

# Influences on the knowledge and beliefs of ordinary people about developmental hierarchies

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## Abstract

This article is motivated by the idea that development and developmental hierarchies have been constructed and embraced for centuries by scholars and policy makers and have been disseminated among ordinary people. Recent research shows that most people have constructions of development hierarchies that are similar across countries. In this article, we extend this research by examining how basic social factors influence ordinary people's beliefs about development and developmental hierarchies in six countries: Argentina, China, Egypt, Iran, Nepal, and the United States. Results show that the understanding and perception of developmental hierarchies vary by gender and education. These results are important because they show how distinct groups of people have differential access to information or ideas.

## Keywords

Comparative studies, development hierarchies, developmental worldviews, North Africa, South and East Asia, South and North America

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## **Introduction**

In this article, we examine the influence of age, gender, and education on the extent to which laypeople in six countries understand developmental hierarchies in the same way as international elites. We analyze data from surveys where respondents rated countries on development and compare the respondents' country development ratings with the Human Development Index (HDI) scores provided by the United Nations (UN) for the same countries. We examine how the correspondence of individuals' development ratings with the UN HDI is affected by the individual's age, gender, and education. The goal is to provide an understanding of the factors that influence laypeople's views of developmental hierarchies and how those lay views correspond to views promulgated by the world's elites. We use survey data from six widely diverse countries: Argentina, China, Egypt, Iran, Nepal, and the United States.

Although social and economic hierarchies can be defined at multiple levels, for example, by age, race, and social class, the hierarchy of interest in this article occurs at the international level and involves the differential placement of countries according to their degree of development. A developmental hierarchy, thus, arrays countries from high to low based on their level of development.

As we discuss below, hierarchies of international development are key components of models of development – also sometimes described as models of modernization – that played roles in the theories, policies, and programs of academics, governments, and nongovernmental organizations for centuries. These models of development also have permeated to the grassroots level in many countries, where they influence the values, beliefs, and behavior of laypeople.

## **Theoretical motivation**

Although development and developmental hierarchies are seen by many as taken-for-granted physical realities, they are socially constructed models. Cultural models provide people understanding of the world, how the world operates, and what causes what. They also provide guidance about what is good, goals to achieve, and methods for achieving goals (D'Andrade, 1984; Fricke, 1997a, 1997b; Geertz, 1973). Such cultural models can have a major influence on the relationships and behaviors of individuals and communities (Johnson-Hanks et al., 2011; Shanahan and Macmillan, 2008; Thornton, 2001).

The concept of development and the placement of societies along a hierarchy of development have been influential among the elites in Europe and the migrant populations from Europe for centuries. These models of development assume that each society progresses along the same pathway of progress (Harris, 1968; Mandelbaum, 1971; Nisbet, 1969; Sanderson, 1990; Thornton, 2001, 2005). In these models, the speed of development is believed to vary across societies, and societies are seen as being at different development levels at any point in time. The result of this perspective is a belief in a cross-sectional developmental hierarchy. For the past several hundred years, it has been common for scholars and other elites to locate northwest Europe and its diaspora populations at the top of the ladder of development (Harris, 1968; Mandelbaum, 1971; Nisbet, 1969; Sanderson, 1990; Thornton, 2001, 2005). Scholars and elites also often located the indigenous people of America, Africa, and Australia at the low end of the developmental hierarchy. Other countries were pictured as scattered in middle positions along this trajectory. In recent years, Japan and other East Asian countries reached the top (or near the top) of the developmental hierarchies of many organizations such as the UN (United Nations Development Programme (UNDP), 2007/2008).

Models of development also specify many causal connections among various aspects of social change, frequently identifying economic development as a cause of other social changes, as a consequence of other social changes, or both as a cause and consequence of other changes (Easterly, 2001; Nisbet, 1969; Thornton, 2001, 2005). Development models frequently specify that economic development – including its industrial production, wealth, and sophisticated technology – increases age at marriage, gender equality, youthful autonomy, living in nuclear rather than extended households, personal freedom, democracy, and human rights. Such models also frequently indicate that development reduces fertility, parental involvement in spouse choice, and religious involvement in government. Some development models reverse the causal direction and suggest that economic development is a consequence rather than a cause of these other factors, and economic development can be seen as both a cause and consequence of other changes.

Important variations existed within this general model of development. For example, capitalism and communism each had its own version of development, but within a larger common developmental framework. Also, views of multiple or alternative modernities questioned the notion of a single model of development (Eisenstadt, 2000; Taylor, 2004). In addition, multiple views exist concerning the nature of the causal interconnections among economic development and other dimensions of life.

Development models are not just inert ideas discussed in academia but provide active motivation and guidance for policy makers and ordinary people around the world (Ferguson, 1999; Krücken and Drori, 2009; Osella and Osella, 2006; Pigg, 1992; Thornton, 2001, 2005). Thornton (2001, 2005) discussed the package of motivation and guidance provided by these developmental models as developmental idealism. Importantly, this developmental idealism defines the attributes of modernity as good and to be sought after, while defining the attributes of traditionalism as negative and to be abandoned. It identifies city living, industrial society, low mortality, and high consumption as good and to be sought after. Developmental idealism also defines many other dimensions of social life as modern, good, and to be sought after. These include high ages at marriage, gender equality, youthful autonomy, living in nuclear rather than extended households, personal freedom, democracy, human rights, low fertility, self-choice marriage, and separation of church and state. Developmental idealism also specifies the kinds of changes that societies and individuals should make in order to achieve development goals and what to expect as consequences of development.

However, development and attributes associated with it are not universally seen as positive. Some literature evaluates certain components of development negatively rather than positively (Deeb, 2006; Liechty, 2003; Yount et al., 2010). Other writers reject both development and the idea of development (Esteva and Perez, 2001; Sachs, 2007). Nevertheless, development, sometimes an alternative development, is widely seen as desirable and a goal to be attained.

The developmental model also posits that social change is normal and to be expected, often embraced as a goal that delegitimizes a traditional past and legitimizes a modern future (Sachs, 2007; Wallerstein, 1991). The model also indicates that the direction of change is toward North America and Western Europe, the highest points on the developmental trajectory, and that these regions are beacons for people elsewhere to follow (Chakrabarty, 2000; Wallerstein, 1991). The model also signals that societies at the apex of development embody what is modern, giving them a mantle of goodness and moral authority that they would not otherwise have (Böröcz, 2006; Taylor, 2004).

Today, this developmental model permeates the thinking and actions of many influential individuals and organizations around the world (Latham, 2000; Meyer et al., 1997; Nisbet, 1980; Sachs, 2007). Several development indices exist, with very specific attributes defining

development (e.g., health, education, and some measure of economic growth), and with the countries of the world differentially rated on them. The UN's HDI is probably the best known of these indices (UNDP, 2007/2008). The UN specifies development to be a central goal for the world's countries and provides assistance for development. Similarly, development is enthusiastically endorsed by many national governments and national and international nongovernmental agencies, and they actively strive to increase development.

Thornton (2001, 2005) argued that the concepts of developmental idealism played substantial roles in the initiation of additional programs and policies around the world. These programs include ones aimed at controlling population growth, reducing family size, increasing age at marriage, and enhancing equality between the sexes. Also important are programs to enhance respect for human rights, to spread democracy, and to increase the separation of church and state. Although some of these international programs penetrate only to national elites, including scholars and government workers, other programs penetrate to the grassroots where they can affect the beliefs, values, behaviors, and relationships of individuals and families.

Knowledge of development hierarchies and models is disseminated worldwide to people at the grassroots through such mechanisms as mass education, Christian missionaries, family planning programs, the media, social movements, programs to increase gender equality and the status of women, the UN, and government and nongovernment programs (Baker and LeTendre, 2005; Barrett and Frank, 1999; Benavot et al., 1991; Bier, 2008; Chabbott, 2003; Melegh, 2006; Thornton, 2005; Woodberry, 2012). Ethnographic research documents that the ideas of development are widely held by laypeople in several settings, including in sub-Saharan Africa, the Middle East, China, India, Nepal, and New Guinea (Ahearn, 2001; Amin, 1989; Caldwell et al., 1988; Dahl and Rabo, 1992; Ferguson, 1999; Guneratne, 1998, 2001; Osella and Osella, 2006; Pigg, 1992, 1996; Wang, 1999). Many laypeople in these settings incorporate the language of modernity, development, and developmental hierarchies into their daily lives and interpersonal discussions. They contrast modernity and traditionality, evaluate the modernity of people and things, and evaluate behavior in terms of its perceived role in facilitating or hindering development.

An emerging body of survey research also indicates that the ideas of development and developmental hierarchies are widespread among many laypeople in a range of countries, including Albania, Argentina, Bulgaria, China, Egypt, Iran, Iraq, Lebanon, Malawi, Nepal, Taiwan, Saudi Arabia, and the United States (Binstock and Thornton, 2007; Melegh et al., 2013; Thornton et al., 2008, 2012a; Xie et al., 2012). This survey research shows that many people in these countries hold models of developmental hierarchies that the perceived hierarchies are similar across these countries and that these hierarchies are often similar to the hierarchies published by the UN. Survey research in Argentina, China, Egypt, Iran, Malawi, Nepal, and the United States also demonstrates that many individuals associate development as both a cause and an effect of intergenerational independence, gender equality, older ages at marriage, low fertility, and the involvement of young couples in spouse selection (Abbasi-Shavazi et al., 2012; Binstock and Thornton, 2007; Thornton et al., 2012a, 2012b, 2012c, 2012d).

The world's people have for centuries held their own ideational models, and these models supported local institutions, social relationships, and patterns of behavior. The dissemination of the ideas of development and developmental idealism to laypeople provides alternative models of the world. The new developmental ideas are often rejected at first, but can be accepted over time, sometimes in modified form. This process of acceptance, rejection, or modification of such worldviews is likely to influence people's behavior. Compared to people who reject these models, those who accept them will likely behave differently on many issues, including marriage, divorce, child-bearing, parent-child relations, sexuality, and politics. As the ideas of developmental idealism

become increasingly accepted, they become powerful forces for institutional and behavioral change.

The spread of developmental idealism to laypeople around the world is a force for social change. Although most social changes have multiple causes, increases in laypeople's commitment to developmental idealism's freedom likely helped produce the dramatic increases in premarital sex, non-marital cohabitation, and unmarried childbearing in many places around the world (Esteve et al., 2012; Lesthaeghe, 2010; Thornton, 2005; Thornton and Philipov, 2009). Increasing commitment to freedom among laypeople is also important in the rise of divorce in many places (Aghajanian and Thompson, 2013; Cammack and Heaton, 2011; Thornton, 2005). A growing desire for freedom helped produce political protests such as those occurring in the 'Arab Spring' in 2011.

The spread of developmental idealism's commitment to gender equality among laypeople helped to power grassroots support for gender equality in voting and the division of labor in employment and household activities (Paxton et al., 2006; Thornton, 2005). The principle of equality is also applied to same-sex relationships, with growing acceptance of sexual and marital relationships for same-sex couples (Baunach, 2011; Hicks and Lee, 2006). In addition, the spread of developmental idealism's emphasis on planned and low fertility among laypeople helped decrease fertility around the world (Thornton et al., 2012b; Guend, 2011; Thornton and Philipov, 2009). We also know that age at marriage increased virtually in every country in recent decades (Ortega, 2012), a change that was, in part, generated by laypeople increasingly adopting the developmental idealism view about higher ages at marriage being good and helpful for well-being.

### *Education, gender, and age influences on perceptions of developmental models*

Although knowledge about laypeople's views concerning developmental models is growing, very little systematic information exists about the factors that influence these views. This is unfortunate because it means we have little knowledge of the precise mechanisms transmitting such views or the forces facilitating or hindering their acceptance by individuals in everyday life. The goal of this article is to begin to fill some of this gap by examining the influence of three basic factors – gender, age, and education.

As we have discussed, developmental models include many different but interrelated aspects, including ideas about change, hierarchies of countries, what is good, and the causes and consequences of particular changes. The scope of these beliefs, values, and expectations makes it impossible for us to evaluate influences on all of them. Therefore, we focus our attention on only one dimension of the developmental package – that of developmental hierarchies, a central feature of the package. More specifically, we address whether gender, age, and education are associated with how closely the developmental hierarchies perceived by individuals match those of the UN using survey data from Argentina, China, Egypt, Iran, Nepal, and the United States.

We hypothesize that one of the most important influences on developmental worldviews is a person's education. Education is important because it provides individuals access to information and ideas about the world, including the world that is far from home (Abbasi-Shavazi et al., 2008; Barber, 2004; Kasarda et al., 1986; Lutz et al., 2010). Schools and textbooks around the world are important and authoritative sources of information, beliefs, and values that are generated and disseminated internationally as part of world culture (Benavot et al., 1991; Meyer et al., 1977). Schools sometimes teach young people about developmental hierarchies and the relative positions of various countries on the developmental ladder in ways that are consistent with elite international constructions. For example, some school textbooks in Nepal explicitly teach about development

and Nepal's location in the UN development hierarchy (Ghimire et al., 2008). In addition, people who complete more education have continuing, greater access to the ideas and models circulating in global networks.

We hypothesize that in many parts of the world, women have less knowledge of developmental hierarchies than men. We expect this because many social systems allocate positions in the social structure to women that are secondary to those of men, with fewer opportunities to learn about and deal with the larger world. One clear example of this allocation is the historically large differentials in women's and men's schooling, occupations, and earnings (Bobbitt-Zeher, 2007; England, 2010; Pampel, 2011). For example, in many places, women historically focused more on domestic activities within family units, while men participated more in activities away from home. This division of activities generally exposed men more than women to the circulation of global models. We expect that such gender differences led to women having less social mobility, smaller social networks, and less access to information, which led them to have less exposure to the ideas of developmental hierarchies.

We have contradictory expectations concerning the influence of age, which arise partly from the fact that age groups in cross-sectional studies capture both position in the life course and historical period of socialization. On the one hand, as people age, they experience additional opportunities to learn about the world. This suggests a positive correlation between age and having developmental models similar to those of the UN. On the other hand, the system of socialization in many parts of the world has changed dramatically in recent years, with many new ways for learning about the larger world. These changes are particularly important for young people who were socialized under the new circumstances. Because people are especially open to new ideas during their youths, we believe that such new patterns of socialization are particularly powerful for young people. We have no expectations concerning the relative power of these two mechanisms producing differentials by age.

We recognize that other attributes besides these three likely influence people's beliefs about development and developmental hierarchies. We prioritize the factors of gender, age, and education, since this allows us to examine such influences in six widely diverse countries. Although other predictor variables are available in certain countries, gender, age, and education are the three variables that are available in all six countries. Although research on the influence of other factors is beyond the scope of this article, we advocate future research on other factors.

Our interest in development, developmental hierarchies, and developmental idealism is not motivated by a belief that developmental models are useful tools for conducting research or designing and implementing public policy. Such developmental models have come under strong criticism in recent decades (Esteva and Perez, 2001; Jennings, 1975; Mandelbaum, 1971; Nisbet, 1969, 1980; Sachs, 2007; Szreter, 1993; Tilly, 1984). Our research is also not motivated by any belief that the ideas of developmental idealism are true or false, good or bad. Rather, we are motivated to study developmental models because we believe that they have been disseminated widely, provide important decision-making frameworks, and influence a wide range of behaviors.

## **Data collection**

The data used in this article were collected as part of a larger project to implement a research agenda to investigate laypeople's ideas about development, developmental hierarchies, and developmental idealism. The ultimate goal was to gain understanding of the cause and effect relationships of holding developmental models with many other dimensions of life. The four-fold research agenda includes the following: creating and testing measures that could be used internationally

**Table 1.** Characteristics of sample surveys.

Countries surveyed	Study location	Respondent ages (years)	Respondent sex	Interview mode	Study dates	Sample size
Argentina	Urban agglomerates over 500,000 people	18 and above	Both	Face-to-face	2008	1003
China	Gansu province	17 and above	Both	Face-to-face	2007	633
Egypt	One district each in Fayoum and Qaliubia provinces	Women aged 18–54 and their husbands	Both	Face-to-face	2007–2008	1500
Iran	Yazd City	Married: 15–54; unmarried: 15–29	Women	Face-to-face	2007	703
Nepal	Chitwan Valley	15 and above	Both	Face-to-face	2008–2009	7455
United States	National	18 and above	Both	Telephone	2006	486

among laypeople, fielding those measures in a series of international surveys to evaluate the extent to which laypeople in various settings understand and endorse developmental models, evaluating the factors affecting people's understanding and endorsement of developmental models, and estimating the effects of holding such developmental models on many aspects of people's behavior (Thornton, 2005).

A group of scholars, including the authors of this article, launched the process of creating questionnaires and interviewing protocols by conducting open-ended surveys and focus groups in several countries (Thornton et al., 2010). The next step for these scholars was designing comparable questions that could be asked in different places around the world. Between 2006 and 2009, these questions were fielded in Argentina, China, Egypt, Iran, Nepal, and the United States. In five of the six countries, the data collections were devoted entirely to the research agenda outlined above, including testing of the hypotheses motivating this article. The only exception is the United States where the survey was designed as a supplemental module to the Surveys of Consumers which is conducted monthly at the University of Michigan.

The six countries included in this article were chosen for two reasons. First, they represent countries where the members of the research group could field comparable surveys relatively straightforwardly with limited budgets. Second, the six countries cover a geographical diversity of countries ranging from Argentina and the United States in the Americas, to Egypt in North Africa, to Iran straddling the Middle East and South Asia, to Nepal in South Asia, and to China in East Asia. The six countries also represent a diversity of religions, levels of literacy and education, fertility, per capita income, urbanization, and other factors.

Each of these six data collection efforts occurred in the context of unique opportunities and restrictions, including budgetary ones, in each country. These factors prevented us from fielding comparable national face-to-face surveys in each of the six countries. Instead, we had to rely on city, regional, or urban samples in five of our six countries and a national telephone interview in the sixth. Central attributes of each data collection are summarized in Table 1, and additional information is provided in Appendix 1 and elsewhere (Thornton et al., 2010). For these reasons, we cannot make strict comparisons across countries, although we can compare across the six survey settings because each survey is representative of a known population in each country. However, we make such comparisons tentatively because the sample universes are different. Our main emphasis,

**Table 2.** Mean country scores on development as reported by each country's respondents and the UN HDI score.

Countries rated	Source of countries						UN HDI 2005
	Sample surveys						
	Argentina	China	Egypt	Iran	Nepal	United States	
Brazil	6.5	5.6	5.9	6.5	6.6	6.1	8.0
Central African Republic	3.4	4.7	4.4	3.1	5.6	3.4	3.8
China	7.7	6.9	8.1	7.8	7.4	7.5	7.8
France	7.7	6.7	7.6	7.9			9.5
India	3.6	5.1	5.8	4.6	5.8	5.3	6.2
Japan	8.8	7.2	8.2	8.7	8.2	8.8	9.5
Nigeria	3.5	4.4	5.2	3.4	5.6	3.3	4.7
Pakistan	3.8	5.0	5.6	4.4	5.1	4.1	5.5
Sweden						7.4	9.6
United Kingdom					7.5		9.5
United States	8.4	8.4	8.6	8.6	9.1	8.8	9.5

UN HDI: United Nations' Human Development Index (multiplied by 10).

Both US and Nepal surveys did not include France among the countries rated by respondents. We replaced France with Sweden and with United Kingdom in the US and Nepal studies, respectively.

therefore, is evaluating the overall influence of the various factors on developmental understanding in these various settings.

## Measurement

The central substantive issue for this research concerns the extent to which lay individuals in our six surveys have developmental hierarchies that correspond to the developmental hierarchies used by scholars and policy makers. Our research question is the extent to which gender, age, and education affect the degree of this correspondence. For our measure of an elite developmental hierarchy, we use the one created and published by the UN in its HDI, the most commonly used and authoritative of such development indices. The HDI scores are estimated by the UN as an index consisting of three indicators: the combination of national adult literacy and the gross school enrollment ratio in primary, secondary, and tertiary school; life expectancy at birth; and per capita gross domestic product (GDP). In Table 2, we list the UN HDI scores (multiplied by 10) for a set of countries for the year 2005.<sup>1</sup> As such, the HDI is the UN's operationalization of its developmental hierarchy.

In each of our six surveys, we asked individual respondents to rate the development levels of the countries listed in Table 2. In these surveys, we did not define what was meant by development, but instead, we let respondents provide their own definitions. This is important because it allowed the respondents' own constructions of development to dictate their ratings rather than have those ratings determined by the social construction that we might have provided. Respondents in each of the data collections rated a country's development level from 0 to 10, with 10 being the highest (most developed) and 0 being the lowest (least developed).

In each of the six surveys, our questions were introduced as follows:

We would like you to think about development in different countries around the world today. We'll be talking about countries as varied as England and Mongolia. Think of a development scale that rates countries from *zero* to *ten*. The *least* developed places in the world are rated *zero* and the *most* developed places in the world are rated *ten*. You can use both of those numbers for rating countries plus all of the numbers in between. Using this development scale, where would you put Japan?<sup>2</sup>

Then the respondents were asked to rate each of the countries. Some respondents indicated that they did not know what to rate a country. For them, we asked the following probe: 'Even if you don't know exactly, about where would you put [NAME OF COUNTRY]?' The original question and probe were repeated as necessary for all of the countries rated. In our analyses, we did not distinguish between answers provided without a probe and those provided following a probe because there were relatively few respondents needing a probe.

The countries we asked respondents to rate were chosen after careful deliberation and experimentation. We wanted to have countries that varied along cultural, geographical, political, and economic conditions. It was also necessary to have countries that were known well enough in our six countries for respondents to recognize and rate them. We conducted pretests to ensure that the countries chosen could be rated by most people in the six countries. As reported elsewhere (Thornton et al., 2012a), almost all individuals in the six surveys were able to rate the countries they were asked about.

We found in our pretesting that the introduction saying that we would be asking about countries as varied as England and Mongolia helped respondents to understand the scope of the task we were asking them to complete. It also served to reassure respondents that the task we were asking them to perform could be done. We believe that the provision of the examples had no effects beyond providing respondents an idea of the scope of the task and reassurance that they could perform it.<sup>3</sup>

The average ratings provided by respondents in each of our six surveys for each of the countries rated are reported in Table 2. We do not discuss these average ratings here because they are reported and discussed elsewhere (Thornton et al., 2012a).

Our dependent variable for the individual survey respondents was constructed in two steps. We first arrayed the answers each individual gave for the countries into a column of numbers. A second column was formed with the HDI scores for the same countries. We then calculated for each individual a Pearsonian correlation between each individual's country ratings and the UN HDI scores. That is, for every  $n$  individuals in a data set, we estimated  $n$  correlations between those individual scores and the HDI of the UN. These correlations provide our indicator of the correspondence between an individual's views of the developmental hierarchy and the hierarchical ratings of the UN.

For our analysis of the predictors of the individual-level correlations between respondent and UN scores, we treat each of the predictor variables as temporally preceding the views of the respondents about developmental hierarchies. This approach is clearly justifiable in the case of gender and age (or birth cohort), as each is set at the time of birth and is exogenous relative to views of developmental hierarchies as reported at the time of the survey. We also follow standard conventions and treat education as a predictor variable, although we recognize that education is achieved cumulatively across the life course, which creates the potential for reciprocal causation between individuals' schooling and their views. That is, people whose developmental hierarchies more closely match those of the UN may stay in school longer and have higher educational

achievements. Another possibility is that more highly educated parents (who have more educated children) may also have developmental hierarchies that more closely match those of the UN and those perceptions are passed on to their children. Nevertheless, we see the bulk of the relationship between developmental hierarchies and education being the result of the effect of education on perceived developmental hierarchies, although we recognize the possibility of the relationship being partially the result of the opposite causation.

In addition to the binary variable for gender (with 'men' as the referent category coded 0 and 'women' coded 1), we also dichotomized the measures for age ('less than forty' coded 0 and 'at least forty' coded 1). We tested alternative codifications of age by country, but results do not vary. For education, we use four categories. The categories for education go from level 1 (lowest) through level 4 (highest), but the cut points in each category vary across countries, taking into account their differences in schooling attainments.<sup>4</sup>

Low correlations between a respondent's country ratings and the ratings of the UN can indicate several phenomenon. The respondent may not have a construction of development or may have a different construction from that of the UN HDI. Low correlations can also be produced by respondents having difficulty utilizing our development rating scale reliably or not knowing the countries being rated.

## Results

### *Individual respondent ratings*

We now turn our attention to the distributions of individual Pearsonian correlations, our dependent variable. We summarize these individual correlations in Table 3 by listing the percentile distributions of the correlations from low to high. The vast majority of individual correlations are positive and substantial for the individuals in the six countries, as shown by the correlation levels at the 10th percentile for each sample. The medians range from a low of 0.57 to a high of 0.86, indicating that at least half of the people in each sample have correlations of 0.57 or higher, and in at least one country, half have a correlation of 0.86 or higher.

In the Argentina, Iran, and US surveys, most individuals have substantial correlations, with the 20th percentile ranging from 0.67 to 0.73 in these surveys. However, in the China, Egypt, and Nepal surveys, there are many more low correlations. In these three latter surveys, the 20th percentiles are, respectively, only 0.33, 0.47, and 0.23. For each of the six settings, there are some respondents with very high correlations; at least 20 percent have correlations of 0.81 or higher (the 80th percentile).

While the results show that a significant fraction of individuals in the six study sites understand development hierarchies in ways that are consistent with the UN HDI, we also observe important differences across settings. Nepalese respondents consistently show lower correlations than others with UN HDI ratings, followed by respondents in China and Egypt. Respondents in Argentina, the United States, and Iran consistently show the highest correspondence between people's development scores and those of the UN.

### *Influences of gender, age, and education*

*Bivariate results.* Table 4 shows the unstandardized ordinary least squares regression coefficient effects of gender, age, and education on correlations between individual's ratings and the UN HDI scores. The zero-order (or bivariate) column indicates the effect of a variable when it is the only regressor. To simplify the presentation, we do not report the intercept of each of these bivariate models.

**Table 3.** Bivariate Pearson correlations between *individual* respondents' ratings of development and the United Nations' Human Development Index.

Percentile in the distribution of correlation coefficients across individuals	Sample surveys					
	Argentina	China	Egypt	Iran	Nepal	United States
10th	0.61	0.15	0.23	0.43	0.04	0.51
20th	0.73	0.33	0.47	0.67	0.23	0.68
30th	0.79	0.48	0.59	0.76	0.36	0.75
40th	0.83	0.58	0.67	0.80	0.46	0.80
50th	0.86	0.68	0.73	0.84	0.57	0.84
60th	0.88	0.74	0.78	0.87	0.65	0.88
70th	0.90	0.79	0.83	0.90	0.74	0.91
80th	0.92	0.85	0.87	0.92	0.81	0.93
90th	0.94	0.90	0.90	0.94	0.88	0.95
N of respondents	927	627	1337	660	7385	473

Each correlation coefficient was calculated across the nine countries rated in each survey (see Table 2) for a single respondent, producing one correlation coefficient for each respondent. Both US and Nepal surveys did not include France among the countries rated by respondents. We replaced France with Sweden and with United Kingdom in the US and Nepal studies, respectively.

We begin with the zero-order (bivariate) gender association. Consistent with our expectations, women have lower correlations than their male counterparts, suggesting less correspondence of their views with those of the UN (the Iranian sample is excluded because it included only women). The magnitude of these differences varies across countries, being more important in Nepal, China, and Egypt than in Argentina and the United States where women show only slightly lower correlations than men.

Turning now to the bivariate age effect, we found small negative effects in Nepal and Iran, with older individuals producing smaller correlations than their younger peers. In contrast, Argentina, Egypt, and the United States show the opposite pattern, although differences are small and statistically insignificant.

In each country, people with more education have higher correlations between their country development ratings and those of the UN than do their counterparts with less education. This finding is consistent with the expectation that people with more education are more exposed to the ideas about the larger world and to the elite view of country development hierarchies. These differences are more pronounced in Nepal, Egypt, China, and the United States, whereas in Argentina and Iran, they are more modest. In understanding country differences, it is important to take into account that educational codes vary by country.

**Multivariate results.** The next step in the analysis is to examine gender, age, and education in a multivariate context to estimate the net effect of each of these variables on individuals' perceptions of developmental hierarchies (column 'Multivariate' in Table 4). The multivariate results largely replicate those detailed in the bivariate section, indicating independent effects of gender and education in influencing people's worldviews. That is, individuals with more education in each country view development hierarchies more similarly to the UN than do individuals with lower education. Women view development hierarchies less similarly to the UN than men, with the only exception being the United States where men and women have similar views.

**Table 4.** OLS regression model. Dependent variable – correlations between *individual* respondents' ratings of development and the United Nations' Human Development Index.<sup>a</sup>

Model <sup>b</sup>	Sample surveys											
	Argentina		China		Egypt		Iran		Nepal		United States	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Constant		0.727 ***		0.483 ***		0.576 ***		0.683 ***		0.430 ***		0.613 ***
Gender												
Men (omitted)												
Women	-0.033 **	-0.033 **	-0.088 ***	-0.060 *	-0.089 ***	-0.074 ***	-	-	-0.168 ***	-0.122 ***	-0.006 *	0.000
Age group in years												
Younger than 40 (omitted)												
40 and above	0.014	0.040 **	-0.023	0.014	0.014	0.007	-0.035 *	0.002	-0.040 ***	0.051 ***	0.018	0.023
Educational attainment <sup>c</sup>												
Level 1 (omitted)												
Level 2	0.012	0.023	0.111 **	0.097 **	0.039	0.023	0.027 *	0.028	0.049 ***	0.043 ***	0.078	0.077
Level 3	0.095 ***	0.106 ***	0.151 ***	0.141 ***	0.148 ***	0.138 ***	0.073	0.074 **	0.128 ***	0.138 ***	0.148 **	0.149 **
Level 4	0.089 ***	0.105 ***	0.235 ***	0.228 ***	0.239 ***	0.228 ***	0.115 ***	0.116 ***	0.314 ***	0.313 ***	0.203 ***	0.203 ***
R <sup>2</sup>		0.064		0.079		0.100		0.036		0.188		0.095
Adjusted R <sup>2</sup>		0.059		0.071		0.097		0.030		0.188		0.085
DF		6		6		6		5		6		6
N	933		623		1337		667		7385		466	

DF: degrees of freedom; OLS: ordinary least squares.

<sup>a</sup>Both US and Nepal surveys did not include France among the countries rated by respondents. We replaced France with Sweden and with United Kingdom in the US and Nepal studies, respectively.

<sup>b</sup>Bivariate is a zero-order model with only one of the independent variables in the equation. The constant for each bivariate model is not reported nor the fit of the model, only the unstandardized coefficient of the variable for each independent variable. The constants are shown for the multivariate models.

<sup>c</sup>The cut point for education differs from one country to another (see note 4 for codification).

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$  (two-tailed).

In the case of age, the coefficients remain nonsignificant in China, Egypt, and the United States, and in Iran, they lose statistical significance when moving from the bivariate to the multivariate model. In the case of Argentina and Nepal, the effect of age is positive and statistically significant.

Nepal stands out as the setting in which education and gender have stronger independent effects than in the other countries. In addition, it is the only country where the effect of age changes sign once education is controlled, as shown by the results from the comparison from the bivariate to the multivariate models in Table 4. This suggests that older people's views of development hierarchies are further away from the UN HDI index mainly because they have lower educations than their younger peers. Once education is controlled, the effect of age is reversed, with older individuals having views closer to the UN HDI.

One might expect that some of the gender differences in correlations are due to educational differences between women and men. That is, if women obtain less education than men, as they still do in many places, and education increases awareness of developmental hierarchies, then the lower educational attainments of women would be one reason women have lower correlations with the UN. This line of reasoning suggests that controlling education would substantially reduce the coefficient for gender. However, the data in Table 4 suggest that schooling attainment, along with the control for age, explains either little or none of the gender effect. This conclusion is based on the fact that the gender coefficients are very similar with and without the multivariate controls for education and age. Apparently, the differences between women and men in views of developmental hierarchies primarily operate independently of any gender differentials in educational attainment.

These results suggest that something other than differential years of formal schooling explains the gender effect. It could be the type of schooling, quality of education, curriculum, or teacher expectations for schooling. It could also be from familial socialization, from differential positions in the occupational and familial structures, or from yet some other factor. More research concerning these issues will be necessary to determine why women's developmental hierarchies are further from the UN HDI than men's developmental hierarchies.

## Conclusion

Our research is motivated by the idea that development and developmental hierarchies were constructed and embraced for centuries by elites, including scholars and policy makers, in their thinking about geographical and temporal differences among societies. In fact, the developmental social construction was so thoroughly disseminated and inculcated among elites that it is often taken for granted as a physical reality rather than a socially constructed idea. The dearth of negative correlations between respondents' ratings and the UN HDI country ratings indicates that the construct of development and developmental hierarchies was also disseminated widely among laypeople (nonelite). Previous ethnographic research and recent survey research in a range of countries indicate that worldviews concerning development and developmental hierarchies are widespread and that large fractions of people have understandings of development that are quite similar across diverse countries around the world.

The goal of this article is to move a step further by examining how basic social factors such as gender, age, and schooling influence how close laypeople's perceptions of developmental hierarchies correspond to those of the UN in six countries: Argentina, China, Egypt, Iran, Nepal, and the United States. We hypothesized that the correspondence of lay individual and UN developmental hierarchies will vary by education, gender, and age.

The results are largely consistent with our hypotheses. We found that the correspondence of laypeople's developmental hierarchies with those of the UN varies according to gender and schooling across the countries studied. Both bivariate and multivariate results indicate that men and individuals with more formal schooling have views of developmental hierarchies that are closer to the UN evaluations. The effect of age is modest and not consistent across the countries.

The data we have reported indicate that access to information or ideas varies across important social groups. These data suggest that gender and education are among the important mechanisms for individuals gaining knowledge of development and development hierarchies. More research is needed to continue identifying individual and community factors predicting people's views of developmental hierarchies.

As we argued earlier, the acceptance, rejection, or modification of ideas about development and developmental hierarchies will influence people in everyday life. People who accept these developmental models and the developmental idealism associated with them will likely behave differently on a range of issues than people who reject these ideas. More research is needed to evaluate the extent to which developmental hierarchies and developmental idealism are also endorsed as good or bad things by people and, in turn, how these endorsements have consequences for family, demographic, political, economic, and other outcomes.

We conclude by recognizing some limitations of our research, including the fact that we have interpreted the coefficient for education as representing education's influence on beliefs even though educational attainments may have been influenced by beliefs. This is a common methodological problem in cross-sectional research, and we advocate longitudinal research to separate the reciprocal effects of education and beliefs about development and developmental hierarchies.

There are also methodological differences in the sampling and interviewing procedures used in each country that limit our ability to make strict comparisons across research settings. Although we recognize this limitation, we believe that the overall pattern of results we have observed is not substantially affected by these differences, although more research concerning such potential method influences would be useful. Another important need is similar research investigating these same issues in other countries.

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### **Notes**

1. We use the United Nations Human Development Index (UN HDI) for 2005 to closely match our data collection period.

2. The introduction in the US survey and the Nepal survey mentioned 'France and Mongolia' rather than 'England and Mongolia'. In Argentina, this sentence was not included. In the Nepal study, the sentence telling respondents that they could use both 0 and 10 and all numbers in between was omitted.
3. However, confirmation (or disconfirmation) of this belief would require an experiment that varied not having the introduction, having the introduction we used, or having an introduction with different countries used as examples. To our knowledge, no such formal experiment has been conducted, but we would welcome it.
4. In the case of Egypt and Nepal, those who never attended were coded as level 1, those with elementary were coded as level 2, those with incomplete high school were coded as level 3, and those with complete high school or more were coded as level 4. In China, those with incomplete elementary or less were coded as level 1, those with complete elementary were coded as level 2, those with incomplete high school were coded as level 3, and those with complete high school or more were coded as level 4. In Argentina and Iran, those with complete elementary or less were coded as level 1, those with incomplete high school were coded as level 2, those with complete high school were coded as level 3, and those with superior education were coded as level 4. Finally, in the United States, those with incomplete high school or less were coded as level 1, those with complete high school were coded as level 2, those with some college were coded as level 3, and those with complete college or more were coded as level 4.

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## Appendix I

### *Characteristics of country surveys and data collections*

**Argentina.** The sampling universe consists of all men and women aged 18 and older living in urban agglomerates of at least 500,000 people. More than 60 percent of the country resides in these areas. The sample was drawn using multistage sampling procedures. At the first stage, urban agglomerates were randomly selected, and at the second stage, geographical clusters within agglomerates were randomly selected. At the third stage, households and individuals within each cluster were selected using quotas of gender and age that were established for each cluster based on census population documentation. In each selected household, it was established whether there were residents of the appropriate age and gender. If there were more than one member, with such characteristics, the respondent was selected randomly. The sampling and data collection were managed and administered by Poliarquia, a company specializing in survey research. The study design prevented calculation of response rates. The interviews were made face-to-face with trained interviewers using paper questionnaires. The fieldwork was conducted during April and May 2008, with a total of 1003 respondents.

**China.** The sampling universe consists of all men and women aged 17 years and older living in Gansu province, which is a low-income part of the country located in west-central China. Gansu has a majority Han population, but also has a significant Muslim minority. The sample was drawn using a multistage sampling procedure. First, seven jurisdictions in Gansu were randomly selected (that could be counties, cities, or city districts); second, three villages or communities were randomly selected from each jurisdiction; third, between 30 and 32 households were randomly selected based on the resident documentation by the local governments; finally, selection tables were used to randomly select the adult respondent in each selected household. The Muslim families in Gansu were oversampled. A weight taking into account urban/rural status, ethnicity, age, and

gender was constructed so that the weighted data are representative of the adult population in Gansu. The study was implemented by the Gansu Academy of Social Science, with a response rate of 90 percent. The fieldwork was done during November and December 2007. The interviews were made face-to-face by trained interviewers using paper questionnaires, with a total of 633 respondents.

*Egypt.* The Egyptian sample was drawn from one district in Qaliubia Governorate to the north of Cairo and one district in Fayoum Governorate to the south of Cairo. These districts were selected because they broadly represent governorates in Upper (Southern) and Lower (Northern) Egypt, rural and urban areas, and various local ethnic and religious groups. Households were selected randomly from census data by the central statistical office of the government of Egypt to be representative of the two districts. We sampled women between the ages of 18 and 54 years (plus married women aged 16–17 years), along with the husbands of all married women. In households where more than one woman met these criteria, one of them was chosen randomly. Data collection was done by the Social Research Center at the American University in Cairo between late 2007 and early 2008, with a response rate of 98 percent. The interviews were conducted face-to-face by trained interviewers using paper questionnaires, with a total of 1500 respondents.

*Iran.* The sampling universe consists of women aged 15 years and older living in the city of Yazd. Yazd is a religious and conservative city of more than 400,000 people located in the central part of Iran. Yazd has a relatively homogenous population in terms of religious, ethnic, and language backgrounds, most of whom are Persian and Shi'a. The sample frame was drawn from the larger framework that the Statistical Center of Iran used for the Labour Force Participation Survey. The sample was probabilistic and resulted in a 97-percent response rate. One married woman aged 15–54 years was randomly selected to be interviewed in all sample households (548 respondents). For sample households with a never married woman aged 15–29 years, one of these never married women was also randomly selected for interview (155 respondents). The interviews were made face-to-face with trained interviewers using paper questionnaires, with a total of 703 respondents. Data collection was done through the Universities of Tehran and Yazd during November and December 2007.

*Nepal.* The data collection was designed to represent adults living in the Chitwan Valley located in the south-central part of the country, and combines data from two samples of adults. The first sample consists of adults aged 15–59 years living in the study area in 1996, plus the nonresident spouses of these adults. The data were gathered in 2008 from the 1996 sample members who had moved elsewhere in Nepal between 1996 and 2008 as well as those who stayed in the study area. The second sample includes adults aged 15 years and above in 2008 living in the study area, plus the nonresident spouses of married residents aged 15–34 years in 2008 and the nonresident parents of unmarried residents in 2008 aged 15–34 years. The survey was conducted with 7455 people aged 15 years and above. The participants in both studies were chosen using a two-stage sampling procedure. At the first stage, a sample of neighborhoods was selected randomly with probability equal to size. Once a neighborhood was selected, all the individuals aged 15 years and above residing in those neighborhoods were interviewed, with a response rate of 97 percent. Interviews were conducted face-to-face by trained interviewers using paper questionnaires. The study was conducted by the Institute for Social and Environmental Research in Nepal.

*United States.* The US survey was designed as a supplemental module to the Surveys of Consumers which is conducted monthly at the University of Michigan. The Surveys of Consumers is a stratified, one-stage, equal-probability sample of telephone households in the contiguous United States (48 states and the District of Columbia), with a response rate of about 50 percent. It is conducted by telephone by trained interviewers using computer-assisted telephone interviewing procedures. The supplemental module includes several questions to address our research agenda, including the questions that produced the data analyzed in this article. A total of 486 interviews were conducted during April 2006. The study was conducted by the Survey Research Center of the Institute for Social Research at the University of Michigan.