance on fate may be a powerful motivator for change once the developmental model is accepted as real. That is, if, as the developmental model indicates, all aspects of development are inevitable, people will begin to change their behavior (i.e. use contraceptives, allow their children to choose their own spouses, marry later) because that is their inevitable fate.

Before going on to discuss the evidence supporting DI, it is important to briefly integrate it into current theories of family and demographic change. Although many structural explanations appear to fall victim to the fallacy of the developmental paradigm, to suggest that only ideational factors are present would be incorrect (Caldwell 2001; van da Kaa 1996; and Lesthaeghe and Wilson 1986). For example, DI may encourage governments to invest more heavily in schools, health posts and fertility clinics. These additions to the social structure lead to physical changes that not only provide more contact with DI, but also real changes in health, time use, family functions, everyday concerns, costs and benefits of fertility, as well as evidence that the region is indeed "progressing" (Caldwell 1982, Cain 1977, Cain 1983, Preston 1978; Inglehart 1997; Lesthaeghe 1980; Lesthaeghe and Wilson 1986). Certainly without some clear structural development the ideas of DI would not be supported by personal experience, and would soon be discarded. In fact is it the structural differences between countries, combined with the model of development that makes the development model so appealing, because there are differences and changes the ideas (and goals) of DI are more easily accepted.

DI is also consistent with the cultural explanations of family change. Freedman (1979, 1987), Caldwell (1982, 2001), and van da Kaa (1996) all suggest the importance of Western ideas on global family change. However, as suggested previously, none provide a motivation for trading historically held

2 Although Bista (1994) makes a strong argument, events beginning in 1996 and leading to the civil war and recent ousting of the King indicate that Nepalis are more than capable of making dramatic social changes.

values for those of the West; DI fills this gap by providing a model for a better future by adopting these primarily Western ideals. DI can also work within several other studies such as Greenhalgh's political economy approach (1990, 1993) as well as Bongaarts and Watkins' social interaction theory (1996) by providing the message (as well as the goal) in social interactions. Consequently DI is also consistent with similar work on diffusion such as social transmission, learning, influence and socialization (Casterline 2001; Rogers 1973; Lesthaeghe and Wilson 1986). In fact, the simultaneity of the fertility decline across the globe (Caldwell 2001) is most easily described by a large influx of this powerful ideology across the globe at around the same time.

This model of DI integrates most of the ideational factors contained in the research literature concerning ideational forces on family and demographic behavior and change. DI can add enormously to indigenous material aspirations by increasing the number of things to be attained, by declaring more things attainable, and by giving a western model for achieving those things. So, while material aspirations can and do exist outside of DI, they are enhanced and channeled in specific ways by the developmental model. The ideas of freedom and equality did not originate with the developmental thinking of the 1600s and 1700s, but existed long before that and can exist independent of DI. However, the growing strength of the ideas of development from the 1700s onward provided further support for the principles of freedom and equality, and helped fuel the adoption of these principles in many places around the world. It also brings into the picture such ideational forces as the quest for the western and/or modern, the desire for a higher standard of living, an emphasis on individual agency, expressive individualism, skepticism about authority and institutions, the empowerment of women and the younger generation, and desires for small families, mature marriage, and fertility control.

Existing Evidence about the Dissemination of Developmental Models

Several studies have shown that developmental models have dominated social science thinking for most of the past quarter millennium (Harris 1968; Mandelbaum 1971; Nisbet 1969; Sanderson 1990; Thornton 2001, 2005). It is only in the last few decades that the developmental or modernization paradigm has been strongly challenged—and even discredited—and many of the conclusions of the

generations of scholars shown to be myths—thus for hundreds of years these models were promulgated without check. It has also been documented that European travelers, colonial administrators, leaders of the feminist movement, and family planning advocates have relied heavily on developmental arguments (Thornton 2001, 2005). In addition, the role of developmental models has been important in the documents of the United Nations, numerous governments, including those of China and the United States, and international nongovernmental organizations (Latham 2000; Meyer et al. 1997; Nisbet 1980; UNDP 2001, 2002; United Nations 1948, 1962, 1979).

There are also limited data from ordinary people consistent with the idea that developmental thinking is both widespread and influential. Observers in Africa, India, China, Nepal, and New Guinea have reported examples of ordinary people using the developmental framework in evaluating various attributes and behavior (Ahearn 2001; Amin 1989; Blaut 1993; Caldwell et al. 1988; Dahl and Rabo 1992; Pigg 1992; Wang 1999). For our particular case In Nepal, Pigg (1992) and Ahearn (2001) use ethnographic data to show that in some rural areas of Nepal, people use developmental thinking to compare urban and rural life and to think about marriage and other aspects of family life. However, there is little survey data available demonstrating the overall prevalence of developmental beliefs in the general population.

More recent work by Thornton and colleagues have attempted to explore this area in greater detail (Thornton 2001, 2005; Thornton, Ghimire and Mitchell 2004; de Jong, Ghimire, Thornton and Pierce 2006; Binstock and Thornton 2005; Thornton and Philipov 2007). For example, Thornton, Ghimire and Mitchell (2005) find strong evidence that a sample of ordinary people in Nepal understood the developmental paradigm well enough to provide development scores that correlated highly (both at the aggregate and individual levels) with the UN Human Development scores. Using the same sample in Nepal, de Jong, Ghimire, Thornton and Pierce (2006) show that Nepalis value and desire modern family characteristics such as later marriage, child choose marriages, fewer children and even an increased tolerance toward divorce. Nevertheless this paper is the first to conceptualize and measure developmental models—the causal relationship between family change and development—in a general survey.

Data and Methods

To more fully understand how individuals understand the relationships between family and society, researchers undertook a study in the Chitwan Valley of Nepal. What follows is a discussion of the study site, sample and methods.

Setting

There are several considerations that make Nepal an especially appropriate location for the study of knowledge and beliefs concerning developmental models. Nepal was kept in isolation from the rest of the world until the 1950s (Adhikari 1998). The historical isolation, extreme exploitation by the ruling elite, the Hinduization of the non-Hindu population, and the rugged Himalayan topography with few roads and communication resources have had an enduring influence on many aspects of Nepali life. Nepal currently ranks as one of the poorest countries in the world. Over 85 percent of the population still lives in rural areas with no all-weather roads, poor public education, few health services and limited communication technology. More than half of the population is still illiterate. In addition, several attributes of the family that are labeled by DI as traditional have historically characterized Nepal and are still common. These include extended households, early age at marriage, arranged marriage, parental control over children, and low status of women.

The data for this research were collected in Chitwan Valley, which lies in the south central part of Nepal. In 1955, the Nepalese government opened this valley for settlement; prior to this it was covered with dense tropical forest. Chitwan, once a "Death Valley," soon became a "melting pot," receiving migrants from all over the country. The valley has become connected to the rest of the country by all-weather roads, making it a business hub for the country. Furthermore, there has been a massive expansion of schools, health services, markets, bus services, cooperatives, and employment centers in Chitwan (Axinn & Yabiku, 2001). Previous work in Chitwan shows that there has been a sharp increase in school enrollment, visits to health clinics, employment outside of the home, and exposure to different sources of mass media and new ideas in recent birth cohorts (Axinn & Barber, 2001; Axinn & Yabiku, 2001; Ghimire et al., 2006).

Sample Design

The survey was conducted with 537 people aged 17 and above living in the Western Chitwan Valley. These people were chosen using the following strategy. First, based on the distance from the primary urban center within the Chitwan Valley, the study area was divided into five distinct strata. Second, a sample of 2-4 neighborhoods, consisting of 4-25 households from each stratum, was selected. Finally, once a neighborhood was selected, all the individuals age 17 and above residing in those neighborhoods were interviewed. This sampling procedure resulted in slightly more than 100 individuals being selected from each of the five strata. These people were interviewed in face-to-face interviews in the Nepali language using paper and pencil format. Three respondents who could not be interviewed in Nepali were excluded from our analysis. The field period lasted for six weeks and resulted in a 97 percent response rate.

Measurement

Although individual's ideas, values and attitudes have long been hypothesized to influence individuals' preferences and behaviors (Caldwell 1982; Inglehart 1997; Lesthaeghe 1980), studies of ideational influences on individual behavior still struggle with important theoretical and methodological challenges. On the theoretical side, conceptualizing complex concepts, such as modernity, individualism, and nucleation has been a major challenge. Often, theories of ideational influence take complex constructs from western thought and apply them to nonwestern cultural settings that may or may not have similar cultural constructs. And even when the constructs are similar across societies, there remains extensive variation in individuals' understanding.

The concept of the causal relationship between family change and development, or modernization, is a very complex concept, which led researchers to use a multi-method approach in this data collection. Trained Nepali interviewers conducted a total of 12 in-depth interviews and 10 focus groups with individuals representing different ethnic groups, genders and ages. Researchers used the insights gained from the in-depth interviews and focus groups, combined them with their conceptual understanding of developmental models, to construct individual questionnaire items. One key strategy

guiding the construction of questions was to break the complex propositions of DI into their component parts using concepts and language that were understandable by ordinary Nepalis. Thus, most of the questions did not include the general abstract concepts of development. Instead, the questions focused mostly on family matters that were very familiar to Nepalis such as marriage, living arrangements, parent-child relations, childbearing, and contraception. Similarly, parallel questions focused on socioeconomic structures on such familiar concepts as education, employment, wealth, residence, and mortality. Researchers asked few questions directly about development, or *bikas* in Nepali, in order to ascertain the extent that Nepalis were familiar with the concept

Models of Modernization

The survey questionnaire included 26 sections asking about many dimensions of the developmental paradigm and DI. However, in this paper I focus only on the 9 sections of questions (from 4-15 questions in each section) most relevant for investigating knowledge and belief in developmental models and their application in concrete situations. Table one provides a matrix of all the questions asked on this topic.

(Table 1 about here)[3]

Together these 9 sections and 60 questions provide a systematic examine of peoples beliefs in the correlation and causal relationship between family change and social change. Knowing that respondents may not all view development the same, researchers also took care to ask about three different types or domains of modernization (education, getting richer, and development). As well there are 13 broad areas of family life covered from age of marriage to living arrangements to the number of children to gender equality. Table 1 reveals that not all family domains were asked in all modernization type for each of the causal models; in other words it is not a full matrix. Nevertheless there are 4 family domains covered in each causal model x modernization type cell (and this will prove useful in later analyses). Although researchers were unable to fill the entire matrix due to time constraints there are still a substantial number of questions to aide in addressing if people believe these causal models.

3 Appendix A provides the precise wording, coding distributions for all 9 sections and 60 questions.

More specifically, three of the sections in the survey presented a characteristic (e.g. marrying at older ages) and then asked if this characteristic is more common in different places or types of societies. The location comparisons in the three sections were: 1) rich versus poor places; 2) developed versus traditional places; and 3) educated versus uneducated places. The respondents could specify that a characteristic was more common in one location (e.g. a rich place) or in the other location (e.g. a poor place) or that it was equally common in both. "Don't know" was not given as a response, but were accepted after a follow up probe asking the respondent to give their best guess or estimate. Together these three sections were to intended to measure if survey respondents expected specific family types to be associated with different places, that is, did they see an association between family type and society type. Thus this could be seen as a test of developmental thinking—without any specific causal model.

Similarly, three other sections present the same family characteristics as above and then ask if making the country more developed, richer, or more educated would make people marry earlier or later, have more or fewer children, etc. Also an option of no change was accepted if the respondents voiced that they thought that specific family characteristic would not be affected. "Don't know" was not given as a response, but such answers were accepted after a follow up probe asking the respondent to give their best guess or estimate. These three sections specifically measure if the survey respondents understand or believe that societal change (becoming richer, more developed or more educated) would cause family changes. This measure helps examine if respondents believe that family change is a result of development.

Finally, the last three sections reverse the causal relationship between family change and modernization. These sections ask if changing various family characteristics (people marrying later, having larger families, etc) would make the Nepal richer, a better[4] place, or more educated. As with the previous sets of sections, people were given the option of "no change" and were allowed to provide

4 Based on the in-depth interviews and focus groups the idea of a better place and developed are very equivalent phrases.

"don't know" as a response after probing. These sections combine to provide the individual's belief that specific family change leads to a more modern society.

Due to the large number of analysis questions all questions, used from the sections were coded into 1 "yes" 0 "no", where "yes" means that the answer follows the developmental model (please see Appendix A for all the question-specific coding). In every question an answer of "don't know," "the same," or "no change" was coded as "no" as they were not following the prediction of the developmental paradigm. Nevertheless it is important to note that there was typically only one to three percent of the same within those codes, and never did it exceed five percent of the sample. Also, it is important to note is that only 5 people refused to provide answers or gave uncodeable responses for a total of 9 missing person-questions. Because the missing data was so rare, I coded the 9 missing data points as 0 for those questions.

(Table 2 about here)

Table 2 is a rendition of the matrix of questions found in Table 1; however, this matrix reports the percent agreeing with the model, as outlined by developmental idealism. As well, at the bottom of each column is the overall percent agreeing for the entire section of questions and for the overall model. If we assume that respondents randomly guessed between the two main answers (e.g. More Common/Less Common, Richer/Pooer, etc) then the percent would be expected to be near 50%. Similarly, if everyone was in-line with DI then the percentage would be close to 100% and if people were not in-line with DI it would be close to 0%. To help in interpretation, I indicate if the proportions are *not* significantly different from 0%, 50% and 100%.

Family & Society Characteristic Association

This set of 21 questions contains three subsets all of which are intended to reflect the respondent's belief of the joint distribution of specific family characteristics and society characteristics. More specifically respondents had various family characteristics (please see Appendix A) and had to choose if they were more likely to find it in: a Rich/Poor country, a Traditional/Developed country, and a

Uneducated/Educated country. Again, the higher the percentage the more the respondent responds in accordance with DI.

Looking down the columns it is clear that although there is some variation, most people provide the response that fits with the development paradigm that modern families and modern societies are correlated. The set of questions asking about wealth and family types shows an average of 75% agreement with the developmental model. A higher average agreement of 88% can be found in the four questions correlating education and family domains. Finally, the section asking about the correlation of development and family domain, which has 13 questions, moderately conforms to the developmental model with 71%. It should also be noted that two questions (dealing with multigenerational living and valuing their families) are not significantly different from what we would expect by chance.

The overall percentage for the entire set of questions is relatively high, 75%, which is midway between what we would expect if everyone believed in the developmental model (and had not measurement error) and if everyone was randomly selecting answers. Not having any items below[5] 50% suggests that, on average, few people believe a modern family and a nonmodern society are correlated. Rather, these results suggest that people tend to believe that a modern society is highly correlated with several family characteristics—particularly women getting treated with more respect and couples using contraception.

Society Change Causes Family Change

The next set of questions, 20 in all, contains three similar subsets of questions, but is intended to measure the belief that as a society or country modernizes the family will modernize also. That is, as a society becomes richer, or more educated, or more developed, do people marry at older ages, have smaller families, give women more respect, etc? As before a rubric for understanding the estimates is to view them as average agreement with one type of modernization theory, or in other words, modern societies produce modern families.

5 Although none of the estimates are below 50%, the items dealing with multigenerational living arrangements and people valuing their families less, are not significantly different than 50%.

Beginning again with wealth or money, it is clear that respondents are in harmony with the idea that increased national wealth causes the nation's families to become more modern. With a fairly high average agreement of 82%, it should be no surprise that most respondents provide the modern answer for all four questions. Respondents have even higher agreement, 84%, with the model that education will cause modern family. Finally, respondents have a slightly lower average agreement, 71%, that development leads to less modern families. The lower agreement for development, as in the association set of questions earlier, is most likely not due to respondents disagreeing with the developmental model, but rather because certain family domains (which were not asked in education and wealth subsections) appear to have low agreement with the DI prediction.

Overall there is confirmation that people believe that development causes family change. The overall agreement of 76% suggests that few respondents believe that development leads to "traditional" families. In particular, respondents report a high agreement with the idea that modernization or development leads to women getting treated with more respect, young adults choosing their own spouse, and couples using contraceptives.

Family Change Causes Society Change

The third set of questions reverses the causal direction of the set of questions just discussed by asking if families changed in specific ways would that make Nepal a richer/poorer, a better/worse place, and more/ less educated. As with the other questions to this point a higher scores suggest greater correspondence with the answers predicted by DI, that a modern family causes a modern society.

Overall these sets of questions appear to perform the best. The high average agreement, 79%, with the idea that Nepal will become wealthy if families become more modern, is not such a surprise at this point, but it produced the highest agreement levels for 6 of the 13 family domains. This suggests that people have a strong belief that several family changes will lead to Nepal becoming wealthier. Similarly, on average, 83% of respondents agree that family change can make Nepal more educated. As well, 85% of respondents, on average, agree that making families more modern will make Nepal more developed.

Of the three models examined so far, correlation, development causing family change and now family change causing a modern family, this last model has the highest overall agreement. Based on 19 questions, on average, respondents were 80% in agreement that family change is expected to make a change in Nepal's development. More particularly, people seem to agree that by changing their families to be more modern-later age of marriage, more egalitarian, using contraceptives, and reducing the number of children—Nepal would be expected to become richer, more educated, in sum, more modern.

Relating these results back to the theory it is clear to see the implications of these strong beliefs in the developmental models. That is, if people really do expect changing their families will make their country more developed, and that development is good, they should be expected to act on that belief, even if these changes do not actually lead to greater education or wealth. Similarly, if people believe that development will require them to change, and that change is inevitable, they may be more lenient to changes that might not otherwise have occurred—thus fulfilling their own prophecy.

Between Item Relationships

Along with the evidence that respondents are in congruence with the developmental models outlined by Thornton (2001, 2005) it is important to examine the reliability and validity of these measures. That is, although the results just discussed do provide support for the theory that people believe in developmental models, without understanding the relationship between items, confidence in the estimates must be tempered (Alwin 2007).

In any study, but particularly in studies with new measures, researchers must be attune to measurement error. One of the largest challenges to survey research is imperfect measurement (Groves 1989; Alwin 2007). Typically this imperfect measurement falls into two broad categories: validity (the congruence of the indicators to the indented concept or idea) and reliability (the stability of the results). For this research it is clear that without validity, the evidence presented above may be evidence for something other than the intended concept of respondent's beliefs in models of modernization. Similarly, without reliable measures it is difficult to judge if these results are stabile enough to warrant the label of "evidence." Therefore in the next section I estimate both of these indicators for the measures above.

In order to assess the reliability and validity of these measures I rely on the framework of the Classic True Score theory (Alwin 2007). This theory contends that each observed measure is a result of the combination of the true score and measurement error. However, the measurement error has two components, random error and systematic error (Biemer et al 2004). Using structural equation modeling allows for the explicit modeling of both types of error, as well as the true score. Moreover the estimation of the true scores provides a better indication of the relationships between the intended concepts.

One particularly useful modeling technique is the Multitrait-multimethod (MTMM) measurement design (Campbell and Fiske 1959). This design explicitly attempts to measure all three sources of variance in a measure: the variance of interest (the concept), random error variance, and systematic variance not from the concept of interest (nonrandom error). For many studies this systematic error not due to the topic of interest is often called a method effect. Most MTMM studies then attempt to estimate traits (the concept of interest) removing the effects of the method (e.g. asking on a 5-point scale, 11 point scale, etc) and random error (Alwin 2007).

The MTMM design has been very fruitful in teasing out method effects in large scale surveys, as well as helping to determine the reliability and validity of indicators (Andrews 1984; Groves 2004; Saris and Andrews 2004; Alwin 2007). For example, research has shown that some meaningful method effects are: the number of response categories, battery length, position of the question in the questionnaire, and offering a don't know option (Andrews 1984). Also, as Alwin (2007) shows, the variance can easily be divided into validity, invalidity, reliability, and unreliability.

Before providing the details of the MTMM application in this study, it is important to clarify terminology. When referring to reliability I am specifically using the psychometric definition that reliability is the proportion of the variance of the observed variable accounted for by the true score. More generally, however, higher reliability means higher consistency of measurement. Similarly, validity, or specifically in this context "true score validity" is the contribution of the trait to the true score "without the attenuation effects of reliability" (Alwin 2007:82). Saris and Andrews (2004) explain that invalidity (or true-score invalidity) is really just the validity of the method, which typically is irrelevant to the

researcher and thus counted merely as a method effect. Using the MTMM framework I can produce item-specific reliability, validity and invalidity.

(Figure 1 about here)

For this study, researchers purposefully collected data to cover several different family domains, and three major modernization characteristics for each of the three models (association and both causal direction). This stands in contrast to the vast majority of MTMM designs that typically have a set of traits and a set of methods, whereas this study has a trait (belief in the development models) and two methods (type of modernization and family domain). Also interesting here is that the type of modernization actually has some substantive value as a trait. That is, what do people define as modernization (money, education or development) and do they correlate? Also which ones have higher reliabilities and validities? Thus another way to view this is as two sets of traits and one method effect (family domain). Hence, the standard MTMM method does not apply, and must be modified to fit these unique data.

Using the same definitions as in the MTMM design I allow for three sets of variance for the true-score. As seen in Figure 1, each observed measure (Y_{ijk}) in this study is a combination of the random error (e_{ijk}) and true score (T_{ijk}), but the true score (T_{ijk}) is composed of three sources of systematic variation: variation due to the *i* developmental models (M_i), variation due to the *j* modernization types (D_j), and variation due to the *k* family types (F_k). Which can be formulated into the following equations:

$$y_{ijk}=h_{ijk}T_{ijk}+e_{ijk} \qquad \text{for all } i,j,k$$

and

$$T_{ijk}=b_{ijk}M_i+g_{ijk}D_j+l_{ijk}F_k \quad \text{for all } i,j,k,$$

Where for all *i,j,k*, $cov(M_i,D_j)=0$, $cov(M_i,F_k)=0$, $cov(D_j,F_k)=0$ $cov(M_i,e_{ijk})=0$, $cov(D_j,e_{ijk})=0$, $cov(F_k,e_{ijk})=0$, and $cov(T_{ijk},e_{ijk})=0$.

Following the work of Saris and Andrews (2004) and Alwin (2007) the following calculations can be made:

Reliability= $(h_{ijk})^2$

Modernization model validity= b_{ijk}

Development type validity= g_{ijk}

Family domain validity, or true-score invalidity or method effect= l_{ijk}

To the author's knowledge this is the first time the MTMM model has been modified to study two traits and one method. Some similar work, called multitrait-multimethod-multitime (MTMMMT) has been used to look at MTMM over time, but again, the time was treated as a method effect and not as substantively interesting (Saris and Andrews 2004). One reason for the lack of research on this is because the data design requirements are stringent (Alwin 2007). In particular there needs to be at least three measures for each Trait and method. This, of course, requires asking several very similar questions, which can be burdensome to the interviewers and especially respondents. In fact a common comment from respondents of this survey was "Didn't you already ask me this question?" In fact, for this survey we have only 36 measures that conform to our requirements that they be asked in all three modernization models and all three development types. The four family traits ask in the full 3 x 3 matrix are: people marrying at older ages, women getting treat with more respect, spouse choice and couple using contraceptives.

Due to the binary response options in the survey each observed variable is dichotomous. This violates the assumption of the true score model is that the observed variables are continuous and normal (Bollen 1989). To compensate for the nonnormality of the data I use the weighted least squares means and variance adjusted (WLSMV) estimator in Mplus 4.1 (Muthén 1984; Muthén, du Toit and Spisic 1997; Muthén and Muthén 2006). WLSMV uses the diagonal of the weight matrix in the estimation compared to the more standard weighted least squares estimator (WLS) that uses the full weight matrix. Muthén, du Toit and Spisic (1997) found the WLSMV estimator to be superior to the WLS estimator for categorical variables.

Validity and Reliability

(Table 3 about here)

Using the methods outlined above I estimated the model found in table three. The overall model fit, CFI=0.96, TLI=0.981 and Root Mean Square Error of Approximation =0.031 all indicate that the

model fits the data very well. The panels each provide different four estimates for each of the 36 indicators. Panels A, B and D organize the estimates to focus on the developmental models. Panel C differs in that the organization focuses on the modernization type. Finally, Panel D is treated as a method effect and is not discussed. Those interested viewing the method effect as a validity of the family domains should look at the estimates along the rows.

Panel A of Table 3 presents the reliability estimates for all 36 of the indicators. The reliabilities of the indicators examining the association (or correlation) model range from 0.217 (spouse choice and rich) to 0.783 (women being treated with more respect and development). The reliabilities of the indicators for the development causing family (DCF) change model are overall higher. They range from 0.545 (more money leading to more people choosing their own spouses) to .933 (more education leads to people choosing their own spouses). Similar reliabilities are found in the family causing development (FCD) model, where they ranged from 0.478 (later marriage age leads to more development) to 0.883 (women getting treated with more respect leads to more education). Compared to the reliabilities of most attitude scales, the association model (.507) is fairly low—although there are several lower, and the reliabilities of the two causal models (.72-.73) would be considered very reliable attitude scales where few reliabilities are above 0.80 (Alwin 2007).

The reliabilities reveal that, in general, these 36 questions are within the range of standard attitude questions. However, it is apparent that causal models questions are more adapt to produce consistent results than the general correlation model. This is an interesting result since it seems easier to think in terms of a correlation instead of a causal model. One issue reducing the reliability of the correlation model may be that people had specific locations in mind when trying to determine if a certain characteristic is more or less common in that location, whereas the causal models are more abstract and therefore maybe more consistent (i.e. making the any aspect of the family more modern makes everything in society more modern). Another note is that it is well known that, in general, number of response items and reliability are positively correlated. Since these indicators only have two options, increasing the number of categories should increase the reliability (Andrews 1984; Alwin 2007).

Examining the validities of the measures is a more difficult task since there is not as much consistency with what can be considered a high, medium or low validity. Nevertheless, the results from panel B of Table 3 provide both some signs of high validity and other indications of low indicator validity. As with the reliability, the validity of the association questions appear fairly low. Although there is one particularly valid measure (spouse choice and wealth) as you may recall, that particular measure is not very reliable. However, it does appear that out of the three modernization types the most valid set for the association model is when respondents were asked about family domains being more common in developed or traditional places.

In stark contrast to the association model is the DCF model. Not only is the overall validity of all the measures higher, but the series of questions asking if making Nepal richer will change family has incredibly high validities (0.938-.988). Considering this series has a moderate reliability indicates that overall this is good series of questions for the model attempting to measure people's belief in the model that modernization changes families (at least in four areas). It is also important to note that the development series also has moderate validity.

The final set of validity estimates is from the series of questions measuring the respondent's belief that family changes can modernize a nation. Although without a very high set of validities like the DCF model and wealth, FCD appears to have two moderately valid series. Both family change leading to more education and more wealth appear to be similar in terms of validity measures, as they were for reliability estimates. The lower validity levels for FCD may be due to the fact that for some people development means things like roads, schools, health posts, and it may be difficult for them to see how changing family domains will directly influence that aspect of society. On the other hand, changing families (i.e. marrying at older ages) seems to have a direct influence on getting wealthier and certainly on getting more education.

Initially, the validity estimates for modernization types, as seen in Panel C of table 3, were intended to just be a second method affect. However, in reality they have their own substantive importance to this part. As mentioned earlier, researchers were concerned with what aspect of

development to ask about. Clearly each one may have its own unique relationship with family life and therefore people's beliefs in certain models may change depending on the modernization method used. Rearranging the categories of the columns in Panel C changes the focus from the models of development to types of modernization. The overall high level of validity, at least compared to Panel B, indicates that while only certain series (or specific questions) are highly valid for the models of development, most questions appear to be at least moderately valid indicators of the type of modernization. In particular, education appears to have several indicators with high validity. Thus this may imply that education, wealth and even the vague term development are more salient to the respondents than the primary focus of the paper—the different models of development.[6]

One additional set of estimates not reported in Table 3 are the correlations between the different Traits. More specifically, although the models of development and types of modernization were required to not correlate with each other or the method effect, they could correlate with the other traits within their group. For example, the association model had low correlations with both the DCF and FCD models (0.385 and 0.246, respectively) DCF and FCD correlate at 0.264. These low correlations suggest that people are distinguishing between the models, and therefore knowing the answers to one does not provide a lot of information for the other two. However, it is important to note that since none of the correlations are negative it suggests that in general people tend to view both causal models as reasonable. In contrast, the correlations between types of modernization are quite high (wealth-education= 0.836, wealth-development= 0.814, and education-development= 0.893). This suggests that people see these three types of modernization as almost substitutes for one another.[7]

Conclusion

This paper attempts to combine two powerful and foundational theories of society: modernization theory and Thomas' Theorem on the consequences of perceptions. The first is a theory of how societies

6 A quick glance at Panel D shows that the average validity of the family domains is fairly low, which is standard for a method effect.

7 It is fairly standard to not allow the different methods (family domains) to correlate, and further testing showed that constraining all of the correlations to 0 is the best fitting model. This implies that the correlations are extremely low.

change, and in particular how family life is both a cause and an effect of that social change. Substantial evidence shows that these models have been conveyed all around the world, despite research over the past 50 years showing their inaccuracies (Boas 1940; Eisenstadt 1964; Gusfield 1967; Portes 1976; Thornton 2005; Steward 1955; van Nort and Karon 1955; Mills 1959; Crenshaw 1995; Smits, Ultee and Lammers 2000; Inglehart and Baker 2000; York, Rosa, Dietz 2003; Nisbet 1980; Latham 2000; Meyer et al. 1997; United Nations 1948, 1962, 1979; UNDP 2001, 2002). However, as of yet few people have explored how ordinary individuals have understand and accepted these models, and only until recently has any of this work been using surveys (Pigg 1992; Ahearn 2001).

The second theory comes from W. I. Thomas' theorem that if a situation is perceived as real it is real in its effects on that person (Thomas and Thomas 1928). The implication of this theorem is that if people believe these developmental models to be real and correct, even if they have been shown to be otherwise, they will have real consequences on their outcomes. That is, people who believe that making families more modern leads to a more developed (and thus more educated and wealthier) nation may marry later, have fewer children, use contraceptives, or in other words try to become a modern family, with the expectation of societal modernization. In the least they may tolerate changes that they would not have tolerated if they did not believe it would make them more developed. Similarly, if people believe development causes family change they may expect that their families will change and thus through socialization may pass on those expectations, which in turn promotes the expected family change thus producing a self-filling prophecy (Merton 1968). In sum, understanding how much people believe in these developmental models may be highly predictive of later family attitudes and behavior.

Using survey data from Nepal, I find high levels of support for the hypothesis that people know and believe in these models. First, respondents appear to associate specific family characteristics with certain society characteristics. For example, families that tend to be modern (i.e. latter marriage, smaller families, own spouse selection, high contraceptive use, etc) are expected to be found in countries and societies that are rich, developed and educated; that is respondents think developmental (Thornton, Ghimire, Mitchell 2005). Second, respondents show a great deal of support with the idea that a modern

society causes a modern family, and that a modern family causes a modern society. This supports the idea that people are at least aware of developmental models or paradigms and that they believe these models are descriptions of how the world really works. The implication being that people with higher beliefs in the models may be more likely to have more tolerant attitudes toward changes that they expect will make them more modern, and they may also be more likely to participate in those behaviors or encourage their families to participate. These results are significant because if people believe both the modern family and modern society are good and obtainable-Thornton's first two propositions (Thornton 2001, 2005)—the third proposition provides a model for how to change society as well as how one's family will change as society changes. For example it means that in order to have a wealthier and more educated society individuals may begin have smaller families, waiting longer to marry, etc. This then provides powerful motivations to break from one's culture and adopt new lifestyles.

Another important finding of the study is that the questions used here are as reliable as most other attitudinal questions. While questions dealing specifically with whether certain family domains can be found in certain society types tends have lower reliabilities, the questions dealing with either causal direction generally appear to have high reliabilities. As well there is evidence that several of the questions for the causal models are moderately to highly valid (at least statistically). While the questions concerning the association model tend to have lower validities, it too has some valid measures. As well it should be noted, that I would argue that all of the measures have high construct validity as they were specifically designed to examine these issues.

A final finding is that respondents see development, getting richer, and getting more educated as the same. Throughout the questionnaire respondents were asked to distinguish between educational changes, wealth changes and general development, and their responses indicate that most respondents distinguish very little between the three. In general, I found that when similar family characteristics are used, education, development and wealth all appear to work nearly identically. This may suggest that instead of separate concepts, all three are part of an underlying latent construct. In fact, in the qualitative work conducted prior to the survey did find support that respondents tend to use a broader understanding

of development to answer questions like these. This should not be surprising since even the Human Development Index considers development to be comprised three separate concepts of education, income and health (UNDP 2005).

Despite the strength of the findings there are limitations to this study. First, although the Chitwan Valley is an interesting and productive place to conduct this research, these results are probably not generalizable to the entire world. That is, due to the specific factors that have created this study site people may more clearly understand the development models, at least as is defined here. However, this limitation can be viewed as a motivation to determine if these ideas may be understood and accepted in many other locations and that further investigation if a broad range of societies is warranted.

Another important limitation is that although there is evidence that people believe and accept these development models, the thrust of the theory is that believing in these models will affect later attitudes, values and behavior. Thus future research is warranted on examining the effects of these beliefs. As well, future research should also address the issue that respondents may understand these models, and thus know what answers to provide, but in reality do not believe the world follows the developmental model—and thus we would expect no effect of the report on later behavior. Nevertheless, in response to the common "they are just saying what you want hear" limitation, some qualitative evidence does support the idea that these reports do not just reflect knowledge, but beliefs as well. Nevertheless, I highly encourage further investigation if these beliefs have specific behavioral effects later in life.

A final limitation of this study is that although I attempt to remove much of the method effects using the modified MTMM design, there are several additional effects that may contribute to systematic error. As Andrews (1984) shows, response categories, offering don't knows, battery length, question ordering are all important method effects. However, for this survey none of these methods were varied. Therefore more work should be done to examine other important method effects on these new indicators.

In conclusion, this research has shown that people do appear to believe in these development models that have been promoted around the world for centuries. Based on Thomas theorem (Thomas and Thomas (1928), and more specifically Thornton's Developmental Idealism (Thornton 2001, 2005), then

we would expect these beliefs to have later implications on people's later lives. Understanding these beliefs, both what they predict, what they are predicted by and how diverse their beliefs are is an important new area of research.

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Table 1 Matrix of questions: Causal Model x Development Type x Family Domain

Family Domains	Association			Family Causing Development			Development Causing Family		
	Rich	Education	Development	Rich	Education	Development	Rich	Education	Development
People marry at older ages	X	X	X	X	X	X	X	X	X
Women treated with more respect	X	X	X	X	X	X	X	X	X
Young adults/parents choose spouse	X	X	X	X	X	X	X	X	X
Married couples use contraception	X	X	X	X	X	X	X	X	X
Children live away from their older parents			X	X					X
Women and men did more of the same work			X	X					X
People work away from their family for pay			X	X					X
Adult children have more control over their earnings			X	X					X
More men have one/multiple wives			X	X					X
Families have more/fewer children			X	X					X
Adult sons of the same father lived together			X	X					X
People value their family less			X						X
People not getting married			X						X

Table 2. Percent of Respondents Providing Developmentally Idealistic Response

Family Domains	Association			Development Causing Family			Family Causing Development		
	Rich	Education	Development	Rich	Education	Development	Rich	Education	Development
People marry at older ages	73	80	80	75	80	73	89	88	88
Women treated with more respect	80	90	79	90	88	88	88	89	89
Spouse Choice	66	89	67	82	83	79	70	73	72
Married couples use contraception	81	92	92	81	85	80	89	84	92
Children live away from their older parents			64			50*	55		
Women and men did more of the same work			77			78	89		
People work away from their family for pay			78			54*	80		
Adult children have more control over their earnings			84			71	51*		
Polygamy			62			69	88		
Number of children			75			72	93		
Adult sons of the same father lived together			53*			54	84		
People value their family less			54*			82			
People not getting married			60						
Average percentage	**75**	**88**	**71**	**82**	**84**	**71**	**79**	**83**	**85**
		75			**76**			**80**	

*=not significantly different from 50%

Figure 1 True-score model with three true-score variance components

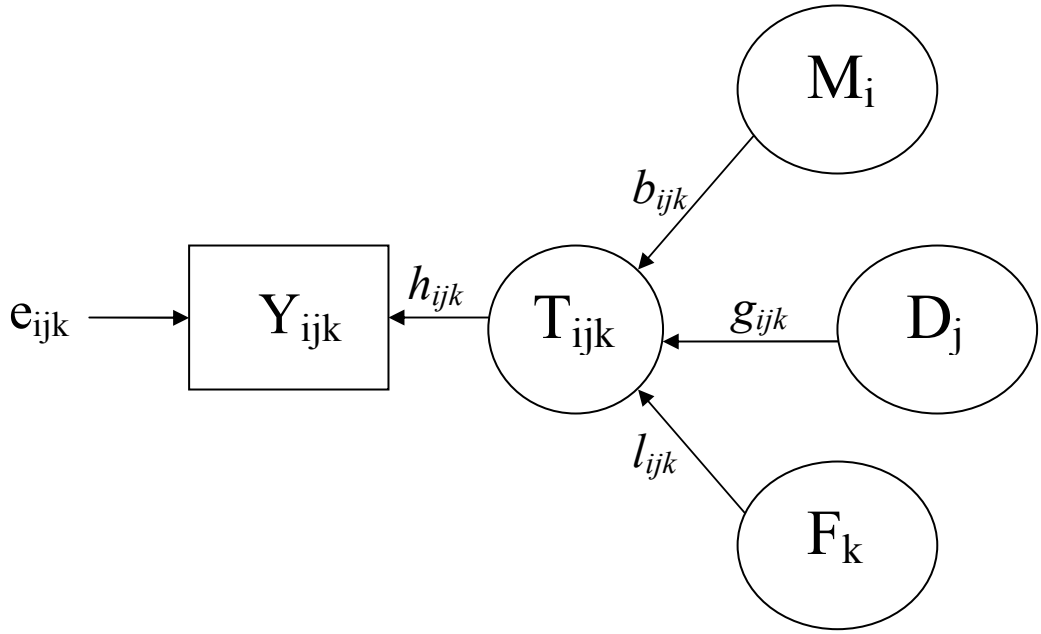

Table 3. Estimated Values of Reliability, Validity and Method effects

Panel A: Reliability

Family Domains	Association			Development Causing Family			Family Causing Development		
	Rich	Education	Development	Rich	Education	Development	Rich	Education	Development
People marry at older ages	0.446	0.462	0.625	0.681	0.727	0.723	0.697	0.627	0.478
Women treated with more respect	0.379	0.551	0.783	0.680	0.878	0.788	0.836	0.883	0.661
Spouse Choice	0.217	0.648	0.513	0.545	0.933	0.651	0.741	0.757	0.619
Married couples use contraception	0.283	0.595	0.582	0.693	0.815	0.655	0.844	0.858	0.656
Average reliability	**0.331**	**0.564**	**0.626**	**0.650**	**0.838**	**0.704**	**0.779**	**0.781**	**0.603**
		0.507			**0.731**			**0.721**	

Panel B: Validity of Development Models

Family Domains	Association			Development Causing Family			Family Causing Development		
	Rich	Education	Development	Rich	Education	Development	Rich	Education	Development
People marry at older ages	0.356	0.535	0.628	0.938	0.564	0.733	0.795	0.854	0.546
Women treated with more respect	0.457	0.504	0.608	0.964	0.539	0.789	0.780	0.744	0.619
Spouse Choice	0.953	0.464	0.741	0.988	0.583	0.756	0.728	0.795	0.719
Married couples use contraception	0.537	0.309	0.571	0.942	0.581	0.776	0.642	0.658	0.566
Average Validity	**0.576**	**0.453**	**0.637**	**0.958**	**0.567**	**0.763**	**0.736**	**0.763**	**0.612**
		0.555			**0.763**			**0.704**	

Panel C: Validity of Modernization Types

Family Domains	Rich			Education			Development		
	Cor	DCF	FCD	Cor	DCF	FCD	Cor	DCF	FCD
People marry at older ages	0.995	0.753	0.653	0.994	0.981	0.806	0.552	0.920	0.893
Women treated with more respect	0.996	0.607	0.924	0.983	0.964	0.779	0.623	0.722	0.949
Spouse Choice	0.940	0.613	0.813	0.986	0.813	0.705	0.909	0.745	0.987
Married couples use contraception	0.970	0.734	0.809	0.995	0.782	0.782	0.610	0.930	0.990
Average Validity	**0.975**	**0.677**	**0.800**	**0.990**	**0.885**	**0.768**	**0.673**	**0.829**	**0.955**
		0.817			**0.881**			**0.819**	

Panel D: Method Effect

Family Domains	Association			Development Causing Family			Family Causing Development		
	Rich	Education	Development	Rich	Education	Development	Rich	Education	Development
People marry at older ages	0.374	0.268	0.202	0.147	0.067	0.012	0.374	0.463	0.488
Women treated with more respect	0.487	0.211	0.229	0.414	0.389	0.353	0.444	0.575	0.661
Spouse Choice	0.323	0.475	0.438	0.429	0.814	0.817	0.400	0.437	0.231
Married couples use contraception	0.568	0.101	0.036	0.126	0.719	0.244	0.578	0.347	0.474

Chi-sqaure value	206.4	***	***p-value<.001	CFI	0.96	RMSEA 0.031
df	136			TLI	0.98	

Appendix A

Measure Construction

Below are the three broad measures used in the paper, as well as their indicators (Rich/Poor, etc). Each indicator has from 4-10 questions. The question wording is followed by the code that was used to code 1, the opposite answer (i.e. more vs. less common, richer vs. poorer, etc) as well "Same" and "don't know" and "missing" were then coded as 0. The following columns provide the percent response distribution for each question. Also, the order of the indicators is not necessarily the order of the sections in the survey.

Family & Society Characteristic
Association
Rich/Poor
I would like you to think about life in poor places compared with life in rich places. I am going to read you a list of items.
For each item, please tell me whether you think it is more common in poor places or more common in rich places.

Questions	Coded as 1	Rich	Poor	About the Same	DK	Missing
People marrying at older ages	Rich	73.2	24.2	1.5	1.1	0.0
Women getting treated with respect	Rich	79.7	16.9	2.8	0.6	0.0
Young people choosing their own spouse	Rich	66.1	26.4	6.3	1.1	0.0
Married couples using contraception	Rich	81.4	14.9	2.6	1.1	0.0

Traditional/Developed
Now, let us talk about life in traditional places and life in developed places.

Questions	Coded as 1	Developed	Traditional	About the Same	DK	Missing
People marrying at older ages	Developed	80.3	19.0	0.2	0.6	0.0
Women getting treated with respect	Developed	79.1	19.0	0.9	0.9	0.0
Married couples using contraception	Developed	91.6	7.4	0.6	0.4	0.0
Same father's children living away from their older parents	Developed	63.7	32.8	2.6	0.7	0.2
Parents controlling who their children marry	Traditional	30.9	67.2	1.1	0.7	0.0
Women and men doing the same work	Developed	77.3	20.1	1.5	1.1	0.0
People working away from their family for pay	Developed	78.4	19.2	1.9	0.6	0.0
Adult children having control over their earnings	Developed	84.2	13.8	1.3	0.7	0.0
Men marrying multiple wives	Traditional	35.2	61.8	2.0	0.9	0.0
Families having lots of children	Traditional	24.6	74.7	0.4	0.4	0.0
People deciding not to get married	Developed	60.0	33.0	6.0	1.1	0.0

People valuing their family less	Developed	54.0	41.3	3.2	1.5	0.0
Adult sons of the same father living together	Traditional	43.8	52.7	2.2	1.3	0.0

Uneducated/Educated

Now, let us talk about life in uneducated places compared with life in educated places

Questions	Coded as 1	Educated	Uneducated	About the Same	DK	Missing
People marrying at older ages	Educated	80.1	18.4	0.6	0.9	0.0
Women getting treated with respect	Educated	89.9	8.4	0.9	0.7	0.0
Using contraception	Educated	92.2	6.3	0.7	0.7	0.0
Young people choosing their own spouse	Educated	89.4	8.4	1.1	1.1	0.0

Society Change Causes Family Change

Development

Now let us talk about whether the following things would be more common or less common if Nepal became more developed.

Questions	Coded as 1	More Common	Less Common	About the Same	DK	Missing
People marrying at older ages	More Common	72.6	26.3	0.0	1.1	0.0
Women getting treated with respect	More Common	88.1	10.1	0.6	1.3	0.0
Young people choosing their own spouse	More Common	79.1	19.2	0.6	1.1	0.0
Married couples using contraception	More Common	80.1	19.2	0.0	0.7	0.0
Children living away from their older parents	More Common	50.3	47.9	0.6	1.3	0.0
Women and men doing the same work	More Common	77.8	20.7	0.4	1.1	0.0
People working away from their family for pay	More Common	54.2	45.3	0.0	0.6	0.0
Adult children having control over their earnings	More Common	71.3	27.2	0.4	1.1	0.0
Men marrying multiple wives	Less Common	28.1	69.1	1.1	1.3	0.4
Families having a lot of children	Less Common	26.8	72.1	0.4	0.7	0.0
People valuing their family less	More Common	81.8	16.9	0.4	0.9	0.0
Adult sons of the same father living together	More Common	53.6	44.5	0.6	1.3	0.0

Education

Many efforts are being made in Nepal these days to make the people of Nepal more educated. Please tell me whether each of the following things would be more common or less common if the people of Nepal were to become more educated.

Questions	Coded as 1	More Common	Less Common	About the Same	DK	Missing
People marrying at older ages	More Common	80.1	19.0	0.0	0.9	0.0
Women getting treated with respect	More Common	87.7	11.2	0.2	0.9	0.0

Young people choosing their own spouse	More Common	83.1	16.2	0.2	0.6	0.0
Married couples using contraception	More Common	84.7	14.5	0.0	0.7	0.0

Wealth

Many efforts are being made these days to make Nepal richer. Please tell me whether each of the following things would be more common or less common if Nepal were to become richer.

Questions	Coded as 1	More Common	Less Common	About the Same	DK	Missing
People marrying at older ages	More Common	74.7	24.2	0.0	1.1	0.0
Women getting treated with respect	More Common	89.6	9.1	0.2	1.1	0.0
Young people choosing their own spouse	More Common	81.6	16.4	0.7	1.3	0.0
Married couples using contraception	More Common	80.6	17.7	0.6	1.1	0.0

Family Change Causes Society Change

Richer/Poorer

Some people talk about making Nepal richer. For each of the following things, please tell me whether you think it would help make Nepal richer or help make Nepal poorer.

Questions	Coded as 1	Richer	Poorer	About the Same	DK	Missing
If more people married at an older age	Richer	88.6	9.3	0.7	1.3	0.0
If women were treated with more respect	Richer	87.7	10.4	0.7	1.1	0.0
If more people chose their own spouse	Richer	69.8	20.9	6.9	2.2	0.2
If more married couples used contraception	Richer	89.4	8.8	0.6	1.3	0.0
If more children lived away from their older parents	Richer	55.1	38.7	3.5	2.6	0.0
If women and men did more of the same work	Richer	88.8	8.0	1.3	1.7	0.2
If more people worked away from their family for pay	Richer	79.7	18.1	1.1	0.9	0.2
If adult children had more control over their earnings	Richer	50.7	46.2	2.0	1.1	0.0
If families had fewer children	Richer	92.7	6.0	0.4	0.9	0.0
If more men had only one wife	Richer	87.5	8.8	2.0	1.7	0.0
If fewer adult sons of the same father lived together	Richer	84.0	12.5	2.2	1.3	0.0

Better/Worse

Some people talk about making Nepal a better place overall. For each of the following things, please tell me whether you think it would help make Nepal a better place or help make Nepal a worse place.

Questions	Coded as 1	Better	Worse	About the Same	DK	Missing
If more people married at older ages	Better	88.3	10.4	0.4	0.9	0.0
If women were treated with more respect	Better	88.5	9.9	0.7	0.9	0.0

If more young people chose their own spouse	Better	71.9	23.6	3.4	1.1	0.0
If more married couples used contraception	Better	91.6	7.6	0.0	0.7	0.0

More/Less Educated

Now, let us talk about how our country of Nepal could be more educated.

Questions	Coded as 1	More Educated	Less Educated	About the Same	DK	Missing
If more people married at older ages	More Educated	88.3	10.2	0.6	0.9	0.0
If women were treated with more respect	More Educated	89.0	9.3	0.6	1.1	0.0
If more young people chose their own spouse	More Educated	72.8	23.1	2.8	1.3	0.0
If more married couples used contraception	More Educated	83.8	14.5	0.9	0.7	0.0