



GÖTEBORGS UNIVERSITET  
HANDELSHÖGSKOLAN

**WORKING PAPERS IN ECONOMICS**

**No 330**

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A Quasi-Experimental Study with *Madrasah*  
Pupils in a Rural Community in India**

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**December 2008**

**ISSN 1403-2473 (print)  
ISSN 1403-2465 (online)**

## **Are Religious People More Prosocial?**

**A Quasi-Experimental Study with *Madrasah* Pupils in a Rural Community in India**

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Date: 3 December 2008

Number of words: 3 961

## **Are Religious People More Prosocial?**

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#### **Abstract**

Using quasi-experimental data, this paper examines the relationship between religiosity and prosocial behavior. In contrast to previous studies which identify religious people by how often they attend religious services or by their self-reported religiosity, this study compares the behavior of highly devout students who are preparing to enter the clergy, to the behavior of other students in a public-goods game and in the dictator game. The results show that religious students were significantly more cooperative in the public-goods game and significantly more generous in the dictator game than other students.

Keywords: Generosity, trust, cooperation, religion, experiment.

JEL Classification: C9, Z12.

## Introduction

Social scientists have long considered religion to be an important determinant of individual behavior, societies, and economic and political phenomena.<sup>1</sup> Most of all, many social scientists have suggested that religion has an important influence on prosocial behavior.<sup>2</sup> This paper presents a quasi-experiment where the relationship between religiosity and prosocial behavior is examined. The experiment relies on two economic games: a three-person public goods game and the dictator game.

The public goods game is a standard game in experimental economics and is ideal for studying cooperation among people (see Kagel and Roth, 1995, for a review). In its basic form participants anonymously choose how much of a given endowment to invest into a public pot. The contributions in the public pot are then multiplied by a positive integer to encourage contribution. Each participant then gets the portion of the endowment they do not contribute plus an even split of the public pot. This ends the game. The dictator game, introduced by Kahneman, Knetsch, and Thaler (1986), is also a well-known and frequently used game in economics and psychology to study generosity. This is a two-person game in which the first player, the dictator, must decide how to distribute a sum of money between her- or himself and a second player, the recipient. The recipient must accept the dictator's decision. Thus, this paper investigates whether religious people are more cooperative and more generous than others.

Several papers have previously used experiments to examine the extent to which religiosity is related to prosocial behavior. However, the results of previous studies are mixed and point in different directions. Some papers have found a relationship between religion and prosocial behavior, while others have not. Eckel and Grossman (2004) examined differences in the amount and pattern of giving to secular charities in response to subsidies by self-identified religious and nonreligious participants. Their results revealed no significant

difference between religious and nonreligious people in either the amount or pattern of giving. Tan (2006) used the dictator game and the ultimatum game, and similar to Eckel and Grossman (2004) he found that religiosity, measured by the responses to different survey questions, had no significant influence in the experiments. Similarly, Ahmed and Salas (2009) found no relationship between self-reported religiosity and voluntary contributions in a public goods game. Orbell, Goldman, Mulford, and Dawes (1992) focused on whether religiosity affects cooperation by using the prisoner's dilemma game. They conducted their experiment in what they considered more religious and less religious towns. They found no general relationship between religious affiliation and cooperation; however, they found that cooperation did increase with church attendance. Ruffle and Sosis (2006) studied the relationship between religion and cooperation but used a public goods game. They found that religious people were more cooperative with anonymous religious people than they were with anonymous nonreligious people. Similar results have been reported for the trust game by Johansson-Stenman, Mahmud, and Martinsson (2009) and Tan and Vogel (2008): more religious trustees were trusted more, and such behavior was more prominent among religious trustors. Tan and Vogel (2008) also found that self-reported religious trustees were more trustworthy than nonreligious people in the trust game.<sup>3</sup>

This paper differs from the previous experimental literature in one important way. In previous studies, people's religiosity is either self-reported or measured in terms of church attendance. The problem with the self-reported measure is that each person has a different understanding of what constitutes religiosity. People can be spiritual without espousing any religious faith. Further, people who are not religious might attend church services. Church attendance does not necessarily mean that people practice the precepts of their religion. For this reason, this paper uses another way of categorizing people into religious and nonreligious people. The present study compares the behavior of religiously

devout students, who are studying to become *imams* (Shiite priests), to the behavior of other students. It is reasonable to assume that someone who has decided to enter the clergy will make a greater effort to adhere closely to the doctrines of that religion.

The results in this paper show that religious participants behaved more prosocially than other participants: Religious participants contributed significantly more in the public goods game and sent higher amounts in the dictator game than did other participants.

### **Method**

A total of 102 men participated in the experiment, which was conducted in March 2006 in a small town called Nowganwan in Uttar Pradesh in India. Forty-two were students in religion and theology, imams-in-training, recruited from two *madrrasah's* (religious Muslim schools) and 60 were students in the social sciences recruited from the local men's college. (For the sake of simplicity I will from now on refer to the imam students as religious students and to the other students as nonreligious students.) The average age of both the religious and nonreligious students was 17 years. The students were informed about the study in regular classes. Those who wished to participate in the study signed up on a list that was circulated in the class. Students were informed that their participation was voluntary and that they would be paid INR20 for their participation, with the opportunity to earn more during the experiment. The participants had to appear at a specified room at a set time and date. Two sessions were scheduled at the religious schools (one in each religious school) for the religious students and two sessions were scheduled at the secular school for the nonreligious students. In each session participants were placed in a single classroom. Once they were seated they were told to not communicate to each other during the experiment.

The procedure was as follows. All instructions and information were given verbally. Once participants were seated they received their show up fee of INR20 (INR100 =

US \$2.40) and then the public goods experiment started. Each participant was given two envelopes: one green and one red. The green envelope contained INR100 in INR10 bills and the red envelope was empty. Participants were told that they had been randomly paired with two other participants so as to form a group of three people and that the other members of their group also had received the two envelopes. Participants never knew the true identity of the others in the group at any stage of the experiment. However, they knew that their group members belonged to their own school. They were told that the green envelope with the money belonged to them but they had the opportunity to invest some, all, or none of their INR100 in a common project with the other group members. They could keep the money they did not invest. They were told that the money that each participant in the group chose to invest would be added up and multiplied by 1.5, increasing the total amount of money that a group of participants contributes by 50 percent. The new sum of money would then be divided and distributed equally among the group members.

After the description of the experiment, examples were given and participants were allowed to ask questions. When all of their questions had been answered, participants were asked to put the amount of money they wished to invest in the red envelope. Participants did not know at any stage of the experiment how much money other members of their group had contributed. The final amount of money given to each participant was the money they decided not to invest and the amount of money they got back from the project.

After the red envelopes had been collected the dictator game experiment was initiated. Two new envelopes were distributed to participants: a green one containing an additional INR100 and one red containing nothing. Participants were told that the money in the green envelope belonged to them and that they had been paired with another person who had not received any money. In reality, however, participants were not paired with anyone. Participants were told that they could share some or none of their money with their partner.

Participants were asked to put the money, if any, they wished to give to the other person in the red envelope. Finally, the red envelopes for the dictator game were collected.

Since participants kept the amount of money they did not invest in the public goods game and the amount of money they did not donate in the dictator game (the remaining money in the green envelopes), only returns from the public goods game had to be calculated and paid to the participants after the experiment. These returns were calculated according to the experimental rules, that is, the contributions of three randomly selected participants was summed, multiplied by 1.5, and then divided by 3. Donations from the dictator game were given to a charity in the town. Hence, what participants thought they were giving to another person actually went to a charity.<sup>4</sup> The experiment took about 30 minutes.

### Findings

Let us start with the results for the public goods game, summarized in Table 1. The amounts given in the table are out of INR100. Hence, the figures can also be interpreted as the percentage of the endowment that participants on average contributed. Religious participants contributed on average 66 percent of their endowment while the corresponding percentage for nonreligious participant was 51. Thus, religious participants contributed on average INR15, or 15 percentage points, more than nonreligious participants. This difference is statistically significant ( $p = 0.014$ ).

[Table 1 about here]

The second row in Table 1 tabulates the percentage of participants that contributed nothing. Less than 3 percent of the religious participants and 15 percent of nonreligious participants kept all of the money that had been given to them. This difference is



statistically significant ( $p = 0.044$ ). Further, the last row in Table 1 tabulates the average contribution by participants that made nonzero contributions. Among religious participants, these nonzero contributions averaged 68 percent. The corresponding figure for nonreligious participants was 60 percent. The difference of 8 percentage points is not statistically significant. Thus, the difference between religious and nonreligious participants lies in the number of participants that decides to contribute positive amounts.

The results for the dictator game are summarized in Table 2. Nonreligious participants donated on average 13 percent of their endowment. This amount is significantly less than the average amount donated by religious participants: 22 percent of their endowment ( $p = 0.006$ ). In the dictator game, religious participants donated on average INR9 more than nonreligious participants.

[Table 2 about here]

Almost 24 percent of the religious participants and 48 percent of the nonreligious participants donated nothing. This difference is large and statistically significant ( $p = 0.014$ ). Religious and nonreligious participants who decided to donate nonzero amounts donated on average 29 and 25 percent, respectively. This difference is, however, not statistically significant. Hence, as in the case of public good experiment, the overall difference in donations by religious and nonreligious participants is clearly driven by the number of participants in each group that decided to donate nonzero amounts.<sup>5</sup>

## Discussion

This paper have used quasi-experimental data to examine the differences in the amount contributed in a public goods game and differences in the amount donated in the

dictator game by religious and nonreligious students. The results show that religious participants contributed significantly higher amounts in the public goods game and donated significantly higher amounts in the dictator game than did other participants. The overall differences between religious and nonreligious participants were totally driven by the number of participants that chose to contribute nonzero amounts. Hence, there was no difference between religious and nonreligious participants in either game when only looking at nonzero contributions and donations.

The results in this paper offer experimental evidence in favor of what is a common assumption in most theories of religion: religion has the effect of emphasizing prosocial behavior. However, it is important to acknowledge that there might be several other explanations to the findings besides religion. One possible explanation could be that more prosocial people choose to enter the clergy. After all, becoming a priest involves helping people in different ways. Another explanation could be that secular students are less prosocial than religious students since they might have been exposed to economics courses more than religious students. There is a substantial amount of literature showing that schooling might be related to prosocial behavior. For example, it has been shown that economics students behave differently compared to other students (see, for example, Ahmed, 2008; Frank, Gilovich and Regan, 1993; and Marwell and Ames, 1981). It is argued that students that have been exposed to the economic theory may act more selfishly than other students.

One explanation is related to the ecological setting of the experiment. Students in the experiment did not know the identity of the group members in the public goods game and did not know the identity of the recipient in the dictator game. However, the experiment with religious students was conducted at the religious schools and the experiment with nonreligious student was conducted at the secular school. Religious students obviously knew that students participating at their school were religious. Hence, even if religious students did

not know the identity of the group members in the public goods game and did not know the identity of the recipient in the dictator game, they still might have had some general knowledge that applied specifically to religious students and that could have affected their behavior.

Research on the relationship between religiosity and delinquency, for example, have shown that religious people are less likely than others to commit delinquent acts, but only in societies where the majority of people are actively religious (see, for example, Stark, 1996 and Stark, Kent and Doyle, 1982). Similarly, one could hypothesize that religious students were more prosocial than other students because they were surrounded by their own kind. This is possible, for example, if people think that religious people hold on to prosocial norms. When surrounded by secular people, on the other hand, there is no reason to think that others value prosocial behavior. This is a normative explanation which suggests that religious norms cause prosocial behavior.

Putting the results of this paper together with the findings of some previous studies support a “religious environment hypothesis”. Recall that Ruffle and Sosis (2006) showed that religious people were more cooperative when they were surrounded by religious people compared to when they were surrounded by other people. Similarly, Johansson-Stenman, Mahmud, and Martinsson (2009) and Tan and Vogel (2008) found that religious trustees were trusted more especially when the trustors were religious. Altogether, these findings suggest that perceptions of others’ religiosity count. A normative mechanism might, therefore, have had a role on people’s behavior in the present study.

A last explanation to the findings in this paper is also related to the social environment of the experiment but is grounded in the priming literature. Randolph-Seng and Nielsen (2007) showed that primed religious representations had an automatic influence on prosocial behavior regardless of prior religious belief. They found that participants primed

with religious words cheated significantly less on a subsequent honesty test. Similar results are reported by Ahmed and Salas (2008) and Shariff and Norenzayan (2007). Could a religious social environment then have a similar automatic influence on people? If religious participants had been tested in a neutral location, would they have shown a different behavior from what we have seen in the present study? Or, similarly, if secular students had participated in the experiment at a religious location, would they have behaved more prosocially? Future carefully conducted tests are necessary to answer these questions.

Subsequent research should also investigate whether the results found in this paper using lab experiments may be extended to more natural settings. What people do in the lab may not correspond to what they do in real-life situations. Further, participants in our study had a Muslim background and the experiment was conducted in India. It would be interesting to examine how consistent the results are across religions, countries, and cultures. Finally, our sample only contained male participants. In order to draw more general conclusions a representative pool of participants is necessary. Replications in other religious contexts and other populations are necessary before findings can be generalized.

### **Acknowledgements**

Helpful comments and suggestions by seminar participants at different occasions and by two anonymous reviewers and are gratefully acknowledged. This project was financially supported by Jan Wallanders and the Tom Hedelius Foundation.

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### Notes

<sup>1</sup> Some classical references where the role of religion has been emphasized are Marshall (1890 [1997]), Smith (1776 [2003]), and Weber (1905 [1930]).

<sup>2</sup> See, for example, Batson (1983), Erikson (1963[1993]), Freud (1927[1989]), James (1902[1994]), Johnson, Stopka and Knights (2003), Kirkpatrick (1999), and Skinner (1969).

<sup>3</sup> I have limited the discussion of previous literature to papers that have emerged from the economic discipline and that have used economic games to measure prosocial behavior. These papers are the ones that are most related to the present study. For the record, however, it should be noted that there also exists a large body of experimental social psychological literature as well as non-experimental literature on religion and prosocial behavior that has not been reviewed here. For an overview of the experimental social psychological literature, see for example, Batson, Schoenrade and Ventis (1993) and Spilka, Hood, Hunsberger and Gorsuch (2003). For reviews of non-experimental papers see Batson, Schoenrade and Ventis (1993), McCullough and Worthington (1999), Saroglou (2002), and Saroglou, Delpierre and Dernelle (2004).

<sup>4</sup> There is a matter of deception here. The reason for giving the donated money from the dictator game to charity was to simplify the administration of the experiment and the difficulty of recruiting participants. Participants were, however, debriefed about this after the experiment. The reason for not telling the participants about the real recipient, the charity, during the experiment was that the charity was administrated by a religious organization.

<sup>5</sup> For the record, since the same people participated in both games it might be interesting to know that participants that were more generous in the first game were also more generous in the second game. Pearson's correlation between the contributions in the public goods game and the dictator game for the total sample was 0.409 ( $p < 0.001$ ). For religious

participants the correlation was 0.386 ( $p = 0.012$ ) and for nonreligious participants the correlation was 0.372 ( $p = 0.003$ ).

Table 1

Summary of results for the public goods game

	Religious ( <i>N</i> = 42)	Nonreligious ( <i>N</i> = 60)	<i>p</i> -values
Mean contribution	65.95 (21.76)	51.33 (31.38)	<i>p</i> = 0.014
Percentage contributing zero	2.38% (1/42)	15.00% (9/60)	<i>p</i> = 0.044
Mean nonzero contribution	67.57 (19.34)	60.39 (24.57)	<i>p</i> = 0.112

*Note:* Amounts are out of INR100. Differences between means are tested with the Mann-Whitney-Wilcoxon test and differences between proportions with the Fisher exact test.

Table 2

Summary of results for the dictator game

	Religious ( $N = 42$ )	Nonreligious ( $N = 60$ )	$p$ -values
Mean contribution	22.14 (17.61)	13.00 (15.33)	$p = 0.006$
Percentage contributing zero	23.81% (10/42)	48.33% (29/60)	$p = 0.014$
Mean nonzero contribution	29.06 (14.22)	25.16 (12.08)	$p = 0.263$

*Note:* Amounts are out of INR100. Differences between means are tested with the Mann-Whitney-Wilcoxon test and differences between proportions with the Fisher exact test.