Does violence leave long-term scars? Evidence from ethnic riots in India

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Abstract

We conduct a lab-in-the-field experiment to examine the long-term effects of riots in Assam in India on a range of economic and behavioural outcomes. We find that individuals who live in the villages that have been heavily and moderately affected by riots are more trustworthy, more likely to be competitive and have higher levels of self-confidence under competitive situations. They exhibit more anti-social preferences but are less likely to be dishonest than individuals in the unaffected areas. The estimates are stronger and more often statistically significant when considering heavily affected areas than moderately affected areas - suggesting stronger influence on those who were directly exposed to or experienced the riots. Using survey measures, we observe that individuals in areas that were heavily exposed to riots have higher levels of trust, higher tendency toward altruism, and lower memory capacity.

Keywords: riot, Assam, risk, trust, field experiments

JEL Codes: C91, C93, D74, D81, O12

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1. Introduction

The experience of being exposed to violent conflict can profoundly change individual beliefs, values, and preferences. Studies in neuroscience and psychology suggest the emotional distress caused by such exposure could influence behaviour under uncertainty and induce changes in personal attitudes towards risk taking. The magnitude and permanence of such behavioural change will depend on the age of exposure to violence, the intensity of violent episodes and the suffering that follows thereafter. These behavioural outcomes are fundamental determinants of people's propensity to save and invest and their ability to overcome social dilemmas. While the short-term impact of these changes can influence emotional recovery, the long lasting effects may increase household poverty thereby hindering wider economic growth and development of the community or region. Thus, the economic and social impact on violence-affected communities can be persistent enough to leave legacy effects to not only its survivors but future generations as well (Collier et al., 2003)

Individuals' pro- and anti-social preferences such as trust, altruism, envy and dishonesty, and attitudes towards risk have been shown to be important for economic development. While the behavioural legacies of conflict point towards higher levels of trust and altruistic behaviour among the affected, lower levels of trust and increase in impatience have also been documented (Bauer, Cassar, Chytilová, & Henrich, 2014; Bellows & Miguel, 2009; Voors et al., 2012; Becchetti, Conzo, & Romeo, 2014; Gilligan, Pasquale, & Samii, 2014). If conflict induces a shift in preferences towards more anti-social behaviour or higher risk-aversion, then the consequences can range from negatively affecting individual wellbeing by distorting economic choices to more long-lasting ones that undermine investment in human capital, the development of market institutions, and formation of social capital (Cassar, Grosjean, & Whitt, 2013; Voors et al., 2012).

In this study, we conduct an artefactual field experiment to examine the economic implications of childhood exposure to violent conflict from a behavioural perspective. We focus on the state of Assam, the largest (in terms of population) state in the northeast region (NER) of India, where civil conflicts have been rife in the early 1980s between groups divided primarily along the lines of language, ethnicity, and religion. In 1979, student-led mass protests (known as the Assam Agitation) against illegal immigration from neighbouring countries began. The state used violent means to contain the largely nonviolent protestors. When the state decided to hold elections to the legislative assembly in early 1983, protestors boycotted it and some of them turned violent. The active politicization of the ethnic and

religious divisions of the population during the run-up to the election led to violent conflicts between various indigenous groups and immigrants, resulting in massive loss of lives and property. The Assam Accord, signed between the central government and the agitation leaders brought an end to the protests in 1985, following which few instances of conflict affecting the entire state have occurred. Conflict has potentially imposed economic costs which are particularly evident in the deteriorating economic indicators over the last three decades. The rate of Gross Fixed Capital Formation for Assam in 1980-81 was 12.3% compared to the national rate of 21.4%. While the difference has somewhat narrowed over time, Assam lagged behind by 7.5 percentage points in 1997-98. Assam slipped from boasting of above-national average per capita income levels from the 1950s to the early 80s, to a below-average level for the first time in 1986. This gap widened to 18% below the national average in the post-conflict period and further to 45% in the 1990s. The distortionary impact of recurrent conflicts and insurgencies on individual behaviour Assam have plausibly contributed to the stagnant economic condition of Assam over the past few decades. While civil society organizations laden blame on government inaction, much less is known or has been studied on how the impact of these conflicts on people's attitude and behaviour may have contributed to the deteriorating economic state of Assam.

Our study is particularly valuable from a policy re-evaluation point of view. The psychological imprints of individuals exposed to conflict can be long-lasting and the consequences for long-term health, psychological and economic outcomes are likely to be determined by permanent shifts in attitude that erode social cohesion, stifle entrepreneurial motivation, and dampen one's overall 'outlook on life'. We examine the importance of these channels as a first step towards rethinking policies that should focus on rebuilding the state economy by rehabilitating its people, and not the other way around.

This study contributes to the literature in a number of ways. Despite the diverse evidence on the link between civil conflicts and pro-social behaviour and risk, much less is known about the anti-social preferences resulting from the exposure to civil conflicts. Evaluating both pro- and anti-social preferences are important for understanding the post-conflict equilibrium in a society. Our study measures the effect of conflict through the channels of pro-social and anti-social behaviour both of which can strengthen social identity. Changes in underlying beliefs and preferences that alter post-conflict behaviour towards other groups, known as parochial altruism (Bowles, 2008, 2009), are easier to identify when the conflict is clearly marked by a group identity such as ethnicity as is the case in our study. Unlike in civil war situations where friends and enemies may not be readily separable in small

local communities, we are able to identify participants belonging to ethnic groups that were involved in the conflict. We also add to the recent literature that has focused on the socioeconomic impact of conflicts in other parts of the world by offering a unique perspective on the long-term impact of exposure to conflict on the behavioural determinants that can explain not only individual economic outcomes but also the growth experience of the community as a whole.

Our results can be summarized as follows. Using experimental game outcomes, we find that individuals born before the riots in heavily and moderately affected areas show higher level of trustworthiness and are more likely to compete with others. More intense exposure to riots could also lead them to be more anti-social as we find them more likely to burn other players' money in a money-burning game. However, they may still be more honest than individuals in the unaffected areas. The coefficient estimates are more often statistically significant and generally stronger for heavily affected areas than moderately affected areas - suggesting the intensity of riots are likely to have stronger effects. When we use the survey measures, we find higher levels of trust among those in heavily affected areas. Our results also indicate that these individuals have higher tendency towards altruism and lower memory capacity.

The paper proceeds as follows. Section 2 presents a brief background of the conflicts that occurred in the region. Section 3 presents the sampling design and identification strategy while section 4 details the measurement of behavioural preferences in two subsections - survey instruments and experimental games. Results are discussed in Section 5, and Section 6 concludes.

2. Background of Violent Conflict in Assam

Against the backdrop of the Assam Agitation, violent conflicts erupted in different parts of Assam in the early 1980s. In this study, we focus on three regions where violent clashes led to massive destruction of lives and property – Nellie, Gohpur, and Merapani – of which Nellie accounted for the one of the highest rates of casualty not only in Assam but among all riots that have occurred in India. While there were differences along the dimensions of cause, extent of damage to lives and property, and groups involved, a common thread that links all three conflicts was the claim to and dispute over land.

The Nellie massacre took place in the Morigaon district in central Assam during a sixhour period in the morning of February 18, 1983. According to the official statistics, the massacre claimed 1,819 lives. However, the unofficial estimates exceeded 3,000 (Sharma, 2013) while no estimates on the damage to property and livestock are available. The victims were Bengali Muslims whose ancestors had relocated from current day Bangladesh during the pre-partition British India period. As the number of Bengali Muslim immigrants increased, the conflicts over land emerged with the Tiwas who were the original inhabitants of that region. The massacre was catalysed by the state assembly elections held on February 14 and boycotted by the Assam Agitation supporters. The inhabitants of these fourteen villages were slaughtered and their houses set on fire. Majority of the victims were women and children. It has been described as one of the worst pogroms since World War II. Although the Tiwas reportedly committed the genocide, even nationalist organisations such as the All Assam Students Union (AASU) and a militant wing - Sweccha Sevak Bahini, were allegedly also involved in planning and executing the mass killings (Nath, 2015).

Similar to the experience in Nellie, two days before the first round of state election was scheduled to be held, conflicts broke between the indigenous tribal group, the Bodos, and non-Bodo communities in Gohpur. Ongoing mistrust and clashes over land encroachment issues flared up when transportation network in areas inhabited by Bodos were disrupted (e.g., bridges were burnt) in order to prevent their participation in the elections. Although it is uncertain as to which group started the conflict, heavily armed groups invaded villages setting houses on fire and causing extensive damage to property in the area, while several hundred suffered casualties according to an unofficial report. Although civil society organizations have actively attempted to maintain peace and harmony in the greater Gohpur area, a sense of mistrust continued to linger leading to a recurrence of violent conflict in 1989 although at a much smaller scale.

The violence in Merapani arose from border-land dispute between the states of Assam and Nagaland. The latter was carved out of Assam's Naga Hills district in 1963. While a series of incidents occurred since Nagaland was created, the major violent conflict took place between the armed police of the two states which lasted for three days in June, 1985. In addition to the loss and injury to lives of both police personnel and civilians, 7000 families were rendered homeless (Phukan 2011). Serious efforts to resolve the border dispute between the two states were made both by the bureaucracy, and local inhabitants. Generally, people living in the border areas have maintained peace and harmony by undertaking bridge-building measures between people on both sides of the border such as marriage between Naga and Assamese and adopting measures for the proliferation of Nagamese (the lingua franca of Nagaland commonly used for communication between different tribes).

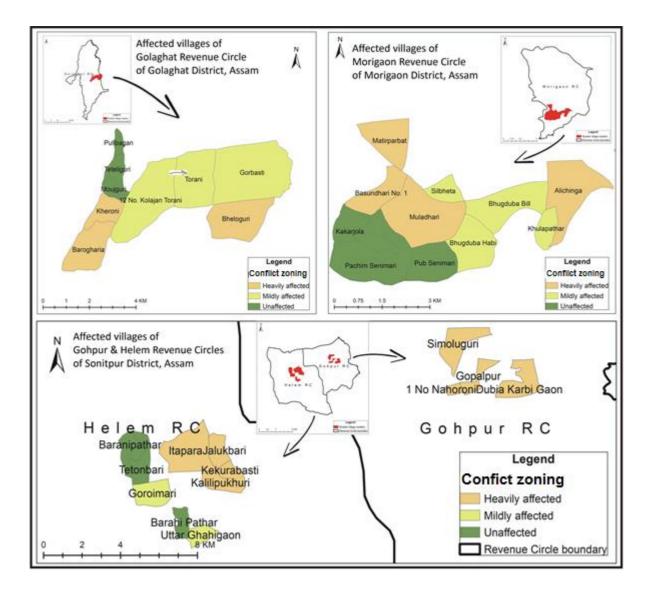
3. Sampling Design and Identification Strategy

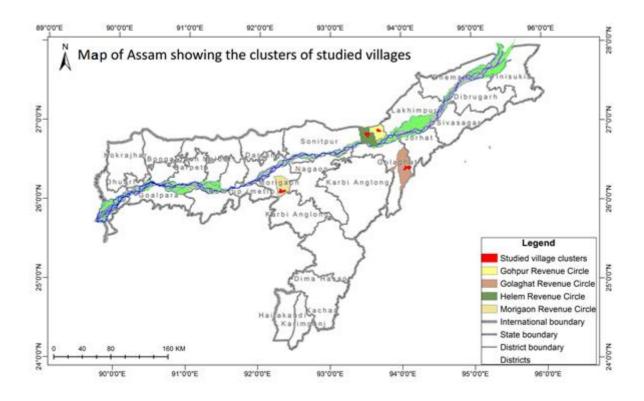
Identifying the causal impact of conflict on individual's social and economic preferences is challenging due to endogeneity concerns arising from potential 'selection into conflict'. These methodological concerns are unlikely to arise in our research design as individuals in the affected areas in our study were primarily victims, and being in their childhood years, were not perpetrators of violence. Treatment assignment of subjects is determined by the intensity of exposure across the three regions/sites discussed in Section 2. These sites were chosen from the geographical regions where the highest incidence of death and damage to property had been reported. We focus on these major riots that occurred prior to the signing of the Assam Accord in 1985. This marked the end of the Assam agitation following which widespread conflict across the state did not occur. In order to measure the long-lasting impact of violence, we consider adults who were aged less than 15 years during their experience of riots.²

Besides the incidence of violence itself, the extent of damages and long-lasting impact on individual preferences are likely to be affected by the intensity of the conflict experienced. Hence the validity of treatment assignment of individuals to being 'exposed' versus 'unexposed' crucially hinges not only the prevalence, but the intensity of conflict experienced. Accordingly, we exploit variation in the level of intensity across villages within each of the three regions to identify areas that were 'heavily affected', 'moderately affected' and 'unaffected' by violence. The 'heavily affected areas' are those that suffered extensive loss of lives and property. They also were the places where the first outbreak of violent conflicts occurred as a result of which victims had no time to flee or save their belongings. The 'moderately affected areas' are those that experienced large scale damage to property but had few death casualties or injuries. The victims in these areas had enough time to flee as the neighbouring villages were attacked which saved more lives. The 'unaffected areas' are those that were not attacked at all. These places might have been inhabited by people belonging to ethnic groups that were not the targets of attack by the perpetrators. In Figure 1, we map the sample of villages selected in the Nellie, Gohpur, and Merapani regions, respectively, demonstrating the three levels of intensity across villages within each region.

 $^{^{2}}$ Although previous research suggests that preferences are stable for adolescents around the age of 10 (e.g., Sutter et al. 2013), we expect preferences are likely to be affected by violent conflict beyond the standard predicted age and allow for exposure on children up to age 15.

Figure 1. Nellie region in Morigaon district, Gohpur region in Sonitpur district, and Merapani region in Golaghat District





Given that the timing of riots vary slightly across the three regions as discussed in Section 2, we use the exact year of violent conflict in that region to define the age of exposure. Specifically, individuals aged 33 or above were born before the riots occurred in the regions of Nellie and Gohpur in 1983 and were subject to the violence during their childhood and early adolescent years, while the defining age for the Merapani region would be 31 years given the occurrence of riots in 1985.³

A potential selection issue can arise due to outmigration of people who were affected by the riots to other regions of the state or other states. Since the people who continued to live in that village may be those who were not severely affected, we use both current village of residence and village of birth to define their area of exposure to violence. In cases where individuals from affected areas have moved to other states or moved to regions within the state but other than the three regions in the study, our estimates would measure the lower bound of the effects of violence.

We further create an index based on the individual's reported experience of physical attack, torture, or theft, to measure the extent of exposure to conflict in terms of the physical,

³ Since the villagers in remote areas of India are often unaware of their exact date of birth or misquote them, we use their reported age to identify their exposure level with respect to the timing of the riots.

mental, and economic damages suffered. Since the impact on household members may have a significant impact on own well-being, especially during childhood years, we also include a more comprehensive measure based upon victimization of household members including their death or impairment.

4. Research Design

The field experiments were conducted in the three sites of Merapani, Gohpur, and Nellie in January, May, and July of 2016, respectively.⁴ At each site, the research team assisted by research assistants spent approximately 2 weeks to conduct pre-surveys, followed by the experimental games, post-surveys, and village-level surveys. Participants were recruited through pre-surveys conducted in each village marked in Fig.1. The research team, guided by members of the All Assam Student Union, the All Assam Minorities Students Union (AAMSU), or other local organizations, who had good knowledge of the locality, went doorto-door to solicit participation in the survey. The pre-survey asks questions on personal background characteristics, among which reported age was used to determine eligibility to participate in the experiment. Eligible subjects were subsequently invited to participate in the experiment along with details of the venue and times being provided. In all sites, we aimed for gender balance. The experiments were conducted in the village school building for which permissions were obtained from the school Headmaster. After completing the experimental games, participants were asked to complete a post-survey questionnaire recollecting their experience of conflict during the riots. Since our participants had none to limited English reading and writing skills, all instruction and survey documents were translated to the local Assamese language and responses were recorded on survey forms by research assistants.

4.1. Survey Questionnaires

4.1.1 Pre-survey: Attitudes and Personality Traits

The pre-survey asks questions based on five broad categories – personal characteristics, investment and saving activities, social network, personality traits, and life satisfaction. Additionally, we check for their capacity to recall information using a memory test on 2-

⁴ In order to conduct the experiments, the selected villages needed to have a school whose authorities had agreed to make their classrooms available.

minute recall of 10 simple household objects, naming the days of the week backwards, and a simple subtraction problem based on repeated recall of the previous answer.

Personal characteristics: We ask for information on their birth village, current village and tenure, ethnicity, completed years of schooling, age of starting school, highest completed level of education, marital status, religion, own average monthly income, and household average monthly income

Social network: In this section of the pre-survey, we ask questions on trust, risk-taking and dishonesty. The trust question focuses on trust in strangers, family members, neighbours, friends, relatives, co-workers, priest, elected heads at the village and district levels, schools, press, cultural organisations, police, government and public authorities, courts, and companies. The questions are scored from 1 to 5, such that higher scores indicate more trust. We elicit their beliefs on the trustworthiness of strangers, and friends or relatives, as well as their perception of self in helping others. We also use a survey question designed by Glaeser, Laibson, Scheinkman, and Soutter (2000) to measure self-reported past trusting behaviour. We form an index of past trusting behaviour by summing the scores of 4 survey questions on how frequently they lend personal possessions and money to friends and relatives. The maximum possible value for this index is 40, with higher scores indicating a higher frequency of lending. Questions on village of residence of family members and village they married into (specifically for females) are indicators of their current network.

Personality traits: Using a concise version comprising 10 questions from the Big Five Inventory-10 (Rammstedt & John, 2007), we measure 5 main personality traits – extraversion, agreeableness, conscientiousness, neuroticism, and openness. We additionally ask questions on self-reported confidence and aspirations. Participants score their willingness to undertake risk on a scale of 0 to 10 with higher numbers indicating higher willingness, in the domains of financial matters, occupation, health, and household finances.

Life satisfaction: Participants report their ratings on satisfaction with life as a whole as well as various aspects related to the quality of their lives. They scale 9 questions between 0 and 10 where 0 implies "feeling no satisfaction at all" while 10 implies "feeling completely satisfied".

4.1.2 Post survey: Experience of Conflict

Although the ability to recall events from childhood varies across age of experiencing an event (Howe, 2013), there is evidence on earliest memories developing before age 3 (Wang & Peterson, 2014). Hence we rely on a range of ages during childhood (1 to 15) to ensure that the retained memories are mature and reliable.

After completion of the experimental games, participants are asked to answer questions on their experience of conflict during childhood. Participants reported recalled experiences of the extent of own injury, torture, damage to property, as well as extent of injury and damage to family member, and their relationship with the family member who suffered these damages. They also reported the frequency of witnessing assault to other people resulting in their death, injury or torture, and damage to their property, on a scale of 0 to 4 where 0 implied "Rarely (1-2 times)" while 4 implied "Very often (more than 10 times)". Finally, we ask them about the extent of mental trauma they experienced during the riots, and the extent to which they are troubled by its memories.

4.2. Experimental Games

We examine the impact of exposure to conflict on preferences that hinder economic growth such as social cohesion, risk-aversion, time preferences, dishonesty, and preferences for competition. We employ seven behavioural games with monetary incentives. All task outcomes were recorded on paper with pen. Clear instructions were provided to all participants. Participants were randomly assigned to rooms in the local school. On average, there were 24 participants per session. One session was smaller (12 participants) and 3 sessions were larger (2 with 28 participants each and one with 32 participants). Participants were matched with others in the same room for games where groups were formed. They were informed that their partner(s) was another participant in the room and selected their partner during the payment stage by choosing the ID number of another participant in the same room. Participants were informed about the payment scheme - that they would be paid for task 1 and one of the next 5 tasks picked at random, and a participants in the room was asked to pick a folded paper from a box containing five such papers to determine the game for which participants got paid. No feedback on tasks not chosen for the final payment were provided.

In each room, the self-reporting game was played first with guaranteed earnings, and one of the remaining tasks were randomly picked for additional payment. We did not include the time preference task for payment as it would include future payments which would be hard to enforce in our setting.⁵ Instead it was used as a warm-up game and played immediately after the self-reporting game. The remaining five games were played in random order in different rooms. Participants made their decisions in a booth during each game, with the exception of the self-reporting game, where an experimenter was available to assist participants if they could not read or write.

4.2.1 Pro- and Anti-Social Attitudes

We evaluate four aspects of social orientation that underlie pro- and anti-social motivations trust in and trustworthiness with one's community members, obligation to contribute to one's community welfare, motivation for harming others, and dishonesty by employing trust, public goods, money-burning, and self-reporting games. The trust game elicits the extent to which participants believe their community members will comply with social norms of reciprocity and fairness, while trustworthiness means complying with those norms in the presence of incentives to cheat. Since collective action may evolve among conflict afflicted individuals as a survival group strategy to overcome challenges and threats, we use the public goods game to measure their willingness in raising their group's welfare by sacrificing their own. Although these games tap into the pro-social aspects of behaviour, we use a money-burning game to elicit anti-social behaviour that allows the destruction of others' resources or well-being at their own cost, while the self-reporting game is designed to measure dishonesty.

Trust Game: We used the standard trust game protocol to measure trust and trustworthiness. Each participant played both as Sender and Receiver. The Sender received an endowment of Rs.200 (AUD 4), while the receiver was endowed with Rs.0. In the first stage, all participants acted as Sender and could send any positive amount to an anonymous Receiver, knowing that the experimenter would triple the amount sent so that the Receiver would receive the amount 3*x*. In the second stage, all participants acted as Receiver. In order to minimise logistical issues in the field, the Receiver was not informed of the amount sent by the Sender. Instead, for every possible amount he might receive, the Receiver decided on to return to the Sender. The Sender was not informed of the amount sent by the Sender. Instead for final payment. If the trust game along with the Sender's role was selected for final payment, all participants received (200 - x + y). Participants received (3x - y) if the Receiver's role was selected.

⁵ The sites include remote locations where future payment sent by postal mail may not guarantee delivery on the exact date.

Public Goods Game: This game was played in two stages among four players matched randomly in the room. Each player received two folded cards, one of which was marked with an 'X' inside while the other was left blank. In each stage, players were asked to turn in one card and place it in an envelope. For each card turned in to the envelope in Stage 1 that is marked 'X' inside, all players in the group received Rs.50. But for each marked card turned in Stage 2, only the player handing in a marked card received Rs.50. If this task was picked for final payment, players received their earnings for both stages of this game.

Money Burning Game: The money burning game allowed each player an opportunity to reduce the income of the other player by paying a fee (Zizzo & Oswald, 2001). Using a simple two-player version of this game, participants received an endowment of Rs.500 (AUD 10). Half of them who had an odd identification (ID) number received an additional amount called a gift of Rs.100 (AUD 2), while the remaining half with even ID numbers did not receive any gift. Participants were made aware of the gift, and simultaneously decided on how much of the other player's total endowment to eliminate. Participants had to incur a fee to be paid from their own endowment in order to eliminate the other player's endowment, which was to be charged at three levels – 5%, 10%, and 20% of the amount eliminated. We allowed for different costs of elimination to determine how much cost they are willing to undertake to reduce other's endowment. If this game was chosen for final payment, first a coin was tossed to randomly choose odd- or even-number participants. If heads showed up the odd-numbered participants got selected, following which each of them chose an even-numbered partner by randomly selecting an even ID number, and vice versa when tails showed up and the even-numbered participants got selected.

Self-reporting Game: We designed a simple self-reporting task with pictures instead of numbers or words to accommodate the low literacy level of the subjects. The game involved finding the picture of a star from a sheet of 10 tables comprised of 9 grids with an image in each grid. They could earn Rs.20 for each star they found. Each participant received an envelope with this sheet and were instructed to find the stars within 1 minute. To ensure that considerable and different opportunities for cheating were available, we designed 3 different sets of sheet containing different number of stars, and varied both the number of stars within each set and the share of each set across the three sites. These maximum numbers were not known to the participants but allow considerable scope for cheating, even for top performers. Participants recorded the total number of stars they found at the end of the sheet, placed the sheet back in the envelope, and collected the payment themselves for the number of stars found from a small envelope containing ten Rs.20 notes they received at the beginning of the task.

Participants placed any remaining money in the same envelope, sealed it, and left it on their desk for the experimenters to collect. Participants were made aware of the fact that the envelopes would not be opened until the experimental session was complete. In order to reduce scrutiny bias, experimenters left the room during this task.

4.2.2 Risk and Time Preferences

While social preferences are important for the development of social capital, experimentally elicited risk and time preferences have been shown to be good predictors of field behaviours involving economic decision-making and behaviours related to investments in health and wellbeing (e.g., Chabris, Laibson, Morris, Schuldt, & Taubinsky, 2008). Exposure to conflict can alter decisions involving uncertainty and long-term consequences. In particular, uncertainties involving investments for the future through saving and education can distort decisions in a post-conflict setting. Therefore, we elicit preferences towards risk using an investment task, and preferences towards delay-discounting using choice-list tasks which are incentivised with cash rewards to be paid according to the choices made (Sutter, Kocher, Glatzle-Ruetzler, & Trautmann, 2013).

Risk Game: We used a simple risk game which involved a 50% chance of winning or losing. Each participant received Rs.200 of which they could invest a positive amount $x \in \{0,20,40,...,180,200\}$ in a risky business. The investment would yield triple the amount invested with 50% probability and 0 with 50% probability. The outcome was decided by tossing a coin, if this task was chosen for final payment. If the coin showed heads, the investment was considered successful, and all participants received (200 - x + 3x). If tails showed up, the payoff for all players was (200 - x + 0).

Time Preference Task: Choice-lists provide an incentive-compatible way to condition real payoffs on actual choices, wherein subjects choose from a set of ordered choices between an immediate payoff and increasingly attractive future payoffs. We used ordered choice lists as in Sutter et al. (2013) to elicit preferences for delay discounting. In each list, participants were asked to choose twenty times between Rs.200 they could receive today, and an amount of money in three weeks. The amount they could choose to receive in three weeks increased at a rate of return of 2 percent. The earlier participants switch from choosing to receive the money today to receiving the higher amount later, the more patient they are considered to be. They were not paid for this task, and were asked to make their choices to gain better understanding of the types of decisions they were to make during the experimental session.

4.2.3 Preference for Competitive Environments

Competition among living things is primarily viewed as the 'struggle for existence' in the mechanism of evolution (Darwin, 1872). In a conflict-ridden scenario where negative experiences are afflicted by others, the comparison across 'social category fault lines' becomes stronger. Importantly, in the aftermath of massive loss, rehabilitation and recovery can evoke strong sentiments of competition or cooperation. We examine if ethnic conflicts that took place in Assam were likely to increase individuals' susceptibility to comparison and desire to maximise relative payoffs. Using an adaptation of Niedeble and Vesterlund (2007), we elicit competitive preferences in a physical effort task since a large proportion of our participants have low levels of literacy and numeracy skills.

Competition Task: Participants were asked to throw marbles into a bucket placed at 2 metres from them. The task comprised of four stages (in fixed order). They got paid under three different payment schemes related to the first three stages. In each of the first three stages, participants had one minute to throw as many marbles as they could into the bucket. In the first stage, participants faced a piece-rate compensation scheme and received Rs.10 for each marble that landed in the bucket and stayed in it. In the second stage, participants were exposed to a tournament compensation scheme. They received Rs.30 for each marble that landed in the bucket if they were ranked in the top third of all players in their group. If they got a rank below the top third, their payoff was zero. These two stages provided participants with experience in both compensation schemes. The rank in the tournament scheme was calculated within each room such that the top third won the tournament.

In the third stage, participants were asked to choose one among the two compensation schemes, piece-rate or tournament, to be applied to their future performance. They were then given another one minute to perform the task of landing as many marbles in the bucket. The performance of a participant choosing the competitive compensation scheme was evaluated relative to the performance of participants in their group who also performed under a tournament compensation scheme (stage 2). In the fourth stage of the task, participants did not have to perform, but were asked to choose the compensation scheme for their past piece-rate performance (in stage 1) according to which they would be paid. They were first reminded about the number of throws that landed in the bucket in stage 1 (but not about their rank), and then had to choose between the piece-rate and the tournament compensation scheme.⁶ This

⁶ If a participant chose to submit his or her piece-rate performance to a tournament, his or her score was compared to the score in stage 2 of the other participants in the session to determine their rank.

stage allowed us to test whether any heterogeneity between different groups in preference for competition (assessed in stage 3), can be explained solely by differences in taste for performing under a competitive environment. Or whether it can also be explained by other factors, such as overconfidence and risk aversion (Niederle & Vesterlund, 2010). In the final stage of the task, participants were asked to guess their relative performance in stages 1 and 2 to measure self-confidence. The elicitation of beliefs for relative performance was not incentivised, in order to ensure that participants had no interest in behaving strategically in the first stages, for instance by performing very poorly.

5. Results

5.1 Summary Statistics

Table 1 reports summary statistics of participants' demographic characteristics in the heavily affected villages, moderately affected villages and unaffected villages. We also conducted a balance check of participants' main characteristics of our samples in the three areas by including experimental sites fixed effects and clustering the standard errors at village level (Table 2). A broad sample balance is achieved across a variety of demographics, including age, gender, religious and individual and household monthly income. Our samples in the three areas do not differ in background demographics, except for education and marital status, as shown in columns (3) and (4) in Table 2.

[Table 1 & 2]

The average age of our sample in the heavily affected villages is approximately 41 while the average age of samples in the moderately affected and unaffected villages are 40. There are no significant differences in the three samples for age (columns 1 in Table 2). Our samples in the three areas are also gender balanced (column 2). Men account for 54% of the participants in the heavily affected villages, 50% of the moderately affected villages and 52% of the unaffected villages. The average years of schooling of our sample in the heavily affected areas is 5.7 years, statistically lower than the average years of schooling of our sample in the unaffected areas (6.4 years). This is consistent with the existing studies on the effects of exposure to conflicts on education, which have shown that civil conflicts disrupted schooling (e.g. Ichino & Winter-Ebmer, 2004; Akresh & de Walque, 2008; Leon, 2012; Shemyakina, 2011; Chamarbagwala & Morán, 2011; Dabalen & Paul, 2012; Verwimp & Van Bavel, 2014; Islam, Ouch, Smyth, & Wang, 2016). However, there is no significant difference in education

between participants living in the moderately affected areas and unaffected areas. More than 90% of our samples in the three areas are married; but the percentage of married participants in the heavily affected areas is statistically significantly higher than in the unaffected areas. Hindus account for 65% of the sample in heavily affected villages, 51% of the sample in moderately affected villages and 48% of the sample in unaffected areas. The median of individual income and household monthly income of participants in the three areas are similar and there are no differences across the three areas (columns 6 and 7 in Table 2).

5.2 Results from Experimental Games

We estimate the differences in behavioural outcomes in the experiments, survey outcomes, big five factors of personality traits and other self-assessment of personal wellbeing and memory capacity using equation (1):

$$Y_{ijk} = \beta_0 + \beta_1 H V_j + \beta_2 M V_j + \beta_2 X_i + \lambda_k + \varepsilon_{ijk}$$
(1)

where the outcome variable Y_{ijk} includes the behavioural outcomes in the experiments and various outcomes from the post-survey questions for individual *i* in area *j* and experimental site *k*. HV_j and MV_j define type of villages during the riots in 1983 and in 1985. They are dummy variables denoting the intensity of riots. HV takes the value of 1 for heavily affected villages, it is equal to zero otherwise. Similarly, MV equals 1 if a village is moderately affected and equals 0 otherwise. The reference category is unaffected villages. A set of control variables X_i includes age, gender, education and religion for individual *i*. λ_k is a set of experimental site fixed effects. ε_{ijk} is the error term. The regressions are clustered by villages where individual *i* is currently living.

In the sensitivity analysis section, we split the sample into two age groups, 31-40 and 41-48, to check whether the behaviour of the younger group different from that of the older group. Second, we also check for the potential impact of migration examining whether individuals who stayed in the current villages are different in terms of individual characteristics and behavioural outcomes from those who moved from riot villages to current villages.

5.2.1 Full sample

The regression results using the experimental outcomes from various games described in section 4.2 are presented in Table 3. Individuals who live in the villages that have been heavily

and moderately affected by riots are more trustworthy, more likely to compete, more likely to burn other players' money but less likely to cheat than individuals in the unaffected areas. The results also demonstrate that heavy and moderate exposure to riots increase pro-social preferences, such as trust and contribution behaviour, but the point estimate is not statistically significant.

[Table 3]

For the trust game, the regression results in Table 3 suggest that individuals in the heavily and moderately affected areas sent 3.6 and 0.4 percentage points more, respectively, of the endowment and returned 7.0 and 3.6 percentage points more, respectively, than individuals in the unaffected areas (columns 1 and 2). However, the differences are not statistically significant, except for the difference in trustworthiness between heavily exposed individuals and unexposed individuals (column 2). The heavily and moderately exposed individuals also display more cooperative attitudes (4.7 and 8.7 percentage points, respectively), as measured by their willingness to contribute to the group in the public goods game, than unexposed individuals. However, the differences are statistically insignificant (column 3). Voors et al. (2012) find that adults who were directly exposed to violence or who lived in communities that were violently attacked during the civil war in Burundi display more altruistic giving to members of their communities. A number of studies also find that individuals affected by conflict are observed to be more politically and socially engaged (Gilligan et al., 2014; Bateson, 2012; Blattman, 2009; Bellows & Miguel, 2009).

For anti-social behaviour, we find a statistically significantly positive association between exposure to riots and motivation for harming others but significantly negative relationship between exposure and dishonest behaviour. Column 4 of Table 3 shows the estimated results of money burning game where the dependent variable is whether participants burn other players' money for at least 1 of the 3 prices of burning (5%, 10%, and 20%). Compared to unexposed individuals, the heavily and moderately exposed individuals are more likely to burn other players' money by 13.8 and 11.3 percentage points, respectively.⁷ Column 5 presents the estimation for the self-reporting game and the measure of dishonesty is a binary indicator of whether participants take more money than that to which they are entitled. Being

⁷ We also include a binary indicator of whether the participant is an advantaged player (i.e., received a gift in the money burning game) as an additional control; however, the results remain unchanged.

heavily and moderately exposed to riots decreased dishonest attitudes since individuals are less likely to cheat by 10.9 and 12.9 percentage points than unexposed individuals.⁸

We examine the effect of exposure to riots on risk and time preferences and preference for competitive environments. In the risk game, the dependent variable is the percentage invested, while the switching point from receiving an amount of money today to receiving higher amounts three weeks later is used as dependent variable for time preference task. We find a statistically insignificant association between exposure to riots and risk and impatient attitudes (columns 6 and 7). Columns 8 and 9 present the estimated results for competitive preferences. The heavily exposed individuals have significantly stronger preferences for competition than unexposed individuals while individuals in both types of affected areas also display higher confidence under competitive conditions (measured by better guessed ranks for their performance). Additionally, individuals in moderately affected areas are likely to have higher confidence compared to those in heavily affected areas.

We also include additional controls, individuals' marital status and income, in the regressions. We report the estimated results in Table A1 in Appendix A. The signs, magnitudes, and significance levels of the coefficients of interest are almost identical to the results in Table 3. We also obtain similar results excluding education as a control from the regression. As we find some differences in education and marital status across three different groups, we control them here. It seems that our main results are not affected by adding or dropping these controls from the regression.

Since there can exist heterogeneity in the extent of physical torture, witnessing of violent acts, victimization of family or household, and the overall level of traumatic experience, we assess the extent to which these self-reported measures of trauma are affected by the intensity of riots (Table A2 in Appendix). We find that individuals in both heavily and moderately affected areas undergo significantly higher levels of trauma compared to unexposed individuals, such that those in heavily affected areas are affected more than moderately affected areas. Hence we control for various measures of traumatic experiences reported by individuals in our regressions in Tables A3-A5. We find our findings remain unchanged with the exception of the impact on competitiveness becoming insignificant in two cases.

⁸ We also control for the maximum number of possible correct answers in the regressions and the results do not vary.

5.2.2. Split by Gender

We investigate the impact of riots on males and females separately in Table 4. We find that there are differences both in the magnitude of impact and the behavioural characteristics themselves across gender. Specifically, the effect on money burning, dishonesty, and selfconfidence are explained by males as they are more likely to be honest, burn money, and guess better ranks than females in both types of affected areas, while there is no statistically significant effect for females. Additionally, males in moderately affected areas show significantly higher confidence even under non-competitive conditions (guessing better rank for their performance under the piece-rate payment scheme). On the other hand the positive effect on trustworthiness and competitiveness in heavily affected areas is explained by females. Additionally, we now find that females in both heavily and moderately affected areas are likely to contribute significantly to the public good.

[Table 4]

5.3 Results from the Survey Questions

We now analyse the survey data and examine the differences in the three level of exposure. The main purpose of this is to assess whether the behavioural outcomes in the survey support the findings from the experiment. Table 5 shows the OLS regression estimations on behavioural outcomes in the self-rated survey questions using equation (1) with the same set of controls as in Table 3. The results indicate that individuals in the heavily affected areas are more trusting (columns 1–5), have more confidence in others (column 6), more risk-averse (columns 7-11) and more honest (column 12). The heavily exposed individuals show high trust in overall trust index, trust in known others index, trust in local community index, compared to the unexposed individuals. Individuals exposed to moderately affected areas also show higher trust in known others than those in unaffected areas. These differences are statistically significant. However, the estimated coefficients for the effect of exposure to riots on attitudes towards risk on general, finance, occupation, and health issues are not statistically significant. Individuals in the heavily affected areas rated themselves as more honest than individuals in the unaffected areas, although there is no statistical significance. Overall, we find that trusting and honesty behaviour reported in the survey-based measures are consistent with trust in the experiment game, but not so for risk. Similarly, the results remained

unchanged after controlling for individuals' marital status and income (Table A6 in Appendix A).

[Table 5]

5.4 Personality Traits, Personal Wellbeing and Memory Capacity

Table 6 and 7 report the differences in personality traits and personal wellbeing and memory capacity among individuals in our samples using equation (1). The estimated results in Table 6 show that heavily exposed to riots has a statistically significant association with higher scores for agreeableness, indicating higher tendency toward altruism. This result is consistent with the findings from experimental games and survey questions. We also observe higher scores for extraversion and conscientiousness, but lower scores for neuroticism and openness for the heavily exposed individuals compared to the unexposed individuals; however, these differences are not significantly different from zero.

[Table 6]

We also find that being heavily and moderately exposed to riots can lead to lower memory capacity for both short and long-term memories than unexposed individuals (columns 3-4 in Table 7). However, the difference is statistically significant only for the long-term memories.

[Table 7]

5.5 Robustness Checks

5.5.1 Split the sample into young and old cohorts

We split the sample into two groups, aged from 31-40 and aged from 41-48, to examine whether the younger group act differently from the older group. We re-estimate the main results of Table 3 using the same estimation methods and control variables. The estimated results shown in Table 8 indicate that our main results in Table 3 are robust. Panel A of Table 8 displays the estimated results using the younger sample aged from 31-40 and Panel B presents the results using the older sample aged 41-48. In the younger sample, individuals in the heavily and moderately affected areas are more trustworthy, more likely to burn others' money, less likely to cheat and more likely to compete. The magnitudes of the effects are slightly bigger; however, the levels of significance of the coefficients of self-reporting game are slightly reduced (column 5) and the difference between the moderately exposed individuals in money burning game is no longer statistically significant

(column 4). However, the results show that the heavily exposed individuals are more likely to be patient than unexposed individuals and the difference becomes statistically significant at the 5% level of significance (column 7). We also observe a stronger effect and higher levels of significance for the preference for competition and self-confidence for the heavily and moderately exposed individuals (column 9). For the older sample (aged 41-48), the estimated results shown in Panel B also indicate the same results as younger age group, except for time preference and competition tasks. Individuals in the older group who are exposed to riots are less patient, less likely to compete, and have lower confidence than the unexposed group, but the differences are statistically insignificant.

[Table 8]

5.5.2 Migration Pattern

We check the migration pattern by showing that individuals who stayed in the current villages are not different in terms of individual characteristics and behavioural outcomes from those who moved from riot villages to current villages. We construct a sample binary variable as equal to 1 if the individual migrated from riot village to current village; otherwise, it is equal to 0 if individual lived in the current village during the riot period. We use equation (1) with the same set of control variables to re-estimate the results of Table 1 and 3.

Table 9 indicates that there are no differences in individuals' basic characteristics between those who migrated from riot villages to current villages and those who stayed in the current villages during the time of riots. We also find no significant differences in behavioural outcomes from experimental games between the two groups (Table 10), except for lower selfconfidence under competitive conditions among those who migrated. This suggests that our main results are not influenced by the migration pattern.

[Table 9 and 10]

6. Conclusion

We examine the long-term effects of one of the Assam riots on a range of behavioural and economic outcomes of the individuals who have heavily and moderately experienced these events during their childhood and early adolescence. We use three different approaches - experiments, survey-based measures, and personality traits questionnaires - to examine the effect of exposure to riots in one of the economically backward and geographically distant regions of India. We find that individuals heavily exposed to the riots are more trusting and competitive, but no effect on their risk taking behaviour and time preference. These

individuals are more altruistic, and show higher level of honesty than those living in unaffected areas. Individuals living in moderately affected areas show similar tendencies as those living in heavily affected areas. However, they generally show weaker influence than those in moderately affected regions. Our results are robust to the age of participants and migration after riots. The results hold with or without controlling for education, marital status and other controls which might be directly affected by riots. We also see that our results are supported by survey-based measures of trust. Using a number of measures of trust from detailed survey questions, find that those living in heavily affected areas have higher level of trust. The individuals in heavily affected areas show higher level of trust using different measures of trusts: compared to the unexposed individuals. We did not find any statistically significant effect on risk using either survey or experimental measures. The survey measures include risk on general, finance, occupation, and health issues. Overall, we find that trusting and honesty behaviour reported in the survey-based measures are consistent with trust in the experiment game, but not so for risk. We also find higher tendency toward altruism among those living in heavily affected areas when we use big five personality measures. We also find that being heavily exposed to riots can lead to lower memory capacity.

Amidst diverse evidence on the link between civil conflicts and pro-social behaviour and risk preferences, our results complement evidence that suggests that exposure to civil conflict has important long-term consequence on pro-social preferences and risk (Cassar et al., 2013; Rohner, Thoenig, & Zilibotti, 2013; Callen, Isaqzadeh, Long, & Sprenger, 2014)). Results from experimental approaches are observed to be correlated with actions outside the experimental setting and can provide meaningful insights about behaviour (Charness & Fehr, 2015; Fehr & Leibbrandt, 2011; Liu, 2013; Karlan, 2005).

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Table 1: Descriptive Statistics

	All sample (31-48)				Heavily Affected Villages			Moderately Affected Villages			Unaffected Villages			
	Ν	Mean	SD	Min.	Max.	Ν	Mean	SD	Ν	Mean	SD	Ν	Mean	SD
Age (years)	763	40.19	4.57	31	48	430	40.50	4.52	188	39.65	4.52	145	39.94	4.73
Male (=1)	763	0.53	0.50	0	1	430	0.54	0.50	188	0.50	0.50	145	0.52	0.50
Education (years)	763	5.87	4.65	0	21	430	5.70	4.66	188	5.87	4.61	145	6.38	4.70
Married (=1)	763	0.95	0.23	0	1	430	0.96	0.21	188	0.94	0.24	145	0.92	0.27
Hindu (=1)	763	0.58	0.49	0	1	430	0.65	0.48	188	0.51	0.50	145	0.48	0.50
Income (median)*	731	3861.15	3515.26	250 0	37500	416	3918.2 7	3458.2 6	177	3742.94	3132.09	138	3840.5 8	4121.3 3
HH income	762	6712.86	5793.85	600	50000	429	6666.2 0	5459.9 9	188	6311.17	5356.56	145	7371.7 2	7133.0 3

Notes: *Some respondents did not want to answer this question. Individual's income was reported as an interval variable. Medium income is the sum of minimum and maximum values of the reported interval and divided by 2.

Dependent variable:	Age	Male (=1)	Years of schooling completed	Married (=1)	Hindu (=1)	Income (median)	HH monthly income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Heavily affected areas	0.505	0.042	-1.588***	0.050**	-0.026	0.827	-1263.379
	(0.521)	(0.060)	(0.453)	(0.022)	(0.111)	(360.082)	(910.828)
Moderately affected areas	-0.328	-0.014	-0.718	0.022	-0.017	-103.215	-1194.005
	(0.581)	(0.063)	(0.556)	(0.027)	(0.116)	(406.081)	(953.903)
Site 2	1.115**	0.005	0.480	-0.038*	0.115*	-431.427	474.279
	(0.481)	(0.055)	(0.719)	(0.021)	(0.065)	(541.856)	(932.523)
Site 3	1.417***	0.085	-3.886***	0.037**	-0.842***	-1154.108**	-2111.667**
	(0.379)	(0.056)	(0.469)	(0.015)	(0.085)	(497.167)	(781.125)
Constant	38.967***	0.471***	8.377***	0.912***	0.907***	4527.133***	8416.071***
	(0.419)	(0.050)	(0.539)	(0.022)	(0.137)	(509.996)	(906.689)
R-squared	0.020	0.008	0.195	0.023	0.842	0.017	0.045
Observations	763	763	763	763	763	731	762

Table 2: Balance Check

Table 3: Estimates of effects of exposur	e to riots
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	Tı	rust	Public goods	Money Burning	Self- reporting	Risk	Time preference		Com	petition	
Dependent variable:	% Sent	% Returned	Contribute	Burn	Dishonest	% Invested	Impatience	Participate in tournament	Choice of payment: Tournament	Confidence (Non- competitive)	Confidence (Competitive)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Heavily affected areas	3.618	6.993***	0.047	0.138**	-0.109***	2.701	-0.348	-0.012	0.094**	-0.100	-0.974*
,	(3.982)	(2.534)	(0.066)	(0.051)	(0.036)	(5.149)	(0.432)	(0.049)	(0.042)	(0.401)	(0.482)
Moderately affected areas	0.421	3.591	0.087	0.113**	-0.129***	-3.439	-0.135	-0.055	0.071	-0.599	-1.361**
	(4.321)	(2.828)	(0.070)	(0.054)	(0.033)	(5.660)	(0.736)	(0.045)	(0.046)	(0.534)	(0.529)
Male	-2.301	3.734	-0.121***	-0.100**	0.037	-9.097***	-0.437	0.020	0.025	-1.173***	-0.947**
	(3.413)	(2.333)	(0.032)	(0.041)	(0.028)	(2.507)	(0.463)	(0.036)	(0.039)	(0.368)	(0.448)
Age	0.058	-0.134	-0.000	-0.001	0.004	-0.445	-0.051	0.001	0.000	0.108**	0.080
	(0.234)	(0.232)	(0.004)	(0.003)	(0.004)	(0.275)	(0.032)	(0.003)	(0.003)	(0.044)	(0.054)
Years of schooling completed	0.594*	1.038***	-0.001	-0.008*	-0.002	0.686***	0.134***	-0.004	0.002	0.025	-0.051
	(0.333)	(0.241)	(0.005)	(0.004)	(0.003)	(0.235)	(0.046)	(0.004)	(0.004)	(0.044)	(0.045)
Hindu	-3.754	-6.322**	-0.164	0.082	0.093***	-9.641	-0.647	0.025	0.066	2.773***	3.385***
	(5.239)	(2.700)	(0.098)	(0.051)	(0.030)	(9.126)	(0.622)	(0.064)	(0.079)	(0.671)	(0.540)
Site 2	-4.582	2.461	0.009	-0.167***	0.117***	-10.377***	0.668	-0.133***	-0.115***	1.369**	1.869**
	(3.614)	(3.653)	(0.060)	(0.046)	(0.019)	(3.737)	(0.466)	(0.034)	(0.033)	(0.643)	(0.733)
Site 3	1.177	-0.014	-0.142	-0.084	0.267***	-11.436	-0.095	-0.133**	0.011	2.193***	3.123***
	(5.875)	(3.305)	(0.115)	(0.064)	(0.036)	(8.707)	(0.565)	(0.062)	(0.078)	(0.522)	(0.589)
Constant	41.257***	31.815***	0.794***	0.821***	-0.136	79.242***	4.081**	0.406***	0.254*	1.392	2.598
	(13.024)	(11.172)	(0.219)	(0.176)	(0.167)	(14.564)	(1.692)	(0.135)	(0.138)	(1.999)	(2.296)
R-squared	0.017	0.048	0.023	0.052	0.073	0.047	0.034	0.017	0.011	0.052	0.056
Observations	762	7620	762	762	763	763	763	762	762	762	762

Notes: Site 2 is Gophur and Site 3 is Nellie. Robust standard errors clustered at the village level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.10

	Trust		Public goods	Money Burning	Self- reporting	Risk	Time preference		Competition		
Dependent variable:	% Sent	% Returned	Contribute	Burn	Dishonest	% Invested	Impatience	Participate in tournament	Choice of payment: Tournament	Confidence (Non- competitive)	Confidence (Competitive)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
				Pa	nel A: Male Sa	mple					
Heavily affected areas	5.853	4.713	-0.082	0.226***	-0.151***	4.681	-0.060	-0.067	0.054	0.043	-1.667*
	(4.360)	(4.419)	(0.060)	(0.062)	(0.047)	(4.699)	(0.643)	(0.080)	(0.090)	(0.549)	(0.972)
Moderately affected areas	2.125	3.004	-0.045	0.237***	-0.217***	-2.992	-0.401	-0.119	0.039	-1.126*	-2.065*
	(4.282)	(4.229)	(0.066)	(0.065)	(0.037)	(6.539)	(0.776)	(0.080)	(0.087)	(0.594)	(1.031)
R-squared	0.024	0.037	0.009	0.072	0.075	0.036	0.076	0.022	0.004	0.062	0.055
Observations	402	4020	402	402	403	403	403	402	402	402	402
				Pan	el B: Female S	ample					
Heavily affected areas	0.825	9.781**	0.166*	0.056	-0.054	1.051	-0.659	0.046	0.140**	-0.354	-0.182
	(5.585)	(3.794)	(0.083)	(0.097)	(0.055)	(7.191)	(0.778)	(0.069)	(0.068)	(0.656)	(0.677)
Moderately affected areas	-1.028	5.065	0.197**	0.010	-0.031	-2.722	0.177	0.008	0.096	0.047	-0.412
	(6.057)	(4.570)	(0.085)	(0.096)	(0.054)	(7.057)	(1.366)	(0.065)	(0.081)	(0.843)	(0.727)
R-squared	0.083	0.056	0.044	0.016	0.095	0.056	0.027	0.027	0.025	0.039	0.053
Observations	360	3600	360	360	360	360	360	360	360	360	360

Table 4: Estimates of effects of exposure to riots by gender

Notes: All regressions include controls for age, gender, education, religious and experimental site fixed effects. Robust standard errors clustered at the village level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.10

Dependent variable:	Overall trust index	Trust in institutions index	Trust in known others index	Trust in local community index	Trust in authoritie s index	Past trusting behaviour index	Risk in general	Risk in finance	Risk in occupatio n	Risk in health	Risk in household finance	Honesty (self-rated)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Heavily affected areas	2.225*	1.068	1.086***	0.934**	0.187	0.007	-0.135	-0.167	0.133	-0.168	-0.288	0.091
	(1.150)	(0.849)	(0.395)	(0.397)	(0.358)	(0.787)	(0.191)	(0.198)	(0.286)	(0.262)	(0.172)	(0.088)
Moderately affected areas	1.008	-0.128	0.971**	0.362	-0.541	-0.318	-0.001	-0.007	0.245	-0.036	-0.061	-0.002
	(1.102)	(0.865)	(0.426)	(0.492)	(0.434)	(0.697)	(0.248)	(0.242)	(0.348)	(0.217)	(0.261)	(0.085)
Male	1.608**	0.976	0.347	0.304	0.594*	0.247	0.097	0.029	0.184*	0.079	0.017	0.019
	(0.711)	(0.605)	(0.232)	(0.219)	(0.332)	(0.517)	(0.109)	(0.105)	(0.105)	(0.103)	(0.101)	(0.062)
Age	0.077	0.037	0.035	0.019	0.015	-0.003	0.000	0.003	-0.004	0.002	-0.004	-0.001
	(0.073)	(0.064)	(0.027)	(0.026)	(0.032)	(0.038)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.005)
Years of schooling completed	0.068	0.077	0.013	-0.011	0.068	0.062	-0.003	0.004	0.005	0.002	0.002	-0.004
	(0.115)	(0.098)	(0.031)	(0.037)	(0.053)	(0.048)	(0.011)	(0.014)	(0.011)	(0.013)	(0.014)	(0.008)
Hindu	-3.229**	-1.854*	-0.754*	-0.485	-0.710**	-1.897***	-1.153***	-0.678**	0.321	0.268	-0.787**	0.043
	(1.221)	(1.040)	(0.407)	(0.578)	(0.306)	(0.509)	(0.206)	(0.312)	(0.313)	(0.241)	(0.372)	(0.105)
Site 2	0.885	0.948	-0.255	-0.569	0.807	-0.322	0.319	0.250	0.283	0.333	0.247	0.124
	(1.675)	(1.513)	(0.332)	(0.678)	(0.647)	(0.923)	(0.320)	(0.352)	(0.374)	(0.448)	(0.354)	(0.094)
Site 3	6.176***	5.471***	1.114**	2.123***	2.715***	-1.964**	-0.813***	-0.395	0.468	0.443	-0.647	0.264
	(1.255)	(0.878)	(0.411)	(0.316)	(0.407)	(0.868)	(0.212)	(0.385)	(0.462)	(0.438)	(0.401)	(0.157)
Constant	57.082***	36.471***	18.212***	17.034***	9.819***	12.541***	3.311***	2.697***	1.757**	1.691***	3.351***	3.842***
	(3.568)	(3.075)	(1.255)	(1.264)	(1.595)	(2.056)	(0.394)	(0.441)	(0.725)	(0.577)	(0.577)	(0.305)
R-squared	0.198	0.165	0.111	0.177	0.128	0.016	0.039	0.018	0.021	0.013	0.024	0.018
Observations	763	763	763	763	763	763	763	763	762	763	763	763

Table 5: Estimates of effects of exposure to riots using survey questions

Dependent variable:	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness
	(1)	(2)	(3)	(4)	(5)
Heavily affected areas	0.047	0.138**	0.096	-0.057	-0.006
Heavily affected areas					
	(0.068)	(0.060)	(0.066)	(0.058)	(0.086)
Moderately affected areas	-0.122	0.052	0.061	0.136*	0.086
	(0.092)	(0.062)	(0.067)	(0.069)	(0.086)
Male	-0.025	0.071	0.006	-0.187***	0.008
	(0.036)	(0.059)	(0.058)	(0.052)	(0.042)
Age	0.001	0.000	0.011**	0.001	-0.001
	(0.004)	(0.005)	(0.005)	(0.005)	(0.004)
Years of schooling completed	0.012**	-0.003	0.002	0.001	0.003
	(0.006)	(0.006)	(0.007)	(0.005)	(0.007)
Hindu	0.084**	-0.172*	-0.088	0.137	-0.152
	(0.041)	(0.091)	(0.094)	(0.110)	(0.107)
Site 2	-0.164**	0.165*	0.091	-0.137*	0.039
	(0.076)	(0.082)	(0.066)	(0.080)	(0.098)
Site 3	-0.123**	-0.041	-0.155	-0.073	0.002
	(0.049)	(0.082)	(0.121)	(0.107)	(0.087)
Constant	3.204***	3.719***	3.498***	2.682***	3.004***
	(0.197)	(0.224)	(0.279)	(0.198)	(0.204)
R-squared	0.053	0.024	0.025	0.050	0.019
Observations	763	763	763	763	763

 Table 6: Estimates of effects of exposure to riots on Big Five Personality Traits

			Repeat word 1	
Dependent variable:	PWI life	PWI all	(% of correct	(% of correct
			word)	word)
	(1)	(2)	(3)	(4)
Heavily affected areas	-1.151	0.433	-1.236	-4.657**
	(3.102)	(1.750)	(1.758)	(1.936)
Moderately affected areas	-7.813**	-0.950	-6.598***	-8.877***
	(3.569)	(1.794)	(2.376)	(2.586)
Male	3.149	0.611	-0.508	-0.821
	(2.001)	(1.033)	(1.441)	(1.822)
Age	0.311	0.118	-0.377***	-0.427***
	(0.191)	(0.088)	(0.134)	(0.151)
Years of schooling completed	0.454**	0.182*	1.257***	1.105***
	(0.188)	(0.094)	(0.170)	(0.165)
Hindu	-15.246***	-10.645***	-3.386*	-2.531
	(3.411)	(2.610)	(1.982)	(5.052)
Site 2	-0.983	0.692	-5.031*	-3.991
	(3.622)	(2.392)	(2.593)	(3.656)
Site 3	-17.154***	-10.874***	-0.957	-1.758
	(2.697)	(2.404)	(2.007)	(4.445)
Constant	70.191***	73.601***	60.481***	58.125***
	(9.947)	(4.970)	(6.545)	(6.982)
R-squared	0.071	0.044	0.153	0.124
Observations	763	763	763	763

Tal	ole 7: Estimates of effects of exposure to	riots on personal wellbeing	and memory capacity

	Trust		Public goods	Money Burning	Self- reporting	Risk	Time preference	Competition				
Dependent variable:	% Sent	% Returned	Contribut e	Burn	Dishonest	% Invested	Impatience	Participate in tournament	Choice of payment: Tournament	Confidence (Non- competitive)	Confidence (Competitive)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
				Pa	anel A: Aged fi	rom 31-40						
Heavily affected areas	3.848	8.535**	0.059	0.156**	-0.138*	6.376	-1.044*	0.065	0.186***	-0.530	-1.629**	
	(5.137)	(3.690)	(0.065)	(0.071)	(0.070)	(5.516)	(0.541)	(0.052)	(0.046)	(0.499)	(0.741)	
Moderately affected areas	-1.812	2.102	0.072	0.118	-0.126*	0.336	-0.278	0.038	0.181***	-0.401	-1.958***	
	(5.215)	(3.888)	(0.074)	(0.085)	(0.068)	(6.645)	(0.767)	(0.043)	(0.049)	(0.573)	(0.691)	
R-squared	0.036	0.050	0.039	0.055	0.078	0.044	0.031	0.019	0.040	0.060	0.051	
Observations	414	4140	414	414	415	415	415	414	414	414	414	
				Pa	anel B: Aged fi	om 41-48						
Heavily affected areas	3.875	5.555**	0.026	0.128**	-0.078	-0.453	0.532	-0.112	-0.029	0.162	-0.269	
	(4.342)	(2.450)	(0.093)	(0.052)	(0.059)	(6.601)	(0.403)	(0.067)	(0.067)	(0.624)	(0.743)	
Moderately affected areas	3.187	5.718**	0.108	0.129**	-0.138*	-6.768	0.107	-0.189**	-0.088	-1.074	-0.639	
	(5.545)	(2.229)	(0.092)	(0.055)	(0.069)	(7.176)	(0.748)	(0.076)	(0.067)	(0.859)	(0.937)	
R-squared	0.016	0.056	0.035	0.067	0.070	0.061	0.050	0.041	0.026	0.068	0.076	
Observations	348	3480	348	348	348	348	348	348	348	348	348	

Table 8: Robustness: Estimates of effects of exposure to riots by splitting sample

Notes: All regressions include controls for age, gender, education, religious and experimental site fixed effects. Robust standard errors clustered at the village level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.10

Dependent variable:	Age	Male (=1)	Years of schooling complete d	Married (=1)	Hindu (=1)	Income (median)	HH monthly income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Migration	-0.098	-0.424***	-0.111	0.025	0.023	-126.561	705.085
	(0.391)	(0.037)	(0.434)	(0.020)	(0.025)	(331.470)	(509.714)
Site 2	1.271**	0.022	0.152	-0.028	0.110*	-423.520	261.350
	(0.497)	(0.046)	(0.660)	(0.025)	(0.060)	(456.101)	(701.314)
Site 3	1.397*** (0.425)	0.055 (0.050)	-3.887*** (0.571)	0.038* (0.019)	-0.841*** (0.070)	- 1164.279*** (416.592)	-2070.689*** (614.975)
Constant	39.148***	0.622***	7.464***	0.934***	0.882***	4540.500***	7267.213***
	(0.382)	(0.036)	(0.532)	(0.018)	(0.066)	(387.337)	(622.356)
R-squared	0.014	0.154	0.178	0.018	0.842	0.017	0.042
Observations	763	763	763	763	763	731	

Table 9: Robustness: Balance test for migration pattern

	Ті	rust	Public goods	Money Burning	Self- reporting	Risk	Time preference	Competition				
Dependent variable:	% Sent	% Returned	Contribut e	Burn	Dishonest	% Invested	Impatience	Participate in tournament	Choice of payment: Tournament	Confidence (Non- competitive)	Confidence (Competitive)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
Migration	3.618 (3.982)	6.993*** (2.534)	0.047 (0.066)	0.138** (0.051)	-0.109*** (0.036)	2.701 (5.149)	-0.348 (0.432)	-0.012 (0.049)	0.094** (0.042)	1.306** (0.620)	1.066* (0.567)	
Male	-2.301	3.734	-0.121***	-0.100**	0.037	-9.097***	-0.437	0.020	0.025	-0.685	-0.574	
	(3.413)	(2.333)	(0.032)	(0.041)	(0.028)	(2.507)	(0.463)	(0.036)	(0.039)	(0.496)	(0.534)	
Age	0.058 (0.234)	-0.134 (0.232)	-0.000 (0.004)	-0.001 (0.003)	0.004 (0.004)	-0.445 (0.275)	-0.051 (0.032)	0.001 (0.003)	0.000 (0.003)	0.106** (0.045)	0.080 (0.052)	
Years of schooling completed	0.594* (0.333)	1.038*** (0.241)	-0.001 (0.005)	-0.008* (0.004)	-0.002 (0.003)	0.686*** (0.235)	0.134*** (0.046)	-0.004 (0.004)	0.002 (0.004)	0.016 (0.055)	-0.048 (0.052)	
Hindu	-3.754 (5.239)	-6.322** (2.700)	-0.164 (0.098)	0.082	0.093*** (0.030)	-9.641 (9.126)	-0.647 (0.622)	0.025 (0.064)	0.066 (0.079)	2.642** (1.175)	3.370*** (1.107)	
Site 2	-4.582	2.461	0.009	-0.167***	0.117***	-10.377***	0.668	-0.133***	-0.115***	1.388*	1.729**	
Site 3	(3.614) 1.177	(3.653) -0.014	(0.060) -0.142	(0.046) -0.084	(0.019) 0.267***	(3.737) -11.436	(0.466) -0.095	(0.034) -0.133**	(0.033) 0.011	(0.760) 2.085*	(0.683) 3.147***	
Constant	(5.875) 41.257***	(3.305) 31.815***	(0.115) 0.794***	(0.064) 0.821***	(0.036) -0.136	(8.707) 79.242***	(0.565) 4.081**	(0.062) 0.406***	(0.078) 0.254*	(1.086) 0.761	(1.108) 1.230	
R-squared	(13.024) 0.017	(11.172) 0.048	(0.219) 0.023	(0.176) 0.052	(0.167) 0.073	(14.564) 0.047	(1.692) 0.034	(0.135) 0.017	(0.138) 0.011	(2.091) 0.059	(2.545) 0.056	
Observations	762	7620	762	762	763	763	763	762	762	762	762	

Table 10: Robustness: Effect of migration

	Tr	ust	Public goods	Money Burning	Self- reporting	Risk	Time preference		Com	petition	
Dependent variable:	% Sent	% Returned	Contribute	Burn	Dishonest	% Invested	Impatience	Participate in tournament	Choice of payment: Tournament	Confidence (Non- competitive)	Confidence (Competitive)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Migration	-3.519	-1.376	0.002	-0.052	-0.004	-0.206	-0.508	0.023	-0.010	1.306**	1.066*
	(2.904)	(1.946)	(0.046)	(0.039)	(0.037)	(3.275)	(0.360)	(0.037)	(0.035)	(0.620)	(0.567)
Male	-3.349	3.565	-0.120***	-0.114***	0.033	-8.877***	-0.638	0.029	0.025	-0.685	-0.574
	(3.681)	(2.158)	(0.041)	(0.034)	(0.032)	(3.265)	(0.445)	(0.032)	(0.039)	(0.496)	(0.534)
Age	0.079	-0.123	-0.000	-0.001	0.004	-0.417	-0.050	0.001	0.000	0.106**	0.080
	(0.224)	(0.172)	(0.004)	(0.003)	(0.003)	(0.261)	(0.034)	(0.003)	(0.004)	(0.045)	(0.052)
Years of schooling completed	0.560*	0.949***	-0.001	-0.010***	-0.001	0.632**	0.142***	-0.005	0.001	0.016	-0.048
	(0.319)	(0.226)	(0.005)	(0.004)	(0.003)	(0.288)	(0.035)	(0.004)	(0.004)	(0.055)	(0.052)
Hindu	-3.766	-6.908**	-0.169**	0.074	0.104	-9.939**	-0.556	0.023	0.057	2.642**	3.370***
	(6.324)	(3.279)	(0.077)	(0.088)	(0.065)	(4.920)	(0.503)	(0.063)	(0.057)	(1.175)	(1.107)
Site 2	-3.689	3.947	0.014	-0.141***	0.100***	-9.387***	0.592	-0.132***	-0.097***	1.388*	1.729**
	(3.303)	(3.370)	(0.048)	(0.044)	(0.027)	(3.566)	(0.445)	(0.039)	(0.035)	(0.760)	(0.683)
Site 3	0.795	-0.979	-0.145*	-0.098	0.280***	-12.076**	-0.004	-0.135**	-0.001	2.085*	3.147***
	(6.894)	(4.398)	(0.086)	(0.107)	(0.065)	(5.348)	(0.453)	(0.055)	(0.059)	(1.086)	(1.108)
Constant	44.168***	37.384***	0.856***	0.955***	-0.250	79.117***	3.962**	0.370**	0.337**	0.761	1.230
	(12.344)	(9.881)	(0.199)	(0.179)	(0.162)	(11.914)	(1.556)	(0.148)	(0.168)	(2.091)	(2.545)
R-squared	0.016	0.039	0.020	0.042	0.056	0.042	0.036	0.016	0.006	0.059	0.056
Observations	762	7620	762	762	763	763	763	762	762	762	762

	Тт	rust	Public good	Money Burning	Self- reporting	Risk	Time preference		Com	petition	
Dependent variable:	% Sent	% Returned	Contribut e	Burn	Dishonest	% Invested	Impatience	Participate in tournament	Choice of payment: Tournament	Confidence (Non- competitive)	Confidence (Competitive)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Heavily affected areas	3.524	7.348***	0.041	0.133***	-0.105***	1.721	-0.316	-0.014	0.089*	-0.197	-0.984*
neavity anceted areas	(3.992)	(2.497)	(0.064)	(0.047)	(0.036)	(5.613)	(0.452)	(0.050)	(0.051)	(0.424)	(0.564)
Moderately affected areas	-0.978	3.424	0.092	0.109**	-0.132***	-4.687	-0.032	-0.058	0.074	-0.659	-1.404**
moderately uncered dreas	(4.302)	(2.835)	(0.071)	(0.050)	(0.032)	(5.912)	(0.723)	(0.049)	(0.055)	(0.545)	(0.578)
Male	-2.562	3.963	-0.123***	-0.116***	0.042	-9.311***	-0.419	0.013	0.009	-1.231***	-0.878*
	(3.378)	(2.424)	(0.037)	(0.041)	(0.027)	(2.364)	(0.474)	(0.038)	(0.041)	(0.381)	(0.442)
Age	-0.021	-0.135	-0.000	-0.001	0.003	-0.467*	-0.069**	0.001	-0.000	0.074*	0.043
	(0.247)	(0.227)	(0.004)	(0.003)	(0.004)	(0.269)	(0.032)	(0.003)	(0.003)	(0.041)	(0.051)
Years of schooling completed	0.605*	1.087***	-0.001	-0.009*	-0.003	0.636**	0.117**	-0.004	0.002	0.011	-0.074*
0 - F	(0.347)	(0.258)	(0.005)	(0.004)	(0.003)	(0.279)	(0.050)	(0.004)	(0.004)	(0.050)	(0.044)
Hindu	-3.818	-5.585*	-0.190**	0.088	0.076**	-8.212	-0.598	0.054	0.095	2.506***	2.928***
	(5.178)	(2.877)	(0.092)	(0.052)	(0.029)	(9.458)	(0.602)	(0.059)	(0.088)	(0.697)	(0.673)
Married	1.984	-1.486	0.079	0.031	-0.004	-0.962	0.503	0.082	0.086	1.684	0.464
	(5.426)	(4.422)	(0.081)	(0.073)	(0.051)	(4.288)	(0.605)	(0.071)	(0.078)	(1.041)	(0.986)
Income	0.000	-0.000	-0.000	0.000	0.000	0.000	0.000	0.000**	0.000*	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Site 2	-3.921	2.009	0.020	-0.165***	0.115***	-9.779**	0.704	-0.130***	-0.117***	1.549**	1.893**
	(3.616)	(3.869)	(0.064)	(0.045)	(0.019)	(3.959)	(0.507)	(0.035)	(0.034)	(0.680)	(0.746)
Site 3	1.574	0.448	-0.162	-0.079	0.246***	-9.222	-0.148	-0.104*	0.041	1.910***	2.500***
	(5.980)	(3.399)	(0.112)	(0.067)	(0.036)	(9.564)	(0.584)	(0.053)	(0.089)	(0.542)	(0.759)
Constant	42.172***	32.317**	0.748***	0.763***	-0.081	78.672***	4.310**	0.263*	0.143	1.439	4.342**
	(14.533)	(12.356)	(0.228)	(0.210)	(0.177)	(15.634)	(2.039)	(0.130)	(0.142)	(2.136)	(2.136)
R-squared	0.018	0.050	0.027	0.057	0.072	0.048	0.034	0.024	0.017	0.054	0.054
Observations	730	7300	730	730	731	731	731	730	730	730	730

Dependent variable:	Experienced physical torture (=1)	Frequency of experiencing physical torture	Frequency of witness of property damage	Index of witness violence act	Family affected by riots (=1)	Index of HH victimization (=1)	Level of traumatization
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Heavily affected areas	0.285*** (0.045)	0.643*** (0.121)	1.427*** (0.248)	2.106*** (0.453)	0.528*** (0.072)	0.478*** (0.080)	1.558*** (0.288)
Moderately affected areas	0.206***	0.557***	1.008***	1.760***	0.313***	0.309***	0.863**
Male	(0.052) 0.076*	(0.128) 0.053	(0.287) 0.287**	(0.507) 0.516**	(0.099) 0.024	(0.101) 0.010	(0.358) 0.214
	(0.038)	(0.102)	(0.125)	(0.198)	(0.052)	(0.056)	(0.129)
Age	0.010***	0.019***	0.035***	0.041**	0.006	0.005	0.024*
	(0.003)	(0.005)	(0.009)	(0.019)	(0.003)	(0.003)	(0.012)
Years of schooling completed	0.003	0.012	-0.005	-0.045**	0.007	0.004	0.019
	(0.003)	(0.007)	(0.013)	(0.021)	(0.004)	(0.004)	(0.012)
Hindu	-0.042	-0.097	-0.692**	-1.148***	-0.180**	-0.211***	-1.077***
	(0.038)	(0.096)	(0.329)	(0.296)	(0.084)	(0.068)	(0.246)
Site 2	-0.073	-0.229*	-0.677***	-1.061**	-0.035	0.017	-0.812***
	(0.051)	(0.118)	(0.230)	(0.444)	(0.070)	(0.077)	(0.297)
Site 3	0.074	0.274**	-0.473	-0.181	0.118	0.181*	-0.867**
~	(0.056)	(0.130)	(0.440)	(0.555)	(0.113)	(0.107)	(0.348)
Constant	-0.435***	-0.886***	-0.371	-0.245	-0.118	-0.120	0.683
_	(0.139)	(0.286)	(0.659)	(1.183)	(0.218)	(0.197)	(0.752)
R-squared	0.111	0.110	0.225	0.252	0.212	0.227	0.240
Observations	763	763	763	763	763	763	763

	T	rust	Public goods	Money Burning	Self- reporting	Risk	Time preference		Com	petition	
Dependent variable:	% Sent	% Returned	Contribute	Burn	Dishonest	% Invested	Impatience	Participate in tournament	Choice of payment: Tournament	Confidence (Non- competitive)	Confidence (Competitive)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Heavily affected areas	2.521	7.411***	0.041	0.135***	-0.095**	2.664	-0.160	-0.005	0.085*	-0.142	-0.888
	(4.065)	(2.439)	(0.065)	(0.039)	(0.040)	(4.529)	(0.428)	(0.046)	(0.048)	(0.603)	(0.587)
Moderately affected areas	-0.375	3.895	0.083	0.111**	-0.119***	-3.466	0.001	-0.050	0.064	-0.629	-1.299**
	(4.283)	(2.645)	(0.070)	(0.045)	(0.037)	(4.886)	(0.517)	(0.046)	(0.051)	(0.668)	(0.613)
Male	-2.598	3.847*	-0.122***	-0.101***	0.041	-9.107***	-0.387	0.022	0.023	-1.184***	-0.923*
	(3.148)	(2.086)	(0.036)	(0.029)	(0.025)	(2.832)	(0.402)	(0.033)	(0.037)	(0.441)	(0.520)
Age	0.019	-0.119	-0.000	-0.001	0.004	-0.446*	-0.044	0.001	-0.000	0.106**	0.083
	(0.231)	(0.173)	(0.004)	(0.003)	(0.003)	(0.249)	(0.035)	(0.003)	(0.004)	(0.044)	(0.051)
Years of schooling completed	0.583*	1.042***	-0.001	-0.008**	-0.002	0.686**	0.136***	-0.004	0.002	0.024	-0.050
	(0.321)	(0.219)	(0.005)	(0.003)	(0.003)	(0.275)	(0.037)	(0.004)	(0.004)	(0.055)	(0.052)
Hindu	-3.597	-6.382**	-0.163*	0.083	0.091**	-9.635*	-0.674	0.024	0.067	2.779***	3.373***
	(5.348)	(3.132)	(0.097)	(0.052)	(0.040)	(4.976)	(0.522)	(0.061)	(0.058)	(0.935)	(0.888)
Experienced physical torture (=1)	3.850	-1.468	0.020	0.010	-0.050*	0.130	-0.658*	-0.025	0.031	0.147	-0.300
	(2.727)	(1.897)	(0.058)	(0.031)	(0.027)	(3.649)	(0.353)	(0.042)	(0.042)	(0.599)	(0.622)
Site 2	-4.295	2.352	0.011	-0.166***	0.113***	-10.367***	0.620	-0.135***	-0.113***	1.380*	1.847***
	(3.177)	(3.143)	(0.051)	(0.037)	(0.024)	(3.630)	(0.408)	(0.041)	(0.037)	(0.721)	(0.671)
Site 3	0.898	0.092	-0.143	-0.084	0.271***	-11.445**	-0.046	-0.131**	0.009	2.182**	3.144***
	(5.809)	(3.636)	(0.109)	(0.062)	(0.043)	(5.264)	(0.464)	(0.053)	(0.066)	(0.852)	(0.991)
Constant	42.924***	31.180***	0.802***	0.825***	-0.158	79.298***	3.795**	0.396***	0.267	1.455	2.468
	(12.331)	(9.021)	(0.235)	(0.173)	(0.148)	(11.653)	(1.702)	(0.151)	(0.170)	(1.964)	(2.426)
R-squared	0.019	0.048	0.024	0.052	0.076	0.047	0.038	0.018	0.012	0.052	0.057
Observations	762	7620	762	762	763	763	763	762	762	762	762

Table A3: Estimates of effects of exposure to riots controlling for experience of physical torture

	T	rust	Public goods	Money Burning	Self- reporting	Risk	Time preference		Com	petition	
Dependent variable:	% Sent	% Returned	Contribute	Burn	Dishonest	% Invested	Impatience	Participate in tournament	Choice of payment: Tournament	Confidence (Non- competitive)	Confidence (Competitive)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Heavily affected areas	3.725	6.989***	0.062	0.121***	-0.092**	5.322	-0.280	-0.021	0.067	-0.379	-1.065*
	(4.224)	(2.435)	(0.068)	(0.042)	(0.038)	(4.344)	(0.447)	(0.047)	(0.045)	(0.641)	(0.610)
Moderately affected areas	0.510	3.589	0.100	0.099**	-0.114***	-1.249	-0.078	-0.062	0.048	-0.829	-1.436**
	(4.392)	(2.851)	(0.074)	(0.045)	(0.039)	(4.711)	(0.534)	(0.046)	(0.047)	(0.649)	(0.636)
Male	-2.275	3.733*	-0.117***	-0.104***	0.041	-8.455***	-0.420	0.018	0.019	-1.240***	-0.968*
	(3.180)	(2.059)	(0.036)	(0.031)	(0.025)	(2.768)	(0.415)	(0.034)	(0.037)	(0.444)	(0.520)
Age	0.060	-0.134	0.000	-0.002	0.004	-0.393	-0.049	0.001	-0.000	0.102**	0.078
C .	(0.229)	(0.181)	(0.004)	(0.003)	(0.003)	(0.254)	(0.035)	(0.003)	(0.004)	(0.044)	(0.051)
Years of schooling completed	0.592*	1.038***	-0.001	-0.008**	-0.003	0.630**	0.133***	-0.004	0.002	0.030	-0.049
	(0.322)	(0.220)	(0.005)	(0.003)	(0.003)	(0.275)	(0.037)	(0.004)	(0.004)	(0.055)	(0.053)
Hindu	-3.813	-6.320*	-0.173*	0.092*	0.084**	-11.069**	-0.684	0.029	0.081	2.927***	3.435***
	(5.433)	(3.413)	(0.097)	(0.055)	(0.041)	(5.149)	(0.512)	(0.063)	(0.058)	(0.924)	(0.905)
Index of witness violence act	-0.051	0.002	-0.007	0.008	-0.008*	-1.244*	-0.032	0.004	0.013*	0.133	0.043
	(0.441)	(0.456)	(0.009)	(0.008)	(0.005)	(0.672)	(0.059)	(0.008)	(0.007)	(0.102)	(0.114)
Site 2	-4.635	2.463	0.001	-0.159***	0.108***	-11.697***	0.634	-0.129***	-0.102***	1.507**	1.914***
	(3.194)	(2.973)	(0.051)	(0.039)	(0.024)	(3.683)	(0.413)	(0.042)	(0.037)	(0.714)	(0.675)
Site 3	1.169	-0.014	-0.143	-0.082	0.266***	-11.660**	-0.101	-0.132**	0.013	2.214***	3.129***
	(5.848)	(3.672)	(0.111)	(0.065)	(0.043)	(5.546)	(0.447)	(0.054)	(0.064)	(0.831)	(1.020)
Constant	41.243***	31.816***	0.792***	0.823***	-0.138	78.937***	4.073**	0.407***	0.257	1.428	2.610
	(12.286)	(9.181)	(0.236)	(0.175)	(0.149)	(11.987)	(1.663)	(0.148)	(0.168)	(1.985)	(2.480)
R-squared	0.017	0.048	0.024	0.053	0.076	0.053	0.035	0.017	0.015	0.054	0.056
Observations	762	7620	762	762	763	763	763	762	762	762	762

Table A4: Estimates of effects of exposure to riots controlling for index of witness violence act

	T	rust	Public goods	Money Burning	Self- reporting	Risk	Time preference		Com	petition	
Dependent variable:	% Sent	% Returned	Contribute	Burn	Dishonest	% Invested	Impatience	Participate in tournament	Choice of payment: Tournament	Confidence (Non- competitive)	Confidence (Competitive)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Heavily affected areas	4.021	7.033***	0.015	0.145***	-0.094**	0.679	-0.395	-0.030	0.066	-0.182	-0.866
	(4.106)	(2.459)	(0.063)	(0.041)	(0.039)	(4.693)	(0.467)	(0.044)	(0.049)	(0.684)	(0.680)
Moderately affected areas	0.682	3.618	0.066	0.118***	-0.119***	-4.744	-0.165	-0.067	0.053	-0.652	-1.291**
	(4.346)	(2.772)	(0.069)	(0.045)	(0.038)	(4.924)	(0.528)	(0.045)	(0.049)	(0.653)	(0.614)
Male	-2.291	3.735*	-0.121***	-0.100***	0.037	-9.141***	-0.438	0.019	0.025	-1.175***	-0.944*
	(3.216)	(2.088)	(0.036)	(0.029)	(0.025)	(2.857)	(0.410)	(0.033)	(0.036)	(0.441)	(0.511)
Age	0.062	-0.134	-0.001	-0.001	0.004	-0.466*	-0.051	0.001	-0.000	0.107**	0.081
	(0.228)	(0.179)	(0.004)	(0.003)	(0.003)	(0.262)	(0.034)	(0.003)	(0.004)	(0.044)	(0.050)
Years of schooling completed	0.598*	1.038***	-0.001	-0.008**	-0.002	0.667**	0.134***	-0.005	0.002	0.024	-0.050
	(0.316)	(0.217)	(0.005)	(0.003)	(0.003)	(0.273)	(0.037)	(0.004)	(0.004)	(0.055)	(0.053)
Hindu	-3.931	-6.339*	-0.150	0.079	0.086**	-8.747*	-0.626	0.033	0.078	2.809***	3.338***
	(5.457)	(3.215)	(0.096)	(0.054)	(0.040)	(5.064)	(0.522)	(0.064)	(0.058)	(0.930)	(0.873)
Index of HH victimization (=1)	-0.842	-0.084	0.067*	-0.016	-0.032	4.229	0.099	0.037	0.059	0.171	-0.225
	(2.328)	(2.024)	(0.040)	(0.035)	(0.023)	(3.493)	(0.346)	(0.040)	(0.038)	(0.484)	(0.555)
Site 2	-4.568	2.462	0.008	-0.167***	0.118***	-10.449***	0.667	-0.133***	-0.116***	1.366*	1.873***
	(3.277)	(3.178)	(0.052)	(0.037)	(0.023)	(3.584)	(0.413)	(0.040)	(0.037)	(0.723)	(0.677)
Site 3	1.328	0.001	-0.154	-0.081	0.273***	-12.200**	-0.113	-0.139**	0.001	2.162**	3.163***
	(5.881)	(3.658)	(0.107)	(0.060)	(0.043)	(4.982)	(0.437)	(0.054)	(0.066)	(0.850)	(1.002)
Constant	41.157***	31.805***	0.802***	0.819***	-0.140	79.749***	4.093**	0.411***	0.261	1.412	2.571
	(12.256)	(9.203)	(0.234)	(0.170)	(0.149)	(12.333)	(1.645)	(0.149)	(0.168)	(2.000)	(2.445)
R-squared	0.017	0.048	0.027	0.052	0.075	0.050	0.034	0.018	0.014	0.052	0.056
Observations	762	7620	762	762	763	763	763	762	762	762	762

Table A5: Estimates of effects of exposure to riots controlling for index of household victimization

Dependent variable:	Overall trust index	Trust in institutions index	Trust in known others index	Trust in local community index	Trust in authorities index	Past trusting behaviour index	Risk in general	Risk in finance	Risk in occupation	Risk in health	Risk in household finance	Honesty (self-rated)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Heavily affected areas	2.539**	1.296	1.156***	1.011**	0.307	0.023	-0.112	-0.174	0.184	-0.115	-0.243	0.133
	(1.206)	(0.923)	(0.391)	(0.441)	(0.390)	(0.804)	(0.205)	(0.204)	(0.293)	(0.258)	(0.179)	(0.085)
Moderately affected areas	1.408	0.243	0.984**	0.507	-0.329	-0.084	0.048	0.004	0.286	-0.024	-0.012	0.027
	(1.152)	(0.919)	(0.426)	(0.529)	(0.463)	(0.683)	(0.256)	(0.249)	(0.353)	(0.213)	(0.268)	(0.085)
Male	1.820**	1.205*	0.350	0.424*	0.648*	0.253	0.108	0.035	0.171	0.074	0.044	0.011
	(0.730)	(0.624)	(0.221)	(0.223)	(0.340)	(0.567)	(0.114)	(0.108)	(0.106)	(0.106)	(0.106)	(0.059)
Age	0.120	0.077	0.040	0.029	0.040	0.003	-0.002	-0.001	-0.010	-0.003	-0.008	-0.003
	(0.077)	(0.067)	(0.027)	(0.027)	(0.034)	(0.037)	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)	(0.004)
Years of schooling completed	0.129	0.136	0.020	0.004	0.106**	0.068	-0.007	-0.003	-0.003	-0.003	-0.001	-0.007
	(0.105)	(0.090)	(0.029)	(0.036)	(0.046)	(0.047)	(0.012)	(0.014)	(0.011)	(0.014)	(0.015)	(0.009)
Hindu	-3.704***	-2.436***	-0.637	-0.708	-0.916***	-1.953***	-1.109***	-0.654**	0.363	0.322	-0.850**	0.047
	(1.068)	(0.855)	(0.442)	(0.490)	(0.325)	(0.526)	(0.231)	(0.314)	(0.315)	(0.243)	(0.355)	(0.116)
Married	0.853	0.972	-0.329	-0.587	0.813	-0.269	0.263	0.205	0.230	0.333	0.214	0.136
	(1.712)	(1.586)	(0.340)	(0.711)	(0.689)	(0.932)	(0.321)	(0.351)	(0.367)	(0.444)	(0.352)	(0.086)
Income	5.740***	5.106***	1.089**	1.878***	2.744***	-1.823*	-0.814***	-0.423	0.443	0.444	-0.779*	0.277*
	(1.323)	(0.945)	(0.417)	(0.327)	(0.457)	(0.922)	(0.203)	(0.369)	(0.429)	(0.393)	(0.384)	(0.162)
Site 2	0.634	0.136	0.283	0.154	0.116	0.334	-0.176	-0.180	-0.185	-0.083	-0.026	-0.252*
	(1.240)	(0.887)	(0.586)	(0.668)	(0.438)	(0.697)	(0.289)	(0.271)	(0.195)	(0.223)	(0.257)	(0.136)
Site 3	-0.000	-0.000*	-0.000	-0.000	-0.000	0.000	0.000	0.000	0.000*	0.000	-0.000	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	55.119***	35.206***	17.695***	16.781***	8.636***	11.690***	3.529***	3.022***	2.048***	1.807***	3.598***	4.076***
	(4.081)	(3.231)	(1.561)	(1.573)	(1.640)	(2.164)	(0.509)	(0.530)	(0.687)	(0.610)	(0.671)	(0.350)
R-squared	0.208	0.180	0.107	0.186	0.147	0.022	0.039	0.019	0.029	0.017	0.026	0.032
Observations	731	731	731	731	731	731	731	731	730	731	731	731

	Table A6: Estimates of effects of ex	posure to riots using surv	ev auestions controlling	g for marital status and individual income
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Dependent variable:	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness
-	(1)	(2)	(3)	(4)	(5)
Heavily affected areas	0.035532	0.143011**	0.099324	-0.061204	0.000754
Theating affected areas	(0.060600)	(0.059992)	(0.063688)	(0.068911)	(0.085912)
Moderately affected areas	-0.124809	0.041403	0.046956	0.106798	0.067769
moderatery arreeted areas	(0.088234)	(0.064629)	(0.064849)	(0.074544)	(0.086619)
Male	-0.023465	0.071693	0.014980	- 0.200571***	0.009895
	(0.043181)	(0.057753)	(0.065249)	(0.052107)	(0.040702)
Age	0.001098	-0.000384	0.010519**	-0.000179	-0.001811
-	(0.004177)	(0.005323)	(0.004824)	(0.004899)	(0.004142)
Years of schooling completed	0.012226**	-0.005146	0.001378	-0.001345	0.001961
	(0.005900)	(0.006405)	(0.007652)	(0.005597)	(0.006863)
Hindu	0.110615**	-0.164402*	-0.065746	0.134882	-0.144641
	(0.044075)	(0.095505)	(0.091176)	(0.121506)	(0.111331)
Married	-0.016402	0.014336	0.039883	0.129145	0.015277
	(0.111126)	(0.100830)	(0.112467)	(0.109564)	(0.067013)
Income	0.000011	0.000003	0.000003	0.000003	0.000001
	(0.000006)	(0.000008)	(0.000007)	(0.000009)	(0.000006)
Site 2	-0.170412**	0.171368*	0.084260	-0.113416	0.037988
	(0.070087)	(0.085550)	(0.067201)	(0.082698)	(0.100924)
Site 3	-0.079564	-0.048448	-0.149050	-0.101645	-0.020435
	(0.051074)	(0.080923)	(0.118903)	(0.117129)	(0.090003)
Constant	3.164151***	3.726787***	3.434132***	2.603469***	3.011661***
	(0.202117)	(0.251168)	(0.325146)	(0.180091)	(0.203598)
R-squared	0.056467	0.027132	0.027103	0.054209	0.012221
Observations	731	731	731	731	731

 Table A7: Estimates of effects of exposure to riots on Big Five Personality Traits controlling for marital status

 and individual income

Dependent variable:	PWI life	PWI all	Repeat word 1 (% of correct word)	Repeat word 2 (% of correct word)
	(1)	(2)	(3)	(4)
Heavily affected areas	-1.619	0.469	-1.177	-4.453**
<u>y</u>	(2.826)	(1.708)	(1.649)	(1.965)
Moderately affected areas	-8.548**	-1.034	-6.172**	-7.905***
,	(3.326)	(1.787)	(2.287)	(2.517)
Male	3.313	0.601	-0.194	-0.448
	(2.138)	(1.049)	(1.487)	(1.941)
Age	0.305	0.079	-0.362**	-0.441***
C	(0.201)	(0.096)	(0.138)	(0.153)
Years of schooling completed	0.519**	0.145	1.241***	1.098***
	(0.196)	(0.098)	(0.173)	(0.171)
Hindu	-15.774***	- 10.533***	-3.455*	-2.190
lindu	(3.155)	(3.068)	(1.977)	(4.901)
Married	-1.381	0.397	-5.197*	-4.407
	(3.840)	(2.430)	(2.749)	(3.820)
Income	-18.161***	- 11.147***	-1.351	-1.952
Income	(2.965)	(2.767)	(2.014)	(4.492)
Site 2	3.221	0.714	1.573	2.186
Site 2	(3.917)	(2.457)	(2.446)	(2.924)
Site 3	-0.000	0.000	-0.000	-0.000
5110 5	(0.000)	(0.000)	(0.000)	(0.000)
Constant	69.684***	74.241***	58.980***	56.505***
Constant	(9.563)	(5.885)	(6.730)	(7.730)
R-squared	0.079	0.047	0.147	0.122
Observations	731	731	731	731

Table A8: Estimates of effects of exposure to riots on personal wellbeing and memory capacity controlling for marital status and individual income