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Alessandra Cassar
Pauline Grosjean
Sam Whitt

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Social Cooperation and the Problem of the Conflict Gap: Survey and Experimental Evidence from Post-War Tajikistan

By Alessandra Cassar^{*}, Pauline Grosjean[‡] and Sam Whitt[†]

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Abstract

Our research provides experimental and survey evidence on the pro-social behavior (trust, reciprocity, a sense of fairness) and preferences for anonymous market transactions of former combatants. Our results, from a random sample in post-war Tajikistan, show that trust, reciprocity, generosity (dictator giving) are lowest among those respondents reporting having fought during the 1992-1997 Tajik civil war or anytime since its end, especially when the experimental treatment matches individuals with anonymous others from their local community. Consistent with the behavioral results, fighting is associated with lower trust towards any group outside the direct family, a lower willingness to engage in impersonal exchange and stronger kinship-based norms of morality. Replicating previous literature results, we find that ex-combatants are more likely to participate in groups and collective action but we caution that this may just capture political opposition, just as participating in combat did. Overall, our results point to a lasting “conflict gap” between combatants and non-combatants, even long after the end of the civil war, which question the rehabilitation of combatants.

Key Words: Civil war, trust game, dictator game, market institution, experimental methods

JEL Classification: C93, D03, P30, O53

^{*} Department of Economics, University of San Francisco, 2130 Fulton St., San Francisco, CA 94117. acassar@usfca.edu.

[‡] Australian School of Business, The University of New South Wales. pauline.a.grosjean@gmail.com.

[†] U.S. Department of State. Whitt.sam@gmail.com.

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1. Introduction

This paper uses unique game-behavioral and survey evidence collected in post-war Tajikistan with the goal of better understanding the relationship between violence and pro-social behavior and, ultimately, the implications of violent conflicts for market development and institution building.

Recent studies have found surprising increases in pro-social behavior following exposure to violence, providing micro-level explanations for how societies might recover and develop even after devastating experiences (Bauer et al. 2011; Bellows and Miguel 2009; Blattman 2009; Voors et al. 2011). War has also been conjectured to play a critical role in many macro-historical accounts of how nations develop and how political order and institutions are established within complex societies (Tilly and Ardant 1975; Tilly 1985; North, Wallis, and Weingast 2009; Fukuyama 2011). In some cases, however, the prospects of recovery from violence are not as promising. Some states appear deeply mired in poverty and stagnation, and in the worst cases, succumb to recurrent conflict and insurgencies (Collier et al. 2003; Collier and Hoeffler 2004).

The main hypothesis defended in this paper and in a companion paper (Cassar, Grosjean and Whitt 2011) is that violence creates *long-lasting* divisions in pro-social preferences towards different groups – which we call the *conflict gap*. From a theoretical perspective, an important foundation for our hypothesis comes from the culture/gene evolutionary approach to understanding human cooperation. A fascinating hypothesis is that inter-group conflict, like evolutionary pressures, fuels antipathy towards outsiders but reinforces cooperation towards insiders, a behavior known as parochial altruism (Bowles 2008; 2009; Choi and Bowles 2007; Boyd and Richerson 2005). Pro-social behavior may thus be enhanced among the in-group, while the reverse result is expected towards the out-group. The conflict gap is easier to identify when clear lines can be drawn between friends and enemies, but less so when the conflict is contained within a common social community, as in some civil wars. For these cases, the conflict gap may be much more complex and challenging to reveal, especially when friends and enemies have been intermixed in local communities and not readily identifiable from one another. We turn our attention here to the problems of social cooperation posed by these circumstances.

We report here the results of behavioral experiments and a survey designed to capture pro-social norms and attitudes towards different groups. Our behavioral

experiments use a simplified version of the trust game and the dictator game under two treatment conditions: Same Village, in which the anonymous second player is someone who lives in the same village as the first player, and Distant Village, in which the second player might come from anywhere in the country. In the survey, we assess trust towards different groups, defined by varying levels of social proximity (i.e. family vs. someone from another nationality). We also introduce questions aimed at capturing the strength of kinship ties. Since, ultimately, we are interested in the implications of pro-sociality for market development and institution building, we also try and elucidate preferences for market development through survey questions.

Using the case of Tajikistan, we find evidence of long-term conflict gaps after violence. In our companion paper, we find that victimization has opened a significant gap between norms people apply to others in their local communities compared to distant others. Our results show how victimization undermines trust and fairness *within* local communities, decreases the willingness to engage in impersonal exchange, and reinforces kinship-based norms of morality. This paper completes this result by reporting the relationship between *direct participation in combat* and pro-social behavior. We find that combatants are much less trusting, less trustworthy and less generous in our behavioral experiments. Lower generosity is exacerbated when the experimental treatment matches individuals with anonymous others from their local community. Survey results confirm that combatants trust all groups but their immediate family less compared to non-combatants. Consistent with such decrease in trust, ex-combatants have a lower willingness to engage in an economic transaction with an anonymous partner. Reflecting results of previous literature (Blattman 2009), we find that ex-combatants are more likely to participate in groups and collective action but we caution that this may just capture political opposition, just as participating in combat has. Our overall interpretation of the results is that violence reinforces social cohesion and cooperation along kinship and network lines, while undermines them for realms which we believe are critical for institution building and market development, such as generalized trust and sense of fairness towards anonymous others.

Our contribution to the literature, which we review in more detail in Section 2, is two-fold. First, our experimental treatment, which distinguishes between Same and Distant Village partners, allows us to analyze the relationship between violence and prosocial behavior (trust and a sense of fairness) towards different groups: people from the same village, whom the respondent may have directly interacted with during the

conflict, and others from further away (a more abstract concept). We complement the experimental results with survey evidence on trust towards different groups (from the family, to neighbors, to those with a different religion, etc...) with the aim of testing the hypothesis that war opens a gap between pro-social behavior towards different groups, as a function of their social distance and of their likely role in the conflict, i.e. parochial altruism. These results have implications for market development: markets need traders to go beyond personalized interactions towards trusting anonymous counterparties (see literature below), at the very least at the local level. Second, to the best of our knowledge, this study is the first to provide game-behavioral evidence on combatants' preferences.

Our research is motivated by concerns about post-conflict stabilization, institution building and economic development. We find important and intricate linkages between violence, pro-social behavior, social capital and preferences for market development. If violence undermines foundations for social cooperation at the local level, as we see in some areas of Tajikistan, then building functional democratic and market institutions in those areas will present greater challenges than in societies where norms are more conducive to growth and development. The long lasting differences we observe between combatants and non-combatants also point to the shortcomings of post-conflict reintegration, which may in turn have some implications for post-conflict stabilization. Even though ex-combatants are consistently less pro-social (less trusting, less generous), they are more likely to participate in collective action and in groups, and in particular in religious groups. Participation in religious groups, in the Tajik context, may be perceived as a form of political opposition to the regime in place.

To be sure, this paper only offers a case study of a particular conflict, but many civil conflicts share the 'non readily identifiable' aspect of the Tajik civil conflict, which, we believe, drives our main results. Preliminary evidence from the legacy of World War II in France, Poland, Ukraine or Belarus, where indistinguishable if not ethnically homogeneous groups fought one other at the local level on the basis of –unidentifiable– political allegiances, point to similarly destructive legacy on social capital (Grosjean, in progress).

Studying the effect of conflict participation with cross-sectional data is mired with econometric identification problems, among which self-selection bias, sample selection bias and attrition bias inherent to combat death, as well as small sample issues are a few.

In Section 4, we detail how we deal with such identification challenges, but we claim by no means to be able to fully overcome them. The results we report in this paper should be taken as reflective of mere correlations between participation in civil war and pro-social preferences and behavior. Still, these correlations are indicators of the gap in pro-social preferences and behavior between combatants and non-combatants and are, as such, useful for policies that aim at combatant reintegration and post-conflict stability.

Section 2 discusses relevant literature. Section 3 provides some background on the Tajik civil war. The empirical strategy and its limitation are discussed in Section 4 and the research design, sampling and subject recruitments in Section 5. Section 6 presents the results. Section 7 concludes.

2. Relevant Literature

Our research focuses on prosocial preferences such as trust and fairness, because they have been found critical to solve cooperation and coordination problems and therefore crucial for economic and social development. Individual preferences towards others (such as trust, reciprocity, altruism, egalitarianism, parochialism, fairness) are key component of many economic decisions and are often associated with social capital and considered necessary for growth and development. Societal trust and preferences for fairness have been positively associated with growth and market development (e.g. Knack and Keefer 1997; 2001; Knack and Zack 2001; Henrich et al. 2010). The successful development of market economies requires agents to depart from closed group and personal interactions towards exchanges with anonymous others (Fafchamps 2006; Algan and Cahuc 2010). In this regard, generalized trust appears as a keystone for successful market development and it is often included in the various definitions of “social capital” as one of its main elements. Generosity, egalitarianism and a sense of fairness, instead of spitefulness, may also help sustain trade, cooperation and development especially in countries when institutional contracts enforcement is weak, by letting individual engage in profitable trades that are beneficial to self and others and by preventing the violation of contracts. Given the necessarily incomplete nature of contracts, a sense of fairness and trust may support trade even in countries with well functioning institutions. Inside societies in which generosity and fairness are anticipated, more individuals may be willing to participate in impersonal trade, while the opposite definitely may work as a trade deterrent (Fehr, Hoff and Kshetramade 2008).

If trust, a sense of fairness, and other prosocial preferences are so important for the development of markets and growth, the question we address here and in the companion paper Cassar, Grosjean and Whitt (2011) is whether they can be affected in a predictable manner by the violence brought about by wars and civil conflicts. Very recent literature is focusing on the behavioral legacies of conflicts and finds evidence of increased prosocial actions among those more affected by conflict, leading to possibly positive interpretations of some of the effects of wars for social capital building. In particular, Bauer et al. (2011) provide evidence of higher egalitarianism and parochialism among victimized children in the Republic of Georgia in the immediate aftermath of the war with Russia and among those that were children and teens during the civil war in Sierra Leone. Bellows and Miguel (2009) find a significant increase in collective actions among Sierra Leone individuals that were affected by the war. Blattman (2009) reports higher voting and political action in Uganda. Voors et al. (*forth.*) conducted an experiment in Burundi to examine the impact of exposure to conflict on social, risk and time preferences and find that individuals that have been exposed to greater levels of violence during the war display more altruistic behavior towards their neighbors, are more risk seeking, and have higher discount rates. Becchetti et al. (2011) report higher trustworthiness in Kenya after the post-election civil unrest. Gilligan et al. (2011) provide additional evidence of a positive legacy of conflict on norms of cooperation at the community level by finding higher levels of trust and contribution to public goods in villages that were affected by the Maoist insurgency in Nepal.

A less positive result on the interplay of trust with violence has been found by Nunn and Wantchekon (*forth.*) who show that a history of violence, even going as far back as the slave trade in Africa, can impact contemporaneous trust negatively and strongly. Their hypothesis is that the negative legacy of slave trade on general trust is mainly due to the destruction of social ties through inter-ethnic slave raiding. In the same vein, in the companion paper Cassar, Grosjean and Whitt (2011), we find that more than a decade after the Tajik civil war, which was characterized by insurgency and community infighting, exposure to conflict has opened a significant gap between norms people apply to others in their local communities compared to distant others. We do find evidence of increasing pro-social behavior, but only when subjects are matched with very distant others ---an abstract concept. More importantly, our results show how conflict exposure undermines trust and fairness *within* local communities, decreases the willingness to

engage in impersonal exchange, and reinforces kinship-based norms of morality, all pointing to negative implications for market development and growth.

Most of the literature is concerned with the effects of victimization ---receiving acts of violence--- on preferences. Studies of the effect of *participation* in violence, which is the object of this paper, are much scarcer. Impediments to the investigation of the effects of participation in violence are sample size and the issue of causal identification. Most of the literature on the effect of conflict on preference reviewed above relies on survey data. Ex-combatants may not only be few and hard to find, but may also be reluctant to truthfully reveal their participation in violence. Furthermore, combatants may be different from non-combatants in observable and unobservable ways and so any comparison of combatants to non-combatants will conflate the impacts of violence with preexisting differences that led some people to become perpetrators. On the issue of selection into combat, although most theoretical models of conflict and crime suggest that the individuals most likely to engage in fighting (or crime) are the ones with the smallest opportunities in the productive sector (Becker 1968; Grossman and Kim 1995), empirical studies find otherwise. Friedman (2011) uses data from post-war tribunals (*Gacaca*) and documents the characteristics of violence perpetrators in the Rwandan genocide. She finds that higher levels of education are associated with higher participation in violence among Hutu, especially in areas with high local unemployment. This echoes findings by Krueger and Maleckova (2003) and Berrebi (2007), who find that terrorist bombers come disproportionately from wealthy families, and have above average income and education levels. An interpretation by Azam (2005) is that the behavior of participants in violent terrorist acts, and in particular of suicide bombers is explained by their altruism towards future generations. A more general interpretation is that participation in violent and terrorist acts is an act of political participation.

Concerning the impact of combat on later life outcomes, a small empirical literature focuses on the economic reintegration of combatants. Angrist (1990) overcomes both issues of small sample size and unobservable bias by exploiting random drafts for the Vietnam War. He finds evidence of large and persistent earning gaps between male veterans and non-veterans. Anan et al. (2010) document economic gaps for male ex-combatants in Uganda, but not for female. The interpretation of the latter result is that the only channel through which combat affects earning gap is not through psychological shocks – or preferences - but by time spent away from civilian education and labor markets. Indeed, the authors find no evidence of legacy of combat on

psychological distress, such as depression or traumatic stress. They also do not find any evidence that ex-combatants face difficulty in gaining social acceptance upon their return to their local communities, or that they display higher levels of hostility. The main strength of this study comes from causal identification. The sample of ex-combatants consists of returnee child soldiers who were forcibly recruited by the Lord's Resistance Army, which, the authors convincingly argue, conducted abduction in a random and indiscriminate fashion. The main weakness is that the analysis relies on survey data and self-reported symptoms of psychological distress and self-reported hostility level. Self-reported data is subject to self- and social- desirability bias that could bias their results towards zero. Blattman (2009) uses the same identification strategy and a similar sample of former child soldiers in Uganda and find evidence of increased voting and participation in groups, which he attributes to higher pro-sociality. The link to pro-sociality is only conjectural however, since preferences are not directly elicited through behavioral experiments.

3. Background on the Tajik civil war and post conflict

The Tajik conflict erupted after the fall of the Soviet Union in 1992 and ended with a negotiated settlement in 1997. It is estimated that between 50,000 and 100,000 people died and over 1 million people were displaced (out of a population of 5 million in 1992). A variety of interpretations of the conflict can be found in the literature based on regionalism, ideology, elite instrumentalism, and conflict over resources (see Jawad and Tadjbaksh 1995; Hiro 1995; Akiner 2001; Chatterjee 2002; Heathershaw 2009 for detailed accounts of the Tajik civil war and aftermath). From a regional perspective, the war is often described as a struggle between a pro-government alliance of northern and southern factions against eastern opposition groups, out of which the southern faction emerged as dominant. Ideologically, the conflict is often characterized as former communists against a highly fractionalized group of challengers comprised of Islamic revivalists, ethnic nationalists, and pro-democratic reformers. Most of the conflict took place in central and southern low-lying areas where these population groups were inter-mixed. What makes the Tajik conflict particularly intriguing for our main hypothesis is the complex networks of rivalries that emerged within local communities during the fighting. With the exception of Russians and Uzbeks, the Tajik civil war was fought along intra-Tajik divisions, and it was often difficult to make simple shorthand predictions

about who was fighting whom. The various warring factions were not easily identifiable, and fighting often took place across networks of rival groups for control of the same local communities (Tuncer-Kilavuz 2009, 2011). We believe this should have important implications for the long-term development of trust and other pro-social preferences in local communities, especially for those who actively participated in the violence.

Since the war, Tajikistan is still in a process of economic recovery. According to the World Bank, Tajikistan's GDP fell 60% during the war, which also corresponded to the period of transition after the dislocation of the Soviet Union, and has yet to recover to pre-war levels. Based on the Human Development Index (HDI), the UNDP has estimated that Tajikistan will not recover to its 1990 HDI levels until 2015 – over twenty years since the start of the conflict. Today, over half of Tajiks live in poverty according to the UNDP which has estimated real unemployment as high as 35-40%. This led anywhere from 400,000 to 1.5 million Tajiks to emigrate abroad (mainly to Russia) for work and remittances account for nearly half of Tajikistan's GDP.

Politically, a host of monitoring organizations has cited Tajikistan's vulnerabilities on democracy, human rights, and prospects for instability. According to Polity IV data as well as the "Failed State" and "State Fragility" Indices, Tajikistan is considered "especially vulnerable to the onset of new political instability events, such as outbreaks of armed conflict, unexpected changes in leadership, or adverse regime changes" (Marshall and Cole 2009, p. 9). Freedom House and Transparency International rank Tajikistan low on freedom and high on corruption. Finally, Tajikistan has never experienced a transition of power since the conflict ended. Although the government of Emomalii Rahmon has managed to keep peace, many have raised concerns about Tajikistan's long-term stability and have suggested that a destabilizing political or economic shock to President Rahmon's regime could initiate another intra-Tajik power struggle similar to the one that provoked the 1992 civil war (Akiner 2001, Johnson 2006, Heathershaw 2009).

4. Empirical Strategy

We investigate how having directly participated in the conflict as a combatant affects individual preferences, values and beliefs. The general form of the estimation equation is as follows:

$$Y_{ij} = \beta_0 + \beta_1 C_{ij} + \beta_2 X_{ij} + \beta_3 R_j + \varepsilon_{ij} \quad (1)$$

where our outcome variable Y_{ij} includes different measures of elicited social preferences, market orientation and economic and political preferences of respondent i in region or village j ; C_{ij} is a measure of whether the respondent participated directly in combats during or since the civil war, X_{ij} is a set of pre war individual and household controls, and R_j is a set of region or village fixed effects. For participation in combat we use a dummy variable (*Fight*) taking value 1 if the respondent declares direct participation in combat during the civil war or after the Peace Agreement was signed.

In all regressions using experimental data we additionally include controls for the different experimental treatments. We are also interested in the different behaviors of combatants across the different experimental treatments. We include an interaction term between our combat proxies and the experimental treatment in the following way:

$$Y_{ij} = \beta_0 + \beta_1 C_{ij} * SV_{ij} + \beta_2 X_{ij} + \beta_3 R_j + \varepsilon_{ij} \quad (2)$$

where SV_{ij} is a dummy variable taking value 1 in the “Same Village” experimental treatment. Standard errors are clustered at the village level in all specifications. Specifications control alternatively for region and village dummies.

The main weakness of our study has to do with causal identification. Combatants may be different from non-combatants in observable and unobservable ways and so any comparison of combatants and non-combatants will conflate the impacts of violence with preexisting differences that led some people to become perpetrators. This is especially problematic if the characteristics associated with participation in combat are also those associated with the outcomes that we want to observe. For example, the literature reviewed in Section 2 suggests that participation in violence is akin to political participation and should therefore correlate with higher levels of altruism. In other words, one would expect ex-combatants to be more pro-social and this would bias our results upward. Also, combat requires high trust among members of the fighting unit so that combat experience, again, may bias our results in the trust game upward. One way to deal with the potential selection and omitted variable bias is to control for individual characteristics, but we are limited by our small sample size in the number of variables we can control for. Still, we include in the regression framework some pre-war individual characteristics, which are unlikely to have changed as the outcome of participation in combat but may be related with our outcome variables, such as age or gender. We also check that the results of all specifications are robust to the inclusion of village fixed

effects. Because of the regional nature of the conflict, all specifications include regional fixed effects but the use of village fixed effects goes a step further and enable us to remove factors that are common to a given village and that may have led to higher participation in violence. In addition to omitted variable and self-selection bias, attrition and displacement are problematic for the identification of causal effects of participation in violent acts. Attrition bias due to combat death is inherent to cross-sectional studies of this kind and we have no means to address this issue. Endogenous displacement of combatants also poses a challenge for the purpose of econometric identification. Combatants may self-select to specific regions or villages precisely because of local –not necessarily observable- characteristics that may conflate the estimated impact of violence. In order to deal with this issue, we re-run our analysis on the subsample of combatants who have always lived in the same village. Nevertheless, we are aware that none of these strategies fully eliminates concerns about self-selection, omitted variables and sample selection bias so that we should only regard coefficients as suggestive correlations. Still, these correlations are indicators of the gap in pro-social preferences and behavior between combatants and non-combatants and are, as such, useful for policies that aim at combatant reintegration and post-conflict stability.

4. Research Design, Sampling, and Recruitment

Our inferences are based on survey and experimental evidence from a random sample of the Tajik population conducted between June-July 2010. Within the sample, we compare attitudes and behavior of subgroups with varying experiences in direct fighting during the 1992-1997 civil war. Specifically, we ask whether those who participated in fighting are markedly different in attitudes and behavior from those who did not.

The survey covers broad themes of employment and market activity, political preferences and views on democracy, social engagement and trust, and finally, questions related to violence during the civil war. Participation in combat is elicited by the following survey question: “*Did you personally fight in the civil conflict in Tajikistan from 1992 to 1998?*”. In addition, we also want to capture respondents who may have participated in combat after 1998, since clashes continued after the official end to the conflict. We also ask: “*Did you personally take part in armed clashes or fight in Tajikistan since the Peace Agreement in 1998?*”. Our indicator of participation in combat: *Fight* takes value one if respondents answer yes to either question. The main limitation to this question is that we are unable

to identify whether combatants were on the side of the government or of opposition forces. This question was too sensitive to ask. Nevertheless, we are pretty confident that all respondents were on the side of the insurgency. Indeed, the survey also enquires about economic occupations and no respondent who reports having participated in combat reports being a member of military forces. Instead, our sample of combatants consist of people either unemployed or employed in the education, health or construction sector. Also, the majority of respondents in our sample of combatants is from Gharm (66.67%), which was the hotbed of insurgency. We therefore strongly believe that our *Fight* variable measures participation in insurgency.

In selecting our sample, we use a three stage random selection method. First, villages within four regions (Khatlon, Dushanbe, Rasht, and Pamir) were selected with probability proportional to size, based on the latest Census. Most of the violence during and since the conflict took place in Khatlon, Dushanbe, and Rasht valley regions. The Pamir and Northern Sughd regions remained peaceful during the civil war and we selected the Pamir to include for comparison. Consistent with accounts of the war, the people in our sample who were involved in fighting are located in the Khatlon, Dushanbe, and, especially, the Rasht valley. Second, households were randomly selected within each location, using the random route method. Urban locations were further subdivided into administrative districts if necessary and interviewers were assigned random routes by the research team. No more than five interviews were obtained from a single random route, which consisted of contacting every fifth numbered house or apartment in an apartment block from the initial starting point. We used schools as starting points in most cases because housing and apartment blocks were typically clustered nearby. In the event of multiple schools in a district, we randomly selected a school as a starting point. Interviewers began their random routes at different distances and in different directions from the school. We trained twelve Tajik, Uzbek, and Pamiri interviewers, both male and female. Once interviewers made contact with a household, they completed a roster of every member of the household where one adult member of the household was randomly selected to participate in the study, as the third stage of the selection procedure. Interviews were typically conducted in a private location, either in the home if possible or outside in a quiet location. Once the survey was completed, the interviewer would accompany the subject to the school or other designated location to take part in the experimental component of the study.

The experiments took place usually in a large school room with each person seated at a separate desk or when space was limited, subjects completed the study in small groups. The experiments were conducted by a local administrator who read from a standard set of instructions. All subjects completed three experiments commonly referred to as dictator, ultimatum, and trust “games”.¹ The dictator game is a single shot experiment where subjects are given a fixed sum of money (in this case 40 Somoni or approx \$9) and they must decide how much to keep for themselves and how much to send to an anonymous recipient. In our experiment, the anonymous recipient was either someone locally ---but not in the room--- (Same Village treatment) or someone from another location in Tajikistan (Distant Village treatment). We randomized the treatments to sessions (see the experimental instructions for more details). Following the dictator game, subjects completed an ultimatum and finally a trust game with the same local/non-local treatments. In the ultimatum game, subjects must again decide how to divide 40 Somoni between themselves and an anonymous recipient, but this time, the recipient may reject an allocation that they do not like. If the recipient rejects the allocation, neither the subject nor the recipient receives any money². Finally, in the trust game, all subjects start with 20 Somoni and, playing as first players, they have to decide how much to keep for themselves and how much (if any) to send to an anonymous recipient. Senders don’t know anything about these possible receivers except that they are coming either from the Same Village or from a Distant Village (our treatment variable). Whatever they give to the recipient is tripled in value, and the recipient decides how much (if any) to send back to the subject. All subjects played both parts, first as senders then as receivers and, since the actual matching between senders and receivers depended on the treatment (Same Village or Distant Village), receiver preferences were elicited through the strategy method. After completing all three experiments, one experiment is chosen randomly for payment in which all the subjects in the group are paid based on their individual decision matched randomly with an anonymous recipient.

Before making their actual decisions, subjects were given the opportunity to ask questions and administrators used many examples (and a quiz) to ensure subjects understood the instructions clearly. During the actual experiment, no talking was allowed. Each person made their decision privately so that neither the administrator nor

¹ See the online appendix for a description and explanation of each game. The online appendix can be found at: <https://files.me.com/paulinegrosjean/ve9och>

² Since we didn’t find any significant result for the ultimatum game, we do not discuss them in this paper for space consideration, but we make them available upon request.

anyone else in the group could see what they decided to do. At the end of the experiment, forms were collected and subjects were paid according to the decision randomly chosen for payment plus a small show-up fee for their time traveling to and from the experimental location.

In total, 426 subjects took part in the survey and experiments in 17 locations in groups of 10-20 subjects per location. Subjects earning ranged between 0 and 60 Somoni (\$ 0-13.50) an average earning of 24 Somoni (SD 10.9) or \$5.40 (SD \$2.46) for their participation in the experiments.³

6. Results

6.1. Determinants of Participation in Violence

As can be seen in Table 1, only a small minority of respondents to our survey has participated in combats (or admits to it). Less than 3% of our sample declares having fought in or since the civil conflict. In order to study the determinants of participation in combat, the same Table reports the results of regressions where declaring being a combatant is regressed on a number of observable individual characteristics. Gender, education and ethnicity are significant individual predictors of participation in combat. Mirroring the results of earlier literature (Friedman 2011; Krueger and Maleckova 2003; Berrebi 2007), combatants tend to be more educated, although the only significant result is obtained for those who completed compulsory education versus those who have not. Members of the Uzbek minority are more likely to have participated. Region of residence is, as expected, a significant predictor, with habitants from Gharm, the region most affected by the conflict and by post-conflict troubles, more likely to have participated in combats. Income is negatively correlated with participation in combat, although the results are not statistically significant. An important caveat here is that income is measured at the time of the survey and may therefore be an outcome of the conflict. Nevertheless, the lack of statistical significance denotes the absence of significant earning gaps between combatants and non-combatants in our sample.

<Table 1 about here>

³ For comparison, the average monthly salary at the beginning of 2011 was around USD100 and the minimum wage around USD18.

6.2. Fighting and Pro-Social Preferences: Experimental Results

Dictator Game

Figure 1 and the regressions results displayed in Table 2 show that combatants are less generous than non-combatants. Combatants give much less in the dictator game, and particularly so in the “Same Village” experimental treatment in which they know that the amount they are about to give will go to a person (anonymous) coming from the same village as theirs. These results are quantitatively significant. The mean offer in the dictator game is 10.26 somoni⁴ out of a maximum of 40 somoni, an estimate lower than the ones often found in US laboratory studies. Having personally fought is associated with a roughly 40% lower dictator game donation (Column 1 and 2, average coefficient), although the effect is statistically significant at the ten percent level only when village dummies are included. The magnitude of the drop in generosity is larger when respondents are matched with someone from the same village. Ex-combatants give between 76% (Column 3: $((-1.125-6.627)/10.26))*100$ and 87% ((Column 4: $(-2.981-5.841)/10.26))*100$) less than non combatants to someone from the same village. The coefficient on the interaction between *Same Village* and *Fight*, which measures the additional effect, for a combatant, of being matched to someone from the same village, is statistically significant at the five (with region dummies) to ten percent (with village dummies) level. By contrast, the main effect of *Fight* is no longer statistically significant. The lowest generosity of combatants compared to non-combatants observed in Column 1 and 2 thus mainly comes from the drop in generosity of combatants towards the members of their own village. Other results indicate that non-combatants also tend to be less generous towards members of their village. The coefficient on the *Same Village* treatment is essentially zero when only regional dummies are included and becomes negative, although just short of standard levels of statistical significance, when village dummies are included. In the companion paper Cassar, Grosjean and Whitt (2011), we find that respondents who were victimized during the conflict are less generous towards their fellow village members than towards distant others. The fact that such victims are included here as part of the control group could explain the negative sign of the *Same Village* treatment coefficient.

<Table 2 about here>

⁴ 10.10 in the Same Village treatment, 10.31 in the Distant Village treatment.

Trust and Trustworthiness

Figure 2 and 3 and the regression results reported in Table 3 and 4 show that combatants are both less trusting and less trustworthy than non-combatants. Table 3 reports regression results where the dependent variable is the amount sent by the sender in the trust game, a proxy for trust. Table 4 reports regression results where the dependent variable is the amount returned (average amount estimated using the strategy method – the mean of the respondent final returns to all the possible amounts that the sender could have sent) by the receiver in the trust game, a proxy for trustworthiness. Specifications alternatively include region and village fixed effects. In the whole sample, the average amount sent in the trust game is 6.97⁵ (out of 20 somoni) and the average amount returned is 13.5.⁶

Having personally participated in fighting is associated with lower donations in the trust game, but the effect is only statistically significant for the Distant Village treatment, when a distinction is made between the different treatments of the game. Ex-combatants send an approximate 60% lower amount in the trust game towards an anonymous player from a distant village (Columns 3 and 4 of Table 3, average coefficient). The interaction term between *Fight* and the *Same Village* treatment is not significantly different from zero. Nevertheless, combatants still give less to someone from the same village when compared to non-combatants (the sum of the coefficients on *Fight* and *Fight*Same Village* is still negative).

<Table 3 about here>

Combatants are also less trustworthy: when comparing the amount they intend to return back to the sender (averaged among all the possible amounts that they could have received), fighters send back 26% to 38% less compared to non-combatants in the same region or village respectively (Columns 1 and 2 of Table 4). Here, players' behavior is independent of the different experimental treatments.

<Table 4 about here>

Summary and Robustness

⁵ 10.56 in the Same Village treatment, 9.04 in the Distant Village treatment.

⁶ 13.62 in the Same Village treatment, 13.39 in the Distant Village treatment.

Taken together, these results suggest some negative legacy of combat on pro-social behavior, such as trust, trustworthiness and a sense of fairness. An important caveat of our results has to do with a bias due to self-selection into fighting and with the presence of omitted variables that may be correlated both with the probability to engage in violent combat and with the behavior in the dictator and trust games. However, previous literature reviewed in Section 2 suggests that such a selection bias should, if anything and at least for the dictator game, affect our results upward: combatants are expected to be *more* altruistic, whereas our results point to *lower* levels of altruism among combatants. Another bias has to do with selective migration. However, when, in an attempt to overcome this issue, we only consider the sample of people who have never moved (See Appendix, Table A1 to A3), all results but those related to trustworthiness are not only robust but actually become stronger. The subsample of combatants who have never moved are significantly less trusting and less generous, and particularly so when matched to someone from their own village. Indeed, in this subsample, the interaction term between *Same Village* and *Fight* is negative in all specifications for all our behavioral measures: generosity (Dictator Game offers), trust (Trust Game offers) and trustworthiness (Trust Game amount returned). However, the coefficient on this interaction term is only statistically significantly different from zero when it comes to the Dictator Game offers.

6.2.3. Survey Results

We first check the robustness and relevance of our experimental evidence by looking at the combatants' responses to the traditional survey questions on trust towards different groups of people defined by their level of social distance to the respondent. The results, which we describe below in more detail, corroborate our experimental findings that combatants are much less trusting towards any group to whom they are not directly related to or that they do not know personally. These results are suggestive of two things, which we investigate next. First, in light of the literature on the role of trust in sustaining impersonal exchange (see Section 2), lower levels of impersonal trust may have negative implication for market development. To test such implications, we examine directly the respondents' stated preferences on participation in impersonal exchange. Second, the fact that trust towards any group but family members is lower among combatants suggests that participation in combat may be associated with the reinforcement of

kinship ties and clannishness. Combatants may have learned that they can trust no other but their clan and immediate family. To test this hypothesis, we try and investigate the strength of kinship-based norms. Our results confirm that combat is associated with the reinforcement of such norms, suggesting further negative consequences of insurgency and civil war on the development of impersonal exchange (Greif and Tabellini 2010). Third, we investigate participation in combat as a determinant of collective action and group participation.

Trust towards different groups

Our survey included questions on trust towards different groups, which are defined by their level of social distance to the respondent. This question is formulated as follows: *‘I’d like to ask you how much you trust people from various groups. Could you tell me for each whether you trust people from this group completely, somewhat, not very much or not at all? [on a scale of 1 to 5].* This question is asked for each of the following groups: *‘Your family; People in your neighborhood; People you meet for the first time; People of another religion; People of another nationality’*. The survey also included a traditional question on trust, the so-called “general trust” question, which asks: *‘Generally speaking, would you say that most people can be trusted, or that you can’t be too careful in dealing with people? Please answer on a scale of 1 to 5, where 1 means that you have complete distrust and 5 means that you have complete trust’*.

Table 5 reports regression results where the response to each trust question is regressed on combat experience, controlling for age, gender and, alternatively, region and village fixed effects. Results are very clear: combat is associated with lower trust towards any other group but the immediate circle of kin and friends. Levels of trust towards the family or people the respondent knows personally are not significantly associated with combat experience. By contrast, combatants trust neighbors, people from another religion and people from another nationality significantly less.

However, turning to the general trust question (formulated in the same way as in the GSS questionnaire: *‘Generally speaking, would you say that most people can be trusted, or that you can’t be too careful in dealing with people? [on a scale of 1 to 5]*), the coefficient on fighting is positive, although it is not significant when regional fixed effects are included. We find this result ---which contradicts the ones with both our other survey questions on trust and the experimental measures--- particularly interesting in light of the existing debate on whether such GSS questions correlate with experimental measures (e.g. Glaeser et al.

2000). Our results indicate that this question might not be a valid instrument for eliciting a measure of trust that correlates with either stated trust in specific groups or with behavioral measures when the other party is a “concrete” other person living in the same community. We expect this to be due to the fact that the GSS formulation is so generic that a respondent interprets it in an abstract context and therefore replies in terms of “how should one behave” and not in a more specific “how one actually behaves” in concrete contexts.

Market integration and participation

Lower levels of impersonal trust may have negative implication for market development (see literature in Section 2). We investigate directly the respondents’ stated preferences on participation in impersonal exchange with the following survey question: “*When you go to the market, how important is it to buy from a seller that you know personally?*”, with a 4 points scale answer from “not important at all” to “essential”. We interpret a higher response on that scale as signaling a lower willingness to participate in an anonymous economic exchange. The effect of personal involvement in fighting is positive, statistically significantly different from zero at the five percent level and robust to the inclusion of village fixed effects, indicating that combatants are less willing to participate in exchange with anonymous traders. This is consistent with the observed decrease in the offers in the trust game.

Strength of Kinship Ties

The result that trust towards any group but one’s family members is lower among combatants suggests that participation in combat may be associated with the reinforcement of kinship ties and clannishness. Combatants may have learned that they can trust no other but their clan and immediate family. The variable that we use to measure the strength of kinship ties is the respondent’s opinion about the freedom to marry. As stressed by Greif (2006), restricted and consanguineous marriages have historically provided one means of creating and maintaining kinship groups. We ask in the survey whether the respondent supports freedom to marry or rather thinks best for parents to choose a spouse for their children. The results displayed in Table 5 show that active combat is associated with a significant decrease in the support for free marriage, even when we control for whether the respondent herself married freely.

Participation in groups

Several survey questions aim at capturing participation in groups and association. First, we ask respondents whether they had participated in any community meetings during the week preceding our team's visit. Second, we build an index variable that sums the number of groups and associations the respondents belongs to. We ask about a variety of groups, such as mosque and religious organization, NGOs, neighborhood groups, labor unions, fraternal groups and youth associations. This index takes values from 0 to 5. Group participation is low on average in our sample, which is consistent with the literature documenting evidence of low levels of civil society development in post-Soviet Republics (Howard 2003). The mean of the group participation index is 0.79 and 40% of respondents do not participate in any group. However, combat experience in the civil war is significantly and positively associated with group participation. Regression results displayed in Table 5 show that combatants are more likely to have attended community meetings. This mirrors the result by Blattman (2009) who finds a link between fighting in a civil war and local collective action in Uganda. However, taken together with the rest of our results, this may not be a positive sign of inclusive social capital development. Even though group membership and civic participation have been widely used in the literature as measures of social capital and, as such, associated with positive development outcomes (for a recent review, see Guiso, Sapienza and Zingales 2010), this acceptance of social capital may also have negative connotation if it leads to the exclusion of outsiders (Bourdieu 1985, Portes, 1998). We also investigate which particular group and association combatants are more likely to join. It is specifically religious groups, which in Tajikistan are associated with political opposition to the regime in place, that receive a boost in membership among war combatants.

7. Conclusion

This paper considers the relationship between fighting in a civil war and pro-social behavior, and, to the best of our knowledge, provides the first experimental measures of pro-sociality among former (and possibly current) combatants in a civil conflict. More than ten years after the official end of the Tajik civil war, we find persistent behavioral and attitudinal differences between combatants and non-combatants. Game-behavioral evidence points to ex-combatants being much less generous, less trusting and less

trustworthy than non combatants. Survey evidence confirms that combat is associated with lower trust towards any other group but the immediate circle of kin and friends.

These results bode ill both for the economic and political reintegration of combatants. Trust is an important dimension of economic exchange and we find indeed that combatants are less willing to participate in anonymous market transactions. Consistently with recent literature, we find that combatants are more likely to participate in groups and collective action but we caution that such behavior signals political opposition rather civil society revitalizing and political reintegration. The kind of groups that combatants are more likely to participate in are religious groups, which, in Tajikistan, may be perceived as a form of political opposition to the regime that is in place currently, as it was to the regime that was in place during the civil war.

To conclude, we find in this paper and in a companion paper that looks into the effects of victimization during the Tajik civil conflict important linkages between violence, pro-social behavior and the formation of social capital. We find lasting negative consequences of increasing exposure to violence (as victims and combatants) on cooperative social norms, especially at the local level, where most of the fighting took place. We consider this a serious gap opened by the conflict. If violence undermines foundations for social cooperation, as we see in some areas of Tajikistan, then building functional democratic and market institutions in those areas may present very serious challenges.

REFERENCES

- Akiner 2001. *Tajikistan: Disintegration or Reconciliation?* London: Royal Institute of International Affairs.
- Algan, Yann and Pierre Cahuc. 2010. "Inherited Trust and Growth," *American Economic Review* 100(5): 2060–92.
- Angrist, Josh D. 1990. Lifetime Earnings and the Vietnam Era Draft Lottery: Evidence from Social Security Administrative Records. *The American Economic Review*. Vol 80(3): 313-336.
- Annan, Jeannie, Christopher Blattman, Dyan Mazurana and Khristopher Carlson 2010. Civil War, Reintegration, and Gender in Northern Uganda. Working Paper.
- Azam, Jean-Paul 2005. Suicide-Bombing as Inter-Generational Investment, *Public Choice*, vol. 122, n. 1-2, 177-198.
- Becker, Gary (1968), Crime and Punishment: An Economic Approach, *Journal of Political Economy*, 76(1).

- Bauer, Michal, Alessandra Cassar, Julia Chytilová and Joseph Henrich. 2011. Warfare during Ontogeny Increases Egalitarian and Parochial Motivations. Working paper.
- Becchetti, Leonardo, Conzo, Pierluigi and Romeo, Alessandro. 2011, Violence and social capital: Evidence of a microeconomic vicious circle, No 197, Working Papers, ECINEQ, Society for the Study of Economic Inequality,
- Bellows John and Edward Miguel. 2009. "War and Collective Action in Sierra Leone." *Journal of Public Economics* 93(11-12), 1144-1157.
- Berrebi, Claude .2007. "Evidence about the Link Between Education, Poverty and Terrorism among Palestinians," *Peace Economics, Peace Science and Public Policy*: Vol. 13: Iss. 1, Article 2.
- Blattman, Christopher. 2009. "From Violence to Voting: War and Political Participation in Uganda." *The American Political Science Review* 103, 231.
- Bourdieu, Pierre. 1985. "The social space and the genesis of groups." *Social Science Information* 24(2): 195-220.
- Bowles, Samuel. 2008. "Conflict: Altruism's Midwife." *Nature* 456, 326-327.
- Bowles, Samuel. 2009. "Did warfare among ancestral hunter-gatherers affect the evolution of human social behaviors?" *Science* 324, 1293.
- Richerson, Peter and Boyd, Robert. 2005. *Not by Genes Alone: How culture transformed human evolution*. University of Chicago Press, Chicago, IL.
- Cassar, Alessandra, Pauline Grosjean and Sam Whitt. 2011. Civil War, Social Capital and Market Development: Experimental and Survey Evidence on the Negative Consequences of Violence. Working paper.
- Chatterjee, S. 2002. *Society and Politics in Tajikistan: In the Aftermath of the Civil War*. London: Greenwich Millenium Press.
- Choi, Jung-Kyoo and Samuel Bowles. 2007. The Coevolution of Parochial Altruism and War. *Science* 318, 636-640.
- Collier, Paul, Lani Elliot , Håvard Hegre, Anke Hoeffler , Marta Reynal-Querol and Nicholas Sambanis 2003. "Breaking the Conflict Trap: Civil War and Development Policy", Volume 1, A WorldBank policy research report.
- Collier, Paul and Anke Hoeffler. 2004. "Greed and Grievance in Civil War," *Oxford Economic Papers* 56 (4): 563-595.
- Fafchamps, Marcel. 2006. "Development and Social Capital," *Journal of Development Studies*.
- Fehr, Ernst, Karla Hoff and Mayuresh Kshetramade. 2008. "Spite and Development." *American Economic Review: Papers & Proceedings* 98(2): 494-499.
- Friedman Willa. 2011. Local Economic Conditions and Participation in the Rwandan Genocide. Working Paper.
- Fukuyama, Francis. 2011. *The Origins of Political Order*. New York: Farrar, Straus & Giroux.
- Gilligan, Michael J., Benjmain J. Pasquale and Cyrus D. Samii. 2011. Civil War and Social Capital: Behavioral-Game Evidence from Nepal. Working Paper.
- Glaeser, L., Laibson, L., Scheinkman, A., Soutter, L., 2000. Measuring Trust. *Q. J. Econ.* 115, 811-846.

- Greif, Avner. 2006. "Family Structure, Institutions, and Growth: The Origins and Implications of Western Corporations." *American Economic Review, Papers and Proceedings*, 96(2): 308-312.
- Greif, Avner and Guido Tabellini, 2010. "Cultural and Institutional Bifurcation: China and Europe Compared." *American Economic Review, Papers and Proceedings*, 100(2): 135-40.
- Grossman, Herschel and Minseong Kim (1995) Swords or Plowshares? A theory of security of claims to property, *Journal of Political Economy*, 103(6).
- Guiso, Luigi, Paula Sapienza and Luigi Zingales. 2010. "Civic Capital as the Missing Link," NBER Working Papers 15845, National Bureau of Economic Research, Inc.
- Heathershaw, J. 2009. *Post-Conflict Tajikistan: The Politics of Peacebuilding and the Emergence of Legitimate Order*. London: Routledge.
- Henrich, Joseph, Jean Ensminger, Richard McElreath, Abigail Barr, Clark Barrett, Alexander Bolyanatz, Juan Camilo Cardenas, Michael Gurven, Edwina Gwako, Natalie Henrich, Carolyn Lesorogol, Frank Marlowe, David Tracer and John Ziker. 2010. "Markets, Religion, Community Size, and the Evolution of Fairness and Punishment." *Science*, 327, 1480-1484.
- Hiro, Dilip (1995). *Between Marx and Muhammad: The Changing Face of Central Asia*. London: Harper Collins Publishers.
- Howard, Marc 2003. *The Weakness of Civil Society in Post-Communist Europe*. Cambridge: Cambridge University Press.
- Jawad, Nassim and Shahrbanou Tadjbakhsh. 1995. *Tajikistan: A Forgotten Civil War*. London: Minority Rights Group. January.
- Jonson, L. 2006. *Tajikistan in the New Central Asia: Geopolitics, Great Power Rivalry, and Radical Islam*. London: I.B. Taurus.
- Knack, Steven and Philip Keefer. 1997. "Does Social Capital Have an Economic Payoff? A Cross-Country Investigation," *Quarterly Journal of Economics* 112(4): 1251-1288.
- Knack, Steven and Philip Keefer. 2001. "Trust and Growth", *Economic Journal*, 111: 295-321.
- Knack, Stephen and Zack Paul J.. 2001. "Trust and Growth," *Economic Journal*, Royal Economic Society, vol. 111(470), pages 295-321.
- Krueger Alan B., and Maleckova, Jitka. 2003. Education, Poverty and Terrorism: Is There a Causal Connection? *Journal of Economic Perspectives*, Volume 17, Number 4: 119-144
- Marshall, M. and Cole, B. 2009. "Global Report 2009: Conflict, Governance, and State Fragility". Center for Systemic Peace.
- North, Douglass C., Joseph Wallis and Barry Weingast. 2009 *Violence and Social Orders: A Conceptual Framework For Interpreting Recorded Human History*. New York: Cambridge University Press.
- Nunn Nathan and Leonard Wantchekon. "The Slave Trade and The Origins of Mistrust in Africa." *American Economic Review*, Forthcoming.
- Portes, Alejandro. 1998. "Social Capital: Its Origins and Applications in Modern Sociology." *Annual Review of Sociology* 24: 1-24.

- Tilly, Charles and Gabriel Ardant. 1975. *The formation of national states in Western Europe*. Princeton University Press.
- Tilly, Charles. 1985. "War Making and State Making as Organized Crime" in *Bringing the State Back*, edited by Peter Evans, Dietrich Rueschemeyer, and Theda Skocpol. Cambridge: Cambridge University Press.
- Tuncer-Kilavuz, Idil 2009. "The Role of Networks in Tajikistan's Civil War: Network Activation and Violence Specialists". *Nationalities Papers* 37(5): 693-725.
- Tuncer-Kilavuz, Idil. 2011. "Understanding Civil War: A Comparison of Tajikistan and Uzbekistan." *Europe-Asia Studies* 63(2): 263-290
- Voors, Marteen, Eleonora Nillesen, Philip Verwimp, Erwin Bulte, Robert Lensink and Daan van Soest, 2011. "Does Conflict affect Preferences? Results from Field Experiments in Burundi." *American Economic Review*, Forthcoming.

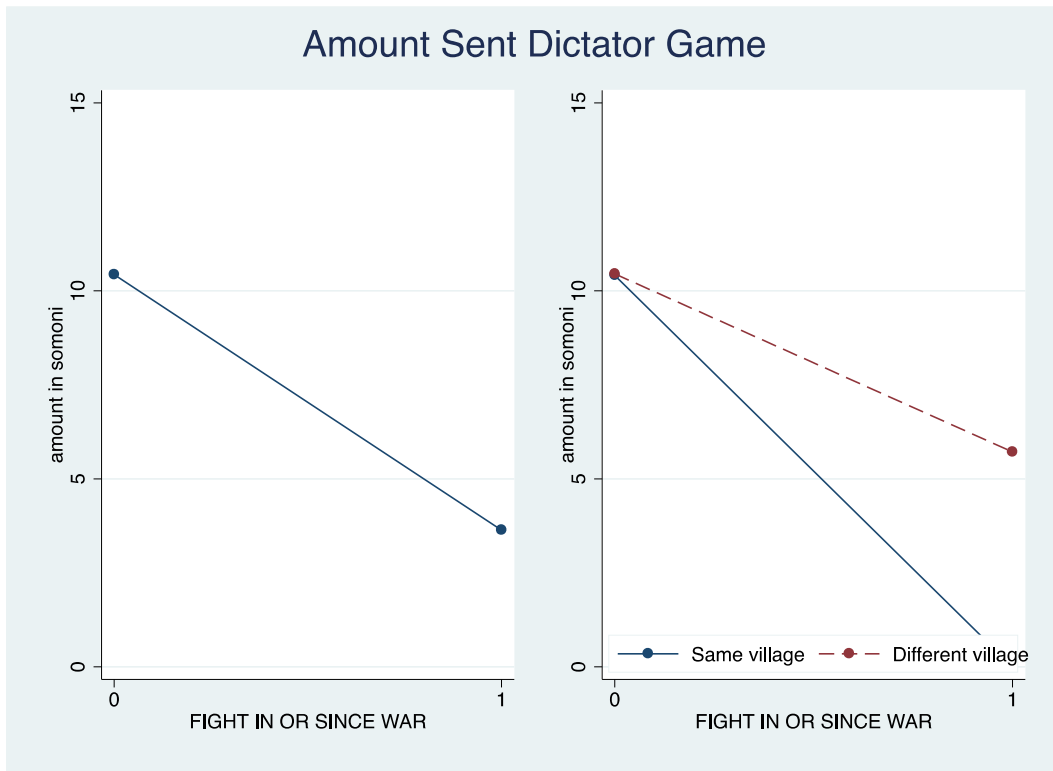


Figure 1. Average amount sent in the Dictator Game (range between 0 and 40 Somoni) by experimental treatment.

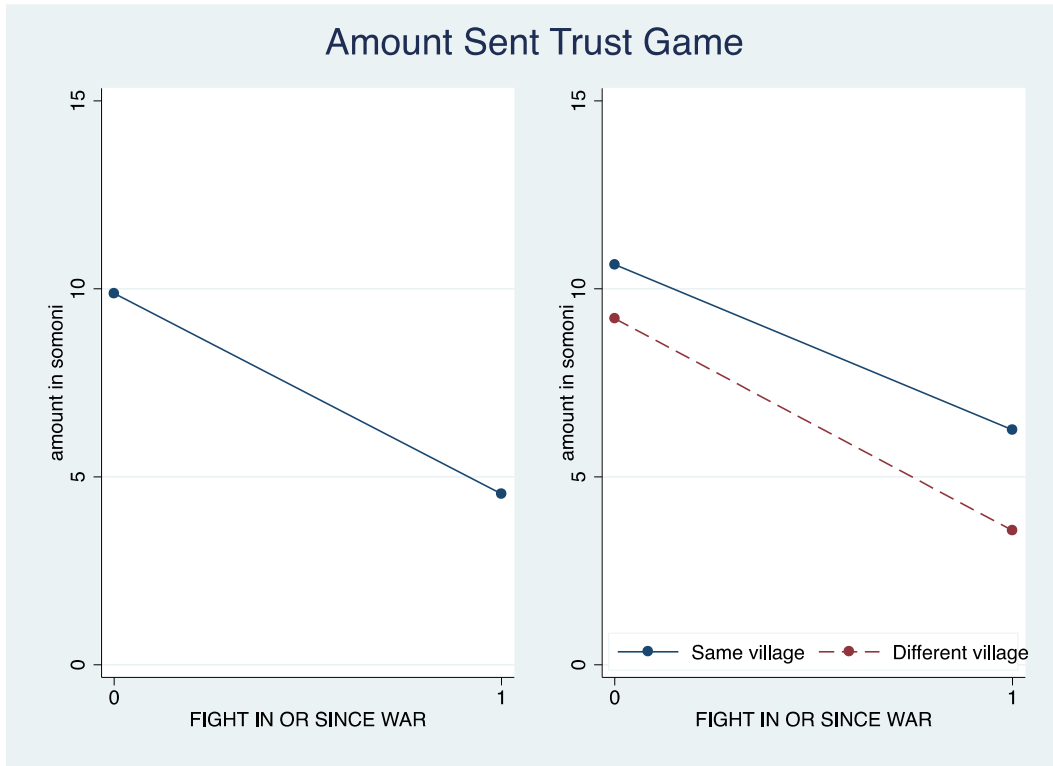


Figure 2. Average amount sent in the Trust Game (range between 0 and 20 Somoni) by experimental treatment.

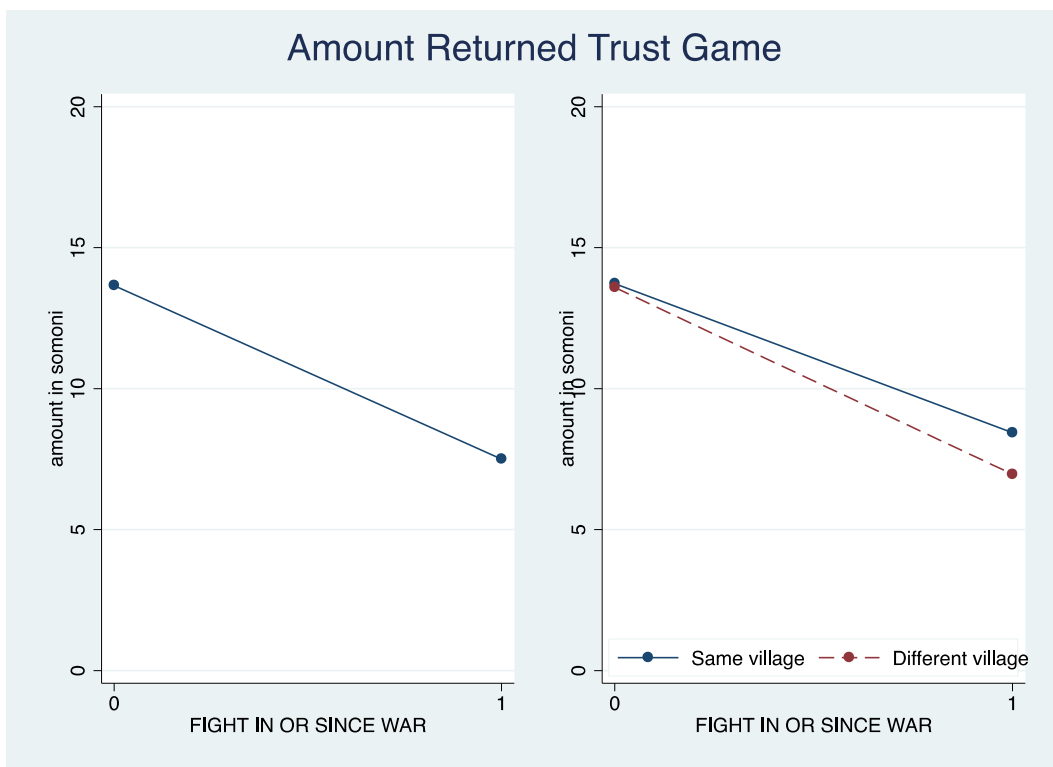


Figure 3. Average amount returned in the Trust Game (strategy method) by experimental treatment.

Table 1: Determinants of Fighting*OLS regression*

Dependent Var.	Fight	
	(1)	(2)
Age	0.001 [0.175]	0.001 [0.324]
Gender	0.036** [0.049]	0.038* [0.068]
Pamiri		0.016 [0.396]
Uzbek	0.031** [0.016]	0.047** [0.019]
Dushanbe	-0.009 [0.559]	0.016 [0.361]
Gharm	0.034** [0.018]	0.097 [0.188]
Khatlon	0.006 [0.639]	0.012 [0.607]
Any member CP	-0.006 [0.518]	-0.003 [0.687]
Displaced Comm. Reg.	-0.001 [0.922]	0.004 [0.671]
Urban	0.002 [0.761]	-0.007 [0.698]
Comp. edu.	0.044* [0.073]	0.048* [0.052]
Second. Edu.	0.013 [0.346]	0.012 [0.441]
Higher edu.	0.011 [0.522]	0.019 [0.318]
Mid income	-0.029 [0.199]	-0.033 [0.228]
Rich	-0.026 [0.284]	-0.023 [0.387]
FE	region	village
Observations	377	377
R-squared	0.07	0.11
Mean dep. Var.	0.026	
s.d. dep. Var.	0.159	

Notes to Table 1: robust standard errors clustered at the village level. All regressions with a constant. P-values in brackets. Excluded ethnicity is: Tajik; excluded 1992 region is: Pamir; excluded education is compulsory education not completed; excluded income is poor (lower third of the income distribution).

Table 2: Dictator Game Regression Results*OLS regression*

Dep. variable: Amount sent by first mover in the dictator game

	(1)	(2)	(3)	(4)
Fight	-3.354 [0.236]	-4.940* [0.100]	-1.125 [0.736]	-2.981 [0.412]
Same village	-0.066 [0.961]	-2.432 [0.117]	0.068 [0.960]	-2.269 [0.146]
Same village*fight			-6.627** [0.028]	-5.841* [0.070]
Age	-0.033 [0.309]	-0.042 [0.210]	-0.030 [0.355]	-0.039 [0.238]
Gender	-1.083 [0.425]	-0.049 [0.970]	-1.133 [0.414]	-0.098 [0.941]
FE	region	village	region	village
Observations	418	418	418	418
R-squared	0.103	0.173	0.105	0.174

P-values in brackets (robust std. err. clustered by sampling village).

All regressions include a constant.

Table 3: Trust Regression Results*OLS regression*

Dep. variable: Amount sent by first mover in the trust game

	(1)	(2)	(3)	(4)
Fight	-3.693 [0.224]	-3.375 [0.265]	-4.497* [0.088]	-4.229* [0.099]
Same village	1.565 [0.164]	1.727 [0.282]	1.517 [0.193]	1.656 [0.322]
Same village*fight			2.391 [0.643]	2.545 [0.656]
Age	0.014 [0.594]	0.019 [0.526]	0.013 [0.628]	0.017 [0.560]
Gender	-0.151 [0.771]	-0.372 [0.544]	-0.133 [0.790]	-0.350 [0.559]
FE	region	village	region	village
Observations	418	418	418	418
R-squared	0.042	0.093	0.043	0.094

P-values in brackets (robust std. err. clustered by sampling village).

All regressions include a constant.

Table 4: Trustworthiness Regression Results*OLS regression*

Dep. variable: Mean returned by second mover in the trust gam

	(1)	(2)	(3)	(4)
Fight	-3.574*	-5.188**	-4.092	-5.639
	[0.094]	[0.028]	[0.230]	[0.129]
Same village	0.381	-0.324	0.350	-0.361
	[0.724]	[0.812]	[0.742]	[0.786]
Same village*fight			1.539	1.346
			[0.741]	[0.777]
Age	-0.031	-0.042	-0.032	-0.043
	[0.419]	[0.284]	[0.417]	[0.287]
Gender	0.957	1.271	0.969	1.282
	[0.284]	[0.163]	[0.273]	[0.159]
FE	region	village	region	village
Observations	418	418	418	418
R-squared	0.075	0.152	0.075	0.152

P-values in brackets (robust std. err. clustered by sampling village).

All regressions include a constant.

Table 5: Trust in Different Groups, Market and Group Participation*OLS regression*

Dependent variable (1 = positive reply):	Fight	Age	Gender	FE	Obs.	R-squared
Trust family members	-0.061 [0.554]	0.000 [0.694]	-0.048 [0.459]	region	417	0.024
	-0.062 [0.548]	0.001 [0.591]	-0.031 [0.609]	village	417	0.067
Trust personal acquaintances	-0.233 [0.442]	0.012* [0.086]	-0.054 [0.720]	region	413	0.035
	-0.170 [0.558]	0.012* [0.087]	-0.018 [0.904]	village	413	0.095
Trust neighbors	-0.721** [0.031]	0.004 [0.304]	-0.107 [0.402]	region	416	0.083
	-0.660** [0.040]	0.006 [0.242]	-0.083 [0.416]	village	416	0.156
Trust people met for first time	-1.411*** [0.001]	0.003 [0.613]	-0.122 [0.447]	region	414	0.168
	-1.559*** [0.000]	0.002 [0.744]	-0.062 [0.710]	village	414	0.208
Trust people of another religion	-1.454*** [0.000]	0.002 [0.697]	-0.024 [0.873]	region	416	0.184
	-1.656*** [0.000]	0.001 [0.863]	-0.048 [0.782]	village	416	0.245
Trust people of another nationality	-1.196*** [0.004]	0.002 [0.684]	-0.033 [0.828]	region	416	0.146
	-1.390*** [0.001]	0.001 [0.851]	-0.081 [0.607]	village	416	0.220
General trust (GSS question)	0.355 [0.223]	-0.004 [0.449]	-0.053 [0.760]	region	396	0.081
	0.600* [0.073]	-0.002 [0.730]	-0.036 [0.844]	village	396	0.131
Important to personally know trade	1.186** [0.013]	-0.004 [0.275]	-0.088 [0.495]	region	418	0.067
	1.125** [0.023]	-0.005* [0.097]	-0.030 [0.805]	village	418	0.123
Freedom to marry	-0.059 [0.306]	0.001 [0.564]	0.047 [0.244]	region	345	0.492
	-0.094** [0.046]	0.001 [0.670]	0.063 [0.123]	village	345	0.538
Participation in groups	0.364*** [0.000]	-0.000 [0.913]	0.155 [0.226]	region	404	0.184
	0.363*** [0.000]	-0.000 [0.979]	0.174 [0.193]	village	404	0.216
Community meetings	0.296* [0.061]	0.002 [0.256]	0.085 [0.106]	region	407	0.064
	0.304* [0.072]	0.001 [0.533]	0.095 [0.114]	village	407	0.120
Religious groups	0.647*** [0.000]	-0.000 [0.955]	0.067 [0.377]	region	339	0.064
	0.615*** [0.000]	0.000 [0.881]	0.102 [0.178]	village	339	0.115

P-values in brackets (robust std. errors clustered by sampling village). Regressions include a constant.

Appendix

Table A1: Dictator Game Results - Subsample of Non Movers

OLS regression

Dep. variable: Amount sent by first mover in the dictator game

	(1)	(2)	(3)	(4)
Fight	-4.136 [0.218]	-7.025* [0.082]	-1.948 [0.557]	-4.410 [0.176]
Same village	0.830 [0.610]	-1.037 [0.615]	0.916 [0.571]	-0.903 [0.659]
Same village*fight			-6.490* [0.060]	-7.853** [0.022]
Age	-0.053 [0.369]	-0.054 [0.433]	-0.052 [0.389]	-0.052 [0.456]
Gender	-0.465 [0.834]	0.059 [0.981]	-0.457 [0.837]	0.057 [0.982]
FE	region	village	region	village
Observations	199	199	199	199
R-squared	0.080	0.150	0.081	0.152

P-values in brackets (robust std. err. clustered by sampling village).

All regressions include a constant.

Table A2: Trust Results - Subsample of Non Movers*OLS regression*

Dep. variable: Amount sent by first mover in the trust game

	(1)	(2)	(3)	(4)
Fight	-5.346***	-4.758***	-5.105**	-4.216*
	[0.003]	[0.005]	[0.024]	[0.052]
Same village	1.703	1.917	1.712	1.945
	[0.156]	[0.346]	[0.156]	[0.343]
Same village*fight			-0.712	-1.628
			[0.754]	[0.473]
Age	0.020	0.019	0.020	0.020
	[0.641]	[0.686]	[0.640]	[0.679]
Gender	-0.263	-0.587	-0.262	-0.588
	[0.740]	[0.467]	[0.741]	[0.468]
FE	region	village	region	village
Observations	199	199	199	199
R-squared	0.075	0.128	0.075	0.128

P-values in brackets (robust std. err. clustered by sampling village).

All regressions include a constant.

Table A3: Trustworthiness Results - Subsample of Non Movers*OLS regression*

Dep. variable: Mean returned by second mover in the trust game

	(1)	(2)	(3)	(4)
Fight	-0.056 [0.993]	-2.002 [0.786]	1.143 [0.910]	-1.166 [0.915]
Same village	0.521 [0.641]	-0.281 [0.847]	0.568 [0.605]	-0.238 [0.862]
Same village*fight			-3.558 [0.732]	-2.514 [0.818]
Age	-0.041 [0.392]	-0.038 [0.475]	-0.041 [0.413]	-0.038 [0.495]
Gender	2.169* [0.086]	2.151 [0.143]	2.173* [0.087]	2.150 [0.144]
FE	region	village	region	village
Observations	199	199	199	199
R-squared	0.068	0.139	0.069	0.139

P-values in brackets (robust std. err. clustered by sampling village).

All regressions include a constant.