# How Exposure to Violence Affects Ethnic Voting

Dino Hadzic
PhD Candidate
Department of Political Science
Washington University in St. Louis
dino.hadzic@wustl.edu

David Carlson
PhD Candidate
Department of Political Science
Washington University in St. Louis
carlson.david@wustl.edu

Margit Tavits[1]
Professor
Department of Political Science
Washington University in St. Louis
tavits@wustl.edu

## Abstract

How does wartime exposure to ethnic violence affect the political preferences of ordinary citizens? Are high-violence communities more or less likely to reject the politicization of ethnicity post-war? We argue that community-level experience with wartime violence solidifies ethnic identities, fosters intra-ethnic cohesion and increases distrust toward non-coethnics, thereby making ethnic parties the most attractive channels of representation and contributing to the politicization of ethnicity. Employing data on wartime casualties at the community level and pre- as well as post-war election results in Bosnia, we find strong support for this argument. The findings hold across a number of robustness checks. Using post-war survey data, we also provide evidence that offers suggestive support for the proposed causal mechanism.

Key words: ethnic voting, violence, post-conflict, party competition, Eastern Europe

How does the legacy of an ethnic civil war affect the political preferences of ordinary citizens? Does experience with wartime violence that is driven by ethnic tensions lead communities to reject the politicization of identity or does it instead radicalize the population even more along ethnic lines? These are important questions for better understanding not only the social and political consequences of ethnic civil wars but also the roots of identity-based political competition. While numerous studies have addressed how conflict affects social behavior and interaction between individuals, how that translates into political preferences and vote choice requires more attention.

Expectations about the effect of violence on voting are not obvious. On the one hand, recent work suggests that ethnic aversions may not endure beyond the war, especially in the Balkans due to per-war norms of cooperation.[2] On the other hand, literature on voting and electoral strategies would predict that violence increases the salience and polarization of ethnic identities, which in turn heightens ethnically based mobilization and voting.[3] Violence exposure may also increase ascriptive identification while reducing general trust and interpersonal exchange between members of the formerly waring groups[4] However, we still know relatively little about the impact of war on social capital[5] and whether or how the inter-group aversions that are potentially engendered by conflict translate to vote choice. Equally important,

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[2]For studies set in the Balkans, see Dyrstad 2012; Massey, Hodson, and Sekulić 2003; O'Loughlin 2010; Strabac and Ringdal 2008; Whitt 2014; Whitt and Wilson 2007. Research in other settings also suggests that communities affected by violence are more likely to exhibit social cohesion, increased political engagement, and altruism (Bellows and Miguel 2009; Blattman 2009; Gilligan, Pasquale, and Samii 2014; Voors et al. 2012; Wood 2003), although this behavior may be directed toward in-group members only (see also Grossman, Manekin, and Miodownik 2015).

[3]Wilkinson 2004.

[4]De Luca and Verpoorten 2015; Rohner, Thoenig, and Zilibotti 2013a; Rohner, Thoenig, and Zilibotti 2013b.

[5]Blattman and Miguel 2010.

while emerging research has looked at the individual level consequences of exposure to wartime violence,[6] the communal effects of wartime violence remain relatively unknown.[7] Yet, these effects better reflect the broader social and political legacies of the war.

Our study focuses on community-level ethnic voting to explore the consequences of wartime violence on the political salience of ethnicity. The empirical analysis relies on data from the civil war in Bosnia in 1992-1995. We employ difference-in-differences (DID) regression and data on wartime casualties and pre- as well as post-war national election results at the municipal-level to estimate the effect of exposure to violence on post-war party competition. We find that increased exposure to violence induces higher levels of post-war ethnic voting. The difference in the post-war ethnic vote share between the least violent and most violent municipality is about 16 percentage points – a substantively large effect that holds across a variety of robustness checks.

We argue that this effect occurs because wartime ethnic violence highlights ethnic differences, forces individuals to adopt and solidify ethnic identity, and induces a retreat into ethnic communities for protection and coping. This, in turn, results in high levels of cohesion among co-ethnics and intense distrust of non-co-ethnics. The combination of in-group cohesion and out-group distrust polarizes voters' political preferences along ethnic lines and makes ethnic parties the most attractive channels of representation. Using post-war survey data, we find suggestive evidence for this causal mechanism.

The rest of the paper is organized as follows. In the next section, we provide our theoretical argument on how community-level exposure to wartime violence affects post-war ethnic voting. We then describe the Bosnian case and the generalizability of the case study. This is followed by a discussion of the data and measures. After

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[6]Balcells 2012; Bellows and Miguel 2009; Blattman 2009.

[7]But see Costalli and Ruggeri 2015.

presenting our main results along with various robustness checks, we delve into the potential causal mechanism. The final section concludes.

## Theory

Individuals have many identities - some ethnic, some non-ethnic - with which they can identify politically.[8] In the absence of strong group-based identities, such as ethnicity, vote choice and party competition tend to be dominated by socio-economic interests.[9] However, as ethnic identification increases, individual political preferences become more polarized along ethnic lines, which in turn encourages voting based on ethnicity rather than more programmatic or ideological issues.[10] We argue that communal experience with wartime ethnic violence constitutes a major change in social conditions and environment, triggering heightened levels of ethnic identification, and increasing the political salience of ethnicity as reflected in support for ethnic parties. The causal mechanism underlying our argument runs as follows.

Ethnically based violence forces even neutral individuals to take sides in order to either gain advantage, seek protection, or simply express moral outrage over the violence.[11] This process of retreating into ethnic communities begins during the conflict itself, but even after violence ends, each side of the conflict continues to band together as a collective coping mechanism.[12] Furthermore, previous research suggests that the effects of war-time violence transcend individual experiences with

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[8]Posner 2005; Wilkinson 2004.

[9]Tavits and Letki 2014; Tavits and Potter 2015.

[10]Tavits and Letki 2014; Tavits and Potter 2015.

[11]For example, Wood (2008) finds that in countries as diverse as Peru, El Salvador, Sri Lanka, and Sierra Leone, violence transformed social networks and made the cleavage along which the violence was committed far more important to an individual's self-identity.

[12]Dyrstad 2013; see also Voors et al. 2012.

communities forming *collective* memories of the violence.[13] Such collective memory can foster ethnic cohesion and sustain the effects of violence on ethnic identification long after the war.

The adoption of ethnic identity and closer connection with co-ethnics make the distinctions between them and others more prominent. The desire to maintain a positive image of one's ethnic identity leads to negative out-group evaluations and perceptions of non-co-ethnics as a threat.[14] This, in turn, breeds parochialism toward out-groups and undermines trust and co-operation with members of those groups, generating an *us vs. them* mentality along ethnic lines.[15]

Under this context of greater in-group cohesion and increased distrust of out-groups, we argue, the ethnic community assumes a significant role in the individual's life and ethnicity becomes a defining feature of the individual's identity. People's perception of personal well-being will be more intimately tied together with the fortunes of their ethnic community. Because of this, individuals in communities that have suffered from ethnic violence are more likely to have ethnically exclusionary policy

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[13]Bar-Tal 2003.

[14]Tajfel and Turner 1986. For a specific example, see Beber, Roessler, and Scacco (2014), who find that in the context of the 2010-2011 Sudanese riots, North Sudanese who were exposed to rioting by South Sudanese became more antagonistic and distrustful of Southerners. Balcells (2012), using Spain during and after the civil war, also finds evidence that victimization leads individuals to reject the identities of the perpetrators.

[15]For example, see Collier et al. 2003; Fearon and Laitin 2000. However, important to note, a similar dynamic can prevail *within* ethnic groups if the violence was not primarily inter-ethnic in nature. For instance, Cassar, Grosjean, and Whitt (2013) find that violence in the Tajik civil war bred distrust and hesitancy to engage in impersonal exchange within local communities (which tended to be fairly ethnically homogenous). Because political allegiance, rather than ethnicity, was the cleavage along which most violence occurred, the distrust that emerged was not motivated by ethnic identification.

preferences.[16]

Naturally, parties that espouse a particular ethnic identity can more credibly claim to members of that ethnicity that once in office, they intend to benefit the group. Non-ethnic parties, on the other hand, will often have leaders and candidates from different ethnic groups. Due to their multi-ethnic composition and programmatic rather than explicitly group-based policies, non-ethnic parties will struggle to make credible claims that they have the best interests of a particular ethnic group in mind. We argue that it is precisely this dynamic that produces higher levels of support for ethnic parties among high exposure communities.[17]

Note that our theory does not necessarily require that individuals personally experience violence. Adopting and solidifying identities and showing solidarity toward the ethnic in-group can also result from witnessing violence[18] or living in fear of violence,[19] both of which are significantly more likely in communities where more wartime violence took place. In turn, our theory suggests that violence experienced

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[16]Alexander and Christia 2011; Gurr 2000.

[17]Relatedly, Glaurdić and Vuković (2016) find that in the context of Croatia, violence-exposed communities were significantly more likely to support the primary center-right party (Croatian Democratic Union - HDZ) that led the country through the war and into independence. More generally, it is quite common for militant and ex-militant groups to compete in post-conflict elections (Matanock 2016, 2017). In the case of Bosnia, militant groups were often recruited and funded by the major political parties that contested the pre-war election, led the country through war, and continued to compete in the post-war period. While conflict-era militants can engage in post-conflict politics in a variety of ways, including by installing puppet civilian leaders and at least temporarily running the state apparatus from behind the scenes (Driscoll 2015), in this paper we are primarily interested in electoral competition.

[18]For example, Blattman (2009) finds that witnessing violence (rather then receiving or perpetrating it) has the strongest effect on subsequent political engagement.

[19]See Maoz and McCuauley (2005) and Strabac and Ringdal (2008) who show that fear for one's group affects attitudes while personal war-related experiences do not.

by the majority of a population will also have an effect on the underlying culture of that locale. If a given population in the aggregate has high levels of distrust of other ethnic groups, this will have a lasting impact on the local community, regardless of a particular individual's level of exposure.

In sum, we argue that communal exposure to wartime violence increases the salience of ethnicity and makes it important for vote choice. On the flip-side, absent experience with violence, ethnic identity remains only one of the possible identities that can affect vote choice. In low-violence communities, we are therefore less likely to see a post-war surge in ethnic party support.

## The Case of Bosnia

Our argument applies to ethnic civil wars that are followed by competitive elections where ethnic parties are allowed to participate. Bosnia represents such a case. The violence in the Bosnian Civil War was overwhelmingly inter-ethnic. At various times during the war (April 1992 - December 1995), significant fighting occurred between Bosniaks and Serbs, Serbs and Croats, as well as Croats and Bosniaks.[20]

The outbreak of the war is best understood in the context of Yugoslavia's rather rapid disintegration in the late 1980s and early 1990s. The first democratic, multi-party elections produced non-communist, ethnically minded governments in Slovenia and Croatia that soon declared independence from greater Yugoslavia. The country's most ethnically diverse republic, Bosnia-Herzegovina, held its own multi-party elections in November of 1990. The Bosniak and Croat members of the subsequent government, motivated by Slovenia's and Croatia's declarations and frightened by the

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[20]The only notable example of intra-ethnic violence was the Bosniak against Bosniak war in the northwestern part of the country. The number of casualties from this intra-ethnic conflict are estimated to be roughly 2,260 (Christia 2008), which constitutes only about 2.3 percent of total wartime casualties.

increasingly chauvinist posture of Serbia's Slobodan Milošević, orchestrated a referendum on independence in February of 1992 which was approved overwhelmingly by voters but boycotted by the country's ethnic Serb population. Shortly thereafter, in April of 1992, hostilities broke out between Bosnia's constituent peoples. The violence was both intense and varied, including high numbers of military casualties, indiscriminate targeting of civilians, systematic sexual violence, and the frequent use of torture in the numerous concentration camps that were set up throughout the country. The war continued until NATO forces intervened in mid-1995 and finally brought an end to open hostilities later that year. Post-war, there have been several democratic elections with ethnic and non-ethnic parties competing for votes.

## Generalizability

Bosnia constitutes a difficult case – which enhances the generalizability of our findings – because its history of ethnic relations and recent research suggest that it is an inherently cooperative society where war-effects may be muted or absent altogether. Specifically, several authors point out that Bosnia was one of the most ethnically tolerant societies in the former Yugoslavia and that ethnic hatred was not the leading cause of war.[21] These cooperative norms may be resilient to the effects of war. Indeed, post-war research shows strong evidence of fairness toward non-co-ethnics,[22] absence of polarizing ethnic hatred,[23] and weak war effects on negative evaluations of outgroups.[24] This poses an uphill battle for us to find significant effects of wartime violence. If we do uncover such effects, however, we can be more confident in their

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[21]Dyrstad 2012; Massey, Hodson, and Sekulić 2003; Sambanis and Shayo 2013; Whitt 2010; Whitt 2014.

[22]Whitt 2014; Whitt and Wilson 2007.

[23]Whitt 2010.

[24]Dyrstad 2012.

reliability and generalizability.

Furthermore, the country adopted a system of ethnic quotas after the war. These quotas may have increased the overall level of ethnic voting by priming voters to think of political life in ethnic terms and by incentivizing parties to ground their appeals in ethnic identity (i.e., increasing the supply of ethnic parties). However, since these changes occurred at the national level, their effect is likely to be uniform across all municipalities. Furthermore, any increase in ethnic voting as a result of quotas is likely to suppress potential *variation* in ethnic voting. If we do find the hypothesized violence effect on voting in this context, such an effect is even more likely to be present in contexts where ethnic quotas are absent.

It is important to keep in mind, however, that the conflict in Bosnia concluded with outside intervention, which according to some research may lead to the 'freezing' of the conflict and the underlying issues that led to tensions in the first place.[25] This is in contrast to decisive military outcomes or negotiated settlements undertaken by domestic actors, where a final resolution to the issues that induced conflict is more likely. Therefore, the case of Bosnia is particularly relevant to instances where the issues that produced conflict continue to remain salient in the post-war period. However, outside intervention and peacekeeping have become increasingly common in the post-war period: for example, Regan finds that an outside power intervened in 101 out of 150 intrastate conflicts that occurred between 1945 and 1999.[26] In this regard, Bosnia is representative of a large share of post-conflict societies. We discuss the Bosnian case in greater detail in Supplementary Information (SI) section SI1.

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[25]Greig and Diehl 2005.

[26]Regan 2002.

# Data, Measures, and Method

Estimating the effect of wartime violence on ethnic voting is a difficult task. Communities that experienced more violence are not likely to be similar to those that experienced little to none. Moreover, communities with higher levels of pre-war ethnic voting may be the ones that suffered more wartime violence. To address these problems, we rely on panel data from pre- and post-war elections with a difference-in-differences regression design. Our unit of analysis is a pre-war municipality ($n = 109$). The data for pre-war elections and for our measure of the level of violence are available at this level. We matched this level of analysis also for post-war elections.[27] Descriptive statistics for all the variables are provided in Table SI2.2.1.

Our dependent variable, *Ethnic vote share*, measures the share of the municipal-level vote obtained by ethnic parties in national legislative (House of Representatives) elections.[28] We obtained municipal-level election returns for the 2006, 2010, and 2014 legislative elections from the Central Election Commission of Bosnia and Herzegovina, and for 1990 from Sambró i Melero.[29] While legislative elections were also held in 1996, 1998, 2000, and 2002, municipal-level results with significant coverage were not available for elections prior to 2006.[30] Nevertheless, we believe that using the coun-

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[27]Following the war, new municipalities were created, and as of 2014, the number of municipalities stands at 143. All but three of these new municipalities were carved out of a pre-war one, enabling us to simply add the data. In two of the remaining municipalities, we were able to place every settlement in which a polling station was located into the appropriate pre-war municipality. This left one new municipality for which every polling station could not be properly placed, so we omitted the two pre-war municipalities composing the new one from the analysis.

[28]We make the uncontroversial assumption that few voters support ethnic parties affiliated with an out-group.

[29]Sambró i Melero 2009.

[30]We contacted the statistical agencies of the country's two entities and they were not able to provide us with the municipal level data for the early elections. These results were also not available

try's three most recent national elections poses the most difficult test of our theory. The effects of wartime violence on ethnic voting should be especially pronounced in elections immediately following the war. Focusing on elections that were held over a decade after the war, we are able to observe whether the violence effect endures for an extended period of time.[31]

Following Chandra, we define an ethnic party as 'a party that overtly represents itself as a champion of the cause of one particular ethnic category or set of categories to the exclusion of others, and that makes such a representation central to its strategy of mobilizing voters'.[32] Parties that do not engage in such rhetoric were coded as

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in any statistical yearbooks.

[31]We use national election results rather than local council and mayoral elections for primarily two reasons. First, the *supply* of parties across municipalities is much more consistent for national than for local elections. For instance, a highly competitive multi-ethnic party (the Social Democratic Party of BiH) contested the most recent national elections in all districts, but did not contest the most recent local council elections in a large number of municipalities (covering around 12% of the country's population). This issue is even more severe in mayoral elections. Second, the municipality of Brčko does not hold mayoral elections (the mayor is appointed rather than elected), and the municipality of Mostar has not held local council or mayoral elections since 2008. We did not want to needlessly omit these two municipalities from our analysis. However, we do acknowledge that using national rather than local elections involves a trade-off. We argued earlier that individuals in communities that suffered ethnic violence are likely to adopt ethnically exclusionary policy preferences (Alexander and Christia 2011; Gurr 2000), which partly explains why they support ethnic parties that can credibly commit to serving group interests. Because local public goods in Bosnia are often ethnically particularistic (Swee 2015b), there is reason to believe that this mechanism is especially pronounced at the local election level. Therefore, we may not be capturing the full magnitude of the violence effect on post-war electoral competition. Nevertheless, due to the advantages of using national elections that are described above, we believe this is a trade-off worth making.

[32]Chandra 2004, 3. Pugh and Cobble (2001) provide a similar definition that is more specific to the Bosnian context but also involves more subjective judgements. Ultimately, we use Chandra's definition for its objectivity and generalizability. However, there was very little disagreement between

multi/non-ethnic.[33] The dependent variable ranges from 19.33 to 99.49, with a mean of 80.99.

Our independent variable of interest, *Casualty*, is intended to capture the extent to which a given municipality experienced wartime violence. This measure is based on information reported in the *Bosnian Book of the Dead* (BBD),[34] the most authoritative database on Bosnian wartime casualties yet assembled.[35] The BBD provides data on the number of confirmed dead and missing disaggregated to the pre-war municipal-level.[36] Our independent variable measures the total number of confirmed dead and missing as a percentage of the pre-war municipality population. The measure ranges from 0.12 to 20.86, with a mean of 2.32. In the analysis below, we log the casualty data due to right skewness.

## Method of analysis

In order to estimate the effect of wartime violence on ethnic voting, we use a difference-in-differences (DID) model. This is an appropriate technique for identifying the effect of exposure to violence (*Casualty*), by comparing how *Ethnic vote share* differs between pre-war (1990) and post-war (2006, 2010, and 2014) elections across municipalities exposed to different levels of violence. Our primary quantity of interest

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how we coded the parties and how Pugh and Cobble did.

[33]A complete list of the parties and their classifications is provided in SI2.1. An independent candidate appeared on the ballot in 2010 and 2014. These two candidates received only 451 out of the roughly three million votes cast across 2010 and 2014, so their omission from the analysis should not drive the results.

[34]Research and Documentation Center Sarajevo 2008.

[35]Ball, Tabeau, and Verwimp 2007.

[36]*Casualty* reflects the municipality in which the individual is reported to have been killed or gone missing. Civilian and military casualties are pooled, although as noted later in the paper, we also use the civilian casualty rate as a robustness check.

measures the difference in differences from the pre- and post- periods in municipalities that experienced varying degrees of violence, had the municipality not experienced any violence. It is a counter-factual (i.e., an unobservable quantity) and relies on the admittedly strong assumption that the trends in ethnic voting in the municipalities were and would have continued to be parallel absent the violence. To address this, the modeling strategy accounts for municipal (baseline) heterogeneity and municipal-independent time trends. Specifically, we estimate the effect through the use of the following model:

$$(\text{Ethnic vote share})_{it} = \gamma_i + \lambda_t + \delta_1 D_{2006} \times \log(\text{Casualty})_i + \delta_2 D_{2010} \times \log(\text{Casualty})_i$$
$$+ \delta_3 D_{2014} \times \log(\text{Casualty})_i + \epsilon_{it},$$

where the $i$'s represent the municipality, the $\lambda_t$ represents intercepts for each time period, the $D$'s represent dummy variables for post-war years, and the $\delta$'s the effect of violence at each time period, our primary quantity of interest. The $\epsilon_{it}$ is the stochastic error term. We utilize clustered robust standard errors, on municipality and time, to account for heteroskedasticity and the inherent correlation between observed outcomes within a given municipality over time and between municipalities at a given time. By including fixed effects for municipality and time and by clustering the standard errors in this way, the variation 'picked up' by the explanatory variable is in theory independent of time trends or municipality. Nevertheless, to further address concerns regarding the lack of randomness associated with treatment assignment (i.e., violence), we dichotomize the municipalities at the mean value of *Casualty* into relatively high- and low-violence municipalities and find no large imbalances in most theoretically relevant covariates across these two types of municipalities (see SI2.2 and Figure SI2.2.2). In short, there is little evidence that the modeling strategy

we employ would lead to overestimation of the effect size.[37] Further diagnostic tests we provide in SI3 also suggest that the robust linear specification is appropriate.

## Alternative measures of violence

While we believe the casualty figures that we use provide the most appropriate measure of violence, we also collected data on three alternative violence measures. We use these to further test the robustness of the results we present. The first of these measures is *Refugees*, representing the number of refugee voters in the 1998 national election as a percentage of the pre-war population. This measure should partly capture the considerable physical displacement that resulted as a consequence of the war. These data are available for all 107 municipalities from Tabeau and co-authors.[38]

We also use data on the number of prison camps that were administered during the war, found in the *Final Report of the United Nations Commission of Experts - Annex VIII*. This variable, *Prison Camps*, is the number of wartime prison camps per 1000 pre-war residents. It is important to note that these data were released in mid-1994, and therefore, do not capture the last 1.5 years of the war. Also, the Sarajevo area is not disaggregated to the municipal-level, which leads to the omission of 10 municipalities from the analysis.

The third measure, *Claims*, captures the amount of property destruction incurred during the war as reported by Nenadić and co-authors.[39] It measures the number of legal claims made for return of property lost during the war (or monetary compen-

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[37]In fact, because we are using a classic DID approach in which we estimate a fixed effect for every treatment group, allow correlated error terms, and have only one subject (i.e., municipality) in each treatment category due to the continuousness of the treatment, any variation we estimate will, if anything, be biased towards zero.

[38]Tabeau et al. 2006.

[39]Nenadić et al. 2005.

sation in lieu of return), as a percentage of the number of pre-war residents. The measure covers 99 municipalities.

# Results

Our main results are presented in Model 1 of Table 1.[40] The estimated effect of the logged casualty rate on ethnic vote share is highly reliable and fairly large in magnitude for the first post-war election, decreases slightly in magnitude but maintains reliability at the 95% level for the second post-war election, and loses reliability while decreasing substantially in magnitude in the third election. In general, the higher the casualty rate, the higher the level of post-war ethnic voting. It is interesting to note that the effect appears to diminish both in magnitude and reliability: the estimates are 3.1, 2.1, and 0.4 for 2006, 2010, and 2014, respectively.[41] We take this as an indication that the impact of war-time violence is declining. But perhaps the more striking finding is that the effect persisted for over a decade after the war.

In terms of substantive interpretation, from the lowest exposure of violence to the highest, ethnic vote share is expected to differ by 16.3 percentage points in 2006, 10.7 in 2010, and 2.2 in 2014. Because *Casualty* is highly skewed, a look at the differences in the effect from the 25 percent quantile (1.1) and the 75 percent quantile (2.3) might also be informative. In 2006, the estimated effect differs between the two quantiles by 2.3 percentage points, in 2010 the difference is 1.5, and in 2014 the difference is 0.3. While these differences may seem modest, considering the potentially dampened estimated effects we note above (fn. 37), the differences may be considerably larger.

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[40]Results of the null model are presented in Table SI4.5. A Wald test suggests that the fully specified model reliably outperforms the null.

[41]$F$-tests comparing the coefficient estimates indicate that the effect is reliably distinguishable between 2006 and 2014, and between 2010 and 2014, but not between 2006 and 2010.

The results for the alternative measures are presented in models 2 through 4, also in Table 1. The hypothesized relationship is statistically reliable at the 95% level for all three years for *Refugees* and *Prison Camps*, but again the magnitude is decreasing over time.[42] Substantively, as *Refugees* increases from the 25 percent quantile (1.6) to the 75 percent quantile (5.2), the estimated effect differs by 5.8 in 2006, 5.3 in 2010, and 4.2 in 2014. Similarly, as *Prison Camps* increases from the 25 percent quantile (0.06) to the 75 percent quantile (0.24), the estimated effect differs by 2.4 in 2006, 2.5 in 2010, and 2.0 in 2014.

### Table 1: The Effect of Wartime Violence on Ethnic Vote Share

| Variables | Model 1: log(Casualty) | Model 2: Refugees | Model 3: Prison Camps | Model 4: Claims |
|---|---|---|---|---|
| $\log(\text{Casualty}) \times D_{2006}$ | 3.135* | | | |
| | (0.900) | | | |
| $\log(\text{Casualty}) \times D_{2010}$ | 2.065* | | | |
| | (0.918) | | | |
| $\log(\text{Casualty}) \times D_{2014}$ | 0.415 | | | |
| | (0.827) | | | |
| Alternative Measure $\times D_{2006}$ | | 1.649* | 13.035* | 1.272 |
| | | (0.398) | (5.394) | (0.761) |
| Alternative Measure $\times D_{2010}$ | | 1.495* | 13.514* | 1.526* |
| | | (0.353) | (6.105) | (0.418) |
| Alternative Measure $\times D_{2014}$ | | 1.183* | 10.863* | 1.065* |
| | | (0.296) | (4.089) | (0.370) |
| $\lambda_{2006}$ | 1.932 | −2.490 | 0.213 | −2.324 |
| | (1.413) | (2.378) | (2.099) | (3.476) |
| $\lambda_{2010}$ | −1.527 | −5.913* | −3.027 | −6.978* |
| | (1.351) | (1.926) | (2.033) | (2.682) |
| $\lambda_{2014}$ | 3.450* | −0.618 | 2.312 | −0.902 |
| | (1.047) | (1.503) | (1.552) | (2.030) |
| N | 428 | 428 | 388 | 396 |
| $R^2$ | 0.991 | 0.991 | 0.991 | 0.991 |

*Note*: Cell entries represent unstandardized coefficient estimates with clustered (on municipality and year) robust standard errors in parentheses. The independent variable is listed in the column heading. The dependent variable is *Ethnic vote share* (on 0-100 scale). The intercept term is dropped to allow fixed effects for municipality and year (not shown). *$p < 0.05$

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[42]*Refugees* and *Prison Camps* are right-skewed but not severely. The substantive conclusions do not change if we use logged values of these variables (see SI4, Table SI4.11).

The estimated effect for *Claims* is also reliable at the 95% level for 2010 and 2014, and while not reliable for 2006 ($p = 0.09$), is always in the expected direction. Repeating the earlier exercise, as *Claims* increases from the 25 percent quantile (2.1) to the 75 percent quantile (5.8), the estimated effect differs by 4.7 in 2006, 5.7 in 2010, 4.0 in 2014.

In sum, when employing these alternative measures of violence, we generally continue to detect a reliable relationship between exposure to violence and ethnic vote share. These measures are intended to capture a number of the different dimensions of violence: fatalities, physical displacement, imprisonment, and property damage. Overall, the general consistency of these findings is reassuring and underscores the strength of our hypothesis that exposure to wartime violence increases post-war ethnic voting.

## Robustness checks

We perform a number of robustness tests, reported in SI4, to further substantiate our findings. As we note earlier, due to severe right skewness we log the treatment, *Casualty*, but the results continue to hold with the raw variable (Table SI4.3). The results also hold when we use the *civilian* casualty rate (Table SI4.4).[43] Our results are also robust to the exclusion of outliers (see SI4, Table SI4.1).

To further test for data irregularities, we dichotomize exposure to violence with a binary indicator as to whether the municipality experienced a casualty rate above the mean of all municipalities (see Table SI4.6.). The estimate of the effect of violence maintains reliability and is of a high magnitude for 2006. It is also of high magnitude in 2010, but only reliable at $p = 0.07$. We also find no evidence that our estimated effects of wartime violence on ethnic voting are conditional on any of the variables

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[43]The civilian casualty rate is simply the number of civilian casualties as a percentage of the 1991 pre-war population. These data are not available for six municipalities.

described in SI2.2: a Wald test of all of the models with interaction terms between *Casualty* and the different variables demonstrates that none of these models significantly outperform the model without interactions. Finally, SI5 presents qualitative narratives of most similar municipalities identified via matching methods to further illustrate the hypothesized effect of violence on voting.

**Demographic change**

The civil war uprooted much of the Bosnian population from their place of residence, displacing about two million of the country's pre-war population.[44]  According to some sources, by 2004 (i.e., by the time of the first post-war election included in our analysis) about half of the refugees and internally displaced persons had returned to their pre-war homes,[45] a trend that continued but at a decelerated rate.[46]  Survey-based research similarly claims that a majority of Bosnians reclaimed their pre-war property and returned to their homes.[47]  Still, some sources suggest that the war 'created more or less mono-ethnic communities'.[48]

Theoretically, it is not clear whether and how such an increase should bias our estimates.  On the one hand, recent research on ethnic identities argues that it is hard to infer anything meaningful about ethnic voting from simply looking at the ethnic makeup of a community. This is because the political relevance of ethnic (and other) cleavages depends on the extent to which they have been activated.[49]  Other research suggests that, if anything, homogeneity decreases rather than increases ethnic

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[44]Pugh and Cobble 2001.

[45]UNHCR 2004.

[46]Mikami and Katayanagi 2014.

[47]Tuathail and O'Loughlin 2009.

[48]Mikami and Katayanagi 2014, 11.

[49]Chandra 2012; Laitin 1998; Posner 2005; Sambanis and Shayo 2013.

voting.[50] Research on party politics in Bosnia also suggests that in areas where one ethnic group has a majority status, parties need to diversify their appeals beyond ethnicity to remain competitive.[51] If these studies are correct, then the fact that municipal-level ethnic homogeneity increased after the war is not likely to confound but rather make it harder for us to uncover the effects of war-time violence.

On the other hand, Swee shows that, in Bosnia, ethnically homogeneous municipalities spend more on ethnic schools because such homogeneity leads to convergent preferences among the electorate.[52] The members of ethnic majority groups then turn to ethnic parties because these parties can most credibly commit to spending more on ethnically particularistic goods.[53]

We address the concern that demographic change may bias our estimates in the following ways. First, we replicate our main analysis with the subset of municipalities that were not partitioned following the war. As Swee finds, partition in Bosnia tended to increase ethnic homogeneity through the separation of ethnic populations and the self-sorting that followed between the various parts of partitioned municipalities.[54] If ethnic homogeneity increases ethnic voting and partitioned municipalities experienced more violence, then our results may be driven by a partition effect. The results in Table SI4.7, however, indicate that this is not the case. Even with a reduced sample containing only un-partitioned municipalities, the results are very similar to those in the main analysis.

Second, in order to address concerns about post-war ethnic homogeneity more generally, we capitalize on the 2013 census data released recently to measure post-

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[50]DiPasquale and Glaeser 1998; Olzak 1992; Slack and Doyon 2001; see also Wilkinson 2004.

[51]Manning 2007.

[52]Swee 2015b.

[53]See also Alesina, Baqir, and Easterly 1999.

[54]Swee 2015b.

war demographic composition. We run a direct-effect analysis as outlined by Acharya, Blackwell, and Sen.[55] and present the results in SI4, Table SI4.8. The analysis is a technique to estimate the direct effect of a treatment (war-time violence) that is not mediated by a post-treatment variable (ethnic homogeneity). This is an unbiased approach, as opposed to simply controlling for a post-treatment variable. The census data and the casualty data do not change within a municipality over time, which is why we opt for random effects (rather than fixed effects) at the municipality level. Because this causes concern for municipality heterogeneity, we also include as controls the variables discussed in SI2.2. Our estimates strongly support the conclusions drawn from the original modeling.

Third, we further explore the role of demographic change by using over-time estimates (for each election year) of ethnic composition for 87 municipalities.[56] Because ethnic composition now varies over time, we are able to use our earlier modeling strategy with fixed effects for time and municipality. The results (see SI4, Table SI4.9) are nearly identical to our main findings, and are reliable for the first two election years. Although this is a potentially biased sample of municipalities, it is a large sample, and because the estimates are very similar to the main analysis, we do not believe this potential bias is leading to dramatic changes in the estimates. The results of these two mediation analyses, taken together, help alleviate some of the concern that our observed correlations are being driven by the alternative causal pathway of increased post-war ethnic homogeneity.

Fourth, another potential issue with war-induced displacement concerns the *types*

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[55]Acharya, Blackwell, and Sen 2016.

[56]We obtain these data as follows. For 46 Federation (FBiH) municipalities, we use the 2004 Bosnian Federal Office of Statistics estimates of post-war ethnic composition. We supplement this sample with post-war ethnic composition data for 41 additional municipalities obtained from the ICTY's demography unit. We then combine this information with the 2013 census, and linearly interpolate the ethnic composition for each election year.

of voters who were displaced. If pre-war voters who supported multi-ethnic parties were more likely to out-migrate than were ethnic hardliners then our results may be an artifact of voters who supported multi-ethnic parties dropping out of the electorate, rather than violence inducing the kinds of attitudinal changes we argue it does.

In order the explore this possibility, we use electoral data from the 1997 municipal and 1998 national Bosnian elections, the first two elections for which electoral data disaggregated by 'in-municipality' and 'out-of-municipality' votes are available. In-municipality voters are primarily non-displaced persons, while out-of-municipality voters are overwhelmingly either refugees or internally displaced persons.[57] These data allow us to explore whether preferences were significantly different between displaced and non-displaced persons. In 1997, the three major wartime ethnic parties (the Bosniak SDA, Croat HDZ BiH, and Serb SDS) received a combined 59% of in-municipality votes and 83% of out-of-municipality votes. Similarly, in 1998, these three parties received 51% of in-municipality votes and 69% of out-of-municipality votes. In other words, displaced voters appeared to exhibit substantially higher levels of support for ethnic parties than did the non-displaced. Given that (a) violence severity is positively correlated with displacement,[58] (b) the displaced exhibit higher support for ethnic politics than the non-displaced, and (c) many of these displaced voters (specifically refugees) had by the time of the 2006 election stopped participating in Bosnian politics, the fact that we still find reliable results speaks to how important wartime violence is in shaping post-war politics.[59]

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[57]OSCE 1997.

[58]Swee 2015a.

[59]In addition to how violence affected post-war demography, another potential issue is how ethnic composition and displacement interact with violence *during* a war. The concern is one of endogeneity, where ethnic composition and/or displacement co-move with violence during the war, each affecting the other throughout the process. If ethnic composition and displacement levels are also predictive of ethnic voting, then our estimates may partly be explained by composition and displacement.

Finally, in order to further address the concern that displacement may contaminate our results, we obtained data on the number of persons who were still internally displaced circa 2005.[60] Using these data we calculated *Net displacement*, which captures the number of persons who were displaced into the municipality minus the number that were displaced out of the municipality, as a percentage of the municipality's population in a given post-war year (0 for pre-war). Using *Net displacement* as the mediator, we conducted another mediation analysis and the estimates continue to be very similar to those in the main analysis (see Model 1 in Table SI4.10).[61] While we certainly do not deny that displacement can affect post-war politics in important ways, the robustness checks we conduct in this section provide some additional assurance that our main results are not simply explained by the post-war demographic

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We addressed this concern to the extent the data allow, by including fixed effects, clustered robust standard errors, and conducting the mediation analyses described in this section. With respect to ethnic composition, we also calculated a Herfindahl-Hirschman Index (HHI) of concentration and found that pre-war ethnic homogeneity and our outcome, *Casualty*, are correlated at $-0.11$. When we calculated HHI indices on a dyadic basis between Bosniaks and Serbs, Bosniaks and Croats, and Croats and Serbs, the correlations with *Casualty* were 0.15, 0.12, $-0.21$, respectively. In other words, the correlations between ethnic composition and violence severity are inconsistent in direction and tend to be fairly modest in magnitude, which is reassuring. Nevertheless, how the interaction between demographic change (either ethnic composition and/or displacement) and violence during the war affects our estimates is not an issue that we can completely address. We can, however, more fully address how the demographic landscape the war created may affect our findings, and we do so in this section.

[60]These data were published by Bosnia's National Ministry of Human Rights and Refugees (Nenadić et al. 2005) and were originally collected by several domestic government organizations in cooperation with the UNHCR in Bosnia.

[61]Using *Gross displacement* rather than *Net displacement* as the mediator again produces very similar results to the main analysis (see Model 2 in Table SI4.10). *Gross displacement* is calculated as the the number persons displaced into *and* out of a municipality, as a percentage of the municipality's population.

landscape that was created through wartime violence.

# Exploring the Causal Mechanism

As the last part of our empirical analysis, we provide a preliminary exploration into the causal mechanism that we proposed in the theory section. We argue that violence increases ethnic voting by inducing retreat into ethnic community and engendering inter-ethnic distrust. In this vein, we employ the post-war survey data from late-2005 used by Bakke and co-authors as well as Ward and co-authors to test this mechanism.[62] The tests remain preliminary because of the nature of the data. Specifically, the survey data only capture the post-war situation and do not allow us to benchmark the outcome by pre-war levels. The results in this part of the analysis should therefore be treated with caution. Nevertheless, these are the most comprehensive data available that permit us to explore the individual-level effects of our community-level predictor (the municipality casualty rate). They can provide us with some valuable, although suggestive, insights concerning the causal mechanism that translates exposure to violence into ethnic party support.

The survey data includes unambiguous municipality identifiers for some, but not all respondents. Due to this and some missing data, our final dataset includes roughly 1,400 respondents across 27 municipalities. As described below, we use a number of dependent variables capturing retreat into ethnic community and inter-ethnic distrust. The independent variable of interest is the log of *Casualty*.[63]

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[62]Bakke et al. 2009; Ward et al. 2006.

[63]We also analyze a binary self-report on whether or not the respondent witnessed death or severe injury during the war or in the immediate aftermath of the war (variable name *Violence*). Because we are primarily interested in community-level exposure (not individual-level), we do not present the results here but instead in SI4, Table SI4.12.

We control for a host of municipal-level, pre-war variables, detailed in SI2.2.[64] We also control for two respondent-level variables that are indications of pre-war (i.e., pre-treatment) conditions: *Gender* and *Age*.[65] Because the dependent variable is always ordered and categorical (i.e., a 5-point scale that ranges from 'strongly agree' (1) to 'strongly disagree' (5)), the modeling strategy we employ is an ordered logit regression with clustered robust standard errors by municipality.[66] The results are presented in Table 2.

Model 1 uses *Ethnic Friends* as the dependent variable, capturing the extent to which a respondent agrees with the statement that he or she desires more friends of different ethnicities. Because we argue that greater exposure to violence induces retreat into ethnic community, we expected a respondent from a high-exposure municipality to provide an answer that is higher on the scale, reflected by a positive estimate for the log of *Casualty*. This is indeed what we find.

The dependent variable in Model 2 is *Closest Friends*, which is also intended to capture retreat into ethnic community. However, unlike the previous measure, this one reflects the actual rather than desired ethnic makeup of the respondent's personal network. It ranges from all of the respondent's closest friends being of the same ethnicity (1) to all of respondent's closest friends being of different ethnicities (5). We expected communal violence to reduce the number of friends of different ethnicities, which is what we find.

Turning to the effect of violence on inter-ethnic distrust, the dependent variable in Model 3 is *National Trust*. This measure captures the extent to which a respondent

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[64]We exclude *Average age* and *Average age squared* because the lack of municipal-level variation causes the covariates to be unstable. Results hold regardless of which controls we drop.

[65]Results hold without these two post-treatment controls. We omit those post-treatment controls that could have been shaped by the war, such as ethnic identity.

[66]Here, we allow the cutoffs to be flexible rather than equally spaced, but all results hold when restricting the cutoffs to be arithmetically sequential.

agrees with the statement that he or she can only trust people of his or her own ethnicity. Higher values for this variable correspond to greater disagreement with the statement, indicating higher levels of inter-ethnic trust. In line with our expectations, the estimate for the effect of communal violence is negative and reliable.

Table 2: Individual-Level Effects of Wartime Violence

| Variables | Model 1: Ethnic Friends | Model 2: Closest Friends | Model 3: National Trust | Model 4: Representation |
|---|---|---|---|---|
| log(Casualty) | 0.667* | −0.514* | −0.395* | −0.219 |
| | (0.183) | (0.170) | (0.151) | (0.228) |
| Gender | −0.113 | 0.265* | 0.089 | −0.071 |
| | (0.126) | (0.098) | (0.112) | (0.121) |
| Age | 0.005 | 0.001 | −0.005 | −0.008 |
| | (0.003) | (0.004) | (0.004) | (0.004) |
| HHI Serb-Bosniak | 0.057 | 0.337 | 2.065 | 4.671* |
| | (1.462) | (1.037) | (1.474) | (1.913) |
| HHI Croat-Bosniak | −0.526 | −0.800 | −0.429 | 0.252 |
| | (0.841) | (0.670) | (0.786) | (1.089) |
| HHI Serb-Croat | 1.043 | −0.591 | −0.889 | −1.564 |
| | (1.041) | (0.763) | (0.865) | (0.905) |
| Population density | 0.000* | −0.000 | −0.000 | −0.000* |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Income per capita | −0.000 | 0.000 | −0.000 | −0.000 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| N | 1401 | 1401 | 1401 | 1371 |
| $\chi^2$ (df = 8) | 119.767* | 74.021* | 47.239* | 150.943* |

*Note*: Cell entries represent unstandardized coefficient estimates with clustered robust standard errors in parentheses. The dependent variable is listed in the column heading and is on a 1-5 scale. Threshold coefficients are not presented. $^*p < 0.05$

Finally, *Non-ethnic representation* measures the extent to which a respondent feels that ethnic parties are necessary to protect ethnic group interests, with lower values indicating greater affinity for ethnic parties. Model 4, though the results are unreliable at conventional levels, suggests that the higher the communal exposure to violence, the lower the respondent's preference for non-ethnic representation and the higher their affinity for ethnic group-based representation.[67]

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[67]Although the control variables are not substantively of interest, the fact that the controls generally line up in the expected direction (see SI2.2 for the expectations) suggests that Bosnia is not an unusual case.

These results support our hypothesized causal mechanism that communal exposure to violence induces retreat into ethnic community and engenders inter-ethnic distrust. Respondents from municipalities that experienced greater exposure to violence consistently answered the survey questions in a manner that suggests that their personal networks are dominated by co-ethnics. These respondents also exhibited systematically lower levels of inter-ethnic trust than did those from low-violence municipalities. Although these data only reflect the post-war situation, these findings are consistent with expectations, and therefore provide at least suggestive evidence of the plausibility of our causal mechanism.

# Conclusion

This paper began by asking whether exposure to violence during ethnic warfare breeds higher levels of ethnic voting in post-war elections. We have argued that violence induces individuals to retreat into their ethnic communities and develop greater distrust of out-groups, thereby making ethnicity more salient in these communities than it would be absent the ethnically motivated violence. Furthermore, we expected the behavior and outlook that such exposure engenders to extend to vote choice, with high exposure communities displaying greater support for political parties with ethnic appeals than do otherwise comparable low exposure communities.

Using municipal-level wartime casualty, and pre- and post-war national election data from Bosnia, we find evidence in support of our hypothesized relationship between exposure to violence and levels of ethnic voting. The effect we uncover is both reliable and substantively significant. It remains robust in various alternative specifications of the model. Using individual-level survey data, we also find suggestive evidence that is consistent with our proposed causal mechanism.

Our findings make an important contribution to our understanding of post-war so-

cieties and the development of party competition in new democracies. Whereas much of the conflict literature has focused on elite behavior and interaction, relatively little attention has been paid to how a legacy of widespread and often indiscriminate violence affects the political preferences of ordinary individuals who bore the brunt of such violence. We show that wartime violence directly affects voting behavior and that these effects persist over a lengthy period of time. Ethnic war can, therefore, have a lasting impact on the nature of post-war party competition. This is an important addition to the literature on party system development, which often neglects to account for contextual factors affecting the politicization of cleavages. Furthermore, our findings point to interesting new avenues for research, such as whether and how communities' experiences with wartime ethnic violence affects party strategies in those communities post-war.

Additionally, this paper has important implications for the literature on conflict, social capital, and economic performance. As Blattman and Miguel have noted, we know relatively little about how conflict affects social capital and cohesion, both of which are important to economic performance and development.[68] Studies in this literature have often focused on how conflict may deplete general trust and, in turn, reduce the impersonal economic transactions needed for sustained, long-term development. However, one implication of our findings is that conflict may also potentially harm development by increasing support for non-programmatic (ethnic) parties. Such parties ground their electoral appeals in ethnic exclusivism and therefore are not bound to the same sorts of programmatic and ideological promises that non-ethnic parties make. This provides ethnic parties with little incentive to deliver the kinds of universal policies and publicly shared goods essential to long-term development.

Finally, our findings also have important implications for domestic and international policymakers. In post-war societies riddled with ethnic divisions and inter-

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[68]Blattman and Miguel 2010.

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ethnic distrust, parties that espouse a non-ethnic brand of politics may contribute to much needed social reconciliation. Ordinary individuals witnessing political leaders from across a country's different ethnic groups campaign under the same party umbrella would likely generate greater co-operation and inter-ethnic trust among those 'on the ground'. Our findings, however, suggest that given the geographic variation in exposure to violence that accompanies any ethnic civil war, some communities will require greater attention than others from policymakers. A better understanding of the relationship between exposure to violence and ethnic party support can, therefore, help inform policy intended to foster such reconciliation.

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