The Long-Term Effects of the Vietnam War on Civic Engagement

Joan Barceló^{a,1}

^aNew York University–Abu Dhabi

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What are the legacies of war exposure on civic engagement? Recent evidence suggests that domestic war may have short-term effects on participation in social organizations. Yet, it is unclear whether these effects will be present in internationalized conflicts and persist over long periods of time. Further, the pathways of persistence by which war exposure leads to greater civic engagement in the long-term are even less understood. In this paper, I contribute to both questions using unique evidence from the Vietnam War. Empirically, I combine a unique U.S. military dataset containing bombing intensity with respondents' wartime place of residence to generate an objective indicator of conflict intensity. Then, I exploit the distance to the arbitrarily drawn border at the seventeenth parallel as an instrument for conflict intensity. The results show that individuals who lived in a province heavily affected by the conflict during the war tend to be more engaged in social organizations and hold greater expressive values, at least, 26 years later. Further, I empirically explore the mechanisms of persistence. The empirical evidence suggests that both persistence within individuals and community-wide transmission jointly account for the long-term increase of civic engagement after conflict.

Conflict | Civic Engagement | Vietnam War | Historical Legacies

The short-term consequences of war are dreadful: the destruction of physical infrastructure, the weakening of economic and political institutions, and the obvious losses in human lives, among others. While the dramatic short-term consequences of war are self-evident, there is no consensus about the long-term consequences of war on societal and developmental outcomes. The conventional wisdom claims that war unavoidably and drastically alters development and social cohesion. Early developmental researchers describe wars as “development in reverse”: their legacy is the persistence of under-development through the weakening of local and national political institutions, the destruction of the social fabric, and division of populations by removing the foundation of norms, values, and interpersonal and communal group trust that facilitate inter-personal cooperation (1, 2). Consistent with this perspective, some micro-level researchers have found that armed conflicts negatively affect tangible factors such as individuals' investment, income, and consumption (3, 4), as well as less tangible elements such as psychological well-being and social trust (5, 6).

Notwithstanding this, a conflict could also spur institutional changes and alter social preferences in a different way (7–10). A body of micro-level evidence is now emerging to suggest that those citizens who have been more heavily affected by a civil war seem to engage in greater collective action in the aftermath of the civil conflict in Burundi (11), Nepal (12), Sierra Leone (13), and Uganda (14). In a recent meta-analysis, Bauer et al. (15) find substantial evidence that exposure to wartime violence increases prosocial behavior, yet they also

find suggestive evidence that this prosocial behavior is biased toward in-groups.

Earlier studies have been limited in their ability to fully address the relationship between exposure to interstate wars and civic engagement in the long-term. First, most evidence has thus far been limited to civil wars—in which perpetrators are domestic actors. In internal conflicts, war exposure may lead to civic engagement with an in-group bias because of heightened post-war inter-group tensions (15, 16). In this regard, Bauer et al. (15) suggest that parochial (in-group) altruism is the most likely hypothesis to explain social cooperation. Therefore, it remains unclear whether the increased prosociality after exposure to domestic wartime violence generalizes to conflicts with a significant international dimension, interstate wars, in which the main perpetrator of violence is a foreign entity, or internationalized wars, in which a foreign state provides critical support to one of the warring parties involved in an armed conflict.

Second, prior work has often measured outcomes in the aftermath of war—usually within the first decade after the end of the violence—amid lingering violence or reconstruction efforts. This could bias the results in favor of more prosocial effects. Third, while scholars often acknowledge the existence of two competing frames to describe the pathways of conflict legacies—namely, persistence for first order exposed individuals, and transmission of effects to new secondarily-exposed individuals—there have been little efforts to empirically distinguish between the two (17). Fourth, the

Significance Statement

Recent studies document that exposure to civil war violence could increase postwar participation in social organizations. Yet, we lack evidence on whether these effects persist over generations, the specific pathway of persistence, and generalize to different types of conflict. I address these gaps, drawing on a very detailed dataset on the conflict intensity in the Vietnam War and a representative survey in contemporary Vietnam that includes respondents' migration history. I find that, conflict-affected individuals tend to engage in social organization and hold greater expressive values, at least, 26 years after the individual exposure to the war. Further, I find positive evidence that both persistence within individuals and community-wide transmission jointly account for the long-term increase of civic engagement after conflict.

Sole author.

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¹ Division of Social Science, New York University Abu Dhabi, Abu Dhabi, United Arab Emirates.
E-mail: joan.barcelonyu.edu

non-random geographical distribution of conflict violence hampers our ability to establish a causal relationship from conflict exposure to preferences. Fifth, differences in outcomes across communities in post-conflict settings may be due to the effect of war but also due to non-response bias (e.g., death, post-conflict) (12). And, finally, most studies rely upon retrospective self-reported conflict victimization data, which may be subject to recall and non-response bias (18, 19).

This paper contributes to the current literature by estimating the effect of exposure to an internationalized war following a research design that overcomes these limitations in the same project. Theoretically, I suggest that a long-lasting legacy of political violence on participation in social organizations that comes together with an increase in participatory values, the importance people assign to expressive values such as freedom of speech, people's efficacy in how things are managed in their proximate community, the society, and the government. Empirically, the case of the Vietnam War allows me to overcome some important empirical challenges. I identify the long-lasting effects of war exposure by exploiting the arbitrarily drawn border along the 17th parallel between North and South Vietnam in 1954. In choosing this as the instrumental variable, I build on a logic introduced by Miguel and Roland (20), and also followed by others (21, 22), whereby exposure to the war grew as one approached the former border that once divided Vietnam. The research design is complemented with two unique data sources on the Vietnamese conflict: (1) the geographic distribution of the U.S. military campaigns drawn from a dataset containing province-level bombing intensity; and, (2) survey data collected in 2001 by the World Value Survey, which include respondents' province of birth, province of residence just before the end of the war in 1975, and place of residence for the period of 1990-2001. Using survey-based information on the postwar migration patterns, the research design can yield suggestive evidence on the persistence mechanisms, whether the effects of violence persist within individuals and close family members, or the effects are associated with community-wide or societal outcomes.

The main finding of this paper is that those respondents who lived during the Vietnam War in a province that was heavily affected by the conflict are more likely to be engaged in civic organizations in 2001, 26 years after the end of the conflict. Additionally, I provide consistent evidence that experiencing bombing in the wartime province of residence also increases people's participatory values. These findings are robust to different measurement decisions in the outcome variables, removing individuals' self-selection during the war, accounting for selection bias in the sample due to death and migration, using the subsample of respondents from North Vietnam—those who did not experience a regime change—and, including non-strategic bombing only. In addition to the main findings, the richness of the data allows me to separate the effects from the experience of residing in a high-conflict intensity area *during* the conflict and/or *after* the conflict.

Additionally, I find suggestive evidence that wartime experiences influence civic engagement irrespective of the postwar setting. Individuals who live in a postwar setting are more likely to participate in social organizations even if they did not live in a conflict-affected area. These results show that wartime experiences within individuals and close family members *and* community-wide and societal post-war-time experiences jointly shape long-term civic engagement.

The Legacies of War on Civic Engagement

Two major pathways of persistence can influence the long-term effect of civic engagement: persistence within individuals through traumatic experiences and community-wide transformations such as collective memories and institutions. The first process of transmission and persistence works through the traumatic experiences of the conflict. These effects are not limited to direct exposure to violence, but they can also follow from indirect experiences, or “second-hand trauma” as people learn from the experiences of others (23). Early scholarship on the effects of war on people's psychology portrays a gloomy picture. Most studies report that survivors of trauma, even many years after the events, often suffer from a wide range of physical and mental health problems, such as lower physical well-being and signs of post-traumatic stress disorder, including anxiety and depression (24). These results, in turn, are generally associated with hopelessness about the future, feelings of threat, and social withdrawal (25), all of which would lead to lower levels of civic engagement. While PTSD is an important concern that affects victims of wartime violence, citizens may also transform their psychological make-up in a way that facilitates long-term civic engagement and participatory values through several interrelated processes (26).

Growth after trauma could account for a long-term link between war exposure and civic engagement (27, 28) as a result of a “psychological change experienced as a result of the struggle with highly challenging life circumstances” (28, 1). The process of traumatic growth begins with the idea that everyone holds a set of beliefs and assumptions that they depend on to make sense of their world. These beliefs guide analytical thinking, understanding of causes and effects, and direct people's courses of action. A traumatic event is then defined as a major challenge to this assumptive world. After the traumatic event, individuals struggle with the new reality by rebuilding a new set of assumptive world dictums that incorporate the trauma and the potential that similar events could happen in the future. The result of the entire process is that individuals respond to trauma by reflecting on and reassessing their lives, particularly by changing their social preferences. These changes lead to an augmented perception of social connectedness, self-efficacy, and personal strength to exercise control over events that affect their lives, as well as an increase in the importance given to life, to other people, and to intimate relationships (29–31).

This process explains how wartime experiences increase tolerance toward the enemy after the end conflict (26) but it may also explain increases in civic engagement. In essence, it involves a process of psychological change that sets in motion a complex process of re-structuring preferences that are strongly connected to major well-known triggers of civic participation. For instance, an augmented perception of self-efficacy is related to the concept of political efficacy; that is, citizens' beliefs about “one's own competence to understand and participate effectively” (32, 1407). A vast literature in political behavior supports the thesis that beliefs that one can make a difference in the social and political realm are associated with preferences for participating in public affairs—participatory values—as well as with actual levels of civic engagement (e.g., 33, 34).

From a similar perspective, Wood's (35) ethnographic work in El Salvador reports that war-related violence increased participation in collective action through an increased sense of injustice. Compared to unexposed citizens, wartime victims

180 and their family members were more likely to join the rebellion
181 and to engage in social organizations. In this regard, Wood
182 describes that victims had an intrinsic pleasure of participation
183 in public activities. Others refer to these intrinsic motives as
184 “expressive preferences” (36); that is, the value that citizens
185 give to the act of participating and expressing their preferences
186 in public affairs. Participation may thus be viewed as an
187 intrinsically valuable act regardless of the decisiveness of that
188 behavior because it is a channel that serves conflict victims to
189 reaffirm beliefs, values, and identities (e.g., 37).

190 Despite the focus on the persistent effects of violence
191 through personal trauma in some earlier work, wartime vio-
192 lence is not experienced in social isolation, but it may also
193 involve *community-wide transmission* (17). Prosocial motiva-
194 tions and, thus, civic engagement, may result from a process
195 of communal coping by which individuals unite to cope with
196 existential threats (12). In this regard, exposure to war-related
197 violence is a stressful situation that is experienced in social
198 groups; that is, many individuals are simultaneously affected
199 by a common stressor. In this context, communal coping may
200 be the way in which several individuals pool resources and
201 efforts to confront common adversity (38, 39). The process
202 to solve this collective problem involves a concerted effort by
203 members of a community to tackle the shared problems that
204 are particularly daunting in conflict-affected areas.

205 Though most socio-psychological theories directly speak
206 to the immediate effects of exposure to war on public en-
207 gagement, there are reasons to believe that they may have
208 persistent effects through the crystallization of social and po-
209 litical attitudes and the intergenerational transmission process.
210 In the long-run, political events that exert socio-psychological
211 transformations are likely to crystallize in a new set of at-
212 titudes and behaviors that are sustained over time (40–42).
213 In this regard, one extreme possibility has been described as
214 the “persistence” model, which depicts that attitudes acquired
215 prior to adulthood remain more or less unchanged through
216 life. In this scenario, the very high stability of social and
217 political orientations would sustain the immediate effects of
218 wartime experiences through long periods of time (43). There-
219 fore, the new set of preferences that results from traumatic
220 experiences should be sustained in the long-term through this
221 crystallization or persistence mechanism.

222 Moreover, social preferences are difficult to reverse, socially
223 reinforced, and transmitted across generations. In this regard,
224 Nunn and Wantchekon find that individuals whose ancestors
225 were subject to heavy raids during the slave trade four centuries
226 ago are less trusting of their relatives, neighbors, out-group
227 members, and political institutions today (44). And, more
228 generally, the legacies of political violence have been found to
229 influence contemporaneous authoritarian values, preferences
230 toward those who are related to the perpetrators and social
231 identities directly, through personal experiences, and indirectly,
232 through their transmission across generations (45–47). In
233 addition, the transformation of community-wide patterns of
234 interactions, institutions, and political structures during the
235 war are likely to linger to the postwar periods.

236 Similarly, the scope of community-wide coping strategies is
237 not limited to the periods of intense fighting, but they might
238 linger to the post-wartime. Communal coping strategies are
239 likely to generate positive externalities, patterns of coopera-
240 tion and social networks, that may strengthen social action,

trust, and prosocial motivations. Added to the wartime experi- 241
ences, the conditions in the post-conflict context may even 242
exacerbate these socialization experiences. In heavily-affected 243
areas, individuals experience high levels of material destruc- 244
tion followed by a slow, grinding reconstruction process in the 245
depth of a post-war economic recession. In this context, local 246
communities may respond by rebuilding the country them- 247
selves. As one of the many consequences, people become more 248
accustomed to volunteering, engage more frequently in public 249
debates, and think that participation in society and politics is 250
good, possibly to prevent another war. Taken together, these 251
cooperative processes learned during wartime, and extended 252
into the post-wartime period, may define new values and be- 253
haviors that emphasize expressive or participatory values, as 254
well as on participation in social organizations. 255

256 Therefore, the effects of war-related violence on civic en-
257 gagement are likely to last even decades after the end of the
258 conflict through these several interconnected pathways of per-
259 sistence. This leads to the main hypothesis that *exposure to*
260 *wartime violence should enhance individuals’ civic engagement*
261 *in the long-term*. Further, we suggest that both *persistence*
262 *within individuals* and *community-wide transmission* jointly
263 account for the long-term increase in civic engagement. In
264 addition, these mechanisms suggest that those respondents
265 who were more exposed to the war may generally place greater
266 value in the act of civic participation itself. Hence, a key em-
267 pirical implication of this is that these individuals would also
268 report a high priority for achieving greater levels of freedom of
269 speech, expanding the space for civic engagement, and greater
270 value in the role of people’s influence in public affairs. This
271 leads to the expectation that *exposure to wartime violence*
272 *enhances individuals’ participatory values in the long-term*.

273 Contextual Background: The Vietnam War

274 The Vietnam War (1954–1975) was a conflict officially fought
275 between North Vietnam and the government of South Viet-
276 nam. Its origins can be traced back to the end of World War
277 II (WWII). In 1945, the Viet Minh—a Vietnamese opposition
278 movement to the French rule led by Ho Chi Minh—took power
279 in Vietnam in the August Revolution, amidst the vacuum
280 of power left by the defeat of Imperial Japan. However, the
281 allied victors of WWII agreed that Vietnam belonged to the
282 French. The British helped to re-build French control in the
283 area, which allowed them to take over South Vietnam. In
284 addition, the French landed in Hanoi and ousted the Viet
285 Minh. Soon after the British departed in 1946, the Viet Minh
286 initiated a rural counter-insurgency guerrilla war against the
287 French government with the support of the Chinese commu-
288 nists. After the guerrilla took control of the northern border
289 of Vietnam in 1949, the war became the First Indochina War.
290 Though the conflict engulfed the entire Indochina area, the
291 Red River Valley in Tonkin, northern Vietnam, was the ge-
292 ographic location of the most intense fighting between the
293 French army and Viet Minh forces (48, 49).

294 Following the defeat of the French army (May 7, 1954), the
295 Soviet Union, the United States, France, the United Kingdom,
296 and China participated in the Geneva Conference to restore
297 peace in Vietnam (May 8, 1954). At first, none of the parties
298 thought that a partition was possible in Vietnam, and France
299 and the United States were opposed to it.* Yet, the turnover

* On the one hand, Bao Dai, the chief State of Vietnam, rejected “partition, direct or indirect, definitive

of the French government in June, as well as the military defeats on the ground, led to a moderation of the French position; the French would now accept a partition.[†] In June, negotiations focused on the exact location of the partition, which was uncertain at that time. On the one hand, the Democratic Republic of Vietnam called for the partition line to be at the thirteenth parallel (50, 595–596). On the other hand, understanding that Ho Chi Minh would only accept an agreement if their territory would include Hanoi, the French suggested a division at the eighteenth parallel, which runs south of Hanoi. Finally, the Geneva Accord, which was struck on July 21, 1954, set out a “provisional military demarcation line” running through the seventeenth parallel.

Though quite arbitrary, the border had an enormous impact on the subsequent Second Indochina War, or Vietnam War (1954–1975). The first stage of the war was characterized by a low-intensity insurgency war in South Vietnam, and the military intervention of the United States escalated in 1964.[‡] Between 1964 and 1973, the conflict was characterized by stark asymmetries of firepower, and a massive U.S. air bombing campaign. Bombing in Vietnam was indiscriminate; that is, targets were not chosen on the basis of individual characteristics, but bombings targeted areas where civilians lived and, thus, collectives of civilians rather than specific individuals (21). In a context of indiscriminate bombing, aggregate bombing data of an area captures the average exposure to the war of a region’s inhabitants. To illustrate the geographic variation of the impact of the Vietnam War across throughout the Vietnamese territory, the map in Figure 1 shows the distribution of bombings across provinces.[§] In addition to some areas around Hanoi, the coastline of North Vietnam, and the area around Ho Chi Minh City that are closest to the Cambodian border—the end of the Ho Chi Minh trail that connected North and South Vietnam through Laos and Cambodia—the most intensely bombed regions are close to the 17th parallel of the North-South border.

Empirical Strategy

A correlation between war exposure and civic engagement may not reflect a causal effect because of potential reverse causation or omitted variable bias. This applies when analyzing both the short and long-term effects of exposure to war. The most obvious issue is that conflict intensity, and thus exposure to war-related violence, is not random. For instance, areas with well-organized groups, with a more active citizenry, or with more individuals holding pro-freedom values may either be more likely to be targeted for violence by the attackers or more likely to defend themselves from a violent attack.

This is arguably the major issue in the literature establishing the consequences of war. Some scholars have attempted to mitigate its impact by following five different strategies: (1)

or provisional, in fact or in law, of the national territory” (50, 562). Eisenhower thought similarly. In fact, the CIA director, John Foster Dulles, is believed to have said to the cabinet and privately to his brother that he thought that it was not possible “to draw a line, given both the present balance of forces and the geography of Indochina” (50, 562). Alternatively, France suggested the physical separation of combatants but in the form of enclaves controlled by each side, the so-called leopard-skin approach, French forces would retain control over the Red River Delta, including the major urban areas of Hanoi and Haiphong (50, 562–563). These statements reflect the positions of the parties as on May 12, 1954.

[†] The United States withdrew from major participation of the convention in early-mid June.

[‡] After the Gulf of Tonkin Resolution, on 7 August 1964, which allowed the U.S. president to launch a full-scale war if it was considered necessary by the president.

[§] See below for a further discussion on the size of provinces. Also, more details on the bombing data can be found in the methodological section.

adding fixed effects at an aggregate unit to maintain constant village specific characteristics if there is within-unit variation (e.g., 13, 14, 51); (2) controlling for pre-war communities’ characteristics through regression or matching approaches (12, 51); (3) subsampling on most affected populations (13); and/or, (4) providing a qualitative account about why violence onset was random (12). While these strategies alleviate some concerns of endogeneity, a causal effect can hardly be disentangled without a source of exogenous variation in the geographic distribution of war conflict.

The Vietnamese case provides a natural experiment to overcome some of the inferential concerns that are present in other studies. Building on the logic introduced by (20), and also followed by others (21, 22), I identify the long-lasting effects of war exposure on civic engagement and participatory values by exploiting the arbitrarily drawn border along the 17th parallel between North and South Vietnam in 1954 as an instrument of conflict intensity. For an instrument to be valid, it must have a strong first stage and be independent of potential outcomes. First, as Figure 1 shows, exposure to the war strongly grew as one approached the former border that once divided Vietnam. This strong correlation implies that the *distance to the 17th parallel* is a relevant instrument of *conflict exposure*. Second, we must evaluate whether the instrument is independent of potential outcomes. While I control for earlier population size and geographic features, one could still be concerned about a potential correlation between the distance to the parallel and prior civic engagement. This could be the case if, for instance, the separation line mapped a historically relevant boundary, was located in conflict-prone or conflict-absent areas, or was drawn because of the characteristics of the population in those areas.

Some characteristics of the Vietnam case are re-assuring for identification purposes. First, the seventeenth parallel had not been used before for any other circumstance of political relevance. Second, the parallel did not coincide with areas of conflict throughout the First Indochina War, when most of the conflict occurred around the River Red Delta and the Chinese border, around the twenty-first parallel and north. Third, it was unclear before the beginning of the negotiations in 1954, whether Vietnam would be partitioned, and, even more importantly, the specific parallel that would be used for partition was uncertain. Fourth, the parallel did not reflect the relative forces of the parties on the ground. For instance, a member of the French delegation remarked “one is entitled to think that the division of the country at the thirteenth parallel would have more accurately reflected the true state of affairs than the partition at the seventeenth parallel which we achieved” (50, 608). Overall, historical evidence suggests that the border was arbitrarily drawn and the pre-existing geographic distribution of Vietnamese people’s political attitudes or behavior on the ground played no role in the location of the border. On the contrary, the First Indochina War and the numerous communists’ hubs in the northern border with China suggests that, if anything, the most socially and politically engaged people would be located in the urban and northern areas. Thus, they are geographically far from the middle areas of the country.

Beyond civic engagement and political values, bombing could also influence other outcomes such as health, education, and infrastructure (2, 52). However, these are essentially post-treatment outcomes and, thus, do not affect the internal

Fig. 1. Geographic Distribution of Bombing and Distance to the 17th Parallel

validity of the IV design. If anything, they should be considered as mechanisms of the main effects.

With an instrument that is relevant and valid, the empirical strategy enables us to identify the average causal effect of war exposure on engagement among “compliers,” the *local average treatment effect* (LATE); that is, the average treatment effect among those who live in provinces that were exposed to the bombing if geographically close to the 17th parallel (treatment group) but not exposed to the bombing if not geographically close to the 17th parallel (control group). The problem is whether the LATE from the IV regression estimates may be different from the average effect in the entire population of Vietnam. In this setup, “compliers” include both individuals who lived in regions close to the parallel that received heavy bombing and individuals who lived in regions far to the parallel that received little bombing. The variation in Figure 1 suggests a relatively continuous and linear relationship between bombing and distance. The vast majority of provinces can be defined as “compliers” because their bombing intensity is closely connected to their distance to the parallel. In fact, the province of Lào Cai is the only province in the dataset—49 provinces with at least one observation in the survey data—that has an absolute value in its standardized residual greater than 2, which implies that this province is the only one that received more or less bombing than expected given its distance to the 17th parallel (i.e., this “always-taker” would have always received heavy bombing regardless of their location).[¶] The wartime population of Lào Cai was estimated to be around 699,700 inhabitants (1.6%), which implies that the vast majority of the Vietnamese population (98.4%) lived in provinces that their treatment status was associated with their distance to the 17th parallel. Therefore, there are reasons to expect that the LATE is likely generalize to the average treatment effect for the entire country.

[¶] Lào Cai is a northern province far from the parallel that was, nonetheless, heavily bombed during the war, and has a standardized residual of -2.43 .

Data and Measures

I rely on the first public opinion survey ever conducted in Vietnam, the World Value Survey 2001 (WVS).^{||} The survey in the field was conducted by the Institute of Human Studies in Vietnam using a multi-stage area probability sample with a random walk household selection. The sample consists of 1,000 respondents distributed proportionately throughout the eight census regions of Vietnam. The survey respondents were selected to be representative of the adult population in Vietnam.^{**} To the core questionnaire of the international WVS project, the Vietnamese survey adds a set of country-specific questions on socio-economic development that are relevant for the object of this study, including an extensive battery of items on civic engagement. Besides, the survey also includes specific questions on the respondents’ province of birth, place of residence before 1975 (the year of the end of the Vietnam war), and in the period 1990–2001 (year of the survey).^{††} These questions allow me to match each respondent to the province-level conflict data.

Civic Engagement. I use respondents’ self-reported participation in social groups to measure civic engagement. Specifically, respondents were asked to indicate whether they were doing unpaid voluntary work in 14 types of voluntary associations or activities offered in the questionnaire: (1) social welfare services for the elderly, handicapped or deprived people; (2) religious organizations; (3) education, arts, music or cultural activities; (4) labor unions;^{‡‡} (5) political groups or organi-

^{||} While some academics criticize the WVS for its lack of comparability across countries, these considerations do not affect analysis within a country sample (53).

^{**} See the Appendix A for a comparison table of some standard survey demographics and the census demographics and a more complete description of the survey methodology. The survey sample is comparable to the population statistics on key demographics such as gender and age, although it over-represents well-educated citizens.

^{††} This set of questions was included by the researchers to meet the Institute’s own research program, but not available in the public WVS data files. I thank J. Diez for access to the original data files.

^{‡‡} Though labor unions in Vietnam are formally controlled by the Communist Party; membership is voluntary and, in practice, workers are autonomous with respect to the national party. This explains the prevalence of wildcat strikes among Vietnamese workers (54). Yet, excluding this category from the list does not alter any of the results and conclusions.

zations;^{§§} (6) local community action on issues like poverty, employment, housing, racial equality; (7) third world development or human rights; (8) conservation, environment, animal rights groups; (9) professional associations; (10) youth work (e.g. scouts, guides, youth clubs); (11) sports or recreation; (12) Women's groups; (13) peace movement; and, (14) voluntary organizations concerned with health.^{¶¶} Appendix E reports the question wordings and Appendix B the descriptive statistics for these items. In Vietnam, about one fourth of the respondents report engagement in community action organizations, labor unions, Women's groups, or organizations that provide welfare services. This illustrates that Vietnam has a generally strong broad-based civic society with high levels of civic participation.^{***}

To estimate scores for each respondent on separate scales of participation on civic organizations, I apply a binary factor analysis (FA) based on a matrix of tetrachoric correlation coefficients. Results from the binary FA suggest a one-factor structure for the participation items.^{†††} Due to the skewness of the distribution of the index—most people report not being a member or an active participant of any organization or type of activity—I take the log of the first factor from the binary factor analysis as the dependent variable of civic engagement.^{‡‡‡}

Participatory Values. To measure participatory values, I use a sub-index of the Post-Materialist Index, called “pro-voice values.” This sub-index intends to measure respondents’ priorities for freedom of speech and people’s say in national and local affairs (57, 66-69). Respondents were asked to choose the statements that best reflect their life priorities among eight items (two four-item blocks). Of the eight items, three measure an emphasis on people’s participatory values: (1) “Seeing that people have more say about how things are done at their jobs and in their communities,” included in Block 1; (2) “Giving people more say in important government decisions,” and, (3) “Protecting freedom of speech,” both included in Block 2.^{§§§} Responses from each block are recoded to 0 when the item has not been chosen as important, 0.5 when it has been chosen as second most important and 1 when it has been chosen as most important.^{¶¶¶}

Conflict Intensity. The data used to construct an individual-level measure of war exposure were initially assembled by Miguel and Roland (20), and derived from three different sources: (1) records of naval gunfire support in North and

South Vietnam (March 1966–January 1973); (2) the Combat Air Activities File (CACTA), which details daily air combat operations flown by the US Navy, Marine Corps, and Pacific Air Forces, by fixed-wing aircraft from October 1965 through December 1970;¹⁷ and, (3) daily records of allied air combat operations by fixed-wing and helicopters flown by the U.S. Army, (South) Vietnamese Air Force, Royal Lao Air Force, and Khmer (Cambodian) Air Force between 1970 and 1975.¹⁸

The data includes the number of general-purpose bombs, cluster bombs, missiles, rockets, cannon artillery, incendiary bombs, white phosphorus and ammunition (in thousands) dropped in each province per square kilometer.¹⁹ The total number of ordnance per square kilometer dropped in a province constitutes the measure of the province-level war intensity. Appendix C reports the descriptive statistics of each of the ordnance category per square kilometer and Appendix D reports the correlation matrix between the summed index and the different types of bombs. The total number of ordnance is highly correlated with all types of ordnance, especially with general-purpose bombs. Hence, it provides a good measure of bombing intensity in a province.²⁰

To construct an individual-level measure of exposure, I match the bombing data to respondents’ information about their province of residence before 1975, which is included in the WVS 2001 survey in Vietnam.²¹ Unlike earlier work that relies on self-reported measures of victimization, which are prone to recall bias and non-response bias (18, 59), I use an objective measure of exposure based on their residence during the war. Another important consideration for evaluating the empirical results is the number and size of the units. Vietnam is divided into relatively small units. The entire country has a surface area of 128,455mi², which is similar to that of American states such as New Mexico. Each province has an average area that is smaller than the average area of counties in New Mexico.²² The small size of provinces reduces the potential measurement error around the independent variable.²³ In any event, the use of an instrumental variable will also help to alleviate issues related to measurement error.²⁴ The sample geographically encompasses the Vietnamese population and the disparity in conflict intensity. Of the 63 administrative

^{§§} While political groups or organizations could be considered to belong to national formal institutions, the party structure in Vietnam is decentralized. This means that local party organization or groups are, for most of their activities, rather independent with respect to the national party leadership. Because citizens are much more likely to devote their time to a local party organization rather than to the national organization, we should consider it as not belonging to national organizations. Yet, excluding this category from the list does not alter any of the results.

^{¶¶} A residual category of “others” is also included in the survey, although not used here.

^{***} Compared to all other countries in the WVS survey wave, civic engagement in Vietnam—an average of 15% across all items—is above the average of that of all other countries in the wave—an average of 8% across all items. This is consistent with early Vietnamese scholars, who suggested that associational life is comparable to that of many Western countries, and surpasses that of other authoritarian countries (55, 56).

^{†††} The Cronbach’s alpha of the participation items is 0.79. Appendix B reports the factor loadings of each item that are used to compute respondents’ score in the index of participation.

^{‡‡‡} Appendix G maps the civic engagement index to the number of organizations in which the respondent is active. Results remain substantively unaltered if I proceed with the natural scale.

^{§§§} Because their inter-item correlation is moderately low, $r = 0.35$, I ensure that the validity of the Index does not jeopardize the results by reporting the results for the two blocks of the Voice Index separately. For further information on the variable, coding procedures, and a full Table with the three four-item batteries that were used in the original WVS questionnaire, see Appendix E.

^{¶¶¶} The coding procedure follows Welzel (57, 66-69) coding instructions and is imposed by the way in which the WVS asks these questions.

¹⁷ A bombing sortie usually included multiple aircraft and weapons. The CACTA was assembled from post-flight pilot debriefs conducted on the day of each sortie.

¹⁸ The datasets are hosted by the U.S. National Archives and access is unrestricted.

¹⁹ Ordnance is measured in units.

²⁰ An alternative source of information comes from the Hamlet Evaluation System. Kocher et al. could match these fine-grained administrative boundaries with hamlet-level bombing intensity (21, 58). However, this dataset only includes a full cross-section of South Vietnam from July through December 1969. While the benefits of using such level of precision outweigh the data limitations of time and scope for their research purposes, I use the dataset that includes the most extensive bombing information for the entire country and wartime period (1965–1975).

²¹ The sample includes all respondents that provide a valid response to a place of residence before 1975. Though most respondents younger than 26 years old have a missing value in this question, some respondents who are too young to have experienced the war themselves have valid responses. The main analyses are implemented using all respondents whose response is valid. All results are unaltered if I exclude these respondents from the sample.

²² The average surface area of Vietnamese provinces is 2,039mi², which is smaller than the average surface of counties in New Mexico.

²³ Though other finer-grained datasets of conflict in Vietnam are currently available (20, 21, 60), respondents’ location in the survey can only be known at the province level. Therefore, cumulative bombing in each province is the most fine-grained value that can be attributed to respondents. The disadvantage of using this level of aggregation is that individuals within units may have had different levels of exposure to bombardments, which produces measurement noise. On average, individuals in heavily affected areas are more likely to have experienced bombardments than individuals in lowly affected areas. The important within-unit variance of exposure increases the measurement noise of the independent variable. However, this source of measurement error will bias our regression estimates toward zero (61).

²⁴ This is true to the extent that distance to the parallel-instrument is uncorrelated with the within-unit variance in exposure—one of the major sources of measurement error in the sample (61).

units existing in today's Vietnam, there are 49 provinces that both can be matched to the codes in the bombing records and have at least one respondent in the WVS dataset that reports having lived in the province during the war.²⁵

Instrumental Variable: Distance to the 17th Parallel. The main empirical concern to estimate a consistent effect in the hypothesized relationship is that conflict intensity and civic engagement may be endogenous. First, bombing can be targeted to those areas with greater mobilization, or more actively involved people. Second, both a province's conflict intensity before 1975 and today's civic engagement may result from an unobserved omitted variable. Third, the number of bombing units dropped in each province is an imperfect historical measure of conflict intensity. Though it is highly correlated with true conflict intensity, there are a number of aspects that it does not capture, such as the violence induced by the North Vietnamese army, additional damage from ground operations, and the fact that the measure is the total number of bombs dropped rather than the actual damage inflicted in a province. Therefore, the measure of conflict intensity is prone to measurement error. Due to the existence of these problems, the OLS estimate may be biased and inconsistent.

The exogenous variation provided by the distance to the arbitrary North-South border may serve as an instrument for conflict intensity (20–22). The validity of the instrument is based on the fact that the location of the border drawn in the 1954 Geneva Accords was exogenous to the characteristics of the people living in those areas. However, distance to the parallel can itself be endogenous to time-invariant conditions. Hence, distance to the border can be considered exogenous conditional on average precipitation, latitude, the pre-war population density of the province, and whether the province is located in South or North Vietnam. These controls adjust for geographic and cultural disparities within Vietnam that are correlated with distance to the parallel.

Control Variables. The models also include three individual-level control variables: female, age, and education. Appendix B reports the descriptive statistics. The theoretical rationale is that conflict exposure influences civic engagement through individuals' psychological processes, which may be reflected in some individual-level variables. Yet, if these intervening variables that reflect such attitudinal processes matter, and they are included as part of the model specifications, they may bias the causal estimate of the treatment. Hence, the model includes demographic controls that are immune to the influence of province-level exposure to bombings—such as age and female—but it does not control for factors that may mediate or be a product of bombing exposure—such as political orientations, current town size, and the like.²⁶

Results

Table 1 reports OLS and IV estimates of the impact of bombing on civic engagement. The OLS models suggest a strong positive and significant effect of the number of total bombs per square kilometer in a respondents' province of residence before 1975 on the level of engagement in social organizations.

Table 1. The Impact of U.S. Bombings on Civic Engagement

	Civic Engagement (log)			
	OLS	OLS	IV	IV
Bombs, per km^2 (log) (residence pre-1975)	0.08** (0.01)	0.12** (0.02)	0.12** (0.03)	0.23** (0.04)
Education		0.03** (0.01)		0.02* (0.01)
Female		−0.06* (0.04)		−0.07* (0.04)
Age		−0.001 (0.001)		−0.002 (0.001)
South		−0.46** (0.14)		−0.28* (0.16)
Latitude (°0)		−0.28** (0.13)		0.01 (0.16)
Population density (1960-61) ('000)		−0.05** (0.02)		−0.11** (0.03)
Average precipitation (°00)		0.01 (0.09)		−0.23** (0.11)
First Stage				
Distance to the 17th Parallel			−0.42**	−0.55**
F Statistic (instrument)			483**	354**
Observations	875	862	875	862
Provinces	48	49	48	49
R ²	0.04	0.09		

** $p < 0.05$, * $p < 0.1$. 1 has been added to the dependent variable to ensure strictly positive values. Robust clustered-standard errors at the level of the province in all models. Appendix Q checks the robustness of the main results to the use of the wild cluster bootstrap. The use of this correction does not alter the findings. Bonferroni p-values adjusted for multiple comparisons are < 0.01 across the four models. Intercepts are excluded from the output.

Because there are reasons to believe that the OLS estimates may be biased and inconsistent, models 3 and 4 instrument bombing intensity with the absolute distance of the province to parallel 17. The results from the first stage regression are reported at the bottom of the table both with and without the second-stage controls (controls are included but omitted from the output). The coefficient of the absolute distance to the parallel is significantly negative, which confirms that provinces located closer to the parallel were more heavily bombed than provinces that were located farther away. Table 1 shows that the instrument is significant at conventional levels, and correlated with the endogenous regressor with an F-statistic that far exceeds the suggested threshold of 10.

Consistent with the OLS estimates, the effects of the instrumented bombings are also positively associated with civic engagement in the model without controls (model 3), as well as in the model with controls (model 4). The coefficients are substantially larger compared to the OLS estimates. The increase in magnitude suggests that the downward bias due to measurement error dominates the potential threat from upward bias due to omitted variable bias or reverse causation.

Figure 2 illustrates the magnitude of the effect of conflict intensity on civic engagement, after keeping all continuous control variables at their mean value, and categorical control variables at their median value. Because both the dependent and the independent variables are measured in a natural logarithmic scale, we can interpret the coefficients in terms of elasticities. Thus, the estimates suggest that rising 10% of the total number of ordnance per square kilometer in a province increases the expected value in the index of civic engagement by 2.3% ($e^{0.24 \times \ln(1.1)} = 1.023$). In terms of standard devia-

²⁵ Appendix F reports the number of respondents by province.

²⁶ The control for educational attainment may be post-treatment for some respondents. None of the results depend on its inclusion.

Fig. 2. Predicted Values of Civic Engagement at Different Levels of Bombing Intensity

Predicted values of civic engagement are generated from Model 4 in Table 1, with all continuous control variables at their mean and categorical variables at their median values. Panel B only shows observations with a number of ordnance per square kilometer lower than 30. Appendix U reports the same figure with an x-axis that ranges from its minimum to its maximum value.

tions, an increase in one standard deviation in the log of the total number of ordnance, i.e., 1.33 logs, is expected to lead to an increase in the log of civic engagement of 0.31, so about 0.56 standard deviations of the outcome.

Panel B transforms the predictor and the predicted values to their natural scale. From this, we can see that increasing the number of ordnance dropped in the respondents' province of residence in 1975 leads to substantial increases in the expected values of civic engagement. For the civic engagement index, which ranges from -0.64 to 1.70, an increase from 0 to 5,000 ordnance leads to an increase from no participation at all, -0.64, to actively participating in one or two organizations, -0.45. A further increase in the level of bombing to 25,000, about the mean of the distribution, leads to a further increase in the expected value of civic engagement to -0.25, which is equivalent to actively engaging in 2 or 3 organizations. Finally, respondents who lived in the most heavily bombed provinces, above 100,000, are expected to have a value of civic engagement above 0.20, which is equivalent to be actively engaged in about 4, 5, or 6 organizations. These increases in the expected values of civic engagement are substantial, especially when we consider that the effect took place between two and four decades ago.

Table 2 reports the effects of bombing on participatory values. Those respondents who lived in areas that were more heavily affected by the war before 1975 are more likely to report a greater level of participatory values today. We find consistent evidence for each of its components: people's preference for having for voice in community matters, as well as a desire to have more freedom of speech and voice in governmental matters. The instrumental variable regressions yield a substantively larger effect of war exposure on participatory values, as well as on each of the items. Taken together, the effects of wartime experiences on participatory values provide evidence consistent with the socio-psychological theories of war legacies on civic engagement.

Table 2. The Effect of Conflict Exposure on Participatory Values

PANEL A		Participatory Values (Index)			
Bombs, per km^2	0.01**	0.04**	0.03**	0.06**	
(log)(pre-1975)	(0.01)	(0.01)	(0.01)	(0.02)	
PANEL B		More voice in community (Item 1)			
Bombs, per km^2	0.03**	0.05**	0.05**	0.10**	
(log)(pre-1975)	(0.01)	(0.01)	(0.01)	(0.02)	
PANEL C		More voice in government (Item 2)			
Bombs, per km^2	0.02**	0.05**	0.02	0.07**	
(log)(pre-1975)	(0.01)	(0.01)	(0.02)	(0.02)	
Estimation	OLS	OLS	IV	IV	
Controls?	N	Y	N	Y	
Observations	875	862	875	862	
Provinces	48	47	48	47	

The Index of Participatory Values is divided into two items. Item 1 is based on the agreement to the following statement: "Seeing that people have more say about how things are done at their jobs and in their communities". Item 2 is based on the agreement to the following two statements: a) "Giving people more say in important government decisions", and b) "Protecting freedom of speech". Question wording in the Appendix E.

** $p < 0.05$, * $p < 0.1$. Robust clustered-standard errors at the level of the province in parenthesis. P-values adjusted for multiple comparisons are 0.05, < 0.01, 0.05, and < 0.01 (Panel A), < 0.01, 0.01, 0.05, and 0.01 (Panel B), and 0.06, < 0.01, 0.25, and < 0.01 (Panel C), respectively. Appendix V reports the full models.

Robustness Checks. The survey contains two items of civic engagement: volunteering and membership. Table 3 (row 1) re-estimates the main result using formal membership—rather than volunteering—as the outcome of interest.

A concern that one may have is that using the place of residence allows for self-selection into the province of residence due to mobility after birth. Indeed, while some people may have answered their place of residence during the Vietnam War, others may have moved during the war and, thus, the

self-selection into a relocation province may bias the results.²⁷ Table 3 (row 2) uses the respondents' place of birth, which is arguably outside the control of the respondents.

Another potential concern is that the relationship might be driven by engagement in specific organizations or respondents in specific provinces. I rule out the first possibility by re-estimating the models after: (1) excluding one item each time (row 3); (2) excluding the most politically-driven organizations, parties and labor unions (row 4); and, (3) including all observations but controlling for party and labor union membership (row 5). While the logarithmic scale should alleviate the latter concern by adjusting the skewness of the distribution of bombing, I further check the potential impact of influential observations in three ways: (1) by excluding respondents from the Quang Tri province, a province located right on the 17th parallel and the most heavily bombed of all Vietnamese provinces (row 6); (2) by excluding the top 20% most bombed observations (row 7); and, (3) by excluding observations from provinces with less than 5 respondents (row 8).

The fourth potential concern is the pre-existing distribution of preferences. The parallel could run through a particularly engaged population, and the high post-war engagement may not be due to war exposure but to high pre-war engagement. First, the geographic distribution of the Vietnamese urbanization should lead us to believe that, in the absence of wars, those living around the major cities, around parallels 13 and 21, should be, if anything, more engaged than those living around the parallel 17 because of greater skills or opportunities. And, second, most fighting between the French troops and the active guerrilla of Viet Minh (1945–1949) was located in northern areas of North Vietnam, where the Communist hubs were located.²⁸ (page B26). As of the end of 1944, the Viet Minh claimed a membership of 500,000 in Vietnam and the region that embraced the largest number of them was Tonkin (North Vietnam).²⁹ Because the pre-war pro-Communist mobilization—before the parallel was drawn and the war began—was located far north of the 17th parallel, the hardest test for the main relationship is to focus only on evidence from North Vietnam. Table 3 (row 9) uses only the 473 respondents from North Vietnam. From a substantive perspective, the results are comparable to those obtained from entire Vietnam. This test also allows to control for a potential effect of winning or losing the war and regime change.

Historical institutions could also drive the pre-existing distribution of preferences. While the 17th parallel does not correspond to any previously important boundary, the French colonial administration divided Vietnam into northern Vietnam (named Tonkin by the French), central Vietnam (named Annam), and southern Vietnam (named Cochinchina).²⁹ While no drastic differences are reported in the colonial experiences across the three regions with regards to predictors of social norms and preferences such as the colonizer identity (64) and state centralization (65), it remains to be a source of non-

randomness in the treatment assignment. I account for them by adding the colonial province fixed-effect in the main models. Table 3 (row 10) shows that the results remain unchanged for the OLS models and the IV model with controls.

A considerable amount of bombardment was dropped from heavy aircrafts that aimed at blasting Vietnamese supply lines out of existence. Strategic bombings from high altitude are likely exogenous from pre-war conditions on the ground as, at the time, they could hardly target specific coordinates but relatively large territories. In fact, historical accounts suggest that about 50% of the bombs fell outside the target zone (66). Following this logic, Table 3 (row 11) shows that the main findings remain unaltered when using a measure of bombardment that excludes incendiary munitions and rockets.

A sixth concern is non-random attrition (or selection bias), which might be present if a non-random subsample of provinces had more war-time deaths, post-war deaths, or international migration after the war. Since those provinces that were more affected by the war are likely to have greater attrition, attrition may be a source of bias. To check the robustness of the estimates to this, I place bounds on the treatment effect by generating new observations and imputing extreme values on their missing potential outcomes in the following manner (67). First, I use an exceedingly liberal estimate of the total number of people who are no longer in the country due to the war—a liberal estimate of attrition will lead to a conservative treatment effect. Though the most reasonable attrition rate is of 5.8% of the 2001 Vietnamese population, I check my findings to an implausibly large attrition rate of 10%. Second, I generate artificially attrited observations equivalent to a 10% of the survey sample through a weighted re-sampling with replacement from the observed respondents. The weights are based on the value of conflict intensity. Thus, the likelihood that an observation from the original sample is re-used as an artificial observation in the final sample is proportional to the intensity of the conflict in the province of residence before 1975. Third, I assign the lowest possible value of civic engagement to these re-sampled observations.³⁰ Table 3 (row 12) shows that the worst-case scenario of attrition exert little influence on the main estimates.

Another kind of endogeneity is ignored in the models: spatial interdependence. Spatial interdependence in the outcome may affect the estimates even if the instrument is randomly assigned and, especially, if the instrument is spatially clustered (68). I test this possibility by creating a row standardized matrix based on the inverse distance of the provinces' centroids.³¹ Then, I employ a general estimation strategy—spatial autoregressive models and spatial two-stage least squares—that accounts for both outcome interdependence and predictor endogeneity. Table 3 (row 13) shows that the estimates remain unaltered when accounting for spatial interdependence.

Sensitivity Analyses. Appendix S relaxes the assumption of perfect exogeneity of the instrument. It reports the variation in the confidence intervals of the IV estimate with controls as a function of changes in δ —the parameter that violates the exclusion restriction (69). The results show that for the estimates of

²⁷ The issue is less problematic than one could imagine given the small size of domestic migratory movements among the survey respondents: a) only 11% of the respondents report a pre-1975 place of residence different from the 1990-2001 place of residence; and, b) only 12% of the respondents report a province of birth that is different from their pre-1975 province of residence.

²⁸ See, for instance, (62, 167) and (63, 643). The *Declassified per Executive Order 13526, Section 3.3 NND Project Number: NND 63316. By: NWD Date: 2011* report that "the first permanent Viet Minh bases were established in 1942–1943" in the northern areas of North Vietnam above Hanoi (page B26). In these areas, "the first locally recruited guerrilla forces were formed under Viet Minh auspices after the people had been well organized

²⁹ Historical map of French Indochina in 1937 showing the protectorates and provinces is obtained from AMS 509 (*Indochina & Thailand*) from the PCL Map collection. *Reseau Routier de l'Indochine*.

³⁰ If all missing observations would have had an extremely low value of engagement had they been in the sample, this would reduce the relationship between war exposure and engagement. Therefore, assigning extremely low values places a lower bound to the average treatment effect.

³¹ I estimate Moran's I based on the residuals of the original OLS model—with the logged civic engagement index. Moran's I value is -0.004 ($p = 0.06$).

Table 3. Robustness Checks

	Civic Engagement (log)				SI
	OLS	OLS	IV	IV	Appendix
(1) DV: Membership	0.04** (0.01)	0.07** (0.02)	0.12** (0.02)	0.12** (0.02)	H
(2) IV: Birthplace	0.08** (0.01)	0.11** (0.02)	0.12** (0.02)	0.22** (0.03)	I
(3) DV: Excluding one item each time ^a	0.07** (0.01)	0.11** (0.02)	0.10** (0.03)	0.20** (0.03)	J
(4) Excluding members of parties and labor organizations	0.05** (0.01)	0.06** (0.02)	0.07** (0.02)	0.13** (0.03)	K.1
(5) Controlling for members of parties and labor organizations	0.06** (0.01)	0.07** (0.02)	0.08** (0.02)	0.14** (0.03)	K.2
(6) Excluding Quang Tri	0.08** (0.01)	0.12** (0.02)	0.12** (0.03)	0.24** (0.03)	L.1
(7) Excluding Top 20%	0.10** (0.01)	0.12** (0.02)	0.16** (0.04)	0.22** (0.03)	L.2
(8) Excluding provinces with ≤ 5 respondents	0.08** (0.01)	0.11** (0.02)	0.10** (0.03)	0.22** (0.03)	L.3
(9) North Vietnam only	0.15** (0.02)	0.16** (0.02)	0.21** (0.03)	0.21** (0.02)	M
(10) Colonial-era administrative boundaries FE	0.07** (0.02)	0.08** (0.02)	−0.02 (0.03)	0.15** (0.04)	N
(11) High-altitude bombardment only	0.10** (0.01)	0.13** (0.03)	0.14** (0.03)	0.32** (0.05)	O
(12) Non-random Attrition	0.05** (0.01)	0.10** (0.02)	0.07** (0.03)	0.21** (0.04)	P
(13) Spatial Models	0.05** (0.01)	0.11** (0.02)	0.09** (0.03)	0.17** (0.03)	R
Controls	N	Y	N	Y	

** $p < 0.05$, * $p < 0.1$. Robust clustered-standard errors at the level of the province in parenthesis. ^a Reports the most conservative coefficient only.

conflict intensity on the civic engagement to lose significance at a 90% confidence interval, distance to the parallel needs to influence people's civic engagement by 0.18 standard deviations through a channel other than conflict intensity and the controls. This is about half of the total effect, so it would require a massive violation for the effect to lose its statistical significance.³²

The reliance on responses to the WVS as the principal outcome variable in a country with a single-party system that encourages state-controlled mobilization is an additional source of concern due to social desirability bias (SDB). While the mere presence of SDB does not affect the results, if SDB was greater for those who lived in a heavily-affected province compared to those who lived in unaffected provinces, then the findings could be the result of these patterns. In a recent meta-analysis, however, Blair et al. demonstrate that sensitivity biases “are typically smaller than 10 percentage points and in some domains are approximately zero” (70), although it might jump to 24 point in some domains. Appendix T shows that the findings of this paper would remain statistically significant even in the presence of an extreme level of SDB.

Exploring the Persistence Mechanism. I empirically explore whether the increase in civic engagement after experiencing an intense conflict is associated with *persistence within individuals*, *community-wide transmission*, or both. As argued in the theoretical section, not only may wartime violence have a strong impact on individuals through trauma within individuals and immediate family socialization but also through broader soci-

etal and community-wide experiences. Even though scholars widely acknowledge that the legacy of violence may work through these two pathways, there has been little effort to provide empirical evidence for them (17).

While I acknowledge that the subsequent analyses depart from the identification strategy outlined throughout the manuscript, respondents' migration history from the survey may provide suggestive evidence that separates the two pathways of conflict legacies. Of the 875 individuals that provide a place of residence before 1975, 868 also provide a province of residence in 2001. These 868 respondents can be matched to the province-level bombing data. From these, 123 respondents, or 14.1% of the sample with valid responses on both questions, changed their province of residence between 1975 and 2001. I use the bombing data linked to their historical residence and to their current residence to explore whether the place of post-war residence has an independent effect compared to the effect of the place of pre-war residence. In other words, do migrant respondents behave following the conflict intensity in their pre-1975 province of residence or, alternatively, their behavior resembles what we would expect for the intensity of the conflict in their post-1975 province of residence? Though none of the models can offer a valid causal estimate of the historical effect because they condition on a post-treatment variable—the post-war place of residence—they do provide us with a *rare* estimate of the effects of bombing on current civic engagement through their post-conflict context.

Table 4 reports the results from regressing civic engagement on the value of bombing in the postwar province of residence (1990-2001) minus the bombing in the wartime province of residence (pre-1975). After adjusting for the baseline bombing intensity in the wartime province of residence, these specifications capture the impact of deviations in the variable of bombing due to migration—the value of 1990-2001 periods with respect to the pre-1975-on respondents' level of civic engagement net of the effect of the bombing in the province of residence in the pre-1975 period. To keep the consistency across specifications, both coefficients are also estimated using the instrument of the distance to the 17th parallel and the difference in distance to the 17th parallel between the province of residence before 1975 and 2001, respectively. The results show an independent effect of exposure to bombing in the *wartime* province of residence—even after adjusting for postwar experiences. The size of the effects is statistically significant and similar to the average effect reported in Table 1.

The IV models also reveal a substantively significant effect of postwar experiences. Though less reliable, the coefficients suggest that the effect of the bombing in the province of residence after the war is about two times greater than the effect of residing in that province only during the war. While I consider this evidence as suggestive but in no way conclusive, it does point out a twofold process. On the one hand, wartime experiences generate an impact that persists irrespective of a postwar environment. This speaks to how exposure to wartime violence directly shapes individuals. On the other hand, postwar experiences generate an impact that goes beyond the effect of being directly exposed to the conflict. This speaks to how post-wartime context directly shapes individuals even in the absence of within-individual experiences. These results show that wartime and post-wartime experiences jointly shape long-term civic engagement.

³²The standardized coefficient of the first stage with controls is −0.38.

Table 4. The Effect of Wartime and Post-wartime Experiences

	OLS	Civic Engagement (log)		
		OLS	IV	IV
Bombs, per km^2	0.08**	0.12**	0.16**	0.29**
(log)(pre-1975)	(0.01)	(0.02)	(0.04)	(0.04)
Δ Bombs, per km^2	0.003	0.04	0.33*	0.47**
(log) (1975-2001)	(0.03)	(0.05)	(0.20)	(0.19)
Controls?	N	Y	N	Y
Observations	868	857	868	857
Provinces	49	48	49	48

**p<0.05; *p<0.1. Individual controls: age, female, and education. Geographic controls: population density of the province in 1960 (log), average precipitation, average temperature, south, latitude. Each geographic control includes its value in the pre-1975 province of residence and its value in 2001 minus its pre-1975 value. Instrumental variables: *distance to the 17th parallel, pre-1975 and its value in 2001 minus its value before 1975*. Province-level heteroskedastic clustered-standard errors in parenthesis. Constants and controls are omitted here. Appendix W reports the full models.

Discussion and conclusion

This paper shows evidence that exposure to war increases civic engagement after more than a quarter of a century since the end of the conflict. Using bombing data from the Vietnam War and a representative public opinion survey conducted in 2001, I find a positive association between having lived in a heavily bombed province during the war and participation in social organizations in 2001. I also report a positive impact of conflict exposure on holding participatory, expressive values.

To deal with the non-random distribution of the conflict, the empirical analysis exploits the arbitrarily drawn North-South Vietnamese border, and implements a number of robustness checks and sensitivity analyses that include: (1) using an IV regression framework; (2) using different outcome measures; (3) excluding subsamples of extreme observations; (4) accounting for non-random attrition due to deaths and migrants; (5) relaxing the exclusion restriction assumption; and, (6) assuming a high level of SDB. In addition, I report some suggestive evidence showing that the main association is due to both *wartime* experiences and *post-wartime* experiences.

These findings contribute to the literature of the micro-level consequences of war, and to the understanding of the historical sources of political behavior in general. Adding knowledge to a growing literature (15), the results from the Vietnam War show that the association between war exposure and civic engagement: (1) persists over long periods of time, at least, 25 years after conflict ended; (2) is causal; (3) generalizes to distinct types of wars such as interstate or internationalized wars, which resemble more the current Syrian war, (4) generalizes to postwar institutional environments that constrain civic engagement such as authoritarian regimes, and (5) is due to both *wartime* experiences and *post-wartime* experiences.

Further, the impact of having experienced the Vietnam War is about three–0.30 standardized effect in the OLS full model—and five times–0.56 standardized effect in the IV full model—greater than Bauer et al.’s average standardized effect (15). While there could be different interpretations of this discrepancy of coefficients, one could argue that the larger coefficients could be a result of two factors: (a) the long-term perspective and (b) the type of war.

First, Bauer et al. report an increasing relationship be-

tween the magnitude of the effect of conflict experiences on cooperation and the time between the end of the conflict and the timing of each study (15). Even though their longest-term study is 12 years, their evidence suggests that the effect of conflict exposure increases over time. Following this logic, it is reasonable to expect that the impact of conflict exposure after more than 25 years later would be several times greater than that found in the average study that measures outcomes between 2 and 8 years after the conflict. Moreover, I also find that both wartime and post-wartime experiences have unique and independent effects on postwar civic engagement. If the postwar context has its independent consequences for civic engagement, it is not surprising to see that the effects of war become greater as time goes by through its consolidation and enhancement in the postwar environment. Future research should develop postwar panel measures of civic engagement in the long-term to unpack this enhancement mechanism.

Second, the type of war—domestic versus interstate or internationalized war—could also account for the discrepancy in the magnitude of effects. According to Bauer et al., parochial (in-group) altruism is the most likely hypothesis to explain social cooperation (15). Their logic, however, fits well with civil wars but less so for interstate wars. In civil wars, wartime violence comes from actors or groups with whom victims will have to co-exist in the postwar setting. Those who were more exposed to the conflict might increase their participation with, and cooperation towards, members of one’s village or identity group; but not toward out-group members. Thus, the social heterogeneity of the postwar setting might limit the increases of cooperation among the survivors. Unlike civil wars, violence in interstate, or internationalized, conflicts often comes from foreign actors. As those more heavily exposed to violence will not have to co-exist with the perpetrators of violence in the postwar social environment, conflict experiences are more likely to influence generalized (non-parochial) preferences toward participation in interstate, or internationalized, wars. Thus, it is reasonable to find a larger effect of violence in Vietnam compared to earlier-studied domestic conflicts.

These findings also contribute to our knowledge of the social, political, and economic effects of the Vietnam War. In the short-term, the U.S. bombings had significant effects on the security environment of bombed areas, weakened local institutions, and enhanced communist civic engagement, during the peak of the war (1969–1973) (60). In the long-run, the bombings had no effects on Vietnamese regional differences in economic development (20). This paper adds to this literature by showing that those who lived in high-conflict areas more likely to engage in civic organizations and hold more participatory values, at least, 26 years later.

Nevertheless, we should acknowledge that the implications of an increased civic engagement in Vietnam is an open question. According to the classic civil society model developed in Tocqueville’s *Democracy in America*, civic engagement supposedly nurtures interpersonal, communication, and organizational skills, and broadens the perspectives of those who engage in them. All together lays the ground for developing a democratic political culture. While one could imagine that civic engagement in a Communist single-party state might not lead to the same experiential learning, leading contemporary scholars have argued that these deep social and political implications of civic life take root even in countries where

democracy is absent and freedom limited (71). While this question lies outside the scope of this project, I encourage future researchers to study whether the consequences of civic engagement suggested in Tocqueville's model generalize to that observed in postwar contexts and, especially, if these positive effects depend on the postwar institutions.

Scholars should strive to combine exogenous variation in conflict exposure with survey data to explore the long-term micro-level consequences of war on preferences. A next step in this agenda is to link the micro-level effects of war to macro-political outcomes, including the maintenance of peace, changes toward democratization, public policies, and the reduction of social and political divisions.

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