

# **The Influence of the Modernization Paradigm on People's Beliefs about Family and Social Change**

By

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## Abstract

This paper outlines the combination of two prominent theories of social life: 1) modernization theory and 2) W.I. Thomas' theorem that people's perceptions have real consequences. It then documents the extent to which the complex idea of modernization and development has cemented itself in the minds of ordinary people as a model of how the world works. I employ latent class analysis and use 2003 survey data from Nepal to examine these issues. I document the extent to which people expect certain family types (late marriage, polygamy, small families) to be in certain society types (developed, poor, educated), and the extent to which people believe family change and societal change are causally connected. Results suggest that the majority of people strongly believe that development and family change are causally related. But nearly 10% of respondents report disagreeing with the developmental models. Fertility, marriage and gender equality are understood by respondents as a package of family behaviors causally related to development.

## INTRODUCTION

Theories of modernization or development have existed for centuries, evidence of social scientists' attempts to explain the causes and effects of social change. Unilinear modernization and development theories grew in number, complexity and popularity beginning in the 18<sup>th</sup> century and became mainstays of paradigms in sociology, economics, demography, and anthropology until the early 20<sup>th</sup> century (Eisenstadt 1964; Gusfield 1967; Thornton 2005). These theories, which often substituted geographically varying data for historically varying data, attempted to causally connect various aspects of life, from religion and family to education, labor, and economics (Moaddel 1994; Crenshaw 1995; Smits, Ultee and Lammers 2000; Inglehart and Baker 2000; York, Rosa, Dietz 2003). They provided powerful explanations for the world's current and projected configurations (Geertz 1973). More important, however, they supplied a framework suggesting how certain social changes might be triggered by modifying individual 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 these theories has been the existence of a causal connection between modern family life and modern societies (Malthus 1986; Thornton 2005). Some have suggested that the modernization of families (i.e., older ages at marriage, greater use of contraceptives, smaller numbers of children) causes societies become more modern (e.g., wealthier, more educated). Others have explored and theorized the reverse causal relationship. This crucial difference, and less profound differences as well, have led to a wide range of modernization theories related to the family (Boas 1940; Crenshaw 1995; Eisenstadt 1964; Gusfield 1967; Inglehart and Baker 2000; Latham 2000; Meyer et al. 1997; Nisbet 1980; Portes 1976; Smits, Ultee and Lammers 2000; Thornton 2001, 2005; York, Rosa, Dietz 2003).

Despite this extensive research and theorizing, and despite evidence that ruling elites have used developmental models to justify policies and programs (Harris 1968; Latham 2000; Mandelbaum 1971; Meyer et al. 1997; Nisbet 1969, 1980; Sanderson 1990; Thornton 2001, 2005), much less is understood about how ordinary people understand these models of social and family change (Ahearn 2004; Amin 1989; Blaut 1993; Caldwell et al. 1988; Dahl and Rabo 1992; Pigg 1992; Wang 1999). W.I. Thomas' theorem—that people's perceptions have real consequences (Thomas and Thomas 1928)—suggests that if ordinary people believe the theory that modern societies produce modern families – or the reverse – they may be directly influenced by changes in either of these domains. Thus, belief in causal relationships between individuals and societies may predict individual behavior in much the same way that values predict behavior (Bongaarts and Watkins 1996; Caldwell 1982, 2001; Casterline 2001; Freedman 1979,

1987; Goode 1970; Lesthaeghe 1980, 1983; Lesthaeghe and Wilson 1986; Lesthaeghe and van de Kaa 1986; Pritchett 1994; Rogers 2003; Thornton, Axinn and Xie 2007; van de Kaa 1987, 1996).

As is often the case when addressing emerging theories, existing data and methods must be modified or created to examine new hypotheses. In this case, new and highly salient data are available, collected from a sample in Nepal using a survey instrument expressly intended to measure people's beliefs in the causal relationships between family and societal change. This survey examined many aspects of family and social life, and probed respondents' views on numerous potential causal interconnections between these aspects. And, because the respondents reside in a remote rural setting experiencing tremendous societal and family changes, the study context is also ideal.

## **BACKGROUND and THEORY**

### **Perceptions, Values and Actions**

During the early 20<sup>th</sup> 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 to examining how individuals perceived their circumstances and 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 the Thomas Theorem<sup>1</sup> is that an individual's beliefs or perceptions about a circumstance—regardless of their basis in actuality—will have an effect on the individual's related actions. Further, an individual's interpretation of a situation may gain meaning and be reinforced as a result of the actions associated with it, beyond any objective significance this interpretation may have.

Merton (1968) expands on this theorem by suggesting that an individual's interpretations of a situation may increase the likelihood of future outcomes associated with that belief. This "self-fulfilling prophecy" then reinforces the strength of the connection between the interpretation and the related outcome. A classic example is a bank run, where individuals' perceptions about a bank's insolvency – regardless of their accuracy – produce behavior (bank withdrawals) that increases the likelihood of outcomes related to the belief (bank insolvency). Clearly, the interpretation or "prediction" need not be correct to have an effect in the predicted direction. But given the reinforcement of the causal connection in a self-fulfilling prophesy between the interpretation (bank is going to fail) and the outcome (bank insolvency), it becomes difficult to sort out the effects of objective factors that might have influenced the outcome from the effects of situational interpretations.

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<sup>1</sup> 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 theories of Thomas (1928) and Merton (1968) fit nicely with Geertz's conjecture that beliefs and ideas provide models for both understanding reality and dealing with the world (Geertz 1973; also see Fricke 1997, and D'Andrade 1984). Similarly, these theories parallel social psychological work by Fishbein and Ajzen (1975) linking attitudes and beliefs to behavior through reasoned action and planned behavior. That is, ideational frameworks help to describe and explain the world by giving meaning to certain behaviors and institutions and by identifying appropriate and productive methods for achieving desired goals. Substantial evidence indicates that ideational frameworks have influenced people's family behaviors in particular. For example, Goode (1970) identifies an increasing social preference for the conjugal family over the extended family as influential on changes in family structures. Lesthaeghe and his colleagues view increasing emphases on egalitarianism and individualism as important social 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 2008; Lesthaeghe and van de Kaa 1986; van de Kaa 1987). Pritchett (1994) posits that declining family size preferences played a significant role in the decline in fertility around the world. Several scholars have explored the effects of Western ideals on family behavior around the world—notably, movement toward smaller families, older ages at marriage, more autonomy in spousal choice and marriage timing, and greater gender egalitarianism (Caldwell 1982; Freedman 1979, 1987; van de Kaa 2001; Inglehart 1997; Inglehart and Baker 2000; Easterlin 1980; Thornton and Lin 1994; Bista 1994).

Although the studies mentioned above have provided powerful evidence that ideational frameworks are important, and that they are dynamic across time and geography, the studies do not explore why or how some ideas displace others, causing changes in individuals' perceptions, behavior, and outcomes. That is, what causes individuals to adopt new ideas (typically Western and or "modern") over former ("traditional") models, values, and perceptions—and concomitantly change their behavior to conform more closely to these new ideologies? Understanding people's perceptions of situations is fundamental to understanding their 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.

Theories of modernization or development dominated much of Western thinking from the Enlightenment of the 1600s and 1700s to the present (Thornton 2005). Initially, the theories asserted 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 in their past, 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 geographic 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 surmised that the family formation patterns of Northwest Europe (less family solidarity, later marriage, less parental authority, greater status of women, etc) were causally connected to higher levels of industry, urbanization, education, consumption, geographic mobility, secularism, democracy, religious pluralism, and other societal characteristics. Although there was some debate about 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 Northwest European 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 1983; 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, they were ethnocentric historical fallacies (Boas 1940). And although the majority of current social scholars have rejected modernization theories in favor of less deterministic and ethnocentric theories such as globalization and dependence theory, many social theories still employed today maintain a strong developmental component (Crenshaw 1995; Smits, Ultee and Lammers 2000; Inglehart and Baker 2000; York, Rosa, Dietz 2003).

More crucial is that despite the academy's general rejection of modernization theory, ordinary people may still believe in the model due to its strong and still very prevalent message. Thornton (2001, 2005) argues that the 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 models and their conclusions provided new rubrics for judging society, family life, and the rights of human beings. They predicted a direction for future family and social change, and described mechanisms people should employ to facilitate social, economic, and familial changes. More specifically, DI's four interrelated propositions state 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, this paper argues that the third proposition, that family change and societal change are causally related is a particularly critical element. Recall that in Thomas' Theorem (1928) when people define a situation—or in this case a 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 be motivated to change their families to be more “modern.” Similarly if people believe modernization makes families more developed, they will change their families to be in line with their more developed society.

Merton’s (1968) 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 the younger generation will change their behavior from the previous generation) because are anticipating the social transforms. These changes, over time, may not ever lead to substantial economic gains, but 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. This would therefore promote additional changes as more people are persuaded to believe the model is correct. In fact, some people may point to a lack of economic change and suggest that is a result of insufficient family change (i.e. traditional families hinder social and economic progress).

Due to the universal nature of the DI model, people often assume 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 that some places 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 leads to the self-fulfilling prophecy of another.

Particularly powerful for this 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<sup>2</sup>. In fact, however, I argue that the reliance on fate may be a powerful influence 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. Thus, turning fatalism on its head, by justifying changes in behavior as inevitable consequences of development people may induce a self-fulfilling prophecy of demographic change.

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<sup>2</sup> Although Bista (1994) makes a strong argument, events beginning in 1996 and leading to the Maoist insurgency and 2008 ousting of the King indicate that Nepalis are more than capable of making dramatic social changes.

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 activities, 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 structural changes the ideas of DI would not be supported by personal experience, and might be discarded.

Another important aspect of structure is that without obvious resource inequality (at least internationally) variation in family behavior could not be argued to be causal related to resource production. Therefore, without people having some knowledge of inequality in “development,” support of the model would fail. Recent research by Thornton, Ghimire and Mitchell (2005) shows that Nepalis’ scores of development for countries around the world strongly correlate with the U.N. Human Development Index—this despite that fact that many of these Nepalis had little to no formal education. This implies that people do know about the unequal distribution of resources—which may predispose them to believe in DI.

DI is also consistent with many 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 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 frameworks such as Greenhalgh’s political economy approach (1990, 1995) 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 2003; Lesthaeghe and Wilson 1986). In fact, the simultaneity of the fertility decline across the globe is most easily described by a large influx of this powerful ideology across the globe at around the same time (Caldwell 2001).

DI integrates most of the ideational factors contained in the research literature concerning ideational forces on family behavior and change. DI can add enormously to endemic 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 circulated without extensive challenge. 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 a developmental or hierarchical framework in evaluating various attributes and behavior (Ahearn 2004; Amin 1989; Blaut 1993; Caldwell et al. 1988; Dahl and Rabo 1992; Pigg 1992; Wang 1999). For example, Pigg (1992) and Ahearn (2004) 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. While these studies have documented that people associate some family types with some society types, primarily focusing on urban and rural differences within the country, they have not explored people's understanding of the causal relationships between society type and family. As well, they have typically explored a limited range of society and family types.

More recent work by Thornton and colleagues has explored this area in greater detail (Thornton 2001, 2005; Thornton, Ghimire and Mitchell 2005; de Jong, Ghimire, Thornton and Pierce 2006;

Binstock and Thornton 2005; Thornton and Philipov 2009). For example, Thornton, Ghimire and Mitchell (2005) find strong evidence that a sample of 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 for a diverse list of countries. Using the same sample in Nepal, de Jong, Ghimire, Thornton and Pierce (2006), show that Nepalis value modern family characteristics such as later marriage, child choice marriages, fewer children and even an increased tolerance toward divorce. Nevertheless, this research does not provide an examination of people's beliefs in the *causal* relationships between societal and family change.

## **RESEARCH AIMS**

A rudimentary hypothesis based on this previous work is that people believe in models of modernization that causally connect societal attributes and family characteristics. This paper is the first to conceptualize and measure individuals' beliefs in developmental models—specifically the causal relationship between family change and development<sup>3</sup>. An application of both Thomas' and Merton's theories suggest that measuring individual's beliefs about these models is requisite to better understanding peoples' later actions. Therefore, the purpose of this paper is to provide evidence concerning people's beliefs in these models of social change. My analyses concentrate on what extent these models of social change are endorsed. To address this issue, this study examines data from a 2003 study of people in the Chitwan Valley of Nepal that was specifically designed to measure their beliefs concerning models of family and societal change.

This paper provides two indicators of who endorses these developmental models. First, by estimating overall endorsement of the models using frequencies, we learn the scope of DI's penetration into the beliefs of a sample of people in Nepal. Second, because of the multidimensional nature of the data, I use latent class analysis of individual's survey responses to estimate overall belief in the modernization models, as well as how the different pieces of DI are understood and believed. As I discuss in greater detail below, different parameterizations supply important confirmations and validations of the latent class findings.

It is important to note that although it is my purpose to examine the extent to which others endorse DI, this should not be taken as evidence that I endorse the propositions of DI myself. Rather, I recognize the motivational power behind these models, and hope to eventually evaluate the possible influence they may have on human behavior.

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<sup>3</sup> Of course, DI is not the only worldview in Nepal. In fact, individuals may be exposed to multiple schemas over time—accepting some, rejecting others and applying them differentially to understand various outcomes. Although beyond the scope of this research, understanding when, how and why people accept and utilize different schemas or worldviews is an important area of research. Nevertheless, for this paper the focus is the extent to which this Nepali sample understands DI.

## **DATA 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. In fact, the clearing of the jungle and eradication of malaria was a major “development” project for Nepal requiring tremendous international aide. Chitwan soon became a social 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, family planning, employment outside of the home, development programs, and exposure to different sources of mass media and new ideas in recent birth cohorts (Axinn & Barber, 2001; Axinn & Yabiku, 2001; Barber et al. 2001; Beutel and Axinn 2002; Ghimire et al., 2006). Despite this general increase, however, much of this research has also demonstrated that access to these institutions, programs, and information is still highly heterogeneous due to both spatial and cultural barriers<sup>4</sup>. Thus, this setting is particularly helpful by affording access to a broad range of people whose different cultural settings and differential contact with the aforementioned institutions, programs, and information can produce a possibly wide range of beliefs in developmental models.

### **Sample Design**

The survey was conducted in 2003, 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

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<sup>4</sup> Since the mid 1990’s there has been a Maoist uprising with strong developmental messages—which eventually lead to the overthrowing of the King in 2008.

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 this analysis. The field period lasted for six weeks and resulted in a 97 percent response rate.

### **Measurement**

Although individuals' ideas, values and attitudes have long been hypothesized to influence their 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.

To address this complexity researchers used the insights gained from 12 in-depth interviews and 10 focus groups (conducted by trained Nepali interviews), and combined them with their conceptual understanding of developmental models to construct individual questionnaire items. A 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 questions were not about abstract concepts, but instead focused 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 used familiar concepts such as education and wealth.

### *Models of Modernization*

In this paper I focus on 9 sections of questions investigating knowledge and belief in developmental models and their application in concrete situations. Together these sections asked 60 questions to systematically document 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 aspects of modernization (education, getting richer, and development). As well, researchers asked about three different models of change or modernization (family type is *correlated* with society type, social change *causes* family change and family change

*causes* societal changes). Of the 60 questions, four family domains (marriage timing, gender equality, spouse choice and contraceptive use) were asked in all nine sections. In order to streamline the paper, I focus on these 4 family domains which cover a relatively broad range of topics including fertility, autonomy, equality, marriage and intergenerational relationships, thus supplying an analytic subset of (3x3x4) 36 questions.<sup>5</sup> The Appendix provides the exact wording, distributions and coding of each of these measures.

More specifically, three of the sections in the survey presented one of four family characteristics (e.g. marrying at older ages, spouse choice, etc) and then asked if this characteristic is more common in different places or types of societies. There were three location comparisons possible in the three sections: 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). Respondents could also volunteer that the family trait was “equally common in both” or that they “don’t know,” but only after a follow-up probe asking the respondent to give their best guess or estimate. Together, researchers intended these three sections 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 for family and societal changes.

Similarly, three other sections presented the same family characteristics as above and then asked if making the country more developed, richer, or more educated would make people marry earlier or later, have more or fewer children, etc. Also responses of “no change” or “don’t know” were accepted if the respondents voiced them after a follow up probe asking them 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 place<sup>6</sup>, or more educated. As with the previous sets of sections, people were allowed to provide the options of “no change” and “don’t know” as a response after probing. These three sections of questions provide an estimate of the individual’s belief that specific family change leads to a more modern society.

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5 A previous version of this paper, (Author citation), discusses the 13 family domains by using all 60 questions. The results from that paper suggest that the 13 common family domains provide substantively similar results to those presented here.

6 Based on the in-depth interviews and focus groups the idea of a better place and developed place are very similar in Nepali.

To analyze the questions, they were coded so that 1 meant the answer was in line with developmental thinking and everything else—including answers of “don’t know,” “the same,” “no change,” and missing—was coded as 0 (see Appendix A for all the question-specific coding). It is important to note that there was typically only one to three percent of the sample that provided responses other than the two provided options. Also, only 1 person refused to provide an answer or gave uncodeable response and this only occurred on one of the 36 questions.

## **RESULTS**

--Table 1 about here--

Table 1 reports the percent agreeing with the developmental idealism model. At the bottom of each column is the average percent agreeing with developmental idealism for the entire section of questions, and below that is the average for the three sections for in each causal direction. If we assume that respondents randomly guessed between the two main answers (e.g. More Common/Less Common, Richer/Poorer, etc), then percentages would center around 50%. Similarly, if everyone was in-line with DI, and there was no measurement error, the percentages would be close to 100%, and if peoples’ beliefs were contrary to DI, the percentages would be close to 0%.

### *Family & Society Characteristic Association*

This set of 12 questions contains three subsets, all of which are intended to reflect the respondent’s belief in the joint distribution of specific family characteristics and society characteristics. Respondents were asked to choose if certain family characteristics (see Appendix A) were more likely to be found in: a Rich or Poor country, a Traditional or Developed country, and an Uneducated or Educated country. Because DI states that people marrying at older ages, women getting treated with more respect, young people choosing their own spouse, and married couples using contraception would be more common in wealthier, more educated and more developed countries, higher percentages indicates greater overall belief in DI.

Although there is some variation, most people provide developmental idealistic responses 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 also has high support with 80%. All of the questions are significantly above the random guessing level of 50%, but none of them are within statistical significance of 100%.

The overall percentage for the entire set of questions is relatively high, 81%, which is just more than midway between what we would expect if everyone believed in the developmental model (and had no measurement error) and if everyone was randomly selecting answers. Having all 12 items significantly

higher than 50% suggests that, on average people tend to believe that a modern society is highly correlated with several family characteristics.

#### *Society Change Causes Family Change*

The next set of questions measures the belief that a society's development causes the societies families to modernize. That is, as a society becomes richer, or more educated, or more developed, people would be expected to marry at older ages, have smaller families, give women more respect, and choose their own spouse.

Overall there is confirmation that people believe that development causes family change. With a high average agreement of 82% for all 12 questions, most respondents provide the modern answer. In particular, respondents report a high agreement with the idea that modernization or development leads to women getting treated with more respect.

#### *Family Change Causes Society Change*

The third set of 12 questions reverses the causal direction of the set of questions just discussed by asking if families changed in specific ways would that make Nepal richer or poorer, a better or worse place, and more or less educated. Thus, a higher number means more agreement with the idea that people marrying at older ages, women getting treated with more respect, people choosing their own spouse, and married couples using contraception will make Nepal more modern.

Overall the responses to these questions support the conclusion that people believe that family change can cause societal-level change in wealth, education and development. Based on 12 questions, on average, respondents were 84% in agreement that family change is expected to make a change in Nepal's development. All three columns had similar overall agreement levels, and each of the family types also appeared to have similar agreement levels, with the exception of spouse choice which was slightly lower than the other family types. Thus although people generally believe that family change causes societal change, there is less agreement that letting young people choose their own spouse will cause societies to modernize.

Relating these results back to the theory motivating this paper, if people really do expect changing their families will make their country more developed, and they believe that development is good, they would be expected to act on that belief. Note that this is true even if the model or causal relationship they believe to be true is false. Similarly, if people believe that development produces broad changes in family life, they may be more lenient to changes (or even encourage them). If those changes would not have occurred otherwise, then they have also just fulfilled their own prophecy.

#### **Response Groups**

To assimilate and confirm these results, I conduct a latent class analysis (LCA) using the 36 binary indicators just discussed. LCA aids in the characterization of a multidimensional set of observed

variables (McCutcheon 1987, 2002). That is, in lieu of assuming the 36 questions provide multiple dimensions of intensity of belief (i.e. believing that education causes family change, getting married later causes development, etc), we can use the questions to find typologies of responses, or response profiles. For example, two very obvious groups would be those who provide answers suggesting a belief in Developmental Idealism and those whose answers imply disbelief in DI. Several other groups may exist, such as: those who believe in one causal direction over another, believing some family types may be affected while other family characteristics remain unchanged, etc. As well, LCA reduces noise due to measurement error in found in any single indicator by utilizing multiple responses (McCutcheon 1987, 2002). Thus, in the same way that factor analysis employs multiple measures to estimate a latent variable, LCA draws on multiple categorical responses to estimate latent groups within the population. Thus, by examining the classes of responses we can better understand the extent of the belief in the various aspects of DI. And, by combining multiple indicators in the LCA we can gain a better comprehension of how consistent respondents are in the beliefs of models of modernization.

#### *Number of Response Groups*

--Table 2 about here--

Maximum-likelihood estimates for the parameters for each latent class model are estimated using iterative procedures, in this case the EM algorithm (Dayton 1998; Muthén and Muthén 2006). To determine the number of classes (or groups) of different response patterns present in the data, Table 2 provides several indicators of model fit for models with 1 to 5 latent classes. Notice that for each additional class, 37 parameters are estimated (36 item parameters and one class parameter). Despite being maximum-likelihood estimates, most research suggests that the often used model likelihood (i.e. standard likelihood ratio test of fit) is not a good indicator of overall model fit<sup>7</sup> (Nylund, Asparouhov, Muthén 2007). The other measures of fit are the AIC, BIC and the Lo-Mendell-Rubin (LMR). The LMR is a specialized likelihood ratio test of model fit that compares the estimated model (# of classes  $k$ ) with a model of  $k-1$  class. The reported  $p$ -value represents a test of the hypothesis that a model with one less class fits the data as well as the current model (Lo, Mendell and Rubin 2001). Considering the large number of indicators and the possible complexity and inequality of the class sizes, determining the best fitting model requires information from all the measures of fit (Dayton 1998; Lo, Mendell and Rubin 2001; Nylund, Asparouhov, Muthén 2007). The final measure in Table 2, entropy, is not a measure of fit but rather a summary measure of how well individuals fit into the classes. Values range from 0 to 1, with 1 indicating respondents are placed perfectly in their class.

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<sup>7</sup> Nevertheless, a change in the likelihood of over 52.192 would indicate a significant improvement of the fit (at the .05 level of significance) for 37 parameters. Based on that criterion none of these models would be a good fit, in fact not even 7 classes would properly fit the data.

We begin examining Table 2 by looking at the results of the 2 class LCA. Both the AIC and BIC show substantial improvement over the single class model and the LMR shows that the single class fits significantly worse. This is not surprising since a single class model assumes no correlation among the variables. The 3 class model shows improvement in fit over the 2 class model, and although the LMR is close to non-significance, it still implies the 3 class model is the better model. The four (and five) class models show little improvement in the AIC over the 3 class model and actually show a worsening of fit for the BIC. Also, the four class model LMR suggests that the 3 class model is within statistical significance of having similar fit. Thus, based on all three major measures of fit, it appears the 3 class model is the best fitting overall model. As well, the four class model provides little new substantive incites over the 3 class model. Finally, the entropy value of 0.89 for the 3 class model is high and implies very stable classes. That is, the response patterns in the data are statistically distinct.

--Table 3 and Figure 1 about here--

As mentioned earlier, LCA's have two different model parameters: item parameters and class probability parameters (Dayton 1998; McCutcheon 1987, 2002). Item parameters are conditional probabilities, or in this case, the probability that a person in the class provides the answer in line with DI. Because the indicators are binary, these parameters also correspond to the proportion of the class that provided the DI answer. The class probability parameters report the sample proportion, or size, of each class. Table 3 reports the class and item parameters for the three class model and Figure 1 displays the item parameters graphically.

Table 3 and Figure 1 are linked by the item codes, which follow a simple 3 letter scheme. The first letter indicates the type of model used in the item: A-association, F-family change causes development, and D-development causes the family to change. The second letter represents the aspect of modernization used in the question: R-rich/poor countries, becoming richer or wealthier, E-educated/uneducated, becoming more educated, and D-developed/traditional, developing. The third letter then represents the type of family behavior the item uses: M-older age of marriage, W-women getting more respect, S-children choosing their own spouse, and C-married couples using contraception. The items are grouped first by model type, then development component and then ordered by family attribute. Also, there is a horizontal line at probability=0.5 to indicate the expected response pattern if the answers were random.

The class parameters at the top of Table 3 show that three strong, unequally sized response groups (or classes) emerge from these data. The largest group, labeled class 1, consists of just over half of the sample. Class 2 consists of over 1/3 of the sample and class 3 represents just over 9% of the sample<sup>8</sup>.

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<sup>8</sup> The slight differences between the class proportions reported in Table 3 and Figure 1 are due to Figure 1's reporting proportions being based on the *estimated* model, while Table 3's class proportions are the actual

Based on a respondent's (typically) unique<sup>9</sup> response pattern to the 36 items, three individual posterior probabilities are estimated for each of the three groups (McCutcheon 1987, 2002; Dayton 1998). The individual is assigned to the class with the highest posterior probability. An indication of the strength of these classes is that the average individual class probabilities were all between 0.94-0.96. For example, for the half of the sample assigned to group one, the *average* probability of the respondent being in group 1 is 0.96. Thus, generally, the probability of being in a class other than the assigned class was extremely low for the entire sample. In fact, about 5% of respondents have *less than* a 70% chance of being in their assigned class and over half of them have essentially no chance being assigned to a different class (i.e. posterior probability $\approx$ 1).

### *Response Group Profiles*

Turning now to the within class item probabilities, Figure 1 indicates that people in class 1 consistently provide answers in line with developmental idealism. The item probabilities in class 1 range from 0.77-1.00. Considering the items were not always presented so that the DI response was first, and one question was worded negatively, this implies an incredible amount of support for DI from this group. In fact, the average item probability for this group is an amazingly high 0.93. That is, for the approximately 57% of the sample that is in class 1, over 93% of the class gave the DI response on any given question. Because their positive responses indicate agreement with the statements, one might consider people in class 1 to be the *strong believers* in developmental idealism. Based on Thomas (1928) and Merton (1968), we might expect this group to be the most likely to act on these strongly held beliefs.

The respondents in the second group, for the most part, provide item probabilities that follow a strikingly similar pattern to the respondents in group 1, but tend to be about 20 percentage points lower in their probabilities, ranging from 0.53 to 0.87 with an average agreement with DI of about 0.74. These results imply that the 34% of the sample people found in class 2 still typically support DI, but they are less supportive of DI than class 1. It may be that some relationships between family change and development are more confusing or more nuanced in ways not identified by this model or by the 36 questions. Thus, a label for this class may be moderate supporters of DI. Here our theory is less clear as to the consequences. For some people the beliefs may be strong enough to act for some behaviors, but not

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proportions after sorting individuals into the different classes based on their posterior probabilities. The closeness of the two sets of proportions reaffirms the strength of the classes.

<sup>9</sup> Of the over 68 billion ( $2^{36}$ ) possible response profiles the respondents provided 424 distinct response profiles. This implies that people generally had unique response profiles. Based on these profiles, 13 people, 2.4% of the sample, provided responses that may indicate they were only providing responses that indicated "more" (i.e. more common, more educated, richer, etc). Determining whether this is an indication of acquiescence or if it is their true belief is impossible in this study. The response profiles also show that no respondent just provided the first response throughout all 36 questions.

others. Or maybe this group recognizes the ambiguity in these models and therefore has a difficult time completely committing to DI.

The final group of respondents, class 3, characterizes only 9% of the sample, but provides a group that, to a limited degree, appears to disagree with DI. Class 3 members do not follow a similar response pattern to people in groups 1 and 2. In fact, the great variation in the responses makes it difficult to describe. Nevertheless, by focusing on larger sections of items, some patterns emerge. First, the association questions (the first 12 items) tend to have item probabilities around 0.56. This indicates very low support, or possibly even random answers to these questions. Similarly, the next 12 items measure the model that family change causes development, and show an average item probability of 0.47. However, the last set of 12 items, which measure the belief that development brings family change, indicate a moderate disbelief in DI with an average probability of 0.31. This suggests that although people in class 3 may be torn or confused on the items measuring the association and family change causing development models, they agree that modernization brings family change<sup>10</sup>. Thus, these 50 people represent a small minority of respondents who not only appear not to support DI, but in the case of the model of development bringing family change, they actually disagree with DI.

As a general comment on all three groups, the 12 questions about development causing family change (the last 12 items in Figure 1) show less item variation than the previous 24 questions. This is remarkable because 4 of the questions were asked early in the survey, 4 in the middle and 4 near the end. Due in part to the lack of variation within class, the three class distinction is strongest in this group. The substantive interpretation of this pattern may be that the message as to how development changes family is more concrete and consistent, and thus believing, or not believing, in it is also more consistent.

Another interesting note for groups one and two is that although there is high support for DI, both groups report lower agreement with questions concerning spouse choice. Figure 1 displays this well. By following the dashed and solid lines (groups 1 and 2 respectively), for each set of four items, the first two and fourth items are high, and the third item is often significantly lower. In fact, the average item probability for the spouse choice questions for groups 1 and 2 (respectively) are 0.90 and 0.66, while the average for the other 3 family types are 0.95 and 0.77. This pattern is particularly strong for the family causing development questions, which suggests respondents are less certain that letting young people choose their own spouse will lead to development, wealth and education. This may be justified by the fact that parents often arrange the marriage in hopes of arranging a happier and better life for the child (and family). Thus, for some, an arranged marriage is intended to produce a more “developed” family life in the future.

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<sup>10</sup> It could also be argued that class 3 appears equally unresponsive of the idea that family change will increase education, but for the sake of generalization, I leave that discussion for another time.

As well, the relationships between development and increasing age at marriage, using contraception and giving women more respect have all been well discussed in Nepal for a significant period, and only recently have ordinary people began to consider modernization's relationship with spouse choice (Author citation). Despite the dramatic changes in spouse choice in Nepal—20 years ago the vast majority of marriages were arranged by parents and now only about 1/3 are completely arranged by parents—most marriages are still highly controlled by the parents, and few young people completely choose their spouse for themselves (Ghimire et al. 2006; Author citation). Interestingly, within Nepal the people often considered the most “modern” are the high caste Hindus, who also have the highest rates of arranged marriages (Ghimire et al 2006; Author citation). That is, the lower castes have historically higher ages of marriage and greater youth control over spouse choice but due to the strong Hinduization of these groups (through legal and social pressure) over the last several decades the behavioral patterns have converged slightly. Thus for some people “development” went with “Hinduization” which would suggest a negative causal relationship between development and the family behavior of age at marriage and youth control of spouse choice. Another implication of this response pattern is that it shows that respondents are providing thoughtful and consistent answers, and not simply acquiescing.

#### *Confirmatory Latent Class Analysis*

An alternative parameterization of the latent class analysis conducted above allows for a more structured and confirmatory analysis of the data. By focusing on the three models of development I use the 36 questions to place respondents into a matrix of groups based on three questions: 1) do they believe family change and development are associated 2) do they believe family change causes development and 3) do they believe development causes family change. That is, I use the individual's responses to the 12 questions asking about if family change will lead to greater development, wealth and education to signal if they believe that model (and so on for the other two sets of 12 survey items). Following this strategy for each of the three questions then I have a total of 8 ( $2^3$ ) possible profiles. This allows to me to examine more completely respondents with alternative theories of development compared to the DI model.

The results of this analysis (not shown)<sup>11</sup> reassert the finding above that the vast majority of people in this sample report believing that development and family change are associated and that they are both causes and effects of each other. Of the 8 groups over 85% of the respondents are in the response profile reporting yes to all three modernization models (i.e. association, family causing development and development causing family). Although, as evidenced from the previous analyses, these models of modernization are not without some individual variation in terms of what family domains are and are not related to development, taken as a whole most people agree with all three models.

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<sup>11</sup> Although the entropy for this 8 class model is very high (0.985) the larger number of classes and imposed structure of the responses provides a worse fit compared the 3 class model above.

Two other categories of responses also have sizeable numbers of individuals. Approximately 5% of the sample reported believing that development and family change were associated and that family change caused development but that development did *not* cause family change. This group appears to be a trimmed version of the class 3 discussed in the previous LCA. Again, this is a group that appears to support one causal pathway, but disputes the other. Similarly, the next largest group (about 4%) reports believing the association between development and family change, but only agrees that causation runs from development to family change. The remaining 6% are fairly evenly divided between the remaining 5 response groups, with only 1.6% reporting not believing in any of the three models.

Overall, this confirmatory LCA suggests that the third latent class described in the first analysis may be a mixture of a number of alternative profiles (compared to those who appear to support all three models of development and family life). That is, it appears that between 10-15% of the sample believe that at least one of the three models is not true. Combining across groups we can see that about 95.1% of the sample report the development and family change are associated. Around 93.3% believe that family change leads to development and 90.6% report believing that development leads to family change.

## **DISCUSSION**

This paper combines 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 change, and in particular how family life is both a cause and an effect of that social change. Substantial evidence shows that these developmental models have been conveyed widely 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 understood and accepted these models (Pigg 1992; Ahearn 2004), and only until recently has any of this work been using surveys (Binstock and Thornton 2007; Yount and Rashad 2008).

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; Merton 1968). The implication of this theorem is that if people believe these developmental models to be real and correct, even if they have been shown elsewhere to be otherwise, they will have real consequences on their outcomes. Hence, 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 associate specific family characteristics with certain society characteristics. For example, families that tend to be modern (i.e. later 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 developmentally (Thornton, Ghimire, Mitchell 2005). Second, most respondents endorse 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 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 that either 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 having smaller families, waiting longer to marry, etc. This then provides powerful motivations to break from one's culture and adopt new lifestyles.

However, I also find that a small subset of the sample (between 10-15%), appear not to believe in these developmental models. In particular, one group appears to reject the idea that education, wealth or development leads to changes in marriage, gender equality and contraceptive use, while another, smaller group, appears to reject the reverse causal direction. These people who appear to be rejecting some aspects of the Developmental Idealism (DI) proposition that the modern family system and modern society are both causes and effects of each other provide an interesting comparison group to the rest of the sample. Questions of how these groups are different from the main sample, if their answers come from a rejection of DI or if they simply have not been exposed to it, and finally if their behaviors are different because of this alternative perception of the world, are all questions that should be addressed.

### **Limitations and future research**

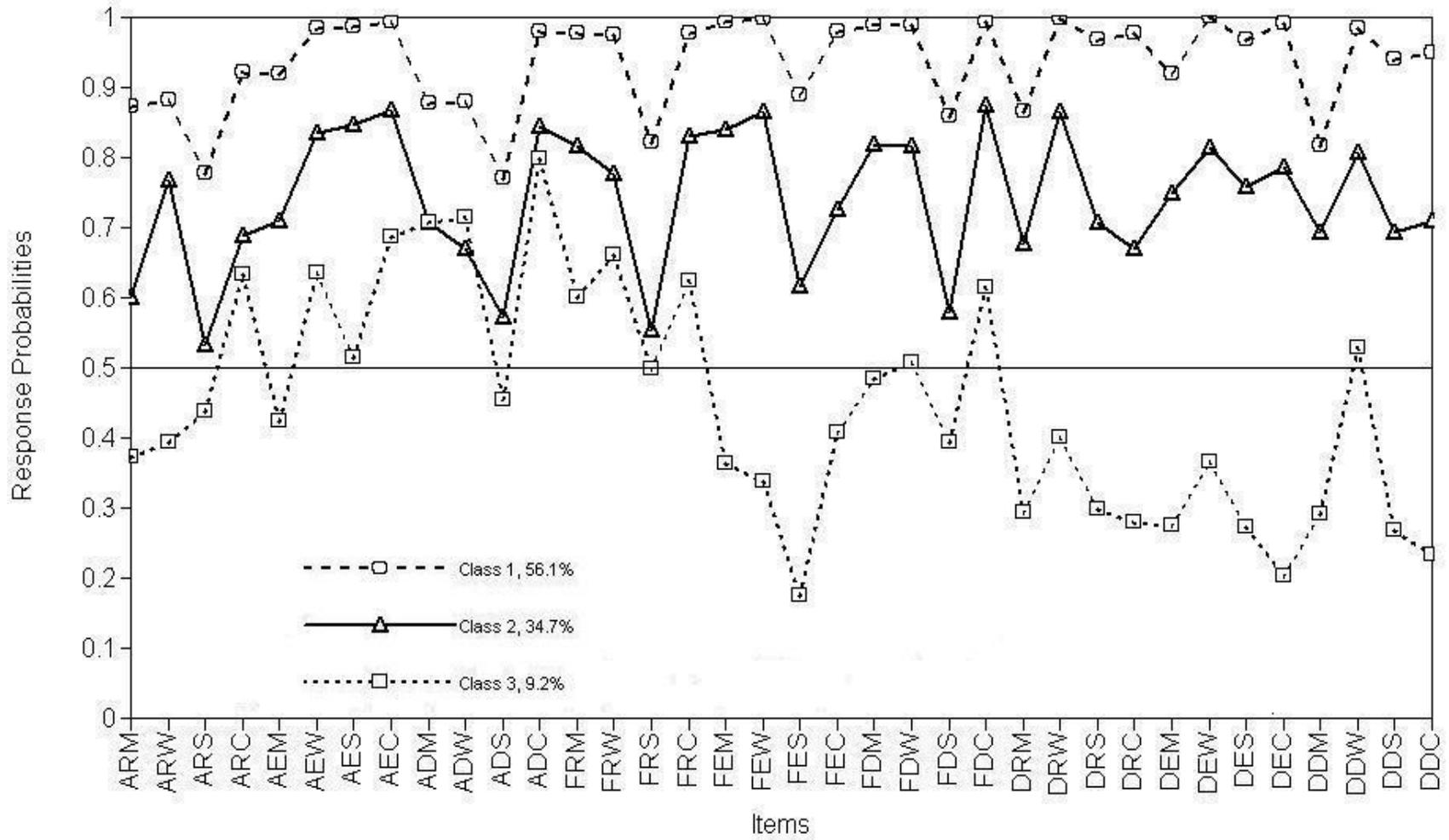
Despite the strength of the findings there are limitations to this study. First, although the Chitwan Valley is an interesting and relevant place to conduct this research, these results are not generalizable to

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 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 of a broad range of societies is warranted.

A second 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. Accordingly, future research on examining the effects of these beliefs, or in other words examining the predictive power of these measures, is necessary. 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 to hear” limitation, some qualitative evidence does support the idea that these reports do not just reflect knowledge, but belief as well. Nevertheless, I highly encourage further investigation if these beliefs have specific behavioral effects later in life.

A third limitation of this study is that although I attempt to account for much of the unique measurement properties of these data by using LCA, there are several additional effects that may contribute to systematic error. As Andrews (1984) shows, response categories, offering don't know, battery length, and 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.

Figure 1. Response Profiles for 3 Latent Classes



\* Refer to Table 3 for Item definitions.

Table 1. Percent of Respondents Providing Developmentally Idealistic Response

| Family Domains                    | Association |           |             | Development Causing Family |           |             | Family Causing Development |           |             |
|-----------------------------------|-------------|-----------|-------------|----------------------------|-----------|-------------|----------------------------|-----------|-------------|
|                                   | Wealth      | Education | Development | Wealth                     | Education | Development | Wealth                     | 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          |
| Youth make spouse choice          | 66          | 89        | 67          | 82                         | 83        | 79          | 70                         | 73        | 72          |
| Married couples use contraception | 81          | 92        | 92          | 81                         | 85        | 80          | 89                         | 84        | 92          |
| Average percentage                | 75          | 88        | 80          | 82                         | 84        | 80          | 84                         | 84        | 85          |
|                                   |             | 81        |             |                            | 82        |             |                            | 84        |             |

\* A developmentally idealistic response is one that is in line with the developmental model.

Table 2. Model Fit for Models with 1 to 5 Latent Classes Based on 36 Developmental Idealism Questions

|                  | Number of Latent Classes |           |           |           |           |
|------------------|--------------------------|-----------|-----------|-----------|-----------|
|                  | 1                        | 2         | 3         | 4         | 5         |
| Parameters       | 36                       | 73        | 110       | 147       | 184       |
| log likelihood   | -8687.081                | -7656.586 | -7467.069 | -7366.067 | -7276.714 |
| AIC              | 17446.161                | 15459.171 | 15154.139 | 15026.134 | 14921.428 |
| BIC              | 17600.457                | 15772.049 | 15625.599 | 15656.176 | 15710.051 |
| LO-MENDELL-RUBIN |                          | 0         | 0.0223    | 0.0762    | 0.4866    |
| Entropy          |                          | 0.914     | 0.887     | 0.868     | 0.871     |

Table 3. Class and Item Parameters for a 3 Class Latent Class Analysis

| <b>Class Parameters</b> |  | Class 1 | Class 2 | Class 3 |                 |
|-------------------------|--|---------|---------|---------|-----------------|
|                         | Class Proportion                         | 0.572   | 0.335   | 0.093   |                 |
|                         | Class Count                              | 307     | 180     | 50      |                 |
|                         | Average Class Probability                | 0.957   | 0.945   | 0.940   |                 |
| <b>Item Parameters</b>  |  |         |         |         |                 |
|                         | <b>Association</b>                       |         |         |         | Figure One Code |
| <i>Rich</i>             | Older age of Marriage                    | 0.873   | 0.599   | 0.371   | ARM             |
|                         | Respect for Women                        | 0.882   | 0.767   | 0.392   | ARW             |
|                         | Spouse Choice                            | 0.777   | 0.533   | 0.437   | ARS             |
|                         | Contraceptive Use                        | 0.921   | 0.688   | 0.633   | ARC             |
| <i>Education</i>        | Older age of Marriage                    | 0.919   | 0.709   | 0.424   | AEM             |
|                         | Respect for Women                        | 0.983   | 0.834   | 0.636   | AEW             |
|                         | Spouse Choice                            | 0.993   | 0.846   | 0.515   | AES             |
|                         | Contraceptive Use                        | 0.993   | 0.868   | 0.686   | AEC             |
| <i>Development</i>      | Older age of Marriage                    | 0.877   | 0.707   | 0.707   | ADM             |
|                         | Respect for Women                        | 0.879   | 0.670   | 0.713   | ADW             |
|                         | Spouse Choice                            | 0.769   | 0.573   | 0.454   | ADS             |
|                         | Contraceptive Use                        | 0.979   | 0.845   | 0.797   | ADC             |
|                         | <b>Family Change Causing Development</b> |         |         |         |                 |
| <i>Rich</i>             | Older age of Marriage                    | 0.976   | 0.817   | 0.599   | FRM             |
|                         | Respect for Women                        | 0.974   | 0.777   | 0.661   | FRW             |
|                         | Spouse Choice                            | 0.821   | 0.553   | 0.498   | FRS             |
|                         | Contraceptive Use                        | 0.977   | 0.831   | 0.624   | FRC             |
| <i>Education</i>        | Older age of Marriage                    | 0.994   | 0.840   | 0.393   | FEM             |
|                         | Respect for Women                        | 0.997   | 0.864   | 0.338   | FEW             |
|                         | Spouse Choice                            | 0.888   | 0.616   | 0.174   | FES             |
|                         | Contraceptive Use                        | 0.978   | 0.725   | 0.406   | FEC             |
| <i>Development</i>      | Older age of Marriage                    | 0.988   | 0.818   | 0.483   | FDM             |
|                         | Respect for Women                        | 0.988   | 0.817   | 0.507   | FDW             |
|                         | Spouse Choice                            | 0.859   | 0.579   | 0.393   | FDS             |
|                         | Contraceptive Use                        | 0.992   | 0.874   | 0.613   | FDC             |
|                         | <b>Development Causing Family Change</b> |         |         |         |                 |
| <i>Rich</i>             | Older age of Marriage                    | 0.864   | 0.677   | 0.293   | DRM             |
|                         | Respect for Women                        | 0.997   | 0.864   | 0.400   | DRW             |
|                         | Spouse Choice                            | 0.967   | 0.707   | 0.298   | DRS             |
|                         | Contraceptive Use                        | 0.977   | 0.670   | 0.279   | DRC             |
| <i>Education</i>        | Older age of Marriage                    | 0.919   | 0.749   | 0.274   | DEM             |
|                         | Respect for Women                        | 1.000   | 0.813   | 0.366   | DEW             |
|                         | Spouse Choice                            | 0.967   | 0.757   | 0.271   | DES             |
|                         | Contraceptive Use                        | 0.990   | 0.787   | 0.202   | DEC             |
| <i>Development</i>      | Older age of Marriage                    | 0.817   | 0.694   | 0.290   | DDM             |
|                         | Respect for Women                        | 0.984   | 0.808   | 0.527   | DDW             |
|                         | Spouse Choice                            | 0.939   | 0.692   | 0.268   | DDS             |
|                         | Contraceptive Use                        | 0.950   | 0.710   | 0.233   | DDC             |

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## Appendix: Measure Construction

The tables below contain the question wording, response options and distributions of the 36 measures used in the paper. Each question was asked in one of nine sections with 4-10 other questions. The introduction and first question wording are recorded under the appropriate section heading. “About the same” and “don’t know” were not given in the option categories and were only accepted after a probe. The question wording is followed by the code that was coded 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. The order presented here is not necessarily the order of the sections or questions 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. People marrying at older ages?

Is that 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. People marrying at older ages? Is that more common in traditional places or more common 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     |
| Parents controlling who their children marry | Traditional | 30.9      | 67.2        | 1.1            | 0.7 | 0.0     |
| Married couples using contraception          | Developed   | 91.6      | 7.4         | 0.6            | 0.4 | 0.0     |

#### Uneducated/Educated

Now, let us talk about life in uneducated places compared with life in educated places. People marrying at older ages? Is that more common in educated places or more common in uneducated 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     |
| Young people choosing their own spouse | Educated   | 89.4     | 8.4        | 1.1            | 1.1 | 0.0     |
| Using contraception                    | Educated   | 92.2     | 6.3        | 0.7            | 0.7 | 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. People marrying at older ages? If Nepal were more developed, would people marrying at older ages be more common or less common?

| 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     |

#### 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. People marrying at older ages? If Nepal were more educated, would people marrying at older ages be more common or less common?

| 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. If more people married at an older age? (Would that help make Nepal richer or 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     |

**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. If more people married at older ages? Would that 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. If more people married at older ages? Would that help make Nepal more educated or help make Nepal less 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     |