

Worldviews and Altruistic Behavior: A Progress Report on Experimental Study[†]

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Abstract

The main purpose of this paper is to examine the effects of worldviews on individual altruistic behaviors toward anonymous others, through experimental researches conducted in churches and universities in Korea, Japan and the US. The experiments were designed to compare the results between Christians and non-Christians and among the Koreans, Japanese and Americans. We found a significant correlation between the worldview and the amount of donation among Christians in Japan and Korea. Among Korean and Japanese Christians, those who believe in punishments for any bad behaviors are less likely to donate. One possible interpretation is that the punishment-related worldview might be correlated with the perception of the origin of the suffering. If respondents believe that suffering is resulted from one's own irresponsible deeds, they would be less willing to make a charitable donation to anonymous others. It should be noted that the small size of our samples hinders from drawing concrete comparisons between Christians and non-Christians and between countries. Our overall estimation results should be interpreted as hinting that worldviews might affect a set of rules that determine individual altruistic decision.

Keywords: worldview, altruistic behavior, cross-country experiment

JEL Classification: C91, D64

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1. Introduction

Extant literature in the field of economics has recently analyzed the relationship individual beliefs and preferences on a variety of economic outcomes (see Guiso et al. 2006 for a survey) such as altruism and intergenerational transfers (see, e.g., Fehr and Schmidt, 2006). Some experimental studies have been conducted to investigate the possible impact of social norms and institutions and market behavior (Roth et al., 1991). Henrich et al. (2010) examined whether the fairness toward anonymous others is associated with the market integration (measured by a percentage of a household's total calories purchased from the "market") and a world religion (categorized by Islam or Christianity, a tribal religion, or no religion), using 15 diverse populations. They found the positive correlation between fairness toward anonymous others and both market integration and a world religion, suggesting that the fairness is the product of both institutions emerged in the human history of expanding populations and an innate social psychology for life and new norms.

Some studies focus on the possible impact of individual belief system and the confidence in the worldview belief on an individual economic behavior. Horioka (2014) has found substantial international variations in altruism for China, India, Japan, and United States. This result suggests that if the variation is not explained by income differences, a natural candidate for explaining such variation is culture. Kubota et al. (2013) focused on worldviews to explain international differences in intergenerational altruistic attitudes using the data of Japan and United States, and Akkemik et al. (2013) took a similar approach using the data of Turkish people living in Turkey and in Germany. These authors have found elements in belief systems such as confidence in worldview beliefs have statistically significant effects on intergenerational altruistic attitudes and explain substantial proportions of international differences in them.

Our study aims to investigate the extent to which the foundational level of worldviews affects an individual economic behavior through experimental researches in churches and universities in Korea, Japan and the US. This experimental plan is the first attempt to investigate the effect of the religious-level variables on altruistic behavior toward anonymous others based on the results obtained from the experimental procedures. We focus on the religious worldview, which is measured by the responses to the question "there are punishments for all bad deeds" (referred as to "punishment-related worldview" in our study). An individual's altruistic behavior is measured by how much an experiment participant donated to anonymous others in the experiment.

First, we compared the descriptive statistics of the punishment-related worldview between non-Christians and Christians in three countries. We found contradictory tendency in the punishment-related worldview between Christians and non-Christians in Korea and Japan. The majority of Christians strongly believe in the punishment for their bad deeds, whereas many non-Christians do not agree with this punishment-related worldview. Comparatively, American

Christians show a similar tendency in the distribution of non-Christians. Second, we ran a simple linear regression of the amount of donation on worldviews. We found a positive correlation between an individual's punishment-related worldview and his/her altruistic behavior among the Christianity, but only in Korea and Japan. Among Korean and Japanese Christians, those who believe in punishments for any bad behaviors are less likely to donate. Our results suggest that the altruistic behavior of people might be significantly related to the perception of the punishment-related worldview.

The remainder of the paper is organized as follows. Section 2 explains the experimental design, and Section 3 describes main variables for our analysis concerning punishment-related worldview. The economic framework and results are summarized in Section 4. The implications of the estimation results are discussed in section 5.

2. Experimental Design

To examine the effects of worldviews on an individual altruistic behavior, we conducted an experimental research at universities and churches in Korea, Japan and the US either in 2009 or in 2010. In each experiment, about 30 participated and the survey concerning worldviews and economic behaviors. At the beginning of the experiment, two envelopes are distributed to the 30 participants. The first one is an envelope with ten \$5 bills (for the Korean experiment, ten 5,000-won bills, and for the Japanese experiment, ten 500-yen coins, both of which are equivalent to approximately \$50) and another one is envelope with ten pieces of bill sized paper. They are instructed to take out a number of bills from the first envelope to donate to the "International Federation of Red Cross and Red Crescent Societies". No one can see how much each of participants donates. After taking out part of or all of the \$50, they are instructed to move the same number of bill-sized paper from the second envelope to make sure that no one notices the amount of donation when the participant turns his/her survey into the drop box. Whether the participants understand the instructions are confirmed with control questions that ask how many of the bills need to be taken out to make a certain amount of donation.

To conduct a more accurate experimental research, we attempted to minimize any potential problems stemming from experimenter, language and currency/stake effects. First of all, one of the research team members was supposed to be in the place where the experiment was conducted, to make sure that all sessions would be implemented under the same protocol. Moreover, trained research assistants and a local experimenter instructed the experiment participants and if necessary, communicated between the participants and the present researcher throughout the experimental procedures. Secondly, to conduct cross-country studies, we also attempted to avoid any problems that could arise from the translation with different meaning and nuances. We double checked the quality of translated instructions by asking a native translator (in this experiment, a Korean and a

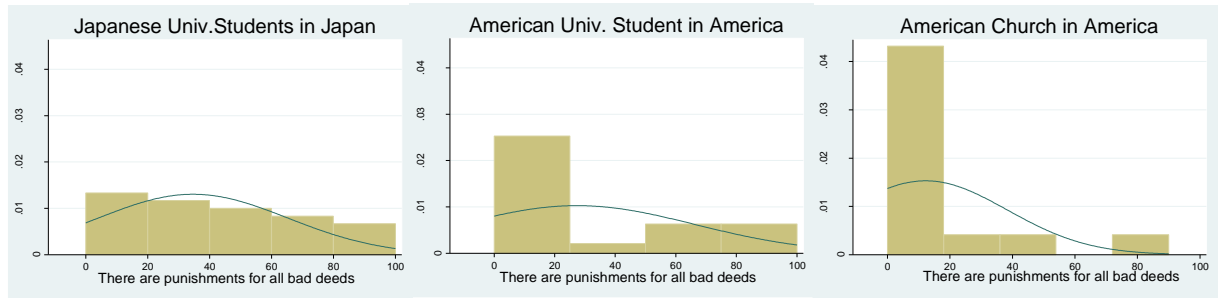
Japanese native speaker) to translate the instruction, which was translated from English to Korean and Japanese, back to the English version so that we can make sure all participants across the nation are instructed in the exactly same way. Finally, we adopted the Purchasing Power Parity (PPP) as a rough guide because the PPP should be a more proper index than the income/hourly wages of subjects, considering that our participants include both students and non-students. In our work, we used the experimental results with the data obtained through surveys. The survey contains various measures of worldviews, as well as individual characteristics. It was conducted before the experiment so that it would not affect the results of the experiment, which enables us to consider the measurement of religious worldview as being exogenous to the experiment.

3. Punishment-Related Worldview and Altruistic Behavior

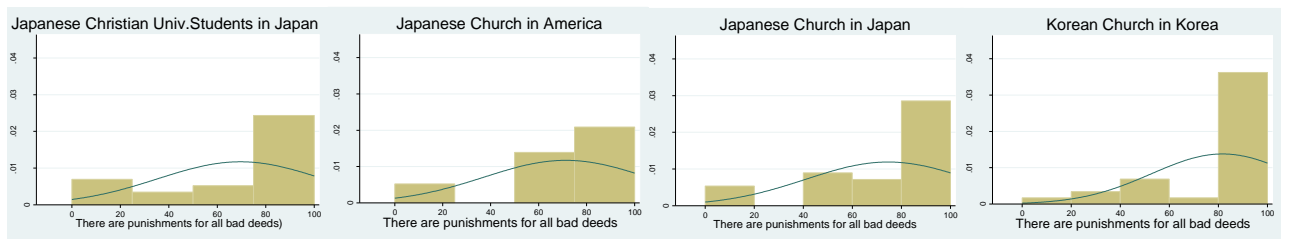
We mainly focus on two variables: an individual belief in the worldview and an individual's altruistic behavior. First, as for the worldview, we used the concept of Hiebert (2008, pp. 25-26) who defines "worldview" in anthropological terms as "the foundational cognitive, affective, and evaluative assumptions and frameworks a group of people makes about the nature of reality which they use to order their lives". A worldview is behind each culture, and Hiebert considers several levels of a worldview (see Lee et al. (2013) in more detail). We measured "punishment-related worldviews" by asking the survey respondents the following question, "There are punishments for all bad deeds". The punishment-related worldviews were scored on a scale of 0 ("strongly disagree") to 100 ("strongly agree") to find how much a respondent agrees with the statement.

Contradictory tendencies in the punishment-related worldview have been found between Christians and non-Christians in Korea and Japan. For a better and easier comparison, Figure 1 divides the histogram of the punishment-related worldview by skewness. Panel 1 has three figures of right-skewed distributions whereas Panel 2 has four figures of left-skewed distributions. The groups of Panel 1 show that the majority chose "strongly disagree with (=0)" the punishment for the bad-deeds. The groups of Panel 2 indicate that the majority chose "strongly agree with (=100)" the punishment-related worldview. The majority of Christians strongly believe in the punishment for their bad deeds, whereas many non-Christians do not agree with this punishment-related worldview. One exception is that American Christians. Christians in America show a similar tendency to non-Christians: there are more people who do not agree with the punishment-related worldview. This might be because of a doctrine taught in the particular church in America in our study. The doctrine of this particular church in America is that if you have faith in Christ, you will never lose salvation ("Doctrine of Perseverance"). Interestingly, regardless of Christianity and country, people strongly agree with the statement of "there are rewards for all good deeds" (see Appendix A). The majority of people tend to strongly believe in the rewards for their good deeds. This suggests that the "punishment"-related worldview has some significant effect on an

individual's altruistic decision.



Panel 1. Groups with Right-skewed Distributions



Panel 2. Groups with Left-skewed Distributions

Figure 1. Distributions of Punishment-Related Worldview by Participant Group

Next, an individual altruistic behavior is measured by how much the experiment participant actually donated to anonymous others. Table 1 shows the descriptive statistics of the degree of donation that ranges from 0 (zero donation) to 10 (100% donation). In contrast to the punishment-related worldview, a distinct tendency in the donation amount between Christians and non-Christians is not found. While average amount donated by Christians is relatively higher among Japanese, the amount donated by church attenders in the US is as low as 1 to 2 (corresponding \$5 to \$10). However, we found one unique characteristic. This unique tendency is observed among Korean Christians. We found that there was none among the Korean participants who donates nothing. In other words, all of the Korean participants donated to the charitable organizations at least 5 dollars. In Japan and the US, 10 to 25% of respondents chose a zero donation.

Table 1. Descriptive Statistics

Data		(1) Korean Church in Korea	(2) Japanese Church in the US	(3) US Church in the US	(4) US Student in the US	(5) Japanese church in Japan	(6) Japanese Univ. Students in Japan (Whole)	(7) Japanese Univ. Students in Japan (christianity)
Dependent var. (Donation: 0~10)	Mean	3.76	2.83	1.56	5.89	5.57	1.30	4.54
	St.dev	(2.46)	(2.92)	(2.21)	(3.63)	(3.52)	(1.53)	(3.16)
Bad Behavior to be Punished (0~100)	Mean	81.72	73.60	12.22	24.55	80.23	38.92	68.97
	St.dev	(28.92)	(33.53)	(26.07)	(36.87)	(32.02)	(29.79)	(31.44)
Observations		29	23	27	19	28	30	23

4. Empirical Results

To analyze these data, we then ran a simple linear regression of worldviews on the individual decision on the amount of donation. An independent variable is constructed from the answers to the question “There are punishments for all bad deeds” and a dependent variable is the amount donated to charitable organizations. Of a wide range of questions that measure the worldview in the survey¹⁰, we found a statistically significant correlation between the punishment-related worldview and the individual altruistic decision.

Table 2 summarizes the estimated results. Those who believe in punishments for any bad behaviors, among the Korean church attenders and the Japanese church attenders in America (columns (1) and (2)) and Japanese university students who identified themselves as Christians (column (7)), are less likely to donate. These results can be interpreted by religion and further by country. First, our descriptive statistics (Table 1) show that on average, Japanese Christians donated more than their counterparts. This suggests Christians in Japan are relatively more altruistic, but among the Japanese Christians, those who more strongly perceive the consequences of their own bad behaviors, seem to have a tendency to be less altruistic. Since the respondents of Japanese church in America (column (2)) include Americans and those with dual citizenship, we ran the regression with the sample restricted to the sample whose nationality is Japanese for the robustness check. The significant negative effect of the punishment-related worldview remains.

Secondly, this negative effect of the punishment-related worldview on the amount of donation is also observed in Christians in Korea (column (1)). In contrast to the case of Japan, as the experiment was only conducted with Christians in Korea, it is difficult to discuss whether this negative effect is in relation to the religion that respondents hold. However, it seems consistent that Christians in Korea are affected by the punishment-related worldview when they make an altruistic decision. Lastly, it appears that for American Christians, this negative effect of the punishment-related worldview is not statistically significant in individual altruistic behaviors. As shown in Table 1, the distribution of the punishment-related worldview of American Christians was opposite to that of Japanese and Korean Christians. Furthermore, the negative effect was not observed among American Christians in contrast to Japanese and Korean Christians (column (3)).

¹⁰ For example, “God and Gods exist”, “God is watching and sees all bad deeds”, “Life after death exist”, “Heaven exists”, or “There is genuine meaning in suffering for oneself/others”

Table 2. The effect of worldview on an individual altruistic behavior

Dependent var. (Donation: 0~10) Model: OLS	(1) Korean Church in Korea	(2) Japanese Church in the US	(3) US Church in the US	(4) US Student in the US (Christians)	(5) Japanese church in Japan	(6) Japanese Univ. Students in Japan (Whole)	(7) Japanese Univ. Students in Japan (christianity)
Bad Behavior to be Punished (0~100)	-0.0302* (0.015)	-0.0418** (0.016)	0.1113 (0.168)	-0.1713 (0.223)	0.0185 (0.020)	0.0091 (0.009)	-0.0354* (0.019)
Constant	4.7178*** (0.651)	3.7170*** (0.646)	1.4195*** (0.476)	6.3634*** (1.041)	4.0855** (1.661)	1.4401*** (0.315)	5.3455*** (0.730)
Observations	29	23	27	19	28	30	23
R-squared	0.126	0.238	0.017	0.034	0.031	0.033	0.143

5. Discussion and Conclusion

Our main estimation result indicates that among Korean and Japanese people who attend church or identify themselves as Christians, those with the punishment-related worldview are less likely to donate. One possible interpretation is that the punishment-related worldview might be correlated with the way to perceive suffering. If those with the punishment-related worldview think that suffering is resulted from the one's deeds such as bad deeds, they would not like to make a charitable donation to those who suffer, because they believe being poor is his or her responsibility. If this holds true, this unobserved perception about the origin of suffering may be reflected in a low participation in donation among Korean and Japanese Christians who have the punishment-related worldview. As for the Korean respondents, the negative effect of the punishment-related worldview can be further interpreted as follows. In Korea, every participant donates at least 10% of what they have, and this may make them feel less obligated to give more than 10%, if they do not connect their altruistic behavior to bad deeds that bring on punishment. In other words, if they think that non-altruistic behavior can be considered as bad deeds, they would make more donations not to be punished.

In contrast, this negative relationship between punishment-related worldview and donation is not observed among American Christians in our study. This might suggest the difference in the perception of the punishment-related worldview between Christians in America and both Japan and Korea. More specifically, the perception of God may be different by doctrine of church. This particular church in America has the doctrine of perseverance indicating that if you have a faith in Christ, you will never lose salvation. In other words, they might believe that once they believe in God, God would not punish them for any behaviors. The doctrine of perseverance can be found in churches in Korea and Japan. It means that although doctrine of church may explain the result of American church in our study, it does not necessarily explain the difference between American Christians and both Japanese and Korean Christians.

In contrast to the negative relationship between the punishment-related worldview and the altruistic behavior observed among Japanese Christians in America and Japanese Christian

university students in Japan, the effect of punishment-related worldview is insignificant among the Japanese church attenders in Japan. One possible reason behind the insignificant relationship may be simply because of the small sample size. Not only for this group, should it be noted that our results for other groups are based on a small number of sample, mainly because of the difficulty to receive the permission to run the experiment in churches and other institutions. The ideal strategy is to conduct experiments with large subject pools from sociologically different groups including churches and universities within a society so that the subject pools can ascertain the randomness and representativeness. Thus, the results could not be generalized and do not suggest the causal relationship. Further research is required for more concrete comparison between countries and between Christians and non-Christians.

Our overall estimation results should be interpreted as hinting that worldviews might act as a set of rules that determine individual altruistic decision. In other words, this study only suggests that religious worldview, in particular, the punishment-related worldview might affect individual altruistic behavior toward anonymous others among Christians. However, our study also suggests that the punishment-related worldview differs among people with the same religious background and its effect on the altruistic behavior might vary by the doctrine of church and by country.

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Appendix A. Distributions of “There are rewards for good deeds”

