Understanding Trust in a Segmented Society[1]

Adeline Delavande

RAND Corporation and Nova School of Business and Economics

Basit Zafar[2]

Federal Reserve Bank of New York

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Abstract

This paper investigates how trust operates in Pakistan, a society segmented along social, religious, and ethnic lines, and mired in conflict. We randomly match 1,521 male students from four Madrassas (religious seminaries), an Islamic University, and two liberal universities with each other in several experiments of economic decision-making, and observe differences in their decisions as match type is varied. These three groups clearly represent three different identities within the Pakistani society. At one end of the spectrum, participants are young males from poorer backgrounds who attend religious schools that are thought by many to be linked to violence. At the other end of the spectrum are wealthy students exposed to Western-type of education. In this setting, our results are rather surprising. First, we don't find any evidence of in-group bias for any group and can reject the hypothesis that behavior in the experiments differs by match type. Second, we find a high level of trust among all groups, with students enrolled at Madrassas being the most likely to trust. Third, we find that students of liberal universities underestimate the trustworthiness of Madrassa students, suggesting that an important segment of the society has mistaken stereotypes about students in religious seminaries.

I. Introduction

Most human exchanges require some level of trust and cooperation. Trust is a central component of a community's social capital, enhances efficiency, is crucial for overall economic growth, and an important driver of financial development (Knack and Keefer, 1997; La Porta et al., 1997; Putnam, 2000; Guiso, Sapienza, and Zingales, 2004). Trust becomes even more crucial in settings with incomplete contracts or failing institutions (Ostrom, 1990; Fukuyama, 1995). This paper sets out to address the question of how trust operates in Pakistan.

Pakistani society can be characterized as one with weak institutions, fragmentation and polarization along social, religious, and ethnic lines. These symptoms of the society make it a ripe candidate for conflict (Blattman and Miguel, 2010; Esteban, Mayoral and Ray, 2010). In fact, the country has experienced violent conflict for the last several years: Figure 1 shows that Pakistan had 2,670 terrorism-related deaths in 2009, placing it third in a worldwide rank, close behind Iraq and Afghanistan. All these features make the Pakistani society particularly intriguing to address the question of how trust operates within. On the one hand, the fragmentation of a society, in particular along ethnic lines, is thought to weaken social cooperation. Several studies document a negative relationship between ethnic fragmentation and economic growth, especially at low levels of development and in non-democracies (e.g., Easterly and Levine, 1997; Collier and Gunning, 1999; Alesina and La Ferrara, 2005). One possible explanation for this is that social sanctions, which are critical when institutions are weak, are harder to implement in places that are more ethnically diverse (Easterly, 2001; Alesina and La Ferrara, 2005; Miguel and Gugerty, 2005; Miguel, 2006). On the other hand, violence and conflict may improve social capital within a community. Recent evidence suggests that exposure to violent conflicts increases the willingness to invest in trust-based transactions and to contribute to a collective good (Gilligan, Pasquale, and Samii, 2010), enhances altruistic behavior toward neighbors (Voors et al., 2010), and promotes local collective actions and political participation (Bellows and Miguel, 2009; Blattman, 2009). Fragmentation and conflict may thus have opposite effects on trust. Which effect dominates among various groups of young Pakistanis, where one group is perceived as fostering violence, is an important empirical question.

We investigate how trust operates within groups that emerge endogenously among Pakistani youth using an experimental approach. More specifically, we randomly match 1,521 male students from four Madrassas (religious seminaries), an Islamic University, a liberal university, and a liberal Western-style university in two cities in Pakistan with each other in several experiments of economic decision-making, and observe differences in their decisions as match type is varied. These institutions (or groups) are ideologically and socially disparate. Madrassas usually don't impart any secular teaching and use texts going back before the 14th century. Islamic Universities provide a Liberal Arts curriculum combined with Islamic teaching, while liberal universities are similar to U.S. colleges. There is substantial sorting by socioeconomic characteristics and very different levels of religiosity and exposure to Western

ideas across the various groups. For example, in our sample, Madrassa students' parental income is one-tenth that of liberal Western-style university students, and their father's (mother's) education is about one-half (one-fourth) that of liberal Western-style university students. Self-reported religiosity (on a scale from 0 to 10) is 9.2 among the Madrassa students and 5.3 among the Western-style university students. It is also important to note that Madrassas stand out from the other groups by the fact that they are often claimed to be responsible for fostering militancy and violence, especially since 9/11, by policy makers and the popular press that sometimes refer to them "jihad factory" or "weapons of mass instruction" (Rashid, 2000; Stern, 2000; Ali, 2009; Rahman, 2008). Having Madrassa students participating in experimental games is a unique feature of this paper. Overall, the groups we consider clearly represent distinct identities within Pakistan.

We use a multiple-game design that measures trust (trust game), expected trustworthiness (expectations in the trust game) and other-regarding behavior (dictator game) to test four main hypotheses: (1) Is there an in-group bias in trust? (2) Do individuals discriminate in their trust in favor of or against any particular group? (3) Is the discrimination taste-based or statistical (stereotype-based)? (4) Are the stereotypes accurate?

In this setting with strong sorting into different groups and one group being perceived as potentially responsible for violence, our results from the trust game are rather surprising. First, we don't find any evidence of in-group bias for any group, and can reject the hypothesis that behavior in the trust game differs by match type. Second, we find a high level of trust among all groups, with students enrolled at Madrassas being the most likely to trust. This later result is consistent with religious teachings that emphasize selflessness, but also casts doubt on the general perception of Madrassas teaching hatred and indoctrinating their students in narrow world-views.

There are several dimensions of preferences and beliefs that may motivate a subject in the trust game, such as unconditional other-regarding preferences, beliefs about trustworthiness of the partner, and risk preferences (Cox, 2004). While we don't find differences in the trust game by match type, such a behavior may still be consistent with different levels of trust and preferences towards certain groups. We next try to decompose behavior in the trust game. Behavior in the dictator game allows us to test for differences in unconditional other-regarding preferences (taste-based preferences) for the different groups. Again, we don't find evidence of in-group bias, or discrimination in favor or against any particular group. We also have subjective expectations of students about how much they expect to receive back from the match which measures expected trustworthiness. We find that students from liberal universities expect Madrassa students to send back less relative to other groups. Moreover, these beliefs are statistically very different and lower than the amount that Madrassa students actually send back, suggesting that some groups within the Pakistani society have mistaken stereotypes about Madrassas students. We also find that Madrassa students typically over-estimate the trustworthiness of Liberal University students.

These results contrast sharply with the existing literature on group identity and behavior. The influence of group membership on individual behavior has been widely studied in social psychology (Tajfel, Billig, and Flament, 1971), where group identity is induced exogenously by assigning participants to "minimal" groups which are arbitrary labels such as blue or red group. These studies have found that even ad-hoc and trivial group categorizations lead to in-group bias and discrimination against the outgroup (Tajfel and Turner, 1986). Since the introduction of identity into economic analysis by Akerlof and Kranton (2000), several economic studies have analyzed the impact of social/group identity and behavior, and find similarly a strong impact of group membership on behavior. One strand of this literature uses induced group membership, similar to that used in social psychology to study the link between group membership and individual behavior (see, for, example, Charness, Rigotti, and Rustichini, 2007; Chen and Li, 2009; Heap and Zizzo, 2009; Sutter, 2009; Benjamin, Choi, and Strickland, 2010). The other approach uses existing groups such as ethnic groups, clans, and residential groups (Fershtman and Gneezy, 2001; Bernhard, Fehr, and Fischbacher, 2006; Falk and Zehnder, 2007).[3] While the selection into groups makes the causal inference of group membership effect harder (an issue that does not arise when inducing group membership), using existing groups, like we do in this study, is a valuable approach to understand, from a policy perspective, how trust operates in a segmented society mired in conflict.

Studies that focus specifically on behavior in the trust game, using either induced groups (Heap and Zizzo, 2009) or existing groups (Glaeser et al., 2000; Freshtman and Gneezy, 2001; Falk and Zehnder, 2007), find evidence of either in-group bias, negative discrimination against outgroups, or discrimination against a particular group. The study that is closest to the approach used in this paper is Freshtman and Gneezy (2001) who also use a multiple-game approach and match students with typical ethnic names in Israel with each other. They find strong evidence of discrimination against Eastern Jews (by both Ashkenazic and Eastern Jews) in the trust game, and upon observing similar behavior in the dictator game deduce that this discrimination is based on (mistaken) stereotypes. One key difference between the two papers, other than the different settings and different measures of group identity, is that we also have expectations data that is directly elicited from respondents about their match's trustworthiness, which allows us to more directly decompose the behavior in the trust game. Falk and Zehnder (2007) use a somewhat similar approach to study trust amongst residents of twelve residential districts of Zurich, and document evidence of in-group bias as well as (statistical) discrimination that varies by districts.

One possible explanation for the high level of trust in our data may be, as mentioned above, that violence within the society unifies people and, in our context, consolidates social capital more than segmentation weakens it. The existing empirical evidence relying on experimental game documents that, within a country that recently experienced a civil war,

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[3] A third approach is to use real social groups with random assignment, as in Goette, Huffman, and Meier (2006; 2010). This approach is less common because of the difficulty in finding real groups without selection.

individuals or communities with greater exposure to violence display more altruistic or more trusting behavior towards neighbors (Voors et al. (2010) in Burundi, and Gilligan et al. (2010) in Nepal). Our paper does not directly test for the impact of individual exposure to violence on trust and takes place in a country where conflict is still on-going. However, given how widespread violence is in Pakistan, we speculate that conflict may play a role in explaining our results.

The paper is organized as follows. We provide background information on Pakistan, Madrassas and the groups we consider in Section II. Section III describes the data and Section IV the empirical results. We discuss potential confounding factors for our results in Section V and provide concluding remarks in Section VI.

II. Background

II.A Pakistan: a segmented society mired in conflict

With a population of 184 million and a GDP per capita of $2,400 (The World Factbook, 2010), Pakistan is a populous and rapidly growing middle income country. Since its creation, it has been in search of a national identity. The various identities coming from religious, regional and national belonging were articulated about a decade ago by the nationalist Wali Khan when he declared to have been a Pashtun for 4,000 years, a Muslim for 1,400 years and a Pakistani for 40 years (Talbot, 2009). Today's Pakistan is still segmented along various lines.

The first divide is economic. While an estimated 24% of the population live under the poverty line, estimates based on a multidimensional poverty index such as financial poverty, illiteracy or children out of school, poor housing and physical household assets show that 54% percent of Pakistanis live in a state of multiple deprivations, with vast differences between rural (69%) and (21%) urban poverty rates (Jamal, 2009).

The second divide is religious. Ninety-five percent of the population is Muslim (Sunni 75%, Shia 20%) while the remaining includes Christian and Hindu (The World Factbook, 2010). In addition to the Sunni-Shia divide, there is also sectarian rivalry within Sunnis between Barelvis, that uphold devotional practices such as elevating Muslim saints, and Deobandis, that seek to eliminate such practices (Talbot, 2009).

A third divide is ethnic and linguistic. The larger ethnic minority are Punjabi (45% of the population), followed by Pashtun (15%), Sindhi (14%), Sariaki (8%), Muhajirs (8%), Balochi (4%) (The World Factbook, 2010). The language divide mirrors the ethnicity divide. Only 8% of the population speaks Urdu, the official language (Talbot, 2009).

A fourth divide is regional (see Figure 2). Punjab dominates demographically with 56% of the population and economically due to a considerable agricultural advantage and industrial development in the Zia era, along with large remittances from the Middle East (Talbot, 2009). This status has been the cause of increasing resentment among the other regions. Fifty-two percent of the Punjab population is classified poor according to Jamal (2009)'s index, compared to 74 % in Balochistan.

In addition to the segmentation highlighted above, another characteristic of today's Pakistan is violence and terrorism. Figure 1 shows that Pakistan had 2,670 terrorism-related deaths in 2009, placing it third in a worldwide rank. Terrorism-related incidents are not merely confined to certain troubled areas and are widespread across the country.[4] In a survey we conducted in 2010 on a random sample of people living in Islamabad/Rawalpindi and Lahore, we find that 14% of the respondents report knowing a victim of a violent attack. These attacks have been attributed to a number of causes: sectarian violence, secessionist movements, backlash effect of the Afghan war ("Kalashnikov culture" and jihad mentality), the conflict with India over Kashmir, Islamist insurgent groups and forces such as the Taliban, and the society's segmentation (Talbot, 2009).

II.B The Madrassas in Pakistan

In recent years, and in particular after 9/11, there have been claims by policy makers and the popular press that Islamic religious schools—Madrassas—in Pakistan are responsible for fostering militancy and violence, and have sometimes been labeled as "weapons of mass instruction" or "jihad factory" (Rashid, 2000; Stern, 2000; Ali, 2009; Rahman, 2008).

Despite popular thinking, there is considerable controversy about the link between Madrassa and militancy (Billquist and Colbert, 2006; Fair, 2008; Asal, Fair, and Shellman, 2008; Winthrop and Graff, 2010). According to Winthrop and Graff (2010), while some Madrassas are linked to sectarian militancy, the majority is non-extremist. Asal et al. (2008), who conducted surveys in Pakistan with families who have lost a son to militancy in Kashmir and Afghanistan, conclude that there is no evidence that Madrassas are a principle place for militants' recruitment.

One relevant question is whether Madrassas "teach terror". Madrassas admit students of all ages. At earlier levels, students usually learn to read and memorize the Quran. The Madrassa curriculum, at advanced stages, focuses on the *Dars-e-Nizami*, which is taught for 8 years after the completion of elementary school and covers religious sciences (e.g., jurisprudence, the Qur'an and its commentaries) and rational sciences such as Arabic grammar and literature, logic, and rhetoric (Rahman, 2008).[5] The books for these subjects are texts going back to before the 14th century and classes are typically taught in Urdu (Fair, 2006; Rahman, 2008). Majority of the Madrassas don't impart any secular or vocational training and it has been argued, albeit with scant evidence, that they deliberately educate their students in narrow worldviews and do not train them sufficiently for the real world (Ali, 2009). In fact, the Pakistani government (in particular, during the Musharraf regime) has made a strong push for Madrassa reform at the behest of the United States (The 9/11 Commission, 2004; Fair, 2008).

Another important question to understand the extent of Madrassas' influence in Pakistan is to determine how many students study in them. The number of Madrassas has undeniably

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[4] Of the 500 bomb blasts in 2009 and 473 in 2010, 35 occurred in Punjab or Sindh. As for suicide attacks, of the 76 attacks in 2009, 19 occurred in Punjab or Sindh. Of the 49 in 2010, 7 happened in Punjab or Sindh (South Asia Terrorism Portal).

[5] This certification is recognized to be equivalent to a Bachelors or Masters degree by the Ministry of Education.

increased, especially in the 1980s during the Soviet war in Afghanistan when Madrassas were established in Afghan refugee camps to train fighters for the resistance movement (Winthrop and Graff, 2010). However, there is large disagreement over the extent of the penetration of Madrassas: Estimates of Madrassas' enrollment vary from less than 1% (Andrabi et al., 2006) to 33% (International Crisis Group Report, 2002) of all enrolled students. One reason why figuring out the extent of enrollment in Madrassas remains challenging is that many are unregistered-according to Rashid (2000), less than a third of Madrassas are registered. Recent studies put the enrollment in registered Madrassas in the 1-7% range (Fair, 2008; Pakistan Ministry of Education). Regardless of the source that one considers credible with regards to Madrassa enrollment, the picture indicates that a non-trivial fraction of Pakistani youth study in Madrassas.

A key feature of the Madrassas is that they generally tend to be free. In a country with a dilapidated public educational system (Winthrop and Graff, 2010), it is believed that Madrassas offer an alternate schooling system to those families which may not be able to afford the more expensive private schools (Singer, 2001). Therefore, it is believed that it is the poorest families that send their children to Madrassas (Rahman, 2004; New York Times[6]).[7] Related to potential link between Madrassas and militancy, we note that the existing literature does not find a causal link between low educational attainment/poverty and terrorism (Krueger and Maleckova, 2003; Abadie, 2006; Berrebi, 2007; Krueger, 2007)

II.C Group identity

We seek to investigate trust among young Pakistanis belonging to distinct groups. We focus on endogenous groups that vary in socio-economics characteristics, religiosity, exposure to Western ideas, and type of education they receive.

In our set-up, the "group" is the institution where the students study at the undergraduate level. Therefore, our notion of group only applies to those who are highly educated. Overall, in Pakistan in 2008/2009, 8.3% of the males aged 21 or more had a Bachelor degree or more. The rate increases to 14.8% among those currently working in an urban area.[8] Groups are endogenous because there is selection into schools. We consider three main groups: Madrassas, Islamic Universities and Liberal Universities.

Madrassas and their curriculum have been discussed above: Students typically come from modest origins, have limited exposure to Western ideas in school, study in Urdu and base their studies on religious texts. The higher levels of Madrassas produce an Alim (Islamic scholar

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[6] Sabrina Tavernise, "Pakistan's Islamic Schools Fill Void, but Fuel Militancy", May 3, 2009. http://www.nytimes.com/2009/05/04/world/asia/04schools.html (accessed January 31, 2011).

[7] Andrabi et al. (2006), however, argue against the hypothesis that poverty drives individuals to Madrassas. In their sample, they find little difference between poor and rich households in the choice of religious schooling.

[8] Source: Authors' computation from the 2008/2009 Pakistan Labor Force Survey.

and/or teacher). Most students who graduate from a Madrassa go on to work in the religious sector.

Islamic Universities provide a Liberal Arts curriculum combined with Islamic teachings and courses. For example, Economics is taught with a focus on Islamic principles of finance. These universities have segregated campuses for males and females, and classes are taught in Arabic or English. These institutions tend to be public and, therefore, are accessible to low and middle income groups. Moreover, a relatively large proportion of students at such universities have typically studied for some time at Madrassas before enrolling.

Liberal Universities are similar to American colleges. They provide a Liberal Arts curriculum. Classes are taught in English and campuses are mixed. Tuition at such institutions tends to be very expensive.

These three groups clearly represent three different identities within the Pakistani society. At one end of the spectrum we have young males from poorer backgrounds who attend religious schools that are thought by many to be linked to militancy and extremism. At the other end of the spectrum we have wealthy students exposed to Western-type of education.

Our measure of group identity is both a measure of religious identity as well as social class. We believe this should strengthen identification with one's group. However, this would also make interpretation of the results harder. For example, if we were to find discrimination by a particular group, it would be challenging to infer how much of it was because of social class (selection into institutions by observables) and how much of it was because of teachings at that particular institution.

III. Data

We conducted experiments in two male Sunni Madrassas from Barelvi school of thought, two male Sunni Madrassas from Deobandi school of thought, one Islamic University (IU), and two liberal Universities located in Islamabad/Rawalpindi and Lahore between May and October 2010.[9] Because they differ slightly in the students' characteristics and tuition level (as we show below), we classify the two liberal universities into liberal Western-style (LU-W) and liberal modern (LU-M) universities. The liberal Western-style university is more selective and liberal than the modern university, and it caters to a higher socioeconomic segment of the society.

The Islamabad/Rawalpindi metropolitan area is the third largest in the country with a population of about 4.5 million. Islamabad, the country's current capital, was constructed in 1960 adjacent to Rawalpindi, an older city which houses the army's headquarters. Lahore is the capital of the province of Punjab and the country's second largest city with about 10 million inhabitants. While both are vibrant urban centers, the Islamabad/Rawalpindi metropolitan area is located closer to Afghanistan and the tribal areas (see Figure 2), and has greater ethnic diversity

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[9] Female Madrassas tend to be small. Since large sample sizes are needed for the randomizations in the experiment, we did not include them in our sample.

compared to Lahore. However, Punjabis are the dominant ethnic group in both metropolitan areas.

The institutions in our sample are amongst the 5 largest and well-regarded institutions in the relevant category in each city. Among all the institutions we contacted, one university and one Madrassa refused to participate. We sampled the most senior students in the 4 Madrassas since they're similar in age to university students, and are pursuing degrees that are equivalent to Bachelor degrees. Though participation was voluntary, almost everyone in the Madrassas participated in the study. At the other institutions, a random sample of students was selected to participate based on a listing of students provided by the registrar's office. Average response rate at the universities was about 70%. Overall 1,521 male students participated in the experiments.[10] They also answered a questionnaire asking about demographic characteristics, school choice, and attitudes on social issues. Below we describe our sample and the experimental procedure.

III.A Sample

Table 1 presents the characteristics of the male participants by group (educational affiliation), and compares them to the characteristics of a random sample of male respondents from Islamabad/Rawalpindi and Lahore (*City* sample) obtained from a separate survey we conducted in 2010. The average age of students varies between 21 and 22. Since we don't find any significant differences within the Madrassas either in terms of demographic characteristics or in their behavior in the experiments, we combine the 4 Madrassas into one group to keep the tables and analysis simple (the disaggregated statistics are available from the authors upon request).

Table 1 highlights the differences across the four groups. Ranking them from the most liberal to the least liberal institutions as done in Table 1, we see that students at more liberal schools come from a much more privileged background, with much higher parental income and parental education and much higher asset ownership. For example, the average years of father's (mother's) schooling is 14 (13) for students from the liberal Western-style University (LU-W) compared to 7.1 (3.5) years in the Madrassas. Similarly, the monthly parental income in the liberal Western-style University is nearly 10 times that in the Madrassas. Moreover, the characteristics of students at LU-W and LU-M, both liberal modern universities, are significantly different from each other in most cases. For example, average parental income for LU-W students is almost twice that of LU-M students.

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[10] Female students from the Islamic and liberal universities also participated in the experiments. We restrict the analysis in this paper to male students who were matched with other male students to focus on group identity, defined by socioeconomic class and religiosity (proxied by institution). The full sample (before excluding female students, and male students matched with female students) consists of 2836 students. The Madrassas we surveyed cater to male students only.

Students from the various groups also show different levels of self-reported religiosity and the number of prayers per day. Students were asked to rate how religious they considered themselves on a scale from 0 (not religious at all) to 10 (very religious). The average religiosity is 5.3 in the liberal Western-style University compared to 9.2 in the Madrassas. The former also pray much less frequently every day (1.5 times vs. 4.9).

Finally, students are likely to be exposed to different types of information and different peer groups. While only 23% of the Madrassas students report watching BBC and CNN, 60% of the students of the other groups report watching it. In addition, while fathers of only 4% of students attending LU-W spent more than 2 years studying in a Madrassa either on a part-time or full-time basis, the corresponding proportion for Madrassa students is 21%. Similarly, while about 6% of students at LU-W have at least a sibling or a friend who spent more than 2 years in a Madrassa either part or full-time, that is the case for nearly a quarter of students at LU-M and IU.[11] This also suggests that the various groups in our setting interact with and have exposure to each other at some level.

The sorting in terms of observables into these institutions is very drastic but as one would have expected. As we move from left-most LU-W (column 1) towards Madrassas (column 4) in Table 1, the average socioeconomic characteristics deteriorate (for example, income and education decrease). At the same time extent of religiosity increases. If we compare the students to the City sample (column 5), we see that Madrassa students seem to hail from humbler backgrounds than the general population in the cities, and that all other institutions fare better in terms of most indicators of wealth. This is consistent with the hypothesis mentioned above that poverty may drive families to send their children to Madrassas.

The last row of the table also shows that a non-trivial proportion of respondents (between 14 and 34%) in each setting have an acquaintance who died or was injured as a result of the violence in the country. This shows again, as pointed out in Section II.A, that violence is widespread and has affected a large proportion of the general public.

III.B Perception of Madrassas

While the perception of the link between Madrassas and militancy in the popular press and literature remains controversial (see section II.B above), an important question to ask is how the Pakistani society and different groups within it view them. For the IU and the City samples, our survey included a few questions that were meant to shed some light on this.

Columns (1) and (3) of Table 2 report the mean responses for respondents at IU and City. The two groups have different exposure to Madrassas as nearly half of the students at IU report to have studied in a religious institution either part-time or full time in the past, compared to only 9% of the city sample. While these numbers may seem high, they reflect a culture in South Asian

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[11] Because of sensitivity concerns, the set of background questions asked in Madrassas was a subset of that asked at other institutions. This information was collected after the experiments had been completed.

countries for even affluent families to send their children (either full-time or part-time) to religious institutions (which could be Madrassas or schools run in mosques) to learn to properly recite or memorize the Quran (Billquist and Colbert, 2006).

In order to evaluate respondents' perception of the influence of Madrassas in the society, we first asked them to guess the percentage of 18-year old males currently enrolled in registered Madrassas. As with inflated estimates in the popular press about Madrassa enrollment (Andrabi et al., 2006), our respondents also tend to over-predict the number of students enrolled in Madrassas with estimates ranging from 38% for IU to 26% for the city sample.[12] This suggests that they see Madrassas as providing education to, and therefore influencing, a large proportion of the population.

We presented to respondents a list of 7 possible causes for extremism and violence in Pakistan, and asked them to rank them in order of importance (7 denoting the most important).[13] The mean rating assigned to religious institutions is 3.1 for IU students, and 5.7 for the city sample. Religious institutions are perceived to be the least important cause of extremism by IU students, but the most important source by City respondents. Since IU students have stronger exposure to Madrassas (see Table 1 also), their relatively positive view of Madrassas is not surprising. Even then, it should be noted that both groups do perceive religious institutions to play some role in fostering extremism.

A third question asked respondents to assign a percent chance that 4 entities (US and Western countries; Radical Islamic organizations; Afghanistan government; Indian government) were responsible for violence against civilians in recent times. Both groups assign "radical Islamic organizations" the lowest chance for being responsible for such acts. However, the mean likelihood assigned to religious organizations is still very different from zero: 45% for IU students and 34% for the City respondents.

Exposure to religious institutions could affect perceptions of Madrassas. Columns (2) and (4) of the table report the corresponding mean responses for the IU and City respondents who had never attended a Madrassa. We don't find that to be the case: their responses are statistically similar to their counterparts who have been exposed to religious institutions.

Finally, both IU and City respondents overwhelmingly favor the government's plan to reform Madrassas (which, among other things, requires them to register and teach secular subjects such as Math and Science). This sentiment is similar to that found in Fair, Ramsay, and Kull (2008) where two-thirds of their sample reportedly supports Madrassa reform.

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[12] Note that our survey question asks about the enrollment proportion of 18-year old male students, which could be different from the proportion of enrolled students of all ages.

[13] This question is a variant of question MQ. 28 in the 2005 17-Nation Pew Global Attitudes Survey.

We interpret these numbers as suggesting that the general public views Madrassas as playing a large role in educating the youth, as being somewhat involved in militant and extremist actions, and that reforming them would be positive for society.

III.C Experimental design

Procedure: The experiments were conducted in sessions of 50-100 students in a classroom of the student's institution. The rooms were large enough to ensure respondent anonymity. The instructions were given to each participant, read out aloud by the experimenters and projected on a retro-projector.[14] Respondents played the games on a paper questionnaire and were matched with an actual partner ex-post, so they did not learn the identity or action of their partner while playing the game. The questionnaire was administered in Urdu at all places except the Western-style liberal University where it was conducted in English, since students there are more used to reading and writing in English.[15] Moreover, the questionnaires were identical across all the institutions up to the section leading into the experiments.

Games: Students were asked to play the following games:
- *Trust game:* Player A (the sender) is given a fixed amount of money (Rs. 300) and decides whether to keep it or give it to Player B (the receiver), i.e. invest it. If given to Player B, the experimenter triples that amount and gives it to Player B who is asked to choose whether to transfer any money back to player A (which can be any amount between zero and Rs. 900). The efficient outcome is for A to invest the money by transferring it to player B, while the subgame perfect equilibrium is to keep the money. Lack of trust towards the partner may lead to inefficiencies. This is a binary version of the "trust game" introduced by Berg, Dickhaut, and McCabe (1995)—it is binary in the sense that player A can choose to send either nothing or the entire amount. In our setting, all respondents played the role of Player A and the role of a Player B who received the money. When put in the role of Player B, we use the strategy method and ask the respondent to report the amount he would like to send back conditional on Player A deciding to invest.
- *Dictator game:* This is a one-stage game in which Player A (the sender) decides on the division of a fixed amount of money (Rs 400) between himself and Player B (the receiver). Player B does not make any choice. Again, respondents play the role of both Player A as well as Player B.

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[14] Full instructions are available from the authors upon request.

[15] The translation was supervised by Zafar who speaks both English and Urdu fluently to ensure that nothing was lost in translation.

- *Expectations:* Respondents were asked to guess (i) the average amount that students from their institution chose to give to their matched partner and (ii) the average amount that students from the partner's institution chose to give to their matched partner from the respondent's institution. Note that when students are asked to provide their expectations, they are asked about the average payoffs for an identical pair of partners (see the exact instructions in the Appendix). Also expectations were elicited after the respondent had made the decision in the games.

Treatment: The treatment in this experiment is the randomization of institution and gender of the pair of players. Each student was randomly matched with *one* of the following partners: a male Madrassa student, a male student from a liberal university, or a male student from an Islamic University. Students from the liberal Modern (Western-style resp.) university who were selected to be matched with a student from a liberal University were informed that they were matched with a student from their *own* university. All other students who were selected to be matched with a student from a liberal University were informed that they were matched with a student from a liberal Western-style University. The description of the match (with the exact name of the match's educational institution) was already printed on the paper questionnaire received by each participant, so students were not aware that other participants in their session were matched with partners of different educational institutions. Each student was informed that they would play all the games with the same partner. Table 3 presents the sample sizes of for each institution and matches. [16] Students were given a short description of the institution they were matched with but since the selected institutions are amongst the most well-known institutions, most students would know all of them.

Payoffs: Respondents received financial compensation for their participation in the survey and the games. They all received a Rs. 200 show-up fee given to them the day of the session. Some tasks were then randomly chosen for determining the payoffs. One of the four roles (sender or receiver in the trust game, sender or receiver in the dictator game) was randomly selected for compensation, along with one of the four expectations questions (Rs. 50 if the respondent correctly identified the interval where the actual average lies). Students were informed that they would receive compensation for one of the four roles in the games, chosen at random, before they made their decisions. Once the sessions were completed, we randomly matched students with a particular partner from the institution/gender indicated in their questionnaire and

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[16] Students at Madrassas who were assigned a "Male Madrassa treatment" were either matched with a student at their own Madrassa or a different Madrassa (but one that belonged to the same school of thought). Since we don't find any systematic differences between the two in our analysis, the two groups are combined. This is why, in Table 3, a much larger number of Madrassa students is matched with Madrassa students than with LU and IU students (since it combines two treatments).

determined the payoffs. Subjects could pick their compensation starting about one week after the completion of the experiment. Respondents earned on average Rs. 600 from the games. The overall Rs. 800 average compensation corresponds to about USD 10. The 2009 per capita GNI at purchasing power parity in Pakistan was $2,710, compared to $46,730 in the US. This means the average compensation of USD 10 corresponds to 0.4% of the GNI per capita. The US equivalent would be approximately USD 170. Therefore, the stakes involved in the experiments were very large.

IV.   Experimental results

We now discuss the results of our experiments. To understand trust between the different groups, we test the following hypotheses:

Hypothesis H1: Does investment behavior in the trust game vary by group (i.e., institution type)? We begin by investigating whether investment behavior varies systematically by group. The first column of Table 4 shows the overall proportion of sender who chose to send the Rs. 300 in the trust game. A few notable patterns stand out about this column. First, respondents are quite trusting on average as 74.6% of all students decided to send the Rs. 300. This is in the higher range of what respondents have been found to send in the few studies that use a version of the binary trust game: the investment rate varies from 32% (Bohnet and Huck, 2004) to 91% (Engle-Wornick and Slonim, 2004).[17] Second, there is heterogeneity of investment behavior by group. For example, 61% of the Islamic University students chose to send the money compared to 80% of Madrassa students. When comparing the four groups, we can reject equality of the means using a F-test and equality of the distribution using a Kolmogorov-Smirnov test (tests presented in the last two rows Table 4).[18] We summarize this result below:

RESULT 1*: Investment behavior in the trust game varies by group, with Madrassa students being more likely to invest.*

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[17] One needs to be cautious in making any comparisons with the few studies that employ a binary trust game since small modifications in the design (such as stake size, stake increase in the investment game—in our case three times, specifics of the match that the respondent is informed about, sample characteristics) can result in large differences. The continuous trust game has been employed by more studies. Players A (trustors) send about 50% of their endowment in such games (Camerer 2003).

[18] Note that this result is not driven by the larger sample size of pairs of Madrassa students matched with other Madrassa students (see footnote 11) as we get similar results if we look at the investment behavior for a given partner. For example, among subjects matched with students from the Islamic University, we see that 63% (80% resp.) of the Islamic University (Madrassas resp.) students decided to invest. We discuss these results below.

Hypothesis H2: Do students exhibit an in-group bias and is there differential treatment (discrimination) in terms of investment against a particular group?

As pointed out earlier, an extensive literature suggests that individuals tend to favor members from their own group. We now investigate whether this applies for the groups we consider in Pakistan and test whether there is systematic discrimination in favor of or against a particular group. For each group, Columns (2)-(4) of Table 4 show the proportion of respondents who sent the Rs. 300 in the trust game conditional on the group they are matched with. Within each group (i.e., each row institution), we do not reject the hypothesis that the proportion of respondents who invest varies by the matched group (as indicated by the F-test for equality of proportion within group and Kolmogorov-Smirnov test for equality of distribution in columns 5 and 6). This suggests that there is no systematic discrimination against a particular group in their investment decision. Moreover, none of the three sets of pairwise hypothesis tests between having a match from own institution type versus another institution type that we conduct (Wilcoxon rank-sum, Kolmogorov-Smirnov test, and t-test for equality of the means) are statistically significant at levels of significance of 5% or higher. This implies that students do not invest more extensively when interacting with a partner from their own group.

This is a very surprising result, and one that is at odds with the existing literature on group identity (see Introduction). Even with minimal groups which are arbitrary labels, group identity typically affects behavior. In a setting such as ours where groups are very distinct in terms of their socioeconomic characteristics and religiosity, and where (inter-group) conflict is present, one would have ex-ante expected to observe strong systematic differences in inter-group behavior.

Table 1 shows that at all institutions, a non-negligible proportion of students' parents or siblings attended a Madrassas. These students may have a systematically different perception of Madrassa students. To investigate this, we replicated Table 4 excluding respondents who had no relatives who attended Madrassas and found similar patterns (table not shown). We summarize this result below:

RESULT 2*: There is no evidence of in-group bias or of differential treatment to any particular group.*

Hypothesis 3: Is there taste-based discrimination or stereotyping against a group?

When playing the trust game, there are several dimensions of preferences and beliefs that may motivate a subject to "invest", i.e., to send the money to the matched partner:

(i)   unconditional other-regarding preferences such as altruism (Andreoni and Miller, 2002), warm glow (Andreoni, 1990), inequity-aversion (Fehr and Schmidt, 1999; Bolton and Ockenfeld, 2000) or maximin preferences (Charness and Rabin, 2002),

(ii)   beliefs about trustworthiness of the partner (Dufwenberg and Gneezy, 2000; Cox, 2004; Ashraf, Bohnet, and Piankov, 2006), and

(iii)   risk preferences (Karlan, 2005; Schecter, 2007).

Results from the trust game do not allow the identification of the relative roles of those dimensions (Cox, 2004). While Result 2 emphasizes a homogenous investment behavior towards the various groups, such a result could still be consistent with different levels of trust and of unconditional other-regarding behavior towards certain groups.[19] For example, Madrassa students may invest similarly with Islamic University student and liberal University students because they do not trust Islamic University students but are altruistic towards them while they trust liberal University students but do not exhibit altruism towards them.

Our multiple-game experimental design allows us to separately measure unconditional other-regarding behavior and expected trustworthiness. In the dictator game, the only motive for sending money to the partner is unconditional other-regarding behavior. We can thus learn more about other-regarding behavior by analyzing how students played that game. In addition, the elicitation of expected average amount sent back by each group to students from their own institution gives us a measure of expected trustworthiness or stereotype towards each group.

Table 5 shows the average amount sent in the dictator game for all pairs of partners. As shown in the first column, on average, students sent Rs. 171 (42.7% of the total amount) to their partner and only 6.7% did not send anything at all. This is a very high level of other-regarding behavior when compared to the standard of dictators sending about 20% of their endowment (Camerer, 2003). Within liberal Universities and Madrassas, there is some evidence that students tend to give slightly less to their own group compared to Islamic University students when looking at the pairwise t-test and Wilcoxon rank-sum test. However, for all groups, we do not reject equality of distribution based on pairwise Kolmogorov-Smirnov test when comparing own group versus other groups. One difference in behavior is noticeable however: Madrassa students give on average more than any other group and are less likely to not give anything. We summarize this in the following result:

RESULT 3*: Within each group (institution type), there is no systematic difference regarding unconditional other-regarding behavior towards other groups, i.e., there is no taste-based discrimination. Madrassa students exhibit stronger other-regarding behavior than any other groups.*

Note that we cannot disentangle the exact mechanisms that lead to each group's unconditional other-regarding behavior. As mentioned above, unconditional other-regarding behavior may be prompted by altruism, warm glow, inequity-aversion, or maximin preferences.

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[19] Since students were randomly assigned a treatment (i.e., match type), differences in risk preferences cannot explain any of the results since there is no reason to believe that risk preferences would change by match type. We, therefore, do not focus on this explanation when decomposing behavior in the trust game. We do have qualitative measures of risk preferences from the respondents, and they in fact are similar within each treatment conditional on the student's institution.

For example, it could be the case that an average LU student has distaste (low altruism) toward Madrassa students (relative to tastes towards students at other institutions), but is very averse to income inequality. That could lead to similar average behavior in the dictator game toward different groups since Madrassa students tend to be from less affluent backgrounds. A structural approach with institution-match specific parameters would be needed to get at this, which is beyond the scope of this paper.[20]

Table 6 and Figure 3 show the expectations reported by individuals regarding the average amount expected from the matched group, i.e., it reveals expected trustworthiness. Note that respondents choose an interval for the average and do not report a point estimate for the exact average. The mean and median amounts presented in Table 6 are those obtained by allocating as expected average the middle of the chosen interval. To conduct hypothesis testing on various quantiles of the distribution of expectations, we also present in Table 6 the proportion of respondents who expect to receive more than Rs. 200, more than Rs. 300 and more than Rs. 400 from the match. Three points from this table and Figure 3 are of note. First, Madrassa students expect all other groups to be the most trustworthy. Column (1) of Table 6 shows that Madrassa students expect on average Rs 405 back while all other institutions expect less than Rs 370 and the differences are statistically significant (see test for equality of means, medians and distributions of the 4 groups presented in the bottom of Table 6). This, combined with the fact that Madrassa students exhibit stronger other-regarding behavior, explains why they are more likely to invest in the trust game. Second, students from liberal Modern University (LU-M) and Madrassas expect all groups to be equally trustworthy (none of the P-value of the test for equality of means, medians and distributions of the 3 matches presented in the last 3 columns of Table 6 are less than 5%). Finally, students from liberal Western-style University (LU-W) and Islamic University (IU) expect different levels of trustworthiness across the various groups, as is also apparent in Figure 3. LU-W students believe Islamic University students to be the most trustworthy and Madrassa students to be the least trustworthy. For example, more than half of the liberal Western-style University students expect Islamic University students to send back more than Rs. 400 compared to less than a quarter who expect Madrassa students to send more than Rs. 400. This difference is statistically significant as shown on the test based on the imputed expectations and on the proportion of respondents who expect to receive more than Rs 400 (P-value less than 5% in the last 3 columns of Table 6). In contrast, IU students expect LU students to be the least trustworthy. We summarize the results from Table 6 and Figure 3 as follows:

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[20] An alternative would be to run reduced-form regressions controlling for characteristics (religiosity, socioeconomic characteristics etc.) of the respondent and the match, besides dummies for the respondent's institution. This approach is not informative because most of the variation is between institutions rather than within institutions, and because socioeconomic characteristics tend to be correlated with institutions (sorting).

RESULT 4: *There is no systematic difference within group about perceived trustworthiness of other groups for liberal Modern University and Madrassa students. Madrassa students are the ones who expect others to be the most trustworthy.*

Madrassa students are the most trusting, they also exhibit strongest unconditional other-regarding behavior and expect to receive back the most from the match in the trust game. Similarly, LU-M students, who are second-most likely to invest, have the second highest levels of other-regarding behavior and expectations of return. This would imply that trusting behavior is related to *both* unconditional other-regarding behavior as well as expectations of return (a finding similar to that of Ashraf et al., 2006). We do not quantify the relative roles of other-regarding behavior and expectations in explaining behavior in the trust game for two main reasons. One, because the goal of the paper is to primarily focus on inter-group behavior. Second, there could be unobservable characteristics that explain behavior in both the trust and dictator game, so a naïve regression which simply regresses trust game behavior on dictator game behavior and expectations of trust would yield biased estimates.[21]

Hypothesis 4: Are the stereotypes correct?

We now compare the expected amount sent with the actual amount sent in Table 7. We show the proportion of students who expected more than Rs 300 from a given group and the proportion of students from that group who actually sent more than Rs 300. In addition, we also show the proportion of students who had "accurate" expectations, i.e., those who chose the interval that contained the actual average, and the proportion of students who under-estimated the amount sent, i.e., those who chose an interval whose upper-bound was below the actual average.

Several interesting results stand out. First, liberal university students have inaccurate expectations about Madrassa students. While 81% of the Madrassas students sent more than Rs. 300 to liberal university students, only 52% of Western-style and 69% of Modern university students expected to receive more than this amount of money. The differences are statistically significant at 5% (as indicated by the P-value in the third row of each panel in Table 7). Moreover, large proportion of respondents from liberal universities under-estimated what Madrassa students would send back (76% of the Western-style and 54% of the Modern university students). Note that this result is not solely driven by the fact that Madrassa students actually send back the most amount relative to other groups (last row in each panel in Table 7), but also by the fact that liberal universities' students expect Madrassa students to be the least trustworthy (Table 6). Second, Madrassa students expected more from liberal university students

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[21] Such a regression at the institution level shows that both unconditional other-regarding behavior and expectations of return are significant in explaining the choice. However, other-regarding behavior seems to be quantitatively more important.

than what they actually received from them: only 13% of the Madrassa students had accurate expectations while 64% over-estimated the amount they would receive.

Note that those differences however do not seem to be large enough to generate differences in investment behavior in the trust game (see Result 2), possibly because of the binary nature of the decision.

RESULT 5*: There is incorrect stereotyping. Liberal University students systematically under-estimate the trustworthiness of Madrassa students, while Madrassa students systematically over-estimate the trustworthiness of Liberal University students.*

V. Potential Cofounding Factors

As mentioned in the Introduction, the literature has found strong effects of group identity even when using minimal groups. However, other than the finding that there is incorrect stereotyping of Madrassa students by liberal university students (and vice versa and in opposite directions), Section IV does not find evidence of group affiliation affecting investment behavior in the trust game and dictator game in a systematic way. In this section, we provide a list of possible confounding factors, and argue that they can be ruled out as possible explanations for the result.

Anonymity

Experimental payoffs for each student had to be computed by matching a student with another student belonging to the designated matched institution, and taking into account the choices of both students in the match pair. While students knew the institution of the student they were matched with, they were never told of who they were matched with. Payoffs were only made available to students starting one week after the completion of the survey. Therefore, we needed some way to link students to the questionnaire, while at the same time keeping their identity confidential. In order to achieve this, each student was given a ten rupee bill (that was initially stapled to their questionnaire) and was asked to enter the serial number of the bill on the questionnaire. The computed subject payoffs for each student were then put in sealed envelopes with the corresponding serial number on them. Students simply had to return their ten rupee bill one week later when they came to collect their payoff. Also during the administration of the experimental component of the survey, all enumerators were pulled aside so that respondents didn't feel that their responses were being observed by someone else. Our survey administration method is therefore equivalent to an anonymous questionnaire.

Credibility

Nearly all the students in our sample had never been exposed to incentivized experimental tasks. Moreover, as mentioned above, payoffs for the games were made at least one week after the student had taken the survey. Both these factors may lead subjects to believe that

payments may not actually be made, and they might not find the offer of monetary incentives credible. While it is not possible to rule out this factor, we worked with the administrations of the participating institutions to convey the seriousness of the incentives. Our field teams always included students and faculty members of the participating institutions. Moreover, experimental payoffs were available for pickup from the Registrar's Office in sealed envelopes with the respondent's serial number written on it. And students received an instantaneous show-up fee of Rs. 200 for completing the questionnaire. These measures should have made this entire endeavor look legitimate from the student's perspective.

The show-up rate (to pick up compensation) varied between 68% and 100% at the participating institutions.[22] This is a fairly high show-up rate, and one that suggests that students did find this entire exercise credible.

Stakes

The dictator game employed a pot of Rs. 400 (~USD 4.7), while the trust game employed an amount of Rs. 300 (~ USD 3.5), which could be tripled. As mentioned earlier, respondents earned Rs. 600 (USD 7) on average from the experiments. Rescaling the stakes using per capita GNI numbers at PPP, this corresponds to about USD 120 in the US. Therefore, the stakes involved in the experiments were very high. This is particularly true for the low-income students in our sample, who predominantly belong to Madrassas and who are found to exhibit the strongest trust and other-regarding behavior.

Understanding the game

Given that most students in our sample had never taken a survey, let alone participate in an experimental game, the possibility of students not being able to comprehend experimental instructions has to be considered. When designing the questionnaire, we made a conscious effort to keep the instructions as simple as possible. It was precisely for this reason that we chose the dictator and trust game to measure discrimination, and not a public good game.[23] The instructions for the games were read out line by line, and projected on a computer screen. Students were allowed to ask any clarifying questions by raising their hands. Finally, the decisions involved in both the dictator and trust game really are very simple.

Column 1 of Table 8 shows the summary statistics of amount sent in the dictator game by institution. Column 4 shows the corresponding statistics for the amount sent back in the trust

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[22] The show-up rate excludes those respondents who showed up to receive compensation and had either misplaced their Rs. 10 notes, or had no record of their bill serial numbers.

[23] For example, Castillo and Petrie (2010) use a public good game to measure discrimination in the lab. Another reason why we couldn't use a public game setup, besides it being harder to comprehend, was that it would have been challenging to give feedback (for example, about others' contributions) to participants in real time using paper surveys.

game (out of Rs. 900 but scaled down to Rs. 400). Abstracting from effects of stake size, theory would suggest that respondents send weakly larger amounts back in the trust game than they do in the dictator game because of the added concern of reciprocity (Cox, 2004).[24] This is in fact what the table shows. The null that the distributions of amount sent in the dictator game and the rescaled (from Rs. 900 to Rs. 400) amount sent back in the trust game are the same is rejected for each of the institutions. This provides strong suggestive evidence that respondents understood the setup of the games.

It is also interesting to note that the findings in the trust game match up fairly well with the self-reported response to the question ''*Generally speaking, on a scale from 0 to 10 would you say that most people can be trusted?*'', where respondents answer on a scale of zero (all people cannot be trusted) to 10 (all people can be trusted). This question is a variant of the one asked in the General Social Survey (see Glaeser et al., 2000, for a discussion on this). As shown in Table 1, the mean response to this question is highest for Madrassa students (5.1) followed by LU-M students, who are second-most likely to send money in the trust game (Table 4).

Binary nature of the trust game

One possible reason for the lack of effect of group membership may be that the binary nature of the trust game prevents us to identify effects that we would find with a continuous trust game. However, this is unlikely to be the case because (i) we do find differences by institutions in the binary decision to invest the money in the trust game, and (ii) we also do not find a group membership effect in the dictator game where the decision is not binary.

VI. Discussion

We investigated how, in a segmented society mired in conflict, trust within groups of young males of very different religiosity, social identity and (perceived) links to extremism operates. Our results are rather surprising. First, we find very high levels of trust, trustworthiness and other-regarding behavior when compared to existing studies in the literature. Moreover, it has been argued that hierarchical religions, such as Catholicism and Islam, weaken trust (Putnam 1993, La Porta et al. 1997). Since our sample consists of Muslims entirely, the high level of trust found in this study is not consistent with this hypothesis. One possibility could be that Pakistan stands out in terms of trust when compared to other countries, but evidence from other surveys suggests that this is not the case. The World Value Surveys of 2000/2001 ask respondents from 70 countries whether "most people can be trusted" or one "needs to be very careful in dealing

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[24] Stake size has been found not to matter for amount sent in dictator games (Forsythe et al., 1994; Carpenter, Verhoogen, and Burks, 2005) or for amount sent back in the trust game (Johansson-Stenman, Mahmud, and Martinsson, 2005).

with people." In Pakistan, 31% of the people surveyed agreed with this statement that most people can be trusted, which is very similar to the UK (30%) and the US (36%) and well below countries that are top ranked in terms of trust such as Iran (65%) or Denmark (66%).

Another important finding is that there is no evidence of in-group bias for any of the groups we consider in the investment decision in the trust game. Despite the fact that opinions collected from a subset of our respondents reveal that Madrassas are not viewed positively and are perceived to play some role in fostering violence, and a large proportion of the students have an acquaintance who died or was injured as a result of the violence in the country (Tables 1 and 2), we do not find that any of the groups behave differently when matched with Madrassa students. It is important to note that the Madrassas we surveyed are mainstream Madrassas, and one could argue that students at other institutions possibly took that into account when playing the games (i.e., students make a distinction between mainstream Madrassas and radical ones). But since most Madrassas are similar to the ones that participated in the study, our findings would extend to the vast majority of those institutions.

We do however find that Madrassa students behave systematically differently than other groups: they are the ones trusting the most and exhibiting the strongest other-regarding behavior. If Madrassas were fostering extremism and teaching hatred, this finding would be highly unlikely. So why is it that Madrassa students invest the most, exhibit the strongest other-regarding behavior, and show more trustworthiness? Lower risk-aversion could explain why they are more likely to invest in the trust game but Table 1 reveals that Madrassas students are on average more risk-averse than any of the other group. Another possibility is their higher levels of religiosity. There is a literature that shows that religious rituals promote pro-social behavior (Iannacone, 1998; Ruffle and Sossis, 2007), and that trust and trustworthiness are positively correlated with religiosity (Tan and Vogel, 2008). Since Madrassa students are more religious and indulge in religious practices more frequently (Table 1), this would be consistent with this literature. This channel alone, however, cannot explain the patterns that we observe across the institutions. Note that IU students rank second in terms of their religiosity and adherence to religious practices, but are less likely to trust (Table 4) and to indulge in other-regarding behavior (Table 5) than liberal university students. Possibly both religion and income matter in this context. Alesina and La Ferrera (2002) find that, in the U.S context, high-income groups tend to trust more. So one factor that may explain that liberal University students are more trusting than the IU students is the higher income of their parents. IU students may trust less than the other groups because they are in the middle in terms of both the income and religiosity scale.

Another finding is that, despite the fact that there is no discriminatory behavior towards any group, there is some incorrect stereotyping. In particular, Liberal University students systematically under-estimate the trustworthiness of Madrassa students, while Madrassa students over-estimate the trustworthiness of liberal University students. These incorrect stereotypes could influence negatively the social and economic interactions of those two groups outside of the lab.

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Still, overall, our findings offer some cautiously optimistic perspective for Pakistan's future. Of course, the high and non-discriminatory levels of trust we find pertain to highly educated groups. However, those groups are likely to be important actors in the economic activity of the country. Several African countries have experienced remarkable post-conflict economic recovery and one of the many channels may be that institutions, including trust, have improved as a result of the conflicts (Cramer, 2006). We can only hope that Pakistan will have a similar fate.

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Figure 1: International comparison of terrorism-related death

Terrorism-related Deaths in 2009

Country	Deaths
Iraq	3,654
Afghanistan	2,778
Pakistan	2,670
Somalia	1,441
Congo	1,346
India	663
Thailand	401
Russia	337
Colombia	323
Sudan	255
Philippines	241
Algeria	128
Sri Lanka	124
Iran	114
Yemen	73

Source: National Counterterrorism Center

Figure 2: Map of Pakistan

Figure 3: Amount expected back from match in the trust game (out of Rs. 900)

Appendix: Instructions for the elicitation of beliefs

For this choice scenario, you will be asked two questions about Choice 1 [*trust game*]. If this choice is chosen for compensation, one question will be picked randomly (by the roll of a dice) at the end of the session to determine which question you will be paid for. The payoff will be given to you after two weeks once we have aggregated everyone's actions.

1) **We ask you to guess the interval that contains the average amount that students from your institution chose to give to *gender* (where gender = {male, female}) students from "*institution X*" in situation 1 of Choice 1.**[25] Recall in situation 1 of Choice 1 the decision was how to divide an amount of Rs. 400 between yourself and another student. The interval that contains the average amount is: **(tick one box)**
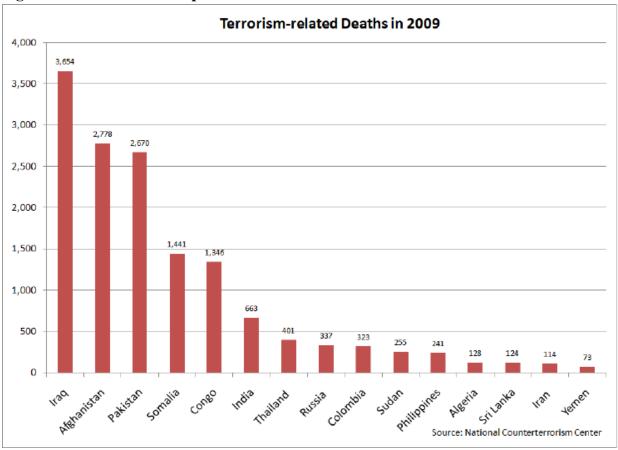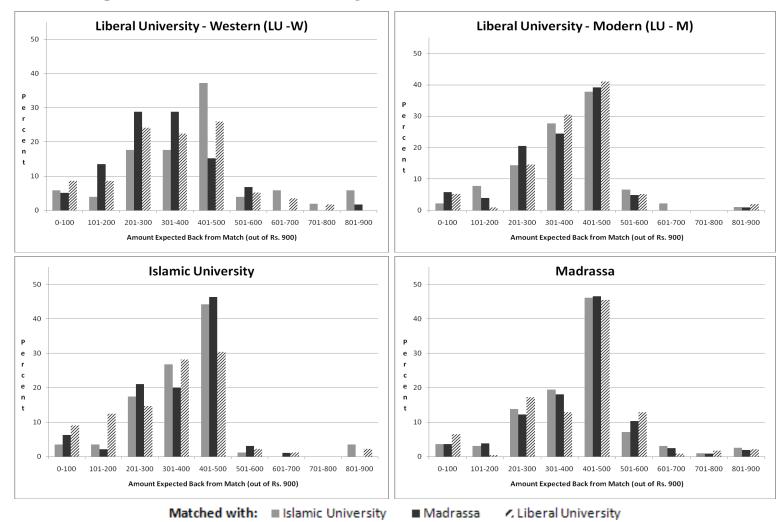
    i.   Rs. 0 – Rs. 50.   ☐
    ii.   Rs. 51 – Rs. 100.   ☐
    iii. Rs. 101- Rs. 150.   ☐
    iv.   Rs. 151- Rs. 200.   ☐
    v.   Rs. 201 – Rs. 250. ☐
    vi.   Rs. 251 – Rs. 300. ☐
    vii. Rs. 301 – Rs. 350. ☐
    viii. Rs. 351 – Rs. 400. ☐

You will receive Rs. 50 if the interval that you choose actually contains the average amount that students from you institution chose to give to the matched students from in situation 1 of Choice 1. Otherwise, you will receive zero. EXAMPLE: If you choose interval 3, i.e., Rs. 101 – Rs. 150, and the average amount that students from your institution gave was Rs. 300, you would receive zero. However, if you chose interval 4, i.e., Rs. 151 – Rs. 200, and the average amount that students from your institution gave was in this interval, you would receive Rs. 50.

2) *Male/female* students from institution X also participated in Choice 1 as deciders in which they were randomly matched with students at your institution. **Now we ask you to guess the interval that contains the average amount that "*male/female*" students from "*institution X*" chose to give to students in your institution in Choice 1.** Your reward will depend on your accuracy. You would receive Rs. 50 for choosing the correct interval, and zero otherwise. The interval that contains the average amount is: **(tick one box)**

    i.   Rs. 0 – Rs. 50.   ☐
    ii.   Rs. 51 – Rs. 100.   ☐
    iii. Rs. 101- Rs. 150.   ☐

---

[25] Actual instructions had gender of the student, and the name of the institution printed.

iv. Rs. 151- Rs. 200. ☐
v. Rs. 201 – Rs. 250. ☐
vi. Rs. 251 – Rs. 300. ☐
vii. Rs. 301 – Rs. 350. ☐
viii. Rs. 351 – Rs. 400. ☐

Table 1: Summary Characteristics

	LU-W	LU-M	IU	Madr	City	F-test
	(1)	(2)	(3)	(4)	(5)	
Number of Observations	168	287	270	796	394	
Age	20	22***	22***	22***	34***	0.000
	(2.7)	(2.2)	(2.4)	(3)	(13)	
Father's years of education	14	11***	11***	7.1***	7.7***	0.000
	(1.6)	(6.1)	(4.3)	(5)	(5.4)	
Mother's years of education	13	11***	7.1***	3.5***	4***	0.000
	(2.8)	(4.8)	(5.1)	(4.3)	(4.9)	
Parents' monthly income (in '000s Rs)	192	99***	42***	21***	25***	0.000
	(235)	(146)	(53)	(70)	(24)	
Number of siblings (including self)	2.7	3.9***	4.7***		5.1***	0.000
	(1.4)	(2.1)	(2.4)		(3)	
% father attended madrassa[a]	4	14***	13***	21***	1**	0.000
% mother attended madrassa	5	13**	7	0	1***	0.000
% friend attended madrassa	5	22***	23***	0	1***	0.000
% sibling attended madrassa	7	23***	26***	0	2**	0.000
% Parents own:						
home	92	86*	84**	82**	100***	0.000
tv	91	84**	77***	30***	84**	0.000
cellphone	90	79**	80**	72***	97***	0.000
computer	83	69***	60***	25***	70**	0.000
internet access	77	50***	40***	8***	45***	0.000
motorbike	47	65***	50	32***	61**	0.000
car	84	68***	43***	11***	37***	0.000
Religiosity (0-10)[b]	5.3	5.9**	6.3***	9.2***	6.1***	0.000
	(1.7)	(2)	(1.6)	(1.6)	(2.4)	
Number of times pray each day	1.5	2.2***	2.9***	4.9***	2.9***	0.000
	(1.6)	(1.6)	(1.6)	(.41)	(1.9)	
Proportion that fast during Ramadan	.92	.92	.97**	.99***	.91	0.000
	(.18)	(.18)	(.13)	(.079)	(.19)	
Trust (0-10)[c]	4.3	4.8**	4.5	5.1**		0.003
	(2)	(2.6)	(2.8)	(3.4)		
Risk general (0-10)[d]	6.7	6.9	6.5	5.3***		0.000
	(2)	(2.4)	(2.4)	(4)		
% watch english news	86	83	82	24***	24***	0.000
% watch BBC or CNN	62	60	58	23***	12***	0.000
% know victim of violent attack	14	16	34***		14	0.000

[a] Percent of respondents whose father attended a madrassa on any religious institution for more than 2 years (either part time or full time).

[b] Self-reported religiosity on a scale of zero (not religious at all) to 10 (very religious).

[c] Response to question: "....most people can be trusted?" on a scale of zero (all people cannot be trusted) to 10 (all people can be trusted).

[d] Self-reported risk preference on a scale of zero (totally unwilling to take risk) to 10 (fully prepared to take risks). This table shows pairwise t-tests for each institution group characteristics versus those of LU-W.

Significant at * p<0.10, ** p<0.05, *** p <0.01.

Table 2: Perception of Madrassas

	IU	IU(R)[1]	City	City(R)[2]
	(1)	(2)	(3)	(4)
Number of observations	444	200	394	37
% Attended madrassa[a]	45	100	9	100
Madrassa enrollment (0-100)[b]	38***	39	26	24
	(22)	(22)	(22)	(21)
Cause of extremism and violence: (1-7)[c]				
Government Corruption	4.7***	4.6	2.7	2.6
US policies and influence	5.3***	5.3	2.8	3.1
Poverty	4.3***	4.4	3.3	3
Lack of education	4.1	4.1	4.1	4.2
Lawlessness	4	4	3.9	4.2
Religious institutions	3.1***	3.1	5.7	5.5
Income inequality	3.3***	3.2	5.4	5.5
Responsible for civilian attacks: (0-100)[d]				
US and other Western countries	78***	79	67	60
Radical Islamic Organizations	45***	43	34	28
Afghanistan government	47**	47	43	40
Indian government	78***	78	70	67
Favor Madrassa Reform (0-10)[e]	8.1	7.7++	8.4	8.5
	(2.7)	(2.9)	(2.5)	(2.3)

[1] IU students who have ever attended a religious institution/Madrassa (part or full time).

[2] City sample respondents who have ever attended a religious institution/Madrassa.

[a] Ever attended a religious institution (full-time or part-time)

[b] Perception of the percent (0-100) of current 18-year old male students are enrolled in a regsitered madrassa.

[c] Importance of the following causes for extermism and violence in Pakistan on a scale of 1 (least important) to 7 (most important).

[d] Percent chance (on a scale of 0-100) that the following are responsible for recent civilian attacks (bomb blasts, suicide bombings etc.) in Pakistan.

[e] Opinion of government plan to reform madrassas on a scale of 0 (absolutely oppose) to 10 (absolutely favor).

***,**,* Responses different for IU and City respondents at 1, 5, and 10% levels of significance resepctively.

+++,++,+ Responses different for IU (City) and IU(R) (City(R)) respondents at 1, 5, and 10% levels of significance resepctively.

Table 3: Number of respondents by match

		Matched with:			
Institution:		LU$^{\oplus}$	IU	Madrassa	Total
LU-W		58	51	59	168
LU-M		95	90	102	287
IU		89	86	95	270
Madrassa		236	198	362	796
Total		478	425	618	1521

$^{\oplus}$ LU-M were matched with LU-M. All other institutions were matched with LU-W

Table 4: Proportion of respondents who send money in the Trust game

			Matched with			p-value for equality of:	
Institution:		Total	LU	IU	Madr	Mean	Distribution
		(1)	(2)	(3)	(4)	(5)	(6)
LU-W Male		0.6310	0.5517	0.6863	0.6610	0.2957	0.2940
	N	168	58	51	59		
LU-M Male		0.7805	0.7368	0.8444*	0.7647	0.1885	0.1881
	N	287	95	90	102		
IU Male		0.6148	0.5506	0.6279	0.6632	0.2815	0.2806
	N	270	89	86	95		
Madr		0.8015	0.8263	0.8081	0.7818	0.3975	0.3970
	N	796	236	198	362		
Total		0.7456	0.7238	0.7647	0.7492	0.3589	0.3587
	N	1521	478	425	618		
Tests of Equality:							
Mean		0.0000	0.0000	0.0011	0.0390		
Distribution		0.0000	0.0000	0.0012	0.0394		

The table also reports two sets of pairwise hypothesis tests between having a match from own institution type versus another institution type: (1) Wilcoxon rank-sum test is reported on the proportion, (2) Kolmogorov-Smirnov test is reported on the sample sizes.
For all tests, *p<0.10,**p<0.05,***p<0.01.

Table 5: Dictator game

Institution:	Total	Matched with			p-values for equality of:		
		LU	IU	Madr	Mean	Median	Distribution
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
LU-W							
mean	161	141	179**	166	0.044	0.153	0.108
median	200	200	200**	200			
N	168	58	51	59			
% who did not send	10.7	15.5	5.9	10.2	0.268	0.264	0.266
LU-M							
mean	168	158$^{\oplus}$	181**	167	0.125	0.148	0.368
median	200	200	200	200			
N	287	95	90	102			
% who did not send	7.3	8.4	4.4	8.8	0.450	0.448	0.449
IU							
mean	144	142	135	155	0.280	0.351	0.446
median	200	200	185	200			
N	269	88	86	95			
% who did not send	13.8	15.9	16.3	9.5	0.323	0.321	0.322
Madrassa							
mean	183	187*	189**	177	0.074	0.075	0.040
median	200	200**	200**	200			
N	790	233	198	359			
% who did not send	3.2	3.8	3.0	2.8	0.760	0.759	0.759
Total							
mean	171	167	176	171			
median	200	200	200	200			
N	1514	474	425	615			
% who did not send	6.7	8.4	6.4	5.5			
Tests of Equality:							
F-test	0.000	0.000	0.000	0.059			
Median test	0.023	0.014	0.015	0.850			
Distribution test	0.000	0.000	0.000	0.022			

$^{\oplus}$ LU-M were matched with LU-M. All other institutions were matched with LU-W

This table shows three sets of pairwise hypothesis tests between having a match from own institution type versus another instiuttion type: (1) t-test is reported on the means. (2) Wilcoxon rank-sum test is reported on the medians, and (3) Kolmogorov-Smirnov test is reported on the sample sizes

For all three,* p<0.10, ** p<0.05, *** p<0.01.

Institution:	Total	Matched with:			P-values for equality of:		
		LU	IU	Madr	Mean	Median	Dist.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
LU-W							
mean	350.595	336.207	406.86**	316.10	0.011	0.003	0.012
median	350.000	350.000	450.00**	350.00			
Prop. expect >200	0.845	0.828	0.902	0.814	0.402		0.400
Prop. expect >300	0.607	0.586	0.725	0.525	0.094		0.094
Prop. expect >400	0.375	0.362	0.549	0.237	0.003		0.003
N	168	58	51	59			
LU-M							
mean	370.906	379.47	376.67	357.84	0.455	0.884	0.556
median	350.000	350.00	350.00	350.00			
Prop. expect >200	0.913	0.937	0.900	0.902	0.601		0.600
Prop. expect >300	0.746	0.789	0.756	0.696	0.314		0.313
Prop. expect >400	0.470	0.484	0.478	0.451	0.885		0.884
N	287	95	90	102			
IU							
mean	357.778	333.15**	379.07	361.58	0.095	0.099	0.082
median	350.000	350.00**	350.00	450.00			
Prop. expect >200	0.878	0.787	0.930	0.916	0.005		0.006
Prop. expect >300	0.700	0.640	0.756	0.705	0.250		0.249
Prop. expect >400	0.452	0.360	0.488	0.505	0.100		0.100
N	270	89	86	95			
Madrassa							
mean	405.78	404.08	405.89	406.82	0.975	0.566	0.875
median	450.00	450.00	450.00	450.00			
Prop. expect >200	0.918	0.919	0.919	0.917	0.993		0.994
Prop. expect >300	0.779	0.750	0.783	0.796	0.418		0.418
Prop. expect >400	0.612	0.623	0.591	0.616	0.774		0.774
N	787	233	195	359			
Test of equality of:							
Mean	0.000	0.000	0.283	0.000			
Median	0.000	0.007	0.070	0.002			
Distribution	0.000	0.000	0.161	0.000			

This table shows two set sof pairwise hypothesis tests between having a match from own institution type versus another institution type: (1) t-test is reported on the means, (2) Wilcoxon rank-sum test is reported on the medians, and (3) Kolmogorov-Smirnov test is reported on the sample sizes.

For all tests,* p<0.10, ** p<0.05, *** p<0.01.

Table 7: How do Expectations Compare with Actual Choices of Trustees?

Institution:	Total	Matched with			Equality of:	
		LU	IU	Madr	Mean	Dist
LU-W						
Prop. expect >300	0.607	0.586	0.725	0.525	0.094	0.094
Prop. match sent >300	0.709	0.621	0.584	0.814	0.000	0.000
p-value actual v. expected[a]	0.015	0.646	0.096	0.000		
Prop. accurate expectation	0.185	0.224	0.176	0.153	0.603	0.600
Prop. under-estimated	0.494	0.414	0.275	0.763***++	0.000	0.000
N	168	58	51	59		
Actual sent by match	411.186	365.44	347.29	465.08	0.000	0.109
LU-M						
Prop. expect >300	0.746	0.789	0.756	0.696	0.314	0.313
Prop. match sent >300	0.709	0.621	0.584	0.814	0.000	0.000
p-value actual v. expected[a]	0.276	0.0053	0.015	0.017		
Prop. accurate expectation	0.328	0.305	0.278	0.392	0.208	0.207
Prop. under-estimated	0.341	0.211	0.244	0.549***+++	0.000	0.000
N	287	95	90	102		
Actual sent by match	411.186	365.44	347.299	465.08	0.000	0.101
IU Male						
Prop. expect >300	0.700	0.640	0.756	0.705	0.250	0.249
Prop. match sent >300	0.753	0.745*	0.756	0.758	0.962	0.962
p-value actual v. expected[a]	0.124	0.0923	1	0.3406		
Prop. accurate expectation	0.404	0.303	0.442	0.463	0.060	0.060
Prop. under-estimated	0.548	0.640	0.512	0.495	0.100	0.100
N	270	89	86	95		
Actual sent by match	428.429	409.08	410.58	449.98	0.026	0.010
Madr						
Prop. expect >300	0.779	0.750	0.783	0.796	0.418	0.418
Prop. match sent >300	0.748	0.708	0.779	0.757	0.370	0.370
p-value actual v. expected[a]	0.168	0.3551	0.9403	0.2124		
Prop. accurate expectation	0.361	0.1274***+++	0.455	0.461	0.000	0.000
Prop. under-estimated	0.339	0.237***++	0.394	0.376	0.000	0.000
N	796	236	198	362		
Actual sent by match	413.69	397.39	415.79	420.47	0.240	0.001

[a] T-test for the equality of proportion that expect more than 300 and the proportion of match group that actually send back more than 300.

This table shows two sets of pairwise hypothesis tests on the proportions between having a match from own institution type versus another institution type: (1) Wilcoxon rank-sum test is reported with stars (*), and (2) Kolmogorov-Smirnov test is reported with plus (+) signs.

For all tests, *,+ p<0.10, **,++ p<0.05, ***,+++p<0.01.

Table 8: Games Summary Statistics

Institution	Dictator game: amount sent out of Rs.400	Trust game: proportion that sent the Rs.300	Trust game: amount sent back	
			out of Rs.900	scaled to Rs.400
	(1)	(2)	(3)	(4)
LU-W				
mean	161	0.6310	375	167
median	200		400	178
% who did not send	10.71		8.33	
N	168	168	168	168***
LU-M				
mean	168	0.7805	399	177
median	200		450	200
% who did not send	7.31		1.39	
N	287	287	287	287***
IM				
mean	144	0.6148	392	174***
median	200		450	200***
% who did not send	13.75		6.29	
N	269	270	267	267***
Madrassa				
mean	183	0.8015	441	196***
median	200		450	200***
% who did not send	3.15		1.25	
N	790	796	787	787***
Total				
mean	171	0.7456	417	185***
median	200		450	200***
% who did not send	6.65		2.95	
N	1514	1521	1509	1509***

This table shows three sets of pairwise hypothesis tests for the equality of amount sent in the dictator game and the amount returned in the trust game (scaled down to Rs. 400 from Rs. 900): (1) t-test is reported on the means. (2) Wilcoxon rank-sum test is reported on the medians, and (3) Kolmogorov-Smirnov test is reported on the sample sizes.

For all three,* p<0.10, ** p<0.05, *** p<0.01.