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THE RELATION BETWEEN WORLDVIEWS AND INTERGENERATIONAL ALTRUISM IN TURKEY: AN EMPIRICAL APPROACH

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Abstract: Intergenerational altruism is an important area of research to understand the impact of culture on economic outcomes. We hypothesize based on recent research about intergenerational altruism and tough love model that worldviews, religious beliefs, and people's confidence about their worldviews affect intergenerational altruistic economic behaviour. We extend the research on the impact of worldviews on intergenerational altruism by focusing on Turkey. In the empirical analysis, we run probit regressions using data from a large national survey. We find that worldviews, religiosity, and confidence of individuals about their worldviews impact on intergenerational altruistic economic behaviour in Turkey.

Key Words: Worldviews, intergenerational altruism, love, religiosity, economic behaviour, Turkey.

Introduction

Recently, there has been a surge of interest in the impact of culture on economic outcomes[1]. Granovetter showed that economic action is embedded in social relations and criticized neoclassical economics' view of "utilitarianist, atomized, and undersocialized individual."[2] In addition, the role of psychological factors in individuals' economic behavior has also been ignored and neoclassical economics reduced economic behavior to formal presentations of utility maximization without emotions and social relations. Recent papers[3] showed that early economists during the 19th century and early 20th century often used culture to explain economic phenomena, such as variations in economic growth and saving rates across nations, and admitted the importance of psychological motives to explain intertemporal choice. Marx argued that economic relations and economic transformation create and change culture, including religion. Weber argued against the direction of this causal relationship and asserted that religion can explain the development of social and cultural changes, such as the rise of capitalism. Starting from the famous economist Paul Samuelson's "discounted utility model" in 1937, in which motives underlying intertemporal choice boil down to a single parameter, the discount rate, neoclassical economics mostly abstained from using culture and psychology to explain economic outcomes. This was mainly due to problems about measuring culture.

Economic behavior in the neoclassical paradigm is based on a naturalistic, rational, and selfish *homo economicus* who engages with the pursuit of her self-interest only for the purpose of utility maximization. This view of economic behavior has been criticized in recent survey and experimental studies.[4] Among the most well-known of such studies, Henrich et al.[5] found strong evidence from economic experiments in 12 countries and 15 small-scale societies that fairness and reciprocity are important concerns. In addition, they showed that social interactions matter and pro-social behavior dominates; people tend to reward co-operative behavior and punish non-cooperative behavior even when it is costly. Two recent papers have also provided evidence for the importance of fairness to explain economic behavior.[6]

As a reflection of the interest in the abovementioned issues surrounding the neoclassical view of economic behavior, recent studies have included various dimensions of culture, such as trust and religiosity, to explain economic phenomena. Culture is generally defined as slow-changing values, beliefs, social norms, and other factors that affect behavior which are transferred across successive generations.[7] Some recent papers revived classical economists' interest and provided evidence that culture affects a variety of economic outcomes. Guiso et al. showed that

culture and cultural hypotheses are important variables in cross-country variation in savings, investments, and bequests.[8] They cite from previous studies that economic behavior of American families is largely affected by the cultural heritage of the immigrant ancestors' country of origin, and Catholic families are more likely to teach thrift to their children than Protestant families. In addition, a growing body of research has shown that culture affects economic outcomes through its impact on institutions. Such studies generally focus on historical evidence and emphasize the important role social capital plays in economic development.[9]

The impact of religion as an important dimension of the link between culture and economic outcomes is an important issue and it has been subject to academic scrutiny by economists recently. Religious beliefs have been used in some recent studies as explanatory variables in analyzing the correlation between religion and economic outcomes such as savings, investments, and bequests. In an early economic model of religious behavior, the individual maximizes utility which is defined as a function of religious commodities and secular commodities.[10] In an econometric study, Barro and McCleary found that religiosity tends to decline with economic development.[11] Guiso et al. found positive correlations between religiosity and (i) attitudes that are conducive to free markets and better institutions, (ii) trust towards the government and the legal system, and (iii) belief in the fairness of market outcomes.[12] In experimental economics, the relationship between religion and economic outcomes has also recently been studied.[13] There also studies studying the effect of religion on a number of demographic issues.[14]

An important critique of the neoclassical paradigm and its *homo economicus* assumption is reflected in the research about altruism. Reciprocal altruism theory, which argues that altruism is only long-run self-interest as exemplified by the "selfish gene," was widely accepted by economists for a long time.[15] However, a number of recent behavioral and experimental economic studies presented empirical evidence that strong reciprocity, i.e., cooperating with others and punishing those violating cooperation, is important in explaining altruism. Economists have developed an interest in altruism since the standard altruism models by Barro[16] and Becker[17] mainly to examine how different generations are connected. This is an important theoretical and empirical issue to understand intergenerational connections through savings, investments, and bequests, which are important determinants of long-run growth.[18] A number of intergenerational altruism models have since been developed to study inter vivos transfers.[19] Recent models of intergenerational altruism modified the standard altruism models by taking into account investment by altruistic parents to affect their children's discount factors and preferences in order to make them patient and hence increase their human capital.[20]

Bhatt and Ogaki[21] extended the intergenerational altruism model by incorporating asymmetric time preferences between consecutive generations and endogenous discount rates, which they operationalize by parental discipline behavior named "tough love." In this model, the altruistic parent allows the child to suffer in the short run because she believes that the child will benefit in the long run. Based on this model, Kubota et al. examined whether parents behave as the tough love model predicts using survey data from Japan and the US.[22] They found that parents' time discount factors affect their child discipline behavior. They also found that relatively more American parents demonstrate tough love behavior compared with Japanese parents. They proposed that this difference arises from cultural differences, specifically differences in the "worldviews" of parents across countries. They present evidence that cultural differences between Japan and the US and the confidence of parents about their worldviews explain the differences in child discipline behavior across countries, and more confident individuals are more likely to show tough love.

The empirical model by Kubota et al. performed well in explaining the differences in intergenerational altruism in Japan and the US. In this study, we build on the tough love model of Bhatt and Ogaki[23] and the econometric method in Kubota et al.[24] to examine the relationship between worldviews and intergenerational altruism in Turkey. We hypothesize that people have different worldviews and this has an impact on intergenerational altruism. In our model, the parent endogenously evaluates the child's discount factor and this evaluation is affected by the parent's worldviews. To test this hypothesis, we examine tough love behavior towards young children in Turkey by taking into consideration worldviews and confidence about worldviews. By doing so, we extend the previous research by Kubota et al. to include Islamic beliefs and norms which dominate the Turkish culture. Previous studies on the impact of Islam on economic outcomes have focused chiefly on economic development related issues such as the causal relationship between Islamic law and traditions and the underdevelopment of Islamic societies.[25] Although the results of this study cannot be generalized due to its one-country focus, we believe that they are indicative of the impact of Islamic culture on intergenerational altruism using the case study of Turkey. The data are obtained from a large national survey conducted in Turkey in 2011.

The rest of the paper is organized as follows. The next section briefly reviews the literature on altruistic economic behavior and worldviews. The third section describes the data and the empirical model. The fourth section presents the estimation results. Finally, the fifth section concludes.

Worldviews and Intergenerational Altruism

In the field of economics, intergenerational altruism has been examined from macroeconomic and microeconomic perspectives and the majority of the previous studies used the Barro-Becker type of standard altruism models.[26] Barro[27] used the standard altruism model to analyze whether expansionary fiscal policy through bond sales impose a cost on future generations (rather than increasing wealth) within the overlapping generations framework with intergenerational transfers, and showed that there is no theoretical evidence to perceive government debt as a component of household wealth.

An important issue regarding the standard altruism model in economics was the treatment of the individual's rational behavior with the assumption of the pursuit of own utility only. Some recent studies have incorporated cultural transmission and endogenous discounting in which the parent interacts with the next generation and evaluates the child's behavior.[28] Duncan and Magnuson provide an early evaluation and review of economic models on parenting.[29] Child discipline behavior in those papers is modeled in such a way that the parent punishes the deviation of the child's behavior from that imposed by the parent. Since the seminal paper on endogenous discounting by Becker and Mulligan[30] which showed that investment for patience increases human capital in the long run, more recent models of intergenerational altruism have included investments by parents to influence child's behavior, i.e., their discount factors and preferences.[31] In these models the parent evaluates the child's time preferences endogenously in her own utility function. These models theoretically show that the parent provides pecuniary and non-pecuniary incentives to discipline behavior by encouraging desired behavior.[32]

Among the recent intergenerational altruism models, Bhatt and Ogaki[33] criticize a finding of earlier standard altruism models which states that when the child becomes impatient, transfers from the parent to the child remain unchanged as it is thought that parents often punish children's misbehavior to discipline them. They introduce the "tough love model," which includes asymmetric time preferences and endogenous discount rates. The altruistic parent evaluates the child's discount factor high in her own utility function, which means that she allows the child to suffer in the short run because she believes the child's lifetime utility will be higher. When the child's discount rate decreases for some reason and becomes impatient due to misbehavior, the model predicts that the parent's transfers to the child decreases.

Kubota et al.[34] tested and verified the validity of the tough love model of Bhatt and Ogaki using US and Japan surveys. An important puzzling finding of Kubota et al. is that parental discipline behavior differs between Japan and the US; more US parents tend to show tough love than parents

in Japan. They hypothesized that cross-cultural differences in terms of worldviews and religiosity can explain this difference. They define worldviews from an anthropological viewpoint as "explicit and implicit beliefs, norms, logic, and emotions that underlie a culture." They argue that since globalization results in exposure to different cultures and worldviews individuals may attach subjective probabilities to different worldviews.

Data and Methodology

Data

The data are collected from a national survey conducted by the authors in 12 cities in Turkey (Ankara, Balikesir, Batman, Bursa, Diyarbakir, Istanbul, Izmir, Kayseri, Konya, Mersin, Samsun, and Trabzon) during July-September 2011. The survey questionnaire is identical to the one used for Japan as in Yamane et al.[35] The national surveys were funded by the Scientific and Technological Research Council of Turkey (TUBITAK, project no. 110K319). The cities vary in terms of geographical location, population size, and socio-cultural characteristics. Each city has been drawn on a random basis from the 12 regions in the NUTS-1 classification system of the Turkish Statistical Institute (Turkstat). Of these 12 cities, Istanbul, Ankara, and Izmir are the largest urban metropolitan areas in Turkey. In the NUTS-1 classification each of these metropolitan areas are categorized as a statistical region. The remaining nine cities are drawn from the list of provinces included in the respective regions. In each of these statistical regions, one province was drawn randomly. Due to budgetary constraints only the people in the provincial urban centers were selected in the surveys. These respondents were selected on a random basis from different quarters of the respective urban areas. 3,180 surveys were collected in the surveys, but only 1,659 could be used for the empirical analysis. The remaining questionnaires were excluded because most of the questions required in the analysis were unanswered. All respondents are at least 18 years old.

Methodology

To examine the impact of various determinants along with worldviews and religiosity on the tough love behavior of parents, we ran probit regressions using data from a large national survey in Turkey. The probit model is based on the tough love model of Bhatt and Ogaki[36] and the specification of the dependent and independent variables closely follows Kubota et al.[37] Our empirical model is as follows:

$$TL = \alpha + \sum_r \beta_r (REL_r \cdot DR) + \sum_s \beta_s X_s + \sum_w \beta_w X_w + \sum_t \beta_t TP_t + \sum_c \beta_c CONF_c + \varepsilon$$

where the subscripts r, s, w, t, and c refer to religious affiliation,

socio-demographic features, worldviews, time preferences (impatience and debt aversion), and types of confidence (spiritual, non-spiritual), respectively. ε is the error term, and α and β terms are parameters to estimate.

The dependent variable TL refers to tough love behavior and it is specified as a dummy variable which is explained in the next section. We use five sets of independent variables. Three dummy variables are used to measure deep religiosity. They are constructed by multiplying the dummy variables representing religious affiliations (REL) by the dummy variable on deep religiosity (DR), which is derived from self-reported evaluations of the level of religiosity. The vector of socio-demographic characteristics (Xs) includes age, a dummy variable for gender, a dummy variable stating whether the respondent has children, the level of education, and household income. The vector Xw includes a set of dummy variables for worldviews that are explained in the next section. The vector of time preferences, TP, includes two variables measuring impatience and debt aversion. CONFc includes two confidence variables, namely confidence about spiritual matters and confidence about non-spiritual matters. Table 1 presents descriptive statistics of the variables.

Table 1. Descriptive statistics of the variables

Variable	Mean	Min	Max	Standard deviation
Tough love	0.71	0	1	0.45
Life after death exists – yes dummy	3.84	0	4	0.66
Life after death exists – no dummy	0.97	0	1	0.16
God and other spiritual beings exist – yes dummy	0.02	0	1	0.12
God and other spiritual beings exist – no dummy	0.97	0	5	0.21
God knows our bad behavior – yes dummy	0.01	0	5	0.16
God knows our bad behavior – no dummy	0.10	0	1	0.30
I believe human beings evolved from other living things – yes dummy	0.87	0	1	0.33
I believe human beings evolved from other living things - no dummy	0.11	0	1	1.99
I will always keep my promises – yes dummy	0.78	0	1	0.42
I will always keep my promises – no dummy	0.10	0	1	0.30
I believe everything written in science textbooks is true – yes dummy	0.50	0	1	0.50
I believe everything written in science textbooks is true – no dummy	0.19	0	1	0.39
I want to live a simple life – yes dummy	0.80	0	1	0.40
I want to live a simple life – no dummy	0.15	0	1	0.36
I will never be robbed – yes dummy	0.28	0	1	0.45
I will never be robbed – no dummy	0.37	0	1	0.48
I know a lot about politics – yes dummy	0.33	0	1	0.49
I know a lot about politics – no dummy	0.62	0	1	0.47
I have a good memory – yes dummy	0.62	0	1	0.49
I have a good memory – no dummy	0.15	0	1	0.36
Confidence about spiritual matters	8.64	0	9	1.42
Confidence about non-spiritual matters	2.43	0	8	2.01
Confidence (total)	11.07	0	17	2.55
Sunni – religious	0.24	0	1	0.42
Alevi – religious	0.01	0	1	0.10
Other – religious	0.03	0	1	0.16
Impatience	3.64	-	6.26	3.67
Debt aversion	0.37	-	9.92	5.90
Gender (male = 1)	0.69	0	1	0.31
Age (in groups)	3.55	1	9	1.70
Education (in categories)	3.80	1	9	2.25
Children (1 if respondent has children)	0.64	0	1	0.48
Income (in categories)	3.19	1	10	1.46

Notes: 1. Categories of age: (i) 18-23, (ii) 24-29, (iii) 30-35, (iv) 36-41, (v) 42-47, (vi) 48-53, (vii) 54-59, (viii) 60-69, (ix) 70 and above.
2. Categories of educational attainment: (i) primary education, (ii) high school or equivalent not graduated, (iii) high school graduate, (iv) some college (no degree), (v) 2-year college, (vi) 4-year university graduate, (vii) non-degree graduate school, (viii) graduate degree (master), (ix) Ph.D.
3. Income categories: (i) none, (ii) TL 10000 or less, (iii) TL 10001-20000, (iv) 20001-40,000, (v) 40001-60000, (vi) 60001-80000, (vii) 80001-100000, (viii) 100001-120000, (ix) 120001-140000, (x) TL 140000 or more. TL is Turkish Lira, the domestic currency.

Dependent and Independent Variables

Kubota et al.[38] emphasize the importance of differences in religious beliefs and worldviews in explaining the differences in altruistic economic behavior across countries. They show that differences in parental attitudes between Japan and the US can be explained by differences in religiosity and differences in worldviews and confidence of parents about their worldviews. We use the following dependent and independent variables.

The dependent variable: The parent in the tough love model of Bhatt and Ogaki[39] endogenously evaluates the child's time preferences, i.e., the discount factor. We measure tough love behavior of parents towards young children using the following hypothetical question in the survey.

Suppose that you have a 2-year old child with high fever and is in pain. The child's doctor, to whom you trust, tells you that both the fever and pain are harmless. He can give you a medicine that cures the sickness but slightly weakens the child's immune system when the child becomes 50 years old. What would you do? (Circle ONE number)
1. I would give the medicine to the child if the sickness were known to last for one day.
2. I would give the medicine to the child if the sickness were known to last for two days.
3. I would give the medicine to the child if the sickness were known to last for one week.
4. I would give the medicine to the child if the sickness were known to last for one month.
5. I would not give the medicine to the child.

The frequency distribution of the answers to this question is presented in Figure 1. We interpret answer 5 as "tough love" behavior. On the other side, we interpret answer 1 as behavior motivated by "spoiling love," i.e., the opposite of tough love. To our surprise, 71 percent of the respondents chose the first answer, while only 8 percent stated they would not give the medicine. Therefore, majority of the respondents in Turkey can be characterized by spoiling love. Comparing this result with

the frequency distributions in Japan and the US in Kubota et al.[40], half of the respondents in the US and 30 percent in Japan show tough love and those showing spoiling love are far less than in Turkey.

Figure 1. *Frequency distribution of the answers given to the intergenerational altruism question in the survey*
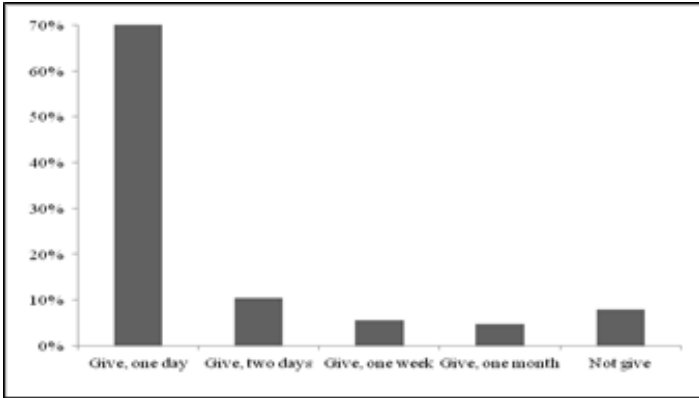
In the empirical analysis, we measure tough love by creating a dummy variable (*TL*). This variable takes the value 1 if the respondent chose answer 5 to the question above and 0 otherwise. Since the dependent variable is a discrete choice variable, the model is estimated as a probit model. The independent variables are explained below.

Socio-demographic variables: The respondents are categorized into nine age groups, nine levels of educational attainment, and ten income groups based on annual household income inclusive of bonuses. We also build a dummy variable taking the value 1 if the respondent has children and 0 otherwise. A dummy variable for gender takes the value 1 if the respondent is male and 0 otherwise.

Religiosity: We categorize religious affiliations as follows: (i) Islam (Sunni), (ii) Islam (Alevi), (iii) Islam (other), (iv) Christian (Catholic), (v) Christian (Orthodox), (vi) Christian (other), (vii) Buddhist, (viii) Hindu, (ix) Jewish, (x) Other, (xi) none, and (xii) prefer not to answer. The respondents' religious affiliations are as follows: Sunni: 83.3 percent, Alevi: 8.0 percent, other Muslim: 2.5 percent, Christian (total): 0.4 percent, others: 5.2 percent.

We measure religiosity using a question about self-reported evaluations of the respondents about their religiosity. The respondents are asked to choose a number on a scale from 1 to 5 (1: totally disagree, 5: totally agree) if they agree with the statement "I am deeply religious." We interpret answers 4 and 5 as deeply religious. Overall, 24 percent of the respondents view themselves as deeply religious. We construct a dummy variable for religiosity by multiplying the religiosity dummy variable (1 if deeply religious and 0 otherwise) by religious affiliation dummy variable

(Sunni, Alevi, and others). There are three religiosity dummy variables: Sunni-religious, Alevi-religious, and Other-religious.

Time preferences: A person with a high discount factor, i.e., a patient person, may have a high discount factor for her child as well. Then, people with high discount factors might show tough love towards their children. To measure time preferences, we use two questions borrowed from Kubota et al. (2011). The first question below measures "impatience."

Suppose that you have two options to receive some money. You may choose Option "A", to receive TL 100 today; or Option "B", to receive a different amount in seven days. Compare the amounts and timing in Option "A" with Option "B" and indicate which amount you would prefer to receive for all 8 choices.

Option "A" Receiving today	or	Option "B" Receiving in 7 days	Includes an annual interest rate of	Which ONE do you prefer? X ONE Box For EACH Row)	
				Option "A"	Option "B"
TL 100.00		TL 99.81	-10%.....................................	1 ☐	2 ☐
TL 100.00		TL 100.00	0%.....................................	1 ☐	2 ☐
TL 100.00		TL 100.19	10%.....................................	1 ☐	2 ☐
TL 100.00		TL 100.38	20%.....................................	1 ☐	2 ☐
TL 100.00		TL 100.96	50%.....................................	1 ☐	2 ☐
TL 100.00		TL 101.91	100%.....................................	1 ☐	2 ☐
TL 100.00		TL 103.83	200%.....................................	1 ☐	2 ☐
TL 100.00		TL 105.74	300%.....................................	1 ☐	2 ☐

The second question below measures "debt aversion."

Suppose that you have the option to pay TL 10,000 in one month or pay a different amount in thirteen months. Compare the amounts and timing in Option "A" with Option "B" and indicate which amount you would prefer to pay for all 8 choices.

Option "A" Paying in one Month	or	Option "B" Paying in 13 months	Includes an annual interest rate of:	Which ONE do you prefer? (X ONE Box For EACH Row)	
				Option "A"	Option "B"
TL 10,000		TL 9,500	-5%.....................................	1 ☐	2 ☐
TL 10,000		TL 10,000	0%.....................................	1 ☐	2 ☐
TL 10,000		TL 10,010	0.1%.....................................	1 ☐	2 ☐
TL 10,000		TL 10,050	0.5%.....................................	1 ☐	2 ☐
TL 10,000		TL 10,100	1%.....................................	1 ☐	2 ☐
TL 10,000		TL 10,200	2%.....................................	1 ☐	2 ☐
TL 10,000		TL 10,600	6%.....................................	1 ☐	2 ☐
TL 10,000		TL 11,000	10%.....................................	1 ☐	2 ☐

To calculate time preferences, we use the method in Kubota et al. (2011). We expect that the higher the discount factor, the more the parents are likely to show tough love. This is due to the implicit assumption that the parents' discount factors obtained from the above financial decisions reflect their subjective discount factors with regards to their parental behavior, i.e., how they assess their children's utility.

Worldviews: We measure worldviews using a set of questions about spiritual and non-spiritual matters as in Kubota et al.[41] and Yamane et al.[42] These questions are originally from "Paranormal Belief Scale" (PBS), developed by Tobacyk and Milford[43] and widely used in various social sciences. For the purpose of this study, we use the following questions in the survey.

1. The afterlife exists.
2. Heaven exists.
3. Hell exists.
4. A person may be reincarnated as another person.
5. Spiritual beings such as God, Buddha, gods, or angels exist.
6. When you conduct good behavior and no one else knows about it, you are watched by God or other spiritual beings.
7. When you conduct good behavior and no one else knows about it, you will be rewarded by God or other spiritual beings.
8. When you conduct bad behavior and no one else knows about it, you are watched by God or other spiritual beings.
9. When you conduct bad behavior and no one else knows about it, you will be punished by God or other spiritual beings.
10. I will never be robbed.
11. I always keep my promises.
12. I know a lot about politics.
13. I have a good memory.
14. I believe that what is written in science books is true.
15. I want to live a simple life.
16. I want to leave as much bequest as possible to my children.
17. I want to leave as much bequest as possible to my spouse.

The questions 1 through 9 measure worldviews about spiritual matters and the answers range from 0 (totally disagree) to 100 (totally agree), increasing in multiples of 10. The questions 10 through 17 measure the worldviews about nonspiritual matters and the answers to these questions range from on a scale from 1 (totally disagree) to 5 (totally agree).

For each of the worldview questions above, we create dummy variables. In the worldview questions 1 through 9, and the question about evolution (18) are measured on a scale from 0 to 100. We create a "Yes" dummy variable which refers to answers 90 and 100, and a "No" dummy variable which refers to answers 0 and 10, i.e., these dummy variables measure strong inclination of the respondents to these worldviews in both directions. Likewise, the worldview variables using questions 11 through 17 are measured on a scale from 1 to 5. "Yes" dummy variable represents answer 5 and "no" dummy variable represents answer 1. In addition, we also use the following question in the survey: "I believe human being evolved from other living things." The answers to this question are also

scaled from 0 (totally disagree) to 100 (totally agree), increasing in multiples of 10.

Confidence about worldviews: Kubota et al.[44] argue that some parents may be tempted to exhibit spoiling love towards young children even if they think that tough love is more beneficial for the child in the long run. Tough love parents, on the other hand, may be confident about their worldviews, and hence allow their children to suffer. Therefore, we believe that confidence about worldviews is important. Accordingly, we use two confidence variables, namely, "confidence about spiritual matters" and "confidence about non-spiritual matters."

To measure confidence about spiritual matters, we use worldview questions 1 to 9. To measure confidence about non-spiritual matters, we use the worldview questions 10 to 17. For each of these questions about spiritual and non-spiritual matters, we measure the respondent's confidence as follows. In the questions about spiritual matters with a scale 0-100, we give 1 point to answers 0, 10, 90, and 100, and zero points otherwise. For instance, whether the respondent strongly believes (90-100) or strongly disbelieves in God (0-10), we give 1 point in either case because the respondent is quite confident. Similarly, in the questions with a scale from 1 to 5, we give 1 point to answers 1 or 5, and zero points otherwise.

We add up the scores for the questions about spiritual matters (questions 1 through 9) and calculate the score for "confidence about spiritual matters" variable. Similarly, we add up the scores for the questions about nonspiritual matters (questions 10 through 17) and calculate the score for "confidence about nonspiritual matters" variable. Frequency distributions of the confidence variable about spiritual matters (range: 0-9) and non-spiritual matters (range: 0-8) are reported in Figure 2. The respondents are highly confident about spiritual matters as 9, which is the maximum, is the peak score with more than 80 percent. In the case of confidence about non-spiritual matters, the peak score is 2 (22 percent), followed by 1 and 3, both slightly below 20 percent. The respondents are far less confident about non-spiritual matters. 16 percent are not confident at all. Compared with Japan and the US in Kubota et al.,[45] the respondents in Turkey are more confident about spiritual matters compared to the respondents in both Japan and the US while their confidence about nonspiritual matters resembles that of the US.

Figure 2: *Frequency distribution of confidence about spiritual and non-spiritual matters*
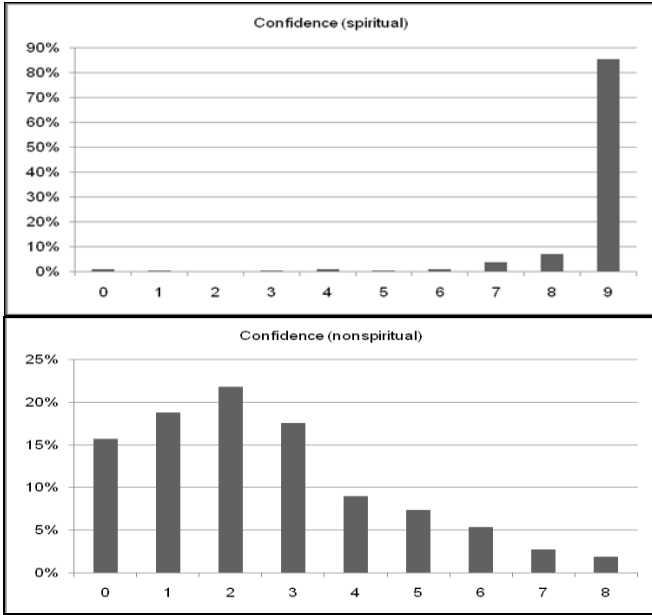
The sum of the scores for confidence about spiritual matters and confidence about nonspiritual matters yields "total confidence" variable (range: 0-17). Frequency distribution of total confidence variable is presented in Figure 3. The peak scores are between 9-12 and the frequency declines after 13.

Figure 3. *Frequency distribution of the confidence variable*
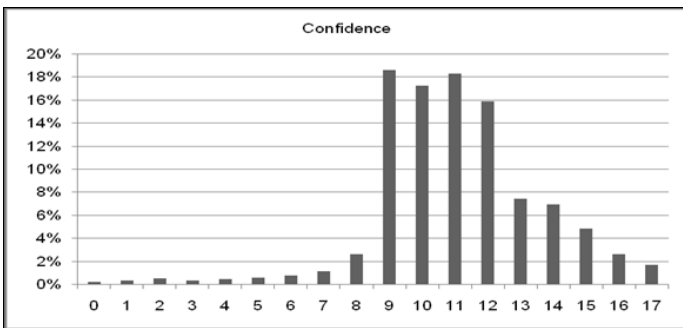
Empirical Findings

Our dependent variable is a discrete choice variable; therefore, we estimate the model using probit regressions where the dependent variable

(TL) represents tough love behavior. All reported results in what follows are marginal affects.

The Results of Probit Regressions

We first run a series of regressions without worldview variables. This is our benchmark model. The results are presented in Table 2. We first focus our attention on religiosity. Pseudo R^2 values are low in all regressions. But, this is not a major issue because the pseudo R^2 is not viewed as a strong indicator of goodness of fit as in the ordinary least squares model. The coefficients of Sunni-religious and Alevi-religious variables are positive and statistically significant. Therefore, the more religious the Muslims, either Sunni or Alevi, the more they are likely to show tough love, and hence, there is an association between deep religiosity and tough love behavior for Muslims.

Table 2. The results of ordered probit regressions without worldview variables

	Dependent variable: tough love			
Sunni religious	0.044*	(0.096)	0.048*	(0.097)
Alevi religious	0.203*	(0.527)	0.200*	(0.530)
Other religious	0.035	(0.264)	0.040	(0.266)
Male	-0.028	(0.133)	-0.035	(0.135)
Age	-0.001	(0.003)	-0.001	(0.003)
Education	0.009***	(0.010)	0.008**	(0.011)
Children	0.007	(0.103)	0.007	(0.103)
Impatience	-0.001	(0.010)	-0.001	(0.010)
Debt aversion	-0.002	(0.007)	-0.002	(0.007)
Income	0.015*	(0.028)	0.015*	(0.028)
Confidence – total	0.009**	(0.012)		
Confidence about spiritual matters			0.013**	(0.019)
Confidence about non-spiritual matters			0.003	(0.020)
Log likelihood	-713.5		-712.4	
Pseudo R^2	0.011		0.012	

Note: The number of observations is 1,209 for all regressions. The results reported are marginal effects and the figures in brackets are standard errors. *** indicates significance at 1 %, ** at 5 %, and * at 10 %.

Among the independent variables in Table 2, the coefficients of education, the dummy variable for having children, impatience, income, total confidence, and confidence about spiritual matters variables are statistically significant at least at 10 percent level. The coefficients of debt aversion, gender and age variables are statistically insignificant in all regressions. The coefficient of the education variable is positive, i.e., the more educated the respondents the more they are likely to show tough

love towards a young child. The statistical significance level of education is higher than other variables. The results also suggest that the higher the level of income the more likely the respondent is to show tough love. The coefficients of the time preferences variables are statistically insignificant. The lack of a relationship between time preferences and intergenerational altruism runs counter to our expectation that own discount factors regarding financial decisions affect parental behavior.

Next, we look at confidence variables. If only total confidence is used, its coefficient is statistically significant and positive, i.e., the more confident the respondent the more likely she is to show tough love. This is an important finding and implies that there is statistical evidence that parents who are confident about their worldviews allow their young children to suffer because they think it is for their benefit in the long term. If we instead include two confidence variables, only confidence about spiritual matters is statistically significant and its sign is positive. Accordingly, higher confidence about spiritual matters is associated with higher likelihood of tough love towards a young child. We understand that Turkish people who are more confident about spiritual matters tend to have a strict discipline behavior towards young children. To put in other words, Turkish people have high discount factor for children when they are very young. Next, we focus our attention on worldviews.

The results for the worldview variables are presented in Table 3. We run probit regressions separately by including one of the worldview variables in the form of "Yes" and "No" dummy variables in each regression one at a time along with the independent variables in Table 2. The signs and statistical significance of the coefficients of religiosity, time preferences, and socio-demographic variables are similar to those in Table 2. For brevity, we deem it sufficient in Table 3 to present the results of only the worldviews variables whose coefficients are statistically significant at least at 5 percent level along with the two confidence variables. The coefficient of the confidence about spiritual matters variable is statistically significant and positive in most regressions and the coefficient of confidence about non-spiritual matters variable is statistically insignificant in all regressions.

Table 3. *The results of ordered probit regressions with worldview variables*

	Coefficient	Standard deviation
Life after death exists – yes	0.004[**]	(0.098)
Live after death exists – no	0.012[*]	(0.103)
Confidence about spiritual matters	0.006	(0.022)
Confidence about non-spiritual matters	0.002	(0.020)
Log likelihood		-713.4
Pseudo R^2		0.011
God and other spiritual beings exist – yes	0.284[***]	(0.274)
God and other spiritual beings exist – no	0.219[**]	(0.397)
Confidence about spiritual matters	0.001	(0.024)
Confidence about non-spiritual matters	0.001	(0.020)
Log likelihood		-711.8
Pseudo R^2		0.013
God knows our bad behavior – yes	0.231[***]	(0.236)
God knows our bad behavior – no	0.181[**]	(0.348)
Confidence about spiritual matters	0.002	(0.023)
Confidence about non-spiritual matters	0.001	(0.020)
Log likelihood		-712.4
Pseudo R^2		0.012
I believe human beings evolved from other living things – yes	0.196[***]	(0.239)
I believe human beings evolved from other living things – no	0.238[***]	(0.210)
Confidence about spiritual matters	0.002	(0.022)
Confidence about non-spiritual matters	0.002	(0.020)
Log likelihood		-710.9
Pseudo R^2		0.014
I always keep my promises – yes	0.097[*]	(0.113)
I always keep my promises – no	-0.002	(0.164)
Confidence about spiritual matters	0.011[**]	(0.020)
Confidence about non-spiritual matters	0.001	(0.021)
Log likelihood		-661.0
Pseudo R^2		0.013
I believe that what is written in science books is true – yes	-0.035	(0.090)
I believe that what is written in science books is true – no	0.065[*]	(0.122)
Confidence about spiritual matters	0.015	(0.020)
Confidence about non-spiritual matters	0.002	(0.021)
Log likelihood		-648.0
Pseudo R^2		0.015

Note: The number of observation is 1,209 for all regressions. The results reported are marginal effects. The figures in brackets are standard errors. [***] indicates significance at 1 %, [**] at 5 %, and [*] at 10 %.

Six worldview variabless have statistically significant coefficients: (i) the afterlife exists ("yes" and "no"), (ii) spiritual beings exist ("yes" and "no"), (iii) when you conduct bad behavior and no one knows about it, you are watched by God ("yes" and "no"), (iv) belief in evolution ("yes" and "no"), (v) I always keep my promises ("yes"), and (vi) I believe that what is written in science books is true ("no"). The statistically significant

coefficients are all positive. People who have strong belief or disbelief in afterlife, God, evolution, and God watching bad behavior are more likely to show tough love. These findings mean that the respondents with strong beliefs in worldviews about afterlife and the existence of God are likely to allow their younger children to suffer. It is interesting to note that the respondents who do not have a strong worldview belief about afterlife also are likely to allow their younger children to suffer. Therefore, people who are strongly critical towards beliefs about afterlife are more likely show tough love. While we do not have a ready answer for this seemingly puzzling result, we believe it deserves scrutiny in future research in this strand of the literature.

Concluding Discussion and Remarks

The empirical findings of this paper demonstrate that religiosity, worldviews, and confidence about worldviews affect intergenerational altruism in Turkey, which is operationalized by parental child discipline behavior as exemplified by the tough love model. People in Turkey are found to be more confident about spiritual matters and they tend to show more spoiling love behavior towards children. Relatively more deeply religious Muslim people in Turkey are more likely to show tough love towards young children.

The findings of this study are comparable to the results of the study for Japan and the US in Kubota et al.[46] They found that confidence positively effects tough love and confidence about non-spiritual matters is more important than confidence about spiritual matters. People confident about their worldviews are more likely to show tough love in Japan and the US. Our results for total confidence are similar to their study. Therefore, there is cross-country evidence that confidence about worldviews do affect intergenerational altruism. Confidence about spiritual matters has higher explanatory power in Turkey while confidence about non-spiritual matters is at work in Japan and the US. We take it as evidence that spiritual matters are more important in an Islam-dominated society (Turkey) than Buddhist or non-religious (Japan) or Christian-dominated (US) societies.

One difference between the parents in Japan and the US Kubota et al. observe is the perception of suffering. They argue that positive view of suffering, which is adopted by most religious Christians, emphasizes promotion of self-development whereas negative view of suffering (e.g., reincarnation), which is adopted by most Buddhists in Japan, avoids suffering of children. Parents with negative view of suffering are then expected to be tempted to behave in a spoiling manner towards their children. In our analysis, we do not find any empirical evidence for the re-

lation between the perception of the meaning of suffering and inter-generational altruism in Turkey.

In the case of the association between religiosity and intergene-rational altruism, deeply religious Buddhist people are more likely to show tough love while there is no such relation for Christian people.[47] The results for Turkey are similar to Japan. Deeply religious Muslims are more likely to show tough love. This finding draws attention to cross-country comparison of the determinants of such similarities and differences.

Among the worldviews that affect intergenerational altruism common between Turkey and the other two countries is overconfidence regarding the question "I will always keep my promise." In Japan and the US, people who do not have tendency for overconfidence are more likely to show tough love. People who strongly disbelieve evolution are also more likely to have a positive view of suffering and show tough love. The result for overconfident people in Turkey is the opposite, i.e., people with high level of confidence about the above-mentioned question about keeping promises are more likely to show tough love while the results for evolution are similar.

The results of this study can be enriched in two ways in the future. First, economic experiments and can be used to measure altruistic economic behavior. Glaeser et al.[48] emphasize that data from experiments and surveys should be used together since experiments measure personal attributes better than surveys. Second, examination of the determinants of differences in intergenerational altruism such as worldviews and confidence across countries is an important issue. Comparison of Turkey with other countries for which data are available may be interesting in this respect. Comparison of Turkey with other Muslim countries or with Muslim communities in other parts of the world might be interesting.

Notes

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[2] Mark Granovetter, "Economic Action and Social Structure: The Problem of Embeddedness," *American Journal of Sociology* 91 (1985): 481-510.
[3] Shane Frederick, George Loewenstein, and Ted O'Donoghue, "Time Discounting and Time Preference: A Critical Review," *Journal of Economic Literature* 15 (2002): 351-401; Luigi Guiso, Paola Sapienza, and Luigi Zingales, "The Role of Social Capital in Financial Development," *American Economic Review* 94(3) (2006): 526-56.
[4] Ernst Fehr and Klaus M. Schmidt, "A Theory of Fairness, Competition, and Cooperation," *Quarterly Journal of Economics* 114 (1999): 817-68.

[5] Joseph Henrich, et al., "In Search for Homo Economicus: Behavioral experiments in 15 Small-Scale Societies," *American Economic Review* 91(2) (2001): 73-78.

[6] Fehr and Schmidt; Alberto Alesina and George-Marios Angeletos, "Fairness and Redistribution," *American Economic Review* 95 (2005): 960-80.

[7] Guiso et al., 2006; Gerard Roland, "Understanding Institutional Change: Fast-Moving and Slow-Moving Institutions," *Studies in Comparative International Development* 38(4) (2004): 109-31; Rene M. Stulz and Rohan Williamson, "Culture, Openness, and Finance". *Journal of Financial Economics* 70 (2003): 313-49.

[8] Guiso et al., 2006.

[9] Avner Greif, "Cultural Beliefs and the Organization of Society: A Historical and Theoretical Reflection on Collectivist and Individualist Societies," *Journal of Political Economy* 102 (1994): 912-50; Paul J. Zak and Stephen Knack, "Trust and Growth," *Economic Journal* 111 (2001): 295-321; Guido Tabellini, "Culture and Institutions: Economic Development in the Regions of Europe," *Journal of the European Economic Association* 8 (2010): 677-716.

[10] Laurence R. Ianaccone, "A Formal Model of Church and Sect," *American Journal of Sociology* 94 (Supplement) (1988): S241-68.

[11] Robert J. Barro and Rachel M. McCleary, "Religion and Economic Growth," NBER Working Paper No. 9682 (2003).

[12] Luigi Guiso, Paola Sapienza, and Luigi Zingales, "People's opium? Religion and Economic Attitudes," *Journal of Monetary Economics* 50 (2003): 225-82.

[13] Daniel J. Benjamin, James J. Choi, and Geoffrey W. Fisher, "Religious Identity and Economic Behavior," NBER Working Paper No. 15925 (2010).

[14] See, for instance, Douglas Almond, and Bhashkar Mazumder, "Health Capital and the Prenatal Environment: The Effect of Ramadan Observance During Pregnancy", *American Economic Journal: Applied Economics* 3(4) (2011): 56-85; Claudiu Herteliu et al., "Effect of Religious Rules on Time of Conception in Romania from 1905 to 2001," *Human Reproduction* 30 (2015): 2202-14.

[15] Herbert Gintis et al., "Explaining Altruistic Behavior in Humans," *Evolution and Human Behavior* 24 (2003): 153-72.

[16] Robert J Barro, "Are Government Bonds Net Wealth?", *Journal of Political Economy* 82 (1974): 1095-117.

[17] Gary Becker, "A Theory of Social Interactions," *Journal of Political Economy* 82 (1974): 1063-93.

[18] Vipul Bhatt and Masao Ogaki, "Tough Love and Intergenerational Altruism," *International Economic Review* 53 (2012): 791-814.

[19] Joseph G. Altonji, Fumio Hayashi, and Laurence J. Kotlikoff, "Parental Altruism and Inter Vivos Transfers: Theory and Evidence," *Journal of Political Economy* 105 (1997): 1121-66; Kathleen McGarry, "Inter Vivos Transfers and Intended Bequests," *Journal of Public Economics* 63 (1999): 321-51.

[20] Alberto Bisin and Thierry Verdier, "The Economics of Cultural Transmission and the Dynamics of Preferences," *Journal of Economic Theory* 97 (2001): 298-319; Matthias Doepke and Fabrizio Zilibotti, "Occupational Choice and the Spirit of Capitalism," *Quarterly Journal of Economics* 123 (2008): 747-93; Bruce A. Weinberg, "An Incentive Model of the Effect of Parental Income on Children," *Journal of Political Economy* 109 (2001): 266-80.

[21] Vipul Bhatt and Masao Ogaki, "Tough Love and Intergenerational Altruism," *International Economic Review* 53 (2012): 791-814.

[22] Kohei Kubota et al., "Cultures, Worldviews, and Intergenerational Altruism," Working Paper (2011).

[23] Bhatt and Ogaki, 791-814.

[24] Kohei Kubota et al., "Cultures, Worldviews, and Intergenerational Altruism," Working Paper (2011).

[25] Timur Kuran, "Why the Middle East is Economically Underdeveloped: Historical Mechanisms of Institutional Stagnation", *Journal of Economic Perspectives* 18 (2004): 71-90; Kuran, Timur, *The Long Divergence: How Islamic Law Held Back the Middle East* (Princeton: Princeton University Press, 2011).

[26] Fehr and Schmidt, 817-868; James Andreoni, "Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence," *Journal of Political Economy* 97 (1989): 1447-58; James Andreoni, "Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving," *Economic Journal* 100 (1990): 464-77; Gary E Bolton and Axel Ockenfels, "A Theory of Equity, Reciprocity, and Competition," *American Economic Review* 90 (2000): 166-93; Oded Stark, *On Private Charity and Altruism* (Netherlands: Springer, 1985).

[27] Barro, 1095-1117.

[28] Lingxin Hao, V. Joseph Hotz, and Ginger Z. Jin, "Games Parents and Adolescents Play: Risky Behaviors, Parental Reputation, and Strategic Transfers," *Economic Journal* 118 (2006): 515-55.

[29] Greg J. Duncan and Katherine A. Magnuson, "Economics and Parenting," *Parenting: Science and Practice* 2 (2002): 437-50.

[30] Gary S. Becker and Casey B. Mulligan, "The Endogenous Determination of Time Preference," *Quarterly Journal of Economics* 112 (1997): 729-58.

[31] See the papers in the bibliography by by Bisin and Verdier, Weinberg, Doepke and Zilibotti, and Bhatt and Ogaki.

[32] Bhatt and Ogaki, 791-814.

[33] Bhatt and Ogaki, 791-814.

[34] Kubota et al., 14-17.

[35] Shoko Yamane, Hiroyasu Yoneda, and Yoshiro Tsutsui, "Homo Economicus vs. Human Being: Outcomes of Irrationality," Osaka University ISER Discussion Paper No. 844 (2012).

[36] Bhatt and Ogaki, 791-814.

[37] Kubota et al., 14.

[38] Kubota et al., 3-4.

[39] Bhatt and Ogaki, 791-814.

[40] Kubota et al., 30.

[41] Kubota et al., 21.

[42] Shoko Yamane, Hiroyasu Yoneda, and Yoshiro Tsutsui, "Homo Economicus vs. Human Being: Outcomes of Irrationality," Osaka University ISER Discussion Paper No. 844 (2012).

[43] Jerome Tobacyk and Gary Milford, "Belief in Paranormal Phenomena: Assessment Instrument Development and Implications for Personality Functioning," *Journal of Personality and Social Psychology* 44 (1983): 1029-37.

[44] Kubota et al., 10-11.

[45] Kubota et al., 32-34.

[46] Kubota et al., 14-17.

[47] Kubota et al., 23.

[48] Edward L Glaeser, et al., "Measuring Trust," *Quarterly Journal of Economics* 65 (2000): 811-46.

References

Almond, Douglas, and Bhashkar Mazumder. "Health Capital and the Prenatal Environment: The Effect of Ramadan Observance During Pregnancy". *American Economic Journal: Applied Economics*. 3(4) (2011): 56–85.

Altonji, Joseph G., Fumio Hayashi, and Laurence J. Kotlikoff. "Parental Altruism and Inter Vivos Transfers: Theory and Evidence." *Journal of Political Economy*. 105 (1997): 1121-66.

Andreoni, James. "Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence." *Journal of Political Economy*. 97 (1989): 1447-58.

Andreoni, James. "Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving." *Economic Journal*. 100 (1990): 464-77.

Barro, Robert J. "Are Government Bonds Net Wealth?". *Journal of Political Economy*. 82 (1974): 1095-117.

Barro, Robert J., and Rachel M. McCleary. "Religion and Economic Growth." NBER Working Paper No. 9682 (2003).

Becker, Gary. "A Theory of Social Interactions." *Journal of Political Economy*. 82 (1974): 1063-93.

Becker, Gary S., and Casey B. Mulligan. "The Endogenous Determination of Time Preference." *Quarterly Journal of Economics*. 112 (1997): 729-58.

Benjamin, Daniel J., James J. Choi, and Geoffrey W. Fisher. "Religious Identity and Economic Behavior." NBER Working Paper No. 15925 (2010).

Bhatt, Vipul, and Masao Ogaki. "Tough Love and Intergenerational Altruism." *International Economic Review*. 53 (2012): 791-814.

Bisin, Alberto, and Thierry Verdier. "The Economics of Cultural Transmission and the Dynamics of Preferences." *Journal of Economic Theory*. 97 (2001): 298-319.

Bolton, Gary E., and Axel Ockenfels. "A Theory of Equity, Reciprocity, and Competition." *American Economic Review*. 90 (2000): 166-93.

Doepke, Matthias, and Fabrizio Zilibotti. "Occupational Choice and the Spirit of Capitalism." *Quarterly Journal of Economics*. 123 (2008): 747-93.

Duncan, Greg J., and Katherine A. Magnuson. "Economics and Parenting." *Parenting: Science and Practice.* 2 (2002): 437-50.

Fehr, Ernst, and Klaus M. Schmidt. "A Theory of Fairness, Competition, and Cooperation." *Quarterly Journal of Economics.* 114 (1999): 817-68.

Frederick, Shane, George Loewenstein, and Ted O'Donoghue. "Time Discounting and Time Preference: A Critical Review." *Journal of Economic Literature.* 15 (2002): 351-401.

Gintis, Herbert, Samuel Bowles, Robert Boyd, and Ernst Fehr. "Explaining Altruistic Behavior in Humans." *Evolution and Human Behavior.* 24 (2003): 153-72.

Glaeser, Edward L., David Laibson, Jose A. Scheinkman, and Christine L. Soutter. "Measuring Trust." *Quarterly Journal of Economics.* 65 (2000): 811-46.

Granovetter, Mark. "Economic Action and Social Structure: The Problem of Embeddedness." *American Journal of Sociology.* 91 (1985): 481-510.

Greif, Avner. "Cultural Beliefs and the Organization of Society: A Historical and Theoretical Reflection on Collectivist and Individualist Societies." *Journal of Political Economy.* 102 (1994): 912-50.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales. "People's opium? Religion and Economic Attitudes." *Journal of Monetary Economics.* 50 (2003): 225-82.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales. "The Role of Social Capital in Financial Development." *American Economic Review.* 94(3) (2006): 526-56.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales. "Does Culture Affect Economic Outcomes?". *Journal of Economic Perspectives.* 20(2) (2006): 23-48.

Hao, Lingxin, V. Joseph Hotz, and Ginger Z. Jin. "Games Parents and Adolescents Play: Risky Behaviors, Parental Reputation, and Strategic Transfers." *Economic Journal.* 118 (2006): 515-55.

Henrich, Joseph, Robert Boyd, Samuel Bowles, Colin Camerer, Ernst Fehr, Herbert Gintis, and Richard McElreath. "In Search for Homo Economicus: Behavioral experiments in 15 Small-Scale Societies." *American Economic Review.* 91(2) (2001): 73-78.

Herteliu, Claudiu, Bogdan Vasile Ileanu, Marcel Ausloos, and Giulia Rotundo. "Effect of Religious Rules on Time of Conception in Romania from 1905 to 2001." *Human Reproduction.* 30 (2015): 2202-14.

Ianaccone, Laurence R. "A Formal Model of Church and Sect." *American Journal of Sociology*. 94 (Supplement) (1988): S241-68.

Kubota, Kohei, Akiko Kamesaka, Masao Ogaki, and Fumio Ohtake. "Worldviews, Temptations, and Intergenerational Altruism." *Keio Economic Studies*. 48 (2012): 135-8.

Kubota, Kohei, Charles Yuji Horioka, Akiko Kamesaka, Masao Ogaki, and Fumio Ohtake. "Cultures, Worldviews, and Intergenerational Altruism." Working Paper (2011).

Kuran, Timur. "Why the Middle East is Economically Underdeveloped: Historical Mechanisms of Institutional Stagnation." *Journal of Economic Perspectives*. 18 (2004): 71-90.

Kuran, Timur. *The Long Divergence: How Islamic Law Held Back the Middle East*. Princeton: Princeton University Press, 2011.

McGarry, Kathleen, "Inter Vivos Transfers and Intended Bequests," *Journal of Public Economics* 63 (1999): 321-51.

Roland, Gerard. "Understanding Institutional Change: Fast-Moving and Slow-Moving Institutions." *Studies in Comparative International Development*. 38(4) (2004): 109-31.

Stark, Oded. *On Private Charity and Altruism*. Netherlands: Springer, 1985.

Stulz, Rene M., and Rohan Williamson. "Culture, Openness, and Finance". *Journal of Financial Economics*. 70 (2003): 313-49.

Tabellini, Guido. "Culture and Institutions: Economic Development in the Regions of Europe." *Journal of the European Economic Association*. 8 (2010): 677-716.

Tobacyk, Jerome, and Gary Milford. "Belief in Paranormal Phenomena: Assessment Instrument Development and Implications for Personality Functioning." *Journal of Personality and Social Psychology*. 44 (1983): 1029-37.

Weinberg, Bruce A. "An Incentive Model of the Effect of Parental Income on Children." *Journal of Political Economy*. 109 (2001): 266-80.

Yamane, Shoko, Hiroyasu Yoneda, and Yoshiro Tsutsui. "Homo Economicus vs. Human Being: Outcomes of Irrationality." Osaka University ISER Discussion Paper No. 844 (2012).

Zak, Paul J., and Stephen Knack. "Trust and Growth." *Economic Journal*. 111 (470) (2001): 295-321.