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The Dictator Game, Fairness and Ethnicity in Postwar Bosnia

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This study considers the effects of ethnic violence on norms of fairness. Once violence is a foregone conclusion, will cooperative norms ever (re-)emerge beyond ethnic boundaries? We use an experiment that measures how fairly individuals in a postconflict setting treat their own ingroup in comparison to the outgroups—in this case, examining the behavior of 681 Muslims, Croats, and Serbs in postwar Bosnia-Herzegovina. To assess fairness, we use the dictator game wherein subjects decide how to allocate a sum of money between themselves and an anonymous counterpart of varying ethnicity. We find that the effects of ethnicity on decision making are captured by our experiments. Although results indicate preferential ingroup treatment, the incidence and magnitude of outgroup bias is much less than expected. We conclude that norms of fairness across ethnicity are remarkably strong in Bosnia, and we take this to be a positive sign for reconciliation after violent conflict.

Once a multiethnic society has emerged from a period of violent conflict, civil war, and even genocide, can those who survive adopt norms capable of sustaining peace with former ethnic rivals and adversaries? While postconflict societies remain largely untapped by behavioral researchers, recent literature underscores the importance of conducting field work in conditions of social conflict (Gibson 2002; Gibson and Gouws 2000). For example, Gibson (2004) examines how attitudes concerning tolerance in South Africa aided the pursuit of truth and reconciliation after decades of social repression under apartheid. Our research adds insight into the question of whether multiethnic societies overcome a legacy of violent conflict.

Our approach considers whether fairness survives as a social norm following a recent history of violence. We focus on the way people treat their ingroup and how they treat the outgroup. We measure this norm behaviorally by observing how much money people choose to keep for themselves and how much they send to an anonymous, but ethnically identifiable, counterpart. We

use a stratified random sample of subjects who reside in Bosnia-Herzegovina and who make their choices eight years removed from a bloody civil war.

Our results show that a norm of fairness has survived (or rejuvenated) in Bosnia. Similar to results in other countries, subjects behave fairly toward a counterpart. Although we find that there is a distinct outgroup effect, a norm of fairness persists. This gives us pause to consider that the sources of violence are rooted in larger institutional and entrepreneurial circumstances. We speculate that regular citizens quickly return to social norms once the fighting is over.

Motivation

Can fairness persist or reemerge in a multiethnic society following a bloody civil war? We are unable to answer the question whether a norm of fairness was in place prior to the Bosnian Civil War, whether it disappeared during

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the conflict, or whether it has reappeared.¹ However, we can look at a cross section of time in which memories of the conflict are vivid. We can draw inferences about the current state of intraethnic and interethnic relations concerning fairness and from that extrapolate whether healing has occurred.

The process of healing may be particularly problematic when violent conflict assumes ethnic dimensions. Hegre (2004) and Fearon (2004) point out that conflicts involving ethnic cleavages are likely to last much longer than other forms of conflict. Walter (2004) finds that conflicts involving ethnic cleavages are also more likely to recur. Several explanations of the persistence and intractability of ethnic conflict have been offered in the literature. First, the importance of ethnicity as a social marker has been emphasized by a good deal of research (Hale 2004; Monroe, Hankin, and Van Vechten 2000; Sanders 2002). In a postconflict environment, ethnicity is likely to remain the most credible marker separating individuals. In societies where ethnicity is a highly salient marker, it can divide people and lead them to behave positively toward their own ingroup and negatively toward an outgroup (Horowitz 1985). Fearon and Latin (1996), however, point out that ethnicity need not encourage violence if ethnic groups self-police and provide clear expectations to those outside the group (but see also Bhavnani and Backer 2000). Relying on ethnic self-policing, however, is generally considered to be unstable in the long run, and postconflict environments are clear examples of where self-policing has demonstrably failed to prevent violence at least once.

A second barrier to healing is posed by high levels of fear and uncertainty in postconflict environments. Research indicates that fear and uncertainty are likely to increase distrust, competition, and threat perceptions among ethnic groups, which can lead to recurrent conflict (Bhavnani and Backer 2000; Hwang and Burgers 1999; Pearson 2001; Posen 1993; Roe 1999; Vanhanen 1999; Weingast 1998). Even if conflict does not recur, conditions of fear and uncertainty pose problems for rebuilding ethnic tolerance and norms of fairness. Threat perceptions, in particular, have been linked to intolerance in

multiethnic societies (Gibson and Gouws 2001). Threat perceptions may also prohibit both associational and “everyday” forms of civic engagement that can reduce tensions across ethnicity (Varshney 2001). In postconflict environments, the salience of ethnicity as a social marker should be particularly strong, threat perceptions are likely to be high, and fraternization across ethnic lines should be largely discouraged.

Why Fairness?

Given the explosiveness of ethnicity, why turn to understanding a social norm like fairness? On the one hand, social norms provide “common knowledge” in which everyone understands and anticipates the actions of others (Chwe 2001). As such, social norms smooth everyday transactions. A shared norm that is widely held in the population can defuse conflicts that might arise in daily life. Treating others fairly, even if they are disliked, is one path to healing.

On the other hand social norms can also serve to differentiate between the ingroup and the outgroup. Norms practiced by one group can serve as a barrier to entry for another group. Specialized ethnic norms serve both as a badge marking group membership and as a course of action directed toward an outgroup. If different ethnic groups hold different norms or call for different behaviors for in- and outgroups, this is a recipe for resuming conflict.

This study asks a very simple question. Do ethnic groups from Bosnia exhibit norms of fairness that are different for their own ingroup than for an outgroup? Of particular interest is whether ingroup members are treated differently from outgroup members. That is, do ingroup members apply one norm to themselves and change that norm when dealing with members of a salient outgroup? On its face, we expect that deep-seated hatred, rooted in ethnic violence and genocide, should be obvious. It should show up in the ways in which individuals differentiate between norms for those within and those outside their group.

Background

The consequences of ethnic violence in Bosnia were devastating. In terms of human costs, an estimated 250,000 civilians and combatants were killed in the course of the war. At the end of 1995, over 2 million people—over half the population of a prewar population of 4.4 million based on the 1991 census—had been uprooted by the war and

¹There is an ongoing debate in the Bosnian case literature between elite and mass driven explanations of “ethnic wars.” Our data were collected seven years after the end of hostilities in Bosnia, and this study deals exclusively with issues of fairness and ethnicity in the postwar period. We cannot address whether norms of fairness existed prior to or during the conflict. However, we argue that we have direct measures of preference, and this gives us insight into both the attitudes and behaviors of the mass public. We observe that a reservoir of fairness persists even when ingroup/outgroup identity is activated. Based on this we tend to side with the elite/entrepreneurial explanations of the conflict.

were either living abroad as refugees or internally displaced across Bosnia.² Following the nearly four-year conflict, most ethnic Serbs, Croats, and Bosnjaks (Bosnian Muslims) who were not living as refugees abroad had settled behind their respective lines of combat, and once multiethnic communities were effectively “cleansed” by the conflict.³

The current population of Bosnia-Herzegovina is approximately 4.4 million, of which ethnic Bosnjaks constitute 48% of the population, Serbs represent 37.1%, and Croats 14.3%. Today, Bosnia is a multiethnic state, a federation, comprised of two substate “entities”:⁴ a Bosnjak-Croat Federation (hereafter: the Federation) and the Serb Republic. The territorial boundaries of the two entities were carved out of the front lines at the time of the Dayton Peace Agreement. While Bosnjaks and Croats share power within the Federation, most municipalities are largely homogeneous. Although progress is being made on the return of Bosnjak and Croat refugees, the Serb Republic is homogeneously Serbian for all practical political purposes.

The past decade has produced a great deal of scholarship on Bosnia, most of which has dealt with the origins of the conflict (Andreas 2004; Burg 1999; Campbell 1998; Gagnon 2004; Mueller 2000; Velikonja 2003; Woodward 1995) and the problems of reconstruction in the postwar period (Bieber 2001; Bose 2002; Chandler 2000; Friedman 2004; McMahan 2004; Woodward 1999). Most scholars now widely dispute “enduring hatred” explanations of the Bosnian conflict, pointing to institutional and entrepreneurial factors instead (though see Petersen 2002). A number of social scientists have found evidence that ethnic relations in Bosnia were generally cooperative before the war (Burg and Berbaum 1989; Hodson, Sekulic, and Massey 1994; Kunovich and Hodson 2002; Sekulic, Massey, and Hodson 1994),⁵ but less has been done to tap the attitudes and behavior of citizens in the postwar pe-

²Estimates of war casualties and displaced persons vary widely. These are estimates cited by Bisogno and Chong (2002). See Tabeau and Bijak (2005) regarding the problem of estimating war-related deaths.

³The Dayton Agreement provides refugees with the right of return. The UNHCR provides annual reports on the resettlement of refugees. Although progress on resettlement has been made since the end of the war, most of Bosnia’s regions are more characteristic of ethnic enclaves than mixed regions.

⁴In addition to the two entities, a special district around Brčko was created under the Bosnian constitution in 1999.

⁵Data collected before the war generally shows that nationalism, intolerance, and prejudice were not widespread in Bosnian society, especially in ethnically mixed, urban areas. The main problem areas were generally rural ethnic enclaves and characteristic to all three groups.

riod. Exceptions to this point include Caspersen (2004), who finds that support for nationalist parties in Bosnia has declined since the end of the war. Likewise Pickering (2006) suggests that ethnic relations have improved in Bosnia because of new institutions that have been put into place. We expand on this scholarship, not only by examining attitudes, but also by bringing a well-known experimental design out of the laboratory and into the field.

Experimental Design

One means for understanding the strength of ethnic divisions is to examine whether different ethnic groups apply the same behavioral norm within their group and outside their group. The problem with norms is that they are difficult to measure. Camerer and Fehr (2004) discuss a variety of instruments to measure social norms. We rely on an experiment known as a “dictator game” to measure norms of fairness. The experiment pays subjects according to their behavior and is conducted “in the field” in locations convenient for the subjects.

The dictator game is widely used in the field of behavioral economics and dates from the early 1980s.⁶ The game is thought to tap altruistic behavior, although it also is used to measure fairness in the allocation of resources. The dictator game is a one-stage game in which a subject (Player A) decides how to allocate a sum of money between him/herself and a second subject (Player B). The game derives its name because Player A can “dictate” the outcome of the game risk-free. Based on pure self-interest, Player A should keep all money, transferring nothing to Player B. However, considerable research finds that subjects generally transfer a nontrivial sum of money to the corresponding Player B under a wide variety of experimental conditions.⁷ Whereas dictator experiments originated as a method of evaluating other-regarding behavior, they are increasingly used to measure perceptions of fairness as well as “tastes for discrimination.”

Dictator games have been used to capture effects of ethnicity on norms of fairness. For example, Fershtman and Gneezy (2001) use it to calibrate concepts of fairness

⁶Some of the first dictator game experiments were conducted by Kahneman, Knetsch, and Thaler (1986). Dictator games are a simple adaptation of an ultimatum game proposed by Guth, Schmittberger, and Schwartz (1982).

⁷See Roth (1995) and Camerer (1997, 2003) for comprehensive reviews of early and most recent empirical literature using dictator games. Also see Eckel and Grossman (1996), Hoffman, McCabe, and Smith (1996), and Fowler (2006) for a range of experimental conditions.

when analyzing behavior between ethnically mixed Israeli students. Bahry and Wilson (2004) use the dictator game to calibrate commitments to norms by different ethnic groups in Russia. Finally, Habyarima et al. (2004) use it to examine ethnicity among students in Southern California, although they find mixed results.

Given that so many have conducted dictator game experiments, why go to Bosnia? First, most experiments have been run on homogeneous groups—a.k.a. student populations. Experiments run on populations are rare, although some work is notable. One study, conducted by a large research team of anthropologists in 15 different societies, demonstrated the diversity of norms when confronting a common set of experimental games (see Henrich et al. 2004). For example Marlowe (2004) uses the dictator game to replicate what is thought to be a norm of fairness in food sharing among the Hadza, a hunter-gatherer tribe from Tanzania. Similar experiments have appeared in political science. Duch and Palmer (2004) embedded an experiment in a mass survey in Benin in order to tap a commitment to property rights norms. Bahry and Wilson (2006) examine generational differences in two Russian Republics using a population sample and relying on both survey research as well as laboratory experiments.

Second, researchers using behavioral experiments have rarely focused on ethnic rivalry. This is not to ignore the substantial literature on ingroup/outgroup behavior. Much of that literature focuses on racial relations in the United States although there is an extensive literature from Europe that treats ethnic minorities and how the majority regards them.⁸ That ethnicity might trigger discrimination has not gone unnoticed by a handful of social scientists using behavioral experiments with financial stakes. But much of that work focuses on trust relations and not fairness. For example, Glaeser et al. (2000) find differences between African Americans and Caucasians in trust propensities using a variation of the investment game. A similar finding emerges when South African high school students are cued with a photograph of their counterpart and mixed by racial groups (Burns 2003). Barr (2003) finds that trust varies between resettled and traditional communities in rural Zimbabwe. The latter are marked by denser kinship relations and exhibit higher levels of trust in an investment game than do the more heterogeneous settlement communities. Eckel and Wilson (2004) find, among American students, that skin color is an important marker for initiating trust, with subjects much more likely to initiate a trust relationship with a lighter-skinned

⁸See for example reviews by Duckitt (2003), Fiske (1998), Fiske (2000), and Brewer and Brown (1998).

partner. Finally, Gil-White (2004) oddly finds that offers in an ultimatum game are higher for the outgroup than the ingroup. While this might be due to the difficulties in carrying out a complicated experiment in Mongolia, these results echo those found by Dawes, Vandekragt, and Prbell (1988) among students in the United States. By and large these findings support the extensive research from social psychology: ingroup favoritism is the norm and outgroup members are treated less favorably.

Third, this study is unique in that it looks at behavior in a highly charged environment. Not quite a decade ago, Bosnia's ethnic groups were fighting each other in a brutal war. To end the war, Muslims, Croats, and Serbs agreed to share power in the framework of an independent, multi-ethnic state. Common knowledge about postwar Bosnia suggests that ethnic politics have been more strained and contentious than cooperative, yet there has been little systematic attempt to examine the extent to which ethnic divisions run deep in the daily life of postwar Bosnian society.

Sampling and Design

The dictator games used in this experimental design are part of an extensive study conducted in Bosnia by the first author from September 2003 through January 2004. We briefly detail the design of that study and point to how the dictator game fits into the overall study.

A private entity, Mareco Index Bosnia, recruited participants for this project.⁹ The firm carried out a multistage, stratified random sampling method for recruiting subjects. The sampling plan called for relatively equal numbers of Bosnjaks, Croats, and Serbs to participate in the study. Additional quotas were included for each sample point to ensure sufficient distribution by gender, education, and age. Recruiters followed a specified selection mechanism for participants until a sufficient number was obtained to fulfill the quota requirements for each experiment session.¹⁰ All subjects were recruited within one

⁹Mareco Index Bosnia is a member of the World Association of Public Opinion (WAPOR), the European Society for Opinion and Marketing Research (ESOMAR), and the American Marketing Association (AMA). The firm conducted the last World Values Survey in Bosnia and is experienced in conducting both academic as well as marketing research.

¹⁰Sampling locations were chosen to reflect diverse conditions in Bosnia. Recruiters used a five-stage stratified random sampling method: (1) a random selection of a sampling point using a map of selected locations; (2) random selection of a starting point for each sampling point; (3) selection of households using a "random route" technique, starting with 5th numbered apartment building or house and selecting every 5th entrance; (4) selection of

week prior to the date of the designated group session. Sessions in the experiment were conducted in groups of 18 to 29 participants, and sessions took place in hotel conference rooms, local cultural centers, or schools.

Each session was directed by a local experimenter who was assisted by the first author. As subjects arrived for the experiment, they were verified by their “invitation letter,” randomly seated, and given a “Consent Form” to read. Anyone who did not wish to participate in the experiments at this point was paid a show-up fee of 10KM (\$5.50 USD) and asked to leave. Those subjects who consented to participate were given a unique identification number that was used in the session.

At the beginning of each session, subjects were greeted by the experimenter, who read from a standard script. The experimenter at this point publicly destroyed the materials used to verify the identities of those who had been recruited. This made it clear that no information could be used to personally identify participants in the research—only a randomly assigned identification number.

The experimenter first guided the subjects through a 50-item questionnaire. Special assistance was provided to participants who had difficulty or required more time to answer questions. All spoken and written materials used by participants were translated into Serbo-Croatian. Serbs from the Serb Republic were provided with materials in the Cyrillic alphabet.

Once the survey was completed and collected, the administrator began the experiment. Five different variations of dictator games were used. The first two provide baseline measures of fairness norms within the same ethnic group. The remaining three tasks involved similar decisions with variation over ethnicity.

The focus of this article is with two of the dictator games. In the first dictator game, referred to hereafter as D-1, Player A (i.e., the “Allocator”) and Player B (the “Recipient”) are of the same ethnicity and reside in the same federal entity of Bosnia: either the Federation or the Serb Republic.¹¹ The subject is given 10 Bosnian Convertible Marks (KM) and 10 blank slips of paper that were the same size as the bank notes. Subjects decided how to allocate the money and the blank slips between themselves

individual respondents (one per household) using a random selection key based on the most recent birthday; and (5) the respondent completes an initial screening survey. Recruiters then compare the screening survey to a standard quota form to ensure the requisite distribution by ethnicity, gender, and age, and continue recruiting (if necessary) until quotas are met.

¹¹ It was possible to determine the ethnicity of each subject based on the initial screening survey used in the recruiting process. Subjects were not asked their ethnic affiliation during the experiment. However, a question about ethnicity was included in the questionnaire as an additional check.

and an anonymous recipient. The recipient is not physically present in the session; instead, information about the recipient’s ethnicity (Bosnjak, Croat, or Serb) and entity of residence (Federation or Serb Republic) is presented to the subject on an envelope marked “SEND.” Subjects are instructed to place 10 items in both the KEEP and SEND envelopes. Whatever is put in the KEEP envelope is taken home. Whatever is placed in the SEND envelope is given to a recipient whose ethnicity is specified on the envelope at a subsequent experimental session.

The second dictator game, hereafter referred to as D-2, is similar to D-1, except that in this game, the anonymous recipient is ethnically different from the subject. Subjects are again asked to allocate 10KM and 10 blank slips of paper between KEEP and SEND envelopes. The SEND envelopes are marked as going to an individual of a specific ethnicity and place of residence. Subjects are told the recipient will participate in a future experiment. In both D-1 and D-2 the SEND envelopes were given to the appropriate recipient at a different session.

This experimental design allows a within-subject comparison of D-1 and D-2. Differences in the amount sent in D-1 and D-2 measure the effect of ethnicity. For example, a subject may chose to transfer nothing to a corresponding recipient in both games, in which case it is unlikely that ethnicity plays a role. Likewise there is no evidence of ethnic bias if the subject transfers the same amount in both D-1 and D-2. However, if the subject sends more to the recipient of same ethnicity in D-1 than to a recipient of another ethnicity in D-2, it indicates ethnic bias. In keeping with much of the literature on outgroup bias we expect subjects to send more money to co-ethnics in D-1 than to those of a different ethnicity in D-2.

Overview of the Data

Data were collected in September 2003 and January 2004. A total of 681 subjects participated in 30 sessions.¹² Of this number, 338 participated in 15 sessions in the September round, and the remaining 343 subjects took part in 15 sessions in the January round. In each period a total of 390 respondents were contacted, completed a screening survey, and agreed to participate in the experiment. The turnout rate in September was 86.7% (338 out of 390) and 87.9% (343 out of 390) in January. Subjects who participated earned an average of \$13.80 USD from their decision making in the experiments (s.d. = \$2.40,

¹² Sessions were held in the following areas in Bosnia: Sarajevo, Mostar, Tuzla, Banja Luka, Zenica, Travnik, Novi Travnik, Livno, Capljina, Siroki Brijeg, Dobo, Gorazde, Prijedor, Pale, Bijeljina, and Brcko.

max = \$16.60, min = \$5.50). This is a considerable sum because most daily wages in Bosnia at the time were between \$5 and \$10.

Quotas on ethnicity, gender, age, education, and urban-rural residence enabled us to obtain a remarkably heterogeneous sample population. Although Croats constitute only 15% of Bosnia's population, the quota ensured equal numbers of Bosnjaks, Croats, and Serbs in the study. The study includes an almost equal percentage of male and female subjects. The initial quota undersampled older subjects, due to a concern that the instruments might be too complicated. This proved not to be the case, and older subjects were solicited at equivalent population rates in the latter half of the research. The distribution in education is consistent with that of the Bosnian population, and the high percentage of unemployed persons in the study (28.1%) is also characteristic of the unemployment situation in the country. Finally, there are more urban participants in this study than rural because sessions were located either in the centers of major cities or small towns for a number of practical reasons.¹³ Generally the sampling quota provides a broadly heterogeneous sample of the population.

Analysis

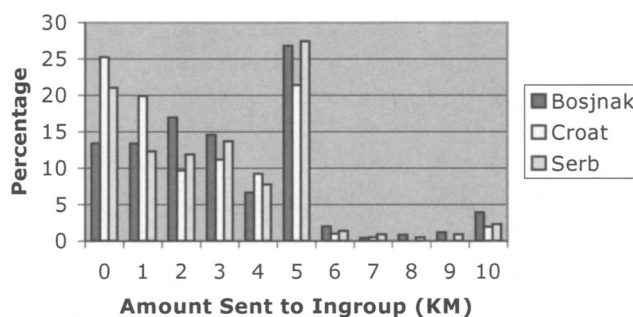
The data analysis consists of three parts. The first part examines cooperative norms within the same ethnic group. The second part considers whether behavior changes when ethnicity is varied in the second task. Finally, to be certain that subjects responded to the treatment, individual differences are examined with a multivariate model.

Cooperative Norms within the Ethnic Group

In the first experiment, D-1, subjects decide how to allocate 10 Bosnian Convertible Marks (10KM) and 10 blank slips of paper between themselves and someone of the same ethnicity. The average amount of money sent in D-1 to recipients of the same ethnicity was 2.90KM

¹³Sixty percent of our sample indicated that they lived in an urban area. The remaining 40% were distributed among suburban areas, small towns, and villages. Suburban areas in Bosnia can be quite remote. We believe that a 60–40 division between urban and rural dwellers in the sample reflects population distributions on the ground. Though a traditionally rural society, Bosnia experienced widespread urban migration during and following the war.

FIGURE 1 Distribution of Amounts Sent in Decision 1 to Ingroup Recipients



(s.d. = 2.35). Most participants (65.5%) sent nontrivial amounts of money in D-1 (2KM or greater) to a member of the same ethnic group. While these figures may seem high, they are in line with results reported in many other countries among student populations.¹⁴ Only 19.4% of participants chose to keep all 10KM and 25.3% split the amount, keeping 5KM for themselves and sending 5KM to the recipient. Finally, 2.8% of subjects behaved as pure “altruists,” sending all 10KM to the recipient. Figure 1 gives the distribution broken out by ethnicity of the recipient.

The figure shows that the between-ethnic distributions are different. This is supported by a test for the difference in distributions between the groups (Kruskal-Wallis $\chi^2 = 12.19$, $p = 0.002$). On average Bosnjaks sent the most and Croats the least. Without overinterpreting the differences among the three ethnic groups, Croat subjects appear more “socially distant” from their own ingroup than Bosnjaks and Serbs.

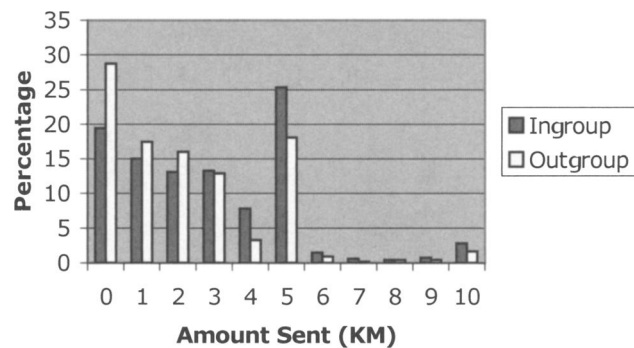
The purpose of the first decision was to establish a baseline measure of a norm of intraethnic fairness. While there is considerable within-group heterogeneity (and between ethnic group differences), the amount sent provides us a measure of fairness within the ethnic group. Overall the modal response is to split the money.

Fairness across Ethnicity

In the second decision the ethnicity of the recipient is manipulated. Each subject decides how to allocate 10KM and 10 blank slips of paper between him/herself and someone of another ethnicity in Bosnia. The ethnicity of the outgroup recipient was randomly assigned. As noted in a prior section we expect an outgroup effect. Moreover

¹⁴In a meta survey by Camerer (2003), the average amount sent in equivalent experiments is around 30% of the endowment.

FIGURE 2 Overall Distribution of What Was Sent to Ingroup versus Outgroup Counterparts in Decision 1 and Decision 2



because of the recency of interethnic hostility, we expect this outgroup effect to be magnified. We expect little to nothing to be sent to the outgroup.

There are four important results from this decision. First, there is a good deal sent to non-co-ethnics (those in the outgroup). Second, less is sent in the second decision than in the first. Third, there is variation among the ethnic groups as to what is sent. Fourth, there is a great deal of individual heterogeneity in decisions. Figure 2 provides the distribution of choices for both the first decision and the second decision, aggregated across all ethnic groups. As can be seen from Figure 2 more subjects send nonzero amounts to their outgroup counterpart. On average 2.23 KM is sent, with slightly over 18% of the subjects splitting the amount in half. But this is not what is expected if ethnic groups persist in their hatred of one another.

We cannot say that the outgroup is treated the same way as the ingroup. This too can be seen from Figure 2. The percentage of subjects sending nothing increases and the percentage of equal splits decreases markedly. What is clear from the figure is that less is sent in the second decision. There is no doubt that subjects differ in what they think is fair for co-ethnics and for an outgroup and this is simple to show. Because we have a within-subjects design, a paired t-test of what was sent in the first and second decisions indicates that the difference is significant and in the expected direction ($t = 11.08$, $df = 679$, $p < .001$).¹⁵

¹⁵A more appropriate test is a nonparametric Wilcoxon matched-pairs test. Using that test we reach the same conclusion: what subjects do in the first decision is different from what they do in the second decision. Here $z = 12.12$, $p < .001$.

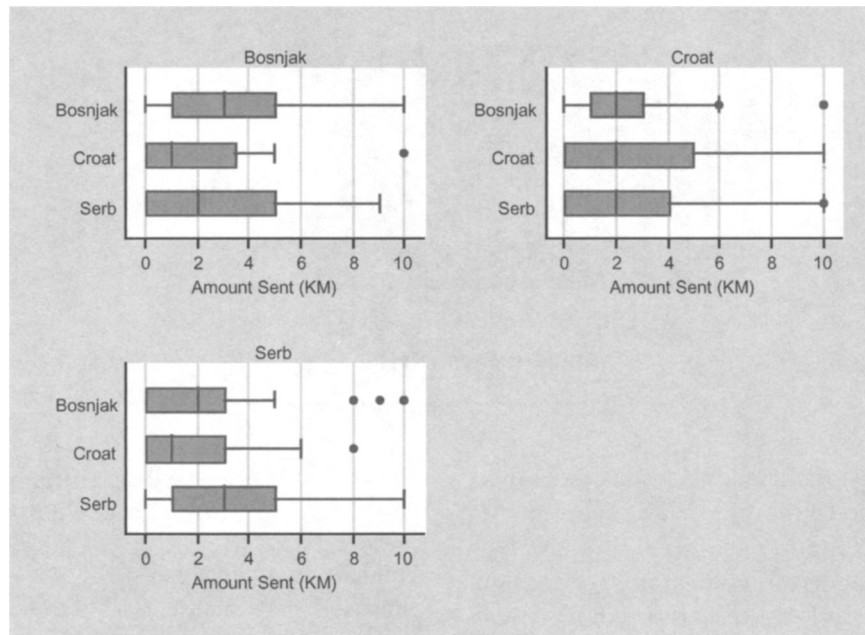
TABLE 1 Average Allocations by Ethnicity of the Subject and Recipient

Ethnicity of Subject	Ethnicity of Recipient	# Recipients	Mean	SD
Bosnjak	Bosnjak	254	3.22	2.41
Bosnjak	Croat	119	2.33	1.99
Bosnjak	Serb	133	2.39	2.46
Croat	Croat	206	2.45	2.22
Croat	Bosnjak	104	1.99	2.21
Croat	Serb	101	1.86	1.94
Serb	Serb	219	2.95	2.35
Serb	Bosnjak	111	2.39	2.19
Serb	Croat	107	2.25	2.21

Note: The bolded rows are the co-ethnic allocations from the first decision. The remaining rows are the average allocations to outgroup members.

Third, we again find differences between Bosnjaks, Croats, and Serbs as to what they send. The second decision mirrors the first in that Croats send the least when compared with either Bosnjaks or Serbs. A non-parametric Kruskal-Wallis test of the distributions shows that the three ethnic groups differ in what they send ($\chi^2(2) = 5.84$, $p = .05$). The right half of Table 1 provides the means and standard deviations for what is sent. On the left half of the table are the pairings of the subjects (including the first task in which subjects are paired with same ethnic counterparts). The table points out that Croat subjects sent less money to others than Bosnjaks or Serbs. However, Croats also sent less to members of their own ethnic group in D-1 on average than Bosnjaks and Serbs. Consequently we do not conclude that Croats are necessarily more discriminating than Bosnjaks or Serbs.

FIGURE 3 Box and Whiskers Plots of the Amounts Sent to Counterparts Broken Out by Ethnicity of Sender and Recipient



Note: Decision 1 (ingroup) amounts are same ethnicity pairings, while decision 2 (outgroup) amounts are across pairings

It may be that the means mask differences in the distributions. Figure 3 provides a box and whisker plot of the amounts sent.¹⁶ Overall, the plots point to a great deal of variation in the amount sent both within and across the different ethnic groups. For Bosnjaks and Serbs, the amount sent to the ingroup is clearly higher. The medians are larger and the distributions are broader. Both groups send less to individuals who are Croats than to one another, at least when comparing the medians. For Croats the pattern is different. The medians are clearly the same for ingroup and outgroup members. However, the variance is larger for Croats sending to other Croats.

Finally, it is clear that subjects are not simply making a rote choice. That is, subjects understand the task, and they are making systematic adjustments in their choice. If subjects did not think about the tasks then the first

¹⁶A box and whiskers plot illustrates several properties of a distribution. The “box” spans the interquartile range (from 25% to 75% of the distribution) while the line in the box is the median of the distribution. The “whiskers” represent the lower extreme (left) and upper extreme (right) of the data. The absence of a whisker on the right side in Figure 3 indicates that the lower extreme and lower quartile are the same. Dots to the left of the box plot indicate single data points that fall far enough out of the range of other values that they are treated as outliers.

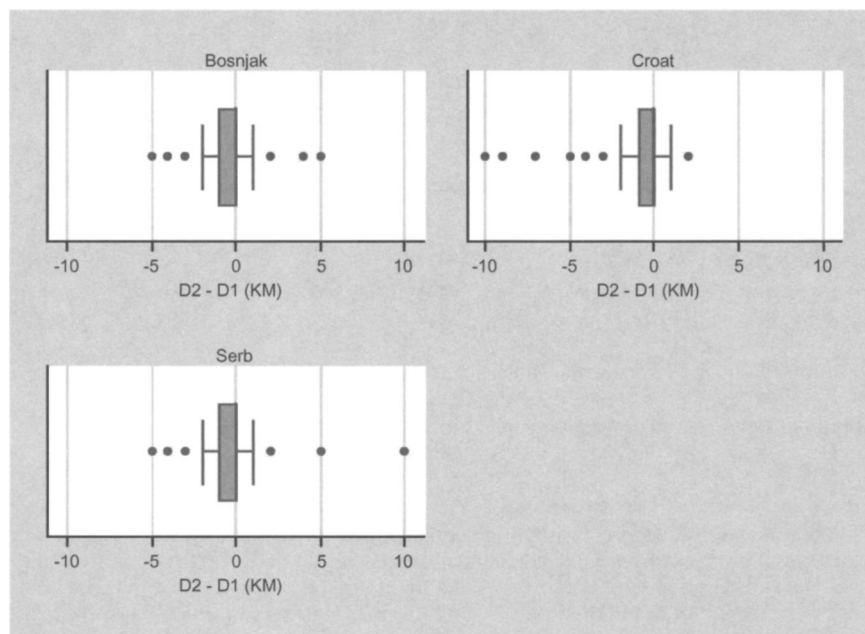
and second decisions ought to look the same. While 55% of the subjects do exactly the same thing in both decisions,¹⁷ the remaining 45% of the subjects shift between the first and second decisions. Figure 4 provides box and whiskers plots of the difference between the second and first decisions broken out by the ethnicity of the target for all subjects. This figure illustrates that there is substantial within-subject variation in choices. The median in all cases is at zero, but as can be seen from the plots, the bulk of the distribution is negative. In other words, most subjects are giving less to their nonethnic counterpart than they gave to co-ethnics.

Patterns of Ethnic Discrimination

What we have found so far is unexpected. We find considerable fairness both within and between ethnic groups. It may be that this is merely an effect of the instrument that we use. The dictator game may be a poor measure of a fairness norm. If so, then there should be

¹⁷Of this group 31.3% send nothing in both decisions and 26.5% always send exactly half.

FIGURE 4 Box and Whiskers Plots of the Difference Between What Was Sent in the Second and First Tasks



Notes: Each ethnic category represents the ethnic target of the second task. Horizontal axes are the difference between the second and first decisions ($D2 - D1$) in Bosnian Marks (KM). Negative values indicate less was sent in the second decision.

no individual correlates linking differences in the first and second decision task. That is, people who strongly dislike non-co-ethnics ought to be no different than those who have no antipathy toward non-co-ethnics when making allocation decisions. In this section we test the robustness of the dictator game in light of individual characteristics.

In the analysis detailed below we use multivariate models to look at individual characteristics for the amount sent to an outgroup recipient in the D-2 experiment. The dependent variable ranges from a minimum value of 0 (where subjects sent 0KM to the outgroup recipient) to a maximum value of 10 (10KM to the outgroup recipient). Given that the data are left and right censored we use TOBIT estimators.

On the right-hand side of the equations we first include three control variables. The first is the amount sent in the first decision. This obviously has an impact on the estimates. For example, those subjects who sent nothing in the first decision are unable to send less to their counterpart in the second. We expect that what was sent in the first decision has an impact on what is done in the second. We also control for the age of the subject. In related research, Bahry and Wilson (2006) show there is a strong relation-

ship between age and what people send.¹⁸ Finally, others, particularly in the United States, have found that the gender of the counterpart matters (cf. Eckel and Grossman 1998). Females typically send more than males in the dictator game. We include a dummy variable for whether the counterpart was female.¹⁹

The measure of outgroup threat perception is taken from items tapping the degree to which the subject feels safe around others of a specific ethnic type. The question was asked for each ethnic group and is measured as a 4-point scale ranging from “very safe” to “highly unsafe.” We use the response for the ethnic group with whom

¹⁸In results not reported here we tried a variety of nonlinear specifications with age. None added to the explained variance.

¹⁹We also ran models with other contextual variables relating to specific conditions in Bosnia (education levels, urban-rural differences, employment and unemployment, etc.). None of these alternate models change our results. We demonstrate that the dictator game captures decision making based on ethnic considerations, and the results we observe are not based on flaws in the experimental design. We also checked for sessional effects and ran a variety of fixed-effects models. None of these alternative specifications affect our conclusions. Consequently we report the reduced form models here.

TABLE 2 Summary Statistics of Variables Used in the Multivariate Analysis

Variable	Bosnjak Subjects			Croat Subjects			Serb Subjects		
	N	Mean	St. Dev	N	Mean	St. Dev	N	Mean	St. Dev
Amount Sent D-2 ^a	252	2.37	2.24	203	1.96	2.09	216	2.34	2.21
Amount Sent D-1 ^b	252	3.24	2.41	203	2.47	2.23	216	2.96	2.36
Age ^c	252	34.39	12.27	203	36.09	14.28	216	36.49	13.70
Female Subject ^d	252	0.46	0.50	203	0.54	0.50	216	0.46	0.50
Outgroup Threat ^f	252	2.21	0.85	203	2.26	0.86	216	2.39	0.83
Ethnic Ties ^h	252	2.19	0.69	203	2.15	0.68	216	2.06	0.62
Serb Other ⁱ	252	0.53	0.50	203	0.49	0.50	-	-	-
Croat Other ^k	-	-	-	-	-	-	216	0.49	0.50

Notes: These data are broken out by the ethnicity of the subject. Cases with missing data are excluded in order to match the estimates reported in Table 3.

^aDependent variable, amount of money sent to outgroup recipient in second experiment, ranging from 0 to 10.

^bAmount of money sent in D-1, ranging from 0 to 10.

^cSubject age in years, ranging from 18 to 77.

^dDummy variable coded 0 = Male Subject, 1 = Female Subject.

^fQuestion reads, "In general, how safe do you feel being around the following people?" [Bosnian Serbs, Bosnian Croats, Bosnjaks/Bosnian Muslims]. Response categories are 1 = Highly Safe, 2 = Generally/Somewhat Safe, 3 = Generally/Somewhat Unsafe, 4 = Highly Unsafe.

^hQuestion reads, "In general, how important is your ethnicity to you?" Response categories are 1 = "It is not very important at all to me," 2 = "It is important, but not the most important thing for me," 3 = "My ethnicity is an important part of who I am."

ⁱDummy variable coded 0 = non-Serb counterpart in second decision, 1 = Serb counterpart in second decision.

^jDummy variable coded 0 = non-Croat counterpart in second decision, 1 = Croat counterpart in second decision.

the subject was matched in the second decision. Threat perceptions have traditionally been related to intolerance, distrust, and recurrent violence (Posen 1993; Weingast 1998).

We also estimate separate models for attitudes about the ingroup. We use subjects' attachment to their ingroup as measured with a single item asking, "In general, how important is your ethnicity to you?" There are three response categories ranging from not very important to very important. We expect that those who do not think ethnic identity is important are less likely to differentiate across ethnicity in the experiments than subjects, for whom ethnicity matters.

As a final control variable we include a dummy variable for the type of ethnic partner in the second decision. Because there were two outgroup ethnic types for each subject, this is treated as a dummy variable and we focus on Croats and Serbs. Table 2 provides summary statistics on these dependent variables.

Given that we observe between ethnic differences, we estimate separate TOBIT equations for each ethnic dictator. We run three models for each ethnic group. Model 1 focuses on outgroup threat perception, Model 2 focuses on ingroup solidarity, and Model 3 contains the full specification. For all three models and all three ethnic groups,

the amount allocated to a counterpart in decision 1 is negatively related to what is sent in decision 2. This is no surprise, since we have already seen that very few subjects were likely to send more in the second decision. Across all three ethnic groups the effect of gender is insignificant in all of the models. We do find a positive correlation between age and a shift in fairness among Serb subjects, but it is marginal.

The picture changes when we look at individual measures of threat perception of outgroups. The behavior of all three ethnic groups varies with threat perception. Subjects who felt threatened by their ethnic counterparts are likely to send less. This is not strongly influenced by the specific ethnic pairing. For example, for Bosnjak subjects, the difference in having a Serb or a Croat recipient in the second experiment is negligible in terms of outgroup fairness. The same is true for Croat and Serb subjects. We do not observe strong preferential treatment of one outgroup compared to another. Hence, Model 1 reveals significant outgroup effects in terms of perceptions of threat.

Model 2 turns to ingroup solidarity. As attitudes vary with respect to the importance of ingroup ties, so does the likelihood that subjects will change what they send to a counterpart. We observe subjects with strong ethnic

TABLE 3 Tobit Estimates of What Is Sent to a Non-co-ethnic (D-2) Broken Down by Ethnicity of the Allocator

	Bosnjaks			Croats		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Decision 1	.807*** (.054)	.807*** (.054)	.799*** (.054)	.959*** (.067)	.977*** (.066)	.963*** (.066)
Age	-.003 (.010)	-.007 (.010)	-.007 (.010)	.010 (.010)	.007 (.009)	.008 (.009)
Female	-.095 (.249)	-.045 (.247)	-.057 (.247)	.180 (.276)	.217 (.273)	.198 (.272)
Threat	-.262* (.147)		-.183 (.149)	-.393** (.165)		-.274 (.172)
Ethnic Ties		-.475*** (.182)	-.421** (.187)		-.551*** (.199)	-.443** (.208)
Serb Other	.078 (.248)	.048 (.247)	.058 (.246)	-.311 (.277)	-.362 (.273)	-.323 (.272)
Constant	.148 (.578)	.726 (.646)	1.045 (.693)	-.376 (.616)	-.031 (.655)	.364 (.693)
LL	-442.216	-440.444	-439.693	-304.465	-303.515	-302.234
r ²	.17	.17	.17	.22	.22	.23
N	252	252	252	203	203	203

	Serbs		
	Model 1	Model 2	Model 3
Decision 1	.903*** (.056)	.910*** (.056)	.897*** (.055)
Age	.017* (.009)	.017* (.009)	.016* (.009)
Female	.035 (.244)	.011 (.244)	.023 (.242)
Threat	-.446*** (.152)		-.288* (.162)
Ethnic Ties		-.706*** (.205)	-.555** (.219)
Croat Other	-.307 (.242)	-.298 (.242)	-.319 (.240)
Constant	-.193 (.588)	.194 (.621)	.663 (.667)
LL	-334.474	-332.819	-331.253
r ²	.24	.25	.25
N	216	216	216

Notes: These models are estimated for each ethnic group. Standard errors are in parentheses.
 ***Significant at $p \leq 0.01$, **Significant at $p \leq 0.05$, *Significant at $p \leq 0.10$.

ties sending less to outgroups than those for whom ethnic identity is less salient or important. We conclude that the degree to which people think that ingroup ties are paramount matters for the bias we see in what is sent.

However, this is the case for less than a third of the subjects in each ethnic group.

Model 3 is the full model and contains the estimates for both the ingroup and outgroup measures. The model

shows that the primary effect is due to subjects' sense of ingroup solidarity. Those individuals who believe that their ethnicity is very important are likely to shift their behavior.

The estimates we produce in Table 3 lead us to conclude that there are systematic variations in behavior for these subjects. This leads us to think that the dictator game is measuring fairness toward both the in- and outgroups. The heterogeneity we observe in the data is due to individuals with extreme views about the threat of non-co-ethnics and who regard their own ethnicity as paramount. These individuals are the least likely to be fair toward the outgroup. The bulk of the other subjects adopt simple rules of fairness toward both their own ethnic group and non-co-ethnics. Thus we are left with our earlier finding that there is a considerable amount of fairness both within and between ethnic groups.

Conclusion

We find strong evidence for a norm of fairness across ethnicity in the aftermath of Bosnia's civil war. This has important implications for understanding the manner in which people resume their normal life. Rather than a world of cemented ethnic cleavages, these findings indicate that a norm of reciprocity can emerge (or be sustained) even following a bloody civil war. While individuals may view one another with suspicion, most are willing to engage in indirect reciprocity—taking a costly action in which a later benefit does not directly accrue. This does not imply that the past is forgiven; it merely points out that people rely on and understand simple norms for the conduct of their daily lives. Putnam (2000), among many others, points to the importance of simple norms like fairness and trust for ensuring social and political cohesion.

In a narrower sense, we think that it is important to rely on behavioral as well as attitudinal measures when focusing on questions of social norms. We find that the dictator experiment is valuable for detecting ethnic bias. Only relying on attitudinal measures may be misleading in that it costs people very little to reply to an abstract question about how others should be treated. In the research reported here people make choices for which they bear real costs. Indeed, the sums used in the experiment were nontrivial for subjects—often amounting to as much as a day's wage. At the same time we find that the attitudinal measures collected during the experiment are helpful in informing what we behaviorally observe.

It is not the case that everyone is fair to both co-ethnics and non-co-ethnics. There is a considerable amount of

heterogeneity in individual choices. We find that there is a great deal of positive ingroup bias and negative outgroup discrimination. This, of course, is expected, and such findings are rife in the social psychology literature. But, the patterns are not merely due to an ingroup effect. Our multivariate analysis points out that those who are most committed to their ingroup identity are also the least likely to be fair to the outgroup. Ethnicity matters in a postconflict environment and ingroup attachments and outgroup perceptions affect individuals' commitments to simple norms of fairness.

On a positive note, given what we know about ethnicity and violence and what we know about the context of Bosnia, we conclude that a norm of fairness is stronger than expected. This lends further credence to the argument that the roots of the Bosnian conflict are not derived from widespread and enduring ethnic hatred. Instead, our results underscore the importance of institutional and entrepreneurial explanations of the Bosnian conflict (Gagnon 2004; Mueller 2000; Woodward 1995) and for understanding postwar divisions in Bosnian society.

Finally, we believe that our methods and our findings have implications for many avenues of future research beyond Bosnia. One, which we emphasize, is that if individuals are capable of treating each other fairly despite a history of violent confrontation, this, in itself, must be considered a positive sign for social tolerance and possibly reconciliation.

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