Chapter 5

Micro-level Effects of Trauma

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Introduction

The purpose of this dissertation is to investigate the relationship between wartime traumatic experiences and post-conflict social and political life. How is social capital rebuilt in the wake of a civil war? In Chapter Two, I identify three dimensions of social and political life that are the focus of the dissertation: political participation, political polarization, and social trust.

Also in Chapter Two, I propose five mechanisms through which wartime traumatic experiences can affect these dimensions of post-conflict social and political life: psychological mechanisms, risk mechanisms, social mechanisms, moral outrage, and exhaustion. Some of these mechanisms are indeterminate in that they could be paths through which traumatic experiences both increase and decrease social and political participation, depending on the individual and circumstances involved. Psychological mechanisms, for example, include Post-Traumatic Stress Disorder, which has been shown to be related to behaviors associated with lower social capital, and Post-Traumatic Growth, a process by which trauma leads to personal growth that may in turn lead to behaviors associated with higher social capital.

The social and moral outrage mechanisms are both likely to lead to increased political participation in post-conflict social and political life. Social mechanisms focus on the way interaction with others in the community can affect the impact traumatic experiences have on the victim's post-conflict social and political life. Social mechanisms to increased participation can include enclave formation, community empowerment, and solidarity rewards. Moral outrage mechanisms focus on the need to respond to a traumatic experience, whether through revenge or through a transitional justice process.

As these mechanisms suggest, the seemingly optimistic prediction of increased participation is at least partially offset by the accompanying likelihood that, depending on the setting, wartime traumatic experiences are also likely to lead to increased political polarization and decreased social trust. The remainder of Chapter Two and Chapter Three clarify the scope conditions for this project and show why post-conflict Aceh is a setting in which such effects can be expected.

In this chapter, I test the relationship between wartime trauma and post-conflict political life using survey data collected between February and July 2007 from more than 1,750 household interviews in Aceh and its neighboring province, North Sumatra. The surveys, which I helped to design and implement, were part of joint project by the United Nations Development Project

(UNDP) and the International Organization for Migration (IOM) designed to assess the living conditions of current and former conflict-affected internally displaced people (IDPs). The data include a variety of measures of participation in social and political life as well as measures of political preferences and trust. They also include a 43-item checklist of traumatic events experienced during the conflict, from which I construct a traumatic events index used to measure the level of trauma experienced by a household.

To preview the results presented here, I find evidence across a range of measures and model specifications that higher levels of wartime trauma are consistently correlated with higher levels of post-conflict political participation. However, consistent with my expectations, I also find even more convincing evidence across a range of measures and model specifications that higher levels of wartime trauma are also correlated with lower levels of trust and more political polarization. I conclude with a discussion of the implications of these findings for ideas about how to structure a post-conflict peacebuilding program in order to take advantage of the motivation to participate without replicating the kind of divisive participation that is likely to have characterized the conflict itself.

Hypotheses

Household-level data are used in this chapter to test a similar set of hypotheses to those tested with macro-level data in Chapter 4. There are two main advantages to using the household-level data. First, they are much more detailed. For example, the traumatic items checklist used to measure the level of trauma a household experienced during the conflict includes 43 yes-no questions about specific kinds of traumatic experiences that are known to have occurred in various places during the war in Aceh. Similarly detailed data are available for other items of interest. This kind of detail allows a level of precision in measuring the impact these traumatic events have on participation, polarization, and trust that is not available in the macro-level analysis.

Second, the household-level data help us understand the environment in which the macro-level effects occur. If wartime trauma is connected to non-bridging social capital at the household level in the post-conflict setting, it is likely to be a resource on which political entrepreneurs can draw for mobilization along the lines of cleavage that defined the war, meaning it is a potential threat to the long-term success of the peacebuilding process. If trauma doesn't have an effect at

the household-level, it is unlikely to be a fertile source for mobilization by such political entrepreneurs. While any process of mobilization is surely endogenous in that successful political entrepreneurs not only take advantage of, but create the conditions for their success, their task is likely to be much easier if the conditions pre-exist their efforts.

Following the logic outlined in Chapter 2, three hypotheses are tested in this chapter:

H1: Household respondents who report experiencing higher levels of wartime trauma will report higher levels of participation in post-conflict political life.

H2: Household respondents who report experiencing higher levels of wartime trauma will report higher levels of political polarization in post-conflict political life.

H3: Household respondents who report experiencing higher levels of wartime trauma will demonstrate lower levels of social trust.

Data

The data used in this paper (hereafter called the UNDP/IOM data) were collected in Aceh and its neighboring province, North Sumatra, by the UNDP and IOM in the latter two phases of a three phase IDP assessment project in February and April, 2007. The first phase of the assessment involved identifying as many IDP settlement sites as possible. In this project, an IDP settlement site was identified as being a location in which resided: (a) people who were displaced by the conflict and have not returned; or (b) people who were displaced by the conflict and returned after the signing of the MoU on August 15, 2005. This was accomplished first through discussions with more than 150 different governmental and non-governmental organizations active in IDP and post-conflict issues in the province. There is little coordination between most of these agencies, and this initial effort was designed to get as broad a picture as possible of each one's perception of the overall situation. Next, field visits were conducted to 250 sites identified during these discussions as having one or both of the two kinds of IDPs described above. These sites were randomly selected from 400 that were identified during the initial conversations with key provincial-level stakeholders. Village heads were asked for a count of the number of each type of IDP household currently located in the village. In 222 of the 250 field visits, of one or both of the two types was confirmed, while in 28 cases, it was learned that there were no households that matched either criteria. The 222 villages were then labeled according to whether

they had IDPs of the first type (not yet returned), the second type (returned since the MoU), or a combination of the two.

Fifty survey sites for the second phase of the assessment were randomly selected from the 222 at which it had been confirmed in Phase 1 that there were IDPs. The selection of these 50 sites was first stratified based on province and IDP type present. Fourteen villages were selected from North Sumatra, the province that borders Aceh to the south and the place to which many IDPs, particularly non-Acehnese, fled. It is worth highlighting that, by definition, these villages consisted exclusively of the first type of IDPs, those who had not yet returned. Of the 36 villages selected in Aceh, 12 were identified as having IDPs who had not yet returned, 7 as having IDPs who had returned, and 17 as having a mixture of the two. Field teams of two enumerators then visited the sites and after collecting a list of qualifying households from the village head and/or IDP community leader, randomly selected 24 households to be interviewed. An actual interview subject was then selected randomly from each household such that there would be an equal number of male and female respondents, all of whom would be older than 17 years of age.

The third and final phase of the assessment focused on sites from which these IDPs originated. Twenty four villages were selected across 3 districts in Aceh. The goal in selecting these villages was to find 12 to which IDPs had mostly returned and another 12 to which IDPs had mostly not returned.[2] In each village visited, enumerators asked the village head for a list of all the households that either had never been displaced or, if they had been displaced, had returned prior to the signing of the MOU. Selection of a primary respondent from each household was then done in the same manner as it was done in Phase 2. Approximately half of the Phase 3 respondents reported having been displaced during the conflict.

The surveys used in Phases 2 and 3 of the assessment were not identical, but included many questions in common. This analysis uses a dataset that is made up of a combination of the Phase 2 and Phase 3 data and includes a total of 1752 observations.

Missing Data

[2] In the end, some of the villages visited were not on the list generated by this process. In some cases this was because the named home of origin could not be located. Sometimes this was because of an ongoing process of "pemekaran", or blossoming, by which administrative units from the province to the sub-village are dividing and creating new units with new names. In at least one case, the enumeration team was told when they arrived in a listed village that no one from that village had been displaced. When a destination village could not be located, a nearby village was selected as a substitute.

In some of the analyses in this paper, the traditional approach of listwise deletion for observations for which there is a missing value results in a significant number of observations being lost. This is especially the case when I include control variables, since only one variable must have missing data for an observation to be dropped. As King, Honaker et al (2001) discuss, listwise deletion is both inefficient and bias-inducing, except in the rare cases where the missingness is completely random (MCAR). That is, if there is any information in the data that could predict whether or not an observation of a particular variable will be missing or not, then estimates obtained through listwise deletion are potentially biased.

Multiple imputation is almost uniformly an improvement on listwise deletion. It is more efficient because observations that would otherwise be dropped are not dropped. In addition, it is unbiased both if the missingness is completely random and if the missingness is related to any of the other variables in the data (MAR).[3] The procedure relies on the distribution of the observed data across all variables to predict a distribution of values on the missing data. Its effectiveness is therefore improved by including in the process as many predictors of missingness as possible. I selected approximately 190 of the more than 700 indicators in the complete dataset on which this research is based for inclusion in the imputation process. The multiple imputation estimates presented in this paper are therefore based on a total of 5 versions of the UNDP/IOM data that have a complete 1752 observations for nearly all variables.[4]

Dependent Variables

I use five indicators from the UNDP/IOM data for political participation, four to reflect political polarization, and four to indicate trust in others. My conceptualization of participation in civic life focuses primarily on associational, as opposed to quotidian, civic engagement, the type that Varshney (2002) argues holds the most potential to deter ethnic violence. That is, four of the five participation indicators measure household-level participation in specific community social or political activities. The exception is an indicator of the number of recent elections in which the

[3] See King et al (2001) for a detailed discussion of this. The only circumstance under which multiple imputation produces biased estimates is when the missingness is nonignorable (NI). This occurs when the missingness is a function of the value of the missing data *and* the values of that missing data cannot be predicted by other variables included in the imputation process. In such cases, both listwise deletion and multiple imputation produce biased estimates.

[4] This was done using the R package *Amelia II*, an updated version of the *Amelia* package described in King et al (2001).

respondent says s/he voted (*vote*). The vote indicator counts from 0 to 2 of the number of the following questions to which the respondent answered 'yes':

- Did you vote in the latest village head election?
- Did you vote in the provincial elections for governor and district head in 2006?

The second political participation indicator (*meetings*) is based on the answer to the question:

- How often do you attend meetings in your current location?[5]

Responses to this indicator range from 1-5, where 1 indicates not at all and 5 indicates more than 5 times per month.

I draw three outcome indicators from a list of 12 questions in the survey about participation in various community organizations. The first (*leader*) indicates whether a person says that a member of his/her household participates in "government founded groups or institutions such as *Rukun Tetangga (RT), Rukun Warga (RW), adat* institutions or hamlet groups". The wording implies that respondents who answer "yes" are involved as leaders at the local level. Each group is a government sanctioned administrative unit below the village level, led by locals but usually subject to some oversight by the village head, who is in turn subject to oversight by higher levels in the administrative structure. The smallest unit is the RT, which usually consists of about 40 households and is sometimes roughly translated as a neighborhood watch group. Adat institutions are traditional inter and intra-village consultation and conflict resolution mechanisms.

The next indicator of participation is a dichotomous variable taking the value 1 if a respondent says that a member of his/her household participates in a "community organization such as a political party" (*party*). Finally, I created an index of community participation by counting the total number of questions about community organizations to which a respondent answered that

[5] This was the exact wording used in Phase 3 of the survey. The Phase 2 question was confusing in that it was (unsuccessfully) designed to refer to the current place of displacement for those who had not yet returned and the most recent place of displacement for those who had already returned. Feedback from the enumerators made clear that this was widely misunderstood among those who had returned. Since we do not know which Phase 2 respondents among those who had returned referred to their most recent place of displacement and which referred to their current location, I changed the responses of all Phase 2 respondents who had returned to missing and imputed their values using the procedure described above. Recall this approach is consistent with the fact that the situation described here makes the missingness I have created MAR and that multiple imputation estimates are unbiased in cases of MAR.

someone in the household does currently participate (*comorg*). This index could in theory range from 0 to 12, but in fact ranges only from 0 to 9.

The four indicators of political polarization are generated from answers to the following four survey questions:

- Do you think people with a pro-GAM (pro-NKRI) background around here would vote for a person with a pro-NKRI (pro-GAM) background if he were standing for District Head?
- Would you vote for a person with a pro-NKRI (pro-GAM) background if he were standing for District Head?

The term NKRI (*Negara Kesatuan Republik Indonesia*), translated as Unitary State of the Republic of Indonesia, is a somewhat provocative way in Aceh of referring to the state. In the survey, respondents could answer yes, no, or depends to each of these questions. For purpose of this analysis, I have coded as a 1 those who answer yes or depends and as 0 those who answer no.

Analyses using the first set of questions – those about the expectations of others' voting preferences – are done using responses to the questions as asked. For example, if a respondent thinks that others with a pro-NKRI background would vote for a candidate with a pro-GAM background (*otherNKR*), and vice versa (*otherGAM*), I interpret this to mean that the respondent perceives others of the type described in the question to be not polarized.

The questions about own voting preferences require a different approach. A respondent who would vote for neither a candidate with a pro-GAM background nor a candidate with a pro-NKRI background may not properly be described as polarized, while a respondent who would vote for a candidate of one type but not the other could be so described. I have therefore developed two indicators of own polarization using the responses to the questions about own voting preferences. The first (*polar*) takes on a value of 0 for any respondent who answers yes to one of the questions and no to the other and as 1 anyone who answers yes to both questions or no to both questions. Similar to the interpretation of the measure of others' voting practices, a decrease in the variable *polar* indicates that a respondent would vote for one kind of candidate but not the other. This coding scheme is illustrated in the figure below:

Figure 1: Coding for polarization of self

		Would you vote for a person with a pro-NKRI background?	
		Yes	No
Would you vote for a person with a pro-GAM background?	Yes	Not polarized (1)	Polarized (0)
	No	Polarized (0)	Not polarized (1)

The second polarization indicator (*polar_r*) is more restrictive in that it codes as not polarized *only* those who answer yes to both questions about own vote choice while counting as polarized everyone who says no to either or both questions. In terms of figure 1, it codes respondents who fall into the southeast cell as polarized.

Two of the four indicators of trust are built in the same way as the indicator of one's own polarization in voting. Included in the survey are questions about how much the respondent trusts people who are pro-GAM and people who are pro-NKRI.[6] Respondents who answer that they trust people who are pro-GAM and not people who are pro-NKRI or vice versa are coded as 0. Respondents who answer that they trust both people who are pro-GAM and those who are pro-NKRI or neither those who are pro-GAM nor those who are pro-NKRI are coded as 1. As with the coding for voting polarization, I show results for both a lenient (*trust*) and a restrictive (*trust_r*) version of polarization on the trust measure. In addition to counting as polarized in trust any respondent who says s/he trusts one type but not the other, the restrictive version counts as polarized in trust anyone who indicates s/he trusts neither people who are pro-GAM nor people who are pro-NKRI.

Because existing evidence suggests traumatic events can have a generally deleterious effect on trust, I also include two more general measures of trust. Taken from the World Values Survey (www.worldvaluessurvey.org), these questions are:

- Generally speaking, would you say that most people can be trusted or that you can't be too carful in dealing with people (*mosttrust*)?

[6] The survey offers 4 responses: Trust completely, Trust somewhat, Distrust somewhat, and Distrust completely. For purposes of this analysis I have consolidated these responses into trust or not trust.

- Would you say that most of the time people try to be helpful or that they are mostly just looking out for themselves (*mosthelp*)?

In each of these cases, the responses are coded as ordinal variables, with 1 indicating lower levels of trust (you can't be too careful and people are mostly looking out for themselves) and 3 indicating higher levels of trust. Respondents who choose "Other / Depends" are coded with a 2.

Independent Variable

The variable indicating traumatic experiences (*trauma*) is based on a list of 43 yes-no questions of traumatic events that were known to have occurred during the conflict. They range in seriousness from indicators of having suffered the confiscation or destruction of personal property to having suffered the murder or death of a child or spouse. The indicator of trauma used in this paper is an additive index of these 43 questions. I take this as a very rough estimate of the level of trauma a person experienced during the conflict.

Two key objections can be raised to such an index. First, it provides equal weight to each response and thus effectively equates the destruction of property with the murder of a child or spouse. In the next chapter, I explore this issue further by breaking down the type of trauma into several categories to examine in more detail how different types of trauma relate to the outcomes of interest here. The second shortcoming with the traumatic events index is that the yes-no format of the questions precludes the possibility of someone indicating they experienced a particular traumatic event more than once. The most sensible response to this shortcoming is to more clearly specify that the index gives a measure of the number of types of traumatic events a household experienced rather than the overall level of trauma experienced.

Table 1 shows the questions in the traumatic events checklist along with the percentage of respondents who indicated that that they experienced that type of trauma during the conflict. The same trauma checklist was used by the International Organization for Migration and Harvard Medical School in a psycho-social needs assessment (PNA) of conflict affected communities in Aceh (IOM/Harvard Medical School 2006; IOM/Harvard Medical School 2007). The first phase of the PNA was conducted in February 2006; the second phase in July and November 2006. For comparison purposes, Table 1 also shows the total percentage of respondents in the combined PNA reports for each question.

[TABLE 1 HERE]

By and large, the population surveyed in the UNDP/IOM assessment experienced similar traumatic events to those experienced by the population represented in the PNA surveys. Some of the noteworthy figures are that 3-4% of respondents report that a spouse or child died or was killed during the conflict, but 39% report that a friend or other family member died or was murdered. At 24%, a large minority of respondents report having been beaten, with 13% having been attacked with a knife or other weapon, 10% suffering serious physical injury, and 8% having been tortured.

Table 1 also highlights a noteworthy difference between the respondents to the UNDP/IOM and the PNA surveys; the UNDP/IOM data is weighted toward respondents who were displaced during the conflict. This is not surprising, since the UNDP/IOM data were collected as part of an IDP assessment mission, while the PNA surveys were designed to assess the conditions of people living in high conflict sub-districts and did not have a specific focus on displacement.[7] The largest differences in responses on the two surveys are on questions related to displacement. Where 57% of respondents to the UNDP/IOM survey suffered from lack of shelter due to the conflict, only 26% of PNA respondents did. Of respondents to the UNDP/IOM survey, 59% and 71% experienced forced evacuation under dangerous conditions and due to burning buildings or homes, respectively. Only 35% and 46% of respondents to the PNA survey experienced these traumatic events.

Interestingly, there is some evidence to indicate that the respondents to the UNDP/IOM survey may have experienced *fewer* of other kinds of traumatic events than respondents to the PNA surveys. Where 74% of PNA respondents experienced combat situations, 62% of UNDP/IOM respondents did; where 44% of PNA respondents witnessed physical punishment, 36% of UNDP/IOM respondents did; where 24% of PNA respondents experienced forced labor, 13% of UNDP/IOM respondents did; and where 12% of PNA respondents were tortured, 8% of UNDP/IOM respondents were. On balance, in spite of these differences, the numbers in Table 1 suggest that the UNDP/IOM data used in the analyses in this paper are reasonably representative of the experiences of many who lived in high conflict zones at the start of the war in Aceh.

[7] See pages 13-14 of the IOM/Harvard Medical School (2007) report for a discussion of the sampling methodology and its implications.

Three other findings from the PNA studies are worth noting here. First is the strong link the authors find between wartime traumatic experiences and psychological symptoms of depression and PTSD. In respondents to the second PNA survey (IOM/Harvard Medical School 2007: 54-55), for example, "[p]ersons who experienced the highest level of traumatic events have 3 to 12 times the risk of a mental health problem when compared with persons who did not suffer a traumatic event, and their risk of suffering the more severe forms of PTSD … are increased 7 to 12 times." This highlights the importance of the psychological mechanisms discussed in Chapter Two.

The second finding from the PNA studies illustrates the reach of these psychological problems. In the first PNA sample, "65% of the total sample ranked high on depression symptoms, 69% on anxiety symptoms, and 34% on PTSD symptoms" (IOM/Harvard Medical School 2006: 3). These numbers are comparable to those found in other post-conflict settings like Bosnia or Afghanistan. The comparable numbers from the second PNA sample illustrate the third noteworthy finding from the PNA studies: the resilience of the conflict victims. By the time of the second PNA survey, less than a year after the signing of the Memorandum of Agreement that ended the war (and approximately 6 months before the data for the UNDP/IOM survey were collected), only "35% of the total … sample ranked high on depression symptoms, 39% on anxiety symptoms, and 10% on PTSD symptoms" (IOM/Harvard Medical School 2007: 5).

Empirical Strategy

The basic econometric model I estimate is straightforward:

$$y_i = b_0 + b_1 x_t + b_2 c_i + u_i$$

In this formulation, y_i represents the outcome variable for individual i, x_i represents the trauma index for individual i, c_i represents a matrix of control variables discussed below, and u_i is the error term, representing the unobserved determinants of the outcome measure. For the outcome measures that are ordered (*vote, meetings, mosttrust, mosthelp*), I estimate an ordered probit model. For the index measure of community participation (*comorg*), which is closer to linear, I estimate a linear model. For the dichotomous outcome measures (*leader, party, polar, polar_r, otherNKR, otherGAM, trust, trust_r*), I estimate both logit and linear models.

Threats to Inference

This econometric model assumes that the measure of trauma is uncorrelated with the error term u_i, which is to say it is uncorrelated with unobserved determinants of participation, polarization, and trust. A key econometric issue in these analyses is the possibility that this assumption is violated because respondents or their households have been targeted for violence. If, for example, armed groups in Aceh tend to target wealthier households, a model without control variables would generate biased findings with respect to the effect of trauma if wealth is correlated with unobserved determinants of participation, polarization, or trust.[8]

The distinction between selective and indiscriminate violence in civil war is a useful framework for thinking through the possibilities and implications of this econometric issue. Violence in civil war can be distinguished "based on the level at which "guilt" (and hence targeting) is determined. Violence is selective when there is an intention to ascertain individual guilt. … selective violence entails personalized targeting, whereas indiscriminate violence implies collective targeting." Though it is often extremely difficult to distinguish the two empirically, each makes up an important part of the total amount of violence we can expect to observe in civil war. Kalyvas (2006: 161), in fact, estimates that in the region of Greece in which he collected data on violence, civilians were equally likely to be killed selectively as indiscriminately. The data used here do not provide any information on whether a respondent experienced selective or indiscriminate violence, but thinking through the implications of each helps to clarify the econometric issues at hand.

Selective Violence

How are victims targeted for selective violence? Kalyvas argues that selective violence is produced through a joint process of information gathering by political / military actors and denunciation and counter-denunciation by local actors and informants. This process generates two types of denunciations: malicious and political. The former are false denunciations in which local actors use the political / military outsiders to address local grievances that are unrelated to the conflict. The latter are "honest" denunciations of local actors who are aligned with or do the bidding of one or another of the political actors.

[8] The first best option in an observational analysis of this kind would be to find an instrument, a randomly occurring variable that is correlated with the level of trauma experienced but uncorrelated with unobserved determinants of the outcome measures. Unfortunately, this is a notoriously difficult task and I was able to find no such instruments.

Malicious denunciations could be problematic for this analysis to the extent they are correlated with unobserved determinants of participation, polarization, and trust. Assuming there is a correlation between being denounced and experiencing selective violence during the war, the problem arises if those who are denounced are also, for unobserved reasons, more or less likely to participate in social and political life, to be polarized, or to trust others. Imagine, for example, a household that is involved in a local dispute that opens them up to the possibility of denouncement. Such a household might also be more likely to profess low levels of social trust, independent of whether or not they are actually denounced. If this is true, and if this household experiences trauma as a result of having been maliciously denounced for unobserved reasons, then an effect on trust of being involved in this local conflict could be incorrectly attributed to the experience of trauma.

Though this possibility cannot be ruled out, there are several reasons to suspect it is not a crippling problem for this analysis. The first is a built-in constraint on the supply of malicious denunciations: the fear of reprisals (Kalyvas 2006: 173-206). Such reprisals could come from other locals, especially when an armed actor is not completely in control of a village. Denunciation by a villager today brings with it a credible threat of retaliation by other villagers later, when the armed actor is no longer present. Reprisals for malicious denunciations could also come from the armed actors themselves, who have incentives to ensure their selective violence conveys a perception of credible selection and is not perceived to be indiscriminate.[9]

A second reason to think malicious denunciations do not undermine the results presented here is that the questions used in this analysis to measure polarization and trust are in large part focused on the main division between GAM and the Government of Indonesia. Malicious denunciations, however, are usually connected to local disputes that predate and are unrelated to the main grievance. A U.S. Army Captain in Iraq describes them as "Jerry Springer Action … a guy stole his cow or married a girl that he wanted to marry or stole some of his land or property. He's just trying to get back by saying he's a leader of al Qaeda or something like that, and you go on a wild-goose chase with the informant" (CNN 2003). It is not likely that denunciations motivated

[9] Kalyvas' argument here is that indiscriminate violence is generally counterproductive where an armed actor has some control and, under these conditions, these armed actors would prefer to deter defection by conveying a perception of credible selection.

by this kind of dispute will be connected to unobserved determinants of polarization in attitudes toward GAM or the Government of Indonesia.

A final reason to think false denunciations will not undermine this analysis is that there was a significant, if not overwhelming ethnic dimension to the violence in Aceh, as discussed in Chapter Three. Armed actors in ethnic civil wars are not as vulnerable to being tricked by false denunciations when they do not need informers. This is the case in ethnic civil wars because ethnicity is used as a marker for targeting civilians in such wars, making informers superfluous. To the extent this is the case, controlling for ethnicity helps to limit the selection problem. The survey used here includes a question on ethnicity with 13 named ethnic group choices and an "other" write-in category. I have created dummy variables for the three most common responses in this dataset–Acehnese, Javanese, and Gayonese–and added a fourth excluded category of "Other".

Political, or "honest", denunciations could also create selection problems for this analysis. To fix ideas, imagine a strongly pro-GAM household being denounced as such to the government by another villager and subjected to violence at the government's hands. On the survey, such a household might respond in a highly polarized way, but it would be wrong to attribute all of that polarization to the traumatic experiences this household suffered. Again, while this possibility cannot be ruled out, there are several reasons to think that selection due to political denunciations should not invalidate the findings here.

One reason political denunciations may not be an insurmountable obstacle to inference is that the fear of retaliation can also deter them, just as this fear deters false denunciations. A second reason is that affiliation in civil war is a largely endogenous process. A central point of Kalyvas' (2006) analysis of violence in civil war is that alignment with one side or the other in civil war is generally quite fluid. This is even the case in many ethnic civil wars, where alignment generally believed to be entirely ascriptive (Kalyvas 2008). Siding with one or the other side in a civil war tends to be a consequence of wartime experiences more than a cause of them. As discussed in more detail in Chapter Two, for example, the moral outrage mechanism is an extremely common reason for joining an insurgency. To the extent that this mechanism is at play, trauma is the cause for alignment and subsequent denunciation and an estimate of the effect of trauma on post-conflict polarization will not be biased.

A third reason that bias-inducing effect of being "honestly" targeted for wartime violence is probably minimal is that we can control for the factors that appear to be most likely to lead to being selected for violence in the Acehnese context. A considerable amount of qualitative evidence from Aceh suggests that those most affected by the conflict were village heads, teachers, religious figures, and other community leaders in conflict-affected areas. As one former GAM combatant noted, "the person who suffered most here during the conflict was the village head because he was *sidroe guechik, dua naggroe*," a single village leader managing the affairs of two nations, two governments, each of which made claims upon him" (IOM/Harvard Medical School 2006: 45).

In addition to ethnicity, as discussed above, I control in this analysis for the possibility that households are targeted for wartime violence based on their involvement in the community. In the analyses of participation, I include a control for the pre-conflict participation in the specific type of activity under consideration. For the measures of meeting attendance, community activities, leadership, and political party, the data include a question asking respondents to indicate their involvement in that activity before the time that displacement from that respondent's home of origin occurred.[10] In the analyses of vote turnout, polarization, and trust, I control for the household's involvement in a leadership role in their pre-conflict communities.

I also control for the possibility that households are targeted based on wealth using two dummy variables that control for socio-economic status; an indicator of owning a house and an indicator of owning land to farm or a fishery prior to the time when displacement from the home of origin occurred.[11] Also included are controls for the respondents' gender (1=female, 0=male), age (years), ethnicity, and whether the respondent lived in Aceh or North Sumatra at the time of the interview. Finally, I control for education using a measure of the education level of the household head.[12]

[10] It is also worth pointing out some of the measures that are *not* included as control variables. I exclude from this analysis indicators of mechanisms through which trauma could have an effect on political life. For example, while social connectedness likely has an independent effect on political participation, it is also likely a mechanism through which trauma affects political participation. Inclusion of a measure of social connectedness would absorb some of trauma's effect on participation, biasing downward the finding regarding the relationship of interest in this paper.
[11] Separate analyses using different measures of socio-economic status, including the log of pay received, a measure of house size, and an index of the answers to three questions about whether or not the respondent possessed different kinds of assets (*assets*), did not appreciably change the results presented here.
[12] Separate analyses using a measure of the highest level of education of a member of the household did not appreciably change the results presented here.

Indiscriminate Violence

Indiscriminate violence is widespread in civil wars. Indeed, until recently most civil war violence was characterized as indiscriminate (Kalyvas 1999), and even now it is commonplace and can have long-lasting implications (Steele 2008). It is marked primarily by the collective nature of its targeting at some level above the individual or household. Indiscriminate violence would present an econometric problem for this analysis if a household is part of a group that is targeted for violence and if the members of that group are, for unobserved reasons, also more or less likely to participate in social and political life, to be polarized, or to trust others. For example, if a particular community is accurately known to be a hotbed of polarized pro-GAM sentiment, then polarization among the members of this community in the post-conflict survey could be incorrectly attributed to the community being targeted for wartime violence by the government.

However, this issue can be reasonably addressed by controlling for these unobserved supra-individual level attributes. As noted above, I control in this analysis for ethnicity, which is one observable supra-individual level attribute. The analyses presented here also use fixed effects to absorb other unobserved effects that might be common across all respondents within a particular location. This should go a considerable way toward accounting for selection problems associated with indiscriminate violence; there is evidence that targeting by state actors and rebel groups is frequently territorial in nature, meaning all those in a community are targeted for displacement (Kalyvas 2006; Steele 2008). Controlling for site accounts for such targeting. For each model here, I present two different versions of fixed effects: one including fixed effects for the enumeration site and one including fixed effects for the respondent's home of origin. In each case, I also use standard errors that are clustered on the same unit as the fixed effect.[13]

For some of the dichotomous outcome indicators (*leader, party, polar, polar_r, otherGAM, otherNKR*), there are some locations (either in enumeration site or in the home of origin) for which there is no variation on the outcome. This results in observations from these locations being dropped from the analysis, which makes multiple imputation impossible in cases in which the observations being dropped vary from one imputed dataset to the next. In such cases, the logit analyses do not include fixed effects for enumeration site or home of origin, but they still do include a dummy variable for whether the respondent is located in North Sumatra or Aceh at the

[13] One consequence of including fixed effects is that I cannot estimate the effects of any village-level attributes. This is not a problem because I am interested in outcomes at a different level of analysis.

time of the interview. In each of these cases I also present results from a linear regression model on the dichotomous outcome measure using fixed effects and clustered standard errors as discussed above.

I have made the case in this section that although the possibility exists that non-random targeting of households for violence during the war could lead to bias in the findings presented here, there are a number of reasons to suspect that such bias should not undermine our confidence in these findings. First of all, there are reasons to think that selective targeting through false denunciations are not a not the predominant source of violence during the war. Civil war dynamics, especially those with an ethnic dimension, generally constrain false denunciations, and in any case such false denunciations usually are motivated by a local dispute that is unlikely to be correlated with the measures of polarization used here, which focus on the macro-level cleavage. Second, I am able to minimize the problems associated with selective targeting through political denunciations by controlling for several of the factors that seem to have been important in determining such targeting in Aceh. Third, I am able to control for indiscriminate, community-level targeting by using fixed effects models and controlling for ethnicity. I now turn to a presentation of the findings.

Descriptive Statistics

The large majority of the respondents in the dataset were both interviewed in and indicated they were originally from villages located in one of two districts in Aceh: Aceh Timur (593 interviews in Aceh Timur, 683 originally from Aceh Timur) and Bener Meriah (583 interviews in Bener Meriah, 413 originally from Bener Meriah). Aceh Timur is on the Eastern coast of the province and its population is concentrated in the coastal areas. It was a center of support for GAM during the conflict, partly because it is predominantly Acehnese and partly because it is relatively far from Banda Aceh, the capital of Aceh. Aceh Timur was also the district most heavily affected by the conflict, according to data collected by the World Bank in Aceh (The World Bank 2006). The World Bank data draws on a variety of sources to rank the intensity of conflict experienced in each of 227 sub-districts in Aceh as high (3), medium (2), or low (1). Table 2, which gives the weighted mean of this ranking by district as well as the number of

interviews conducted in and people from each site, shows that the mean conflict intensity in Aceh Timur was 2.79, considerably higher than any other district in the province.[14]

Bener Meriah is in many ways a study in contrast to Aceh Timur. Located in the central highlands of the province, Bener Meriah is home to a relatively large number of ethnic Gayo. Though it is a mountainous region with relatively difficult terrain, and though considerable displacement occurred in Bener Meriah, it was less heavily affected by the conflict than was Aceh Timur, ranking 1.27 on the World Bank Conflict Intensity Index. Interviews were also conducted in 10 other districts, four of which are in the neighboring province of Sumatra Utara.

[TABLE 2 HERE]

All respondents indicated they were Muslim and, as shown in Table 3, half are women. The average respondent in the survey is 39.5 years old and has finished elementary school but not junior secondary school. The large majority of respondents identified themselves as Acehnese (44%), Gayo (20%), or Javanese (32%). More than 65% of respondents indicated that their primary current activity was working or clearing land, with an additional 17% indicating that working in the house was their primary current activity.

[TABLE 3 HERE]

Turning our attention to the primary dependent and independent variables used in the analysis, shown in Table 4, we see that post-conflict participation was considerably lower in the associational forms of civic engagement than it was in voting, the lone non-associational participation measure. Respondents voted in a mean of 1.55 elections out of a possible 2, whereas only 17% and 2% responded that they or someone in their household is involved in a political leadership position or a political party, respectively. The average respondent scored 1.92 on the question about their attendance at village meetings, which equates roughly to attending less than one meeting per month, and participated in an average of 2.02 out of a possible 10 types of community organizations.

Given the fact that the survey was conducted approximately one and one-half years after the signing of the Memorandum of Understanding and a few months after Aceh's first province-wide elections, respondents were surprisingly unpolarized. Recall both the measures of

[14] The mean intensity for the province is 1.81.

polarization and of polarization in trust are coded as 0 if a respondent indicates she trusts or would vote for either people associated with GAM or people associated with the government, but not both. In all measures but one, fewer than half of the respondents are coded as polarized in terms of their voting or trust according to this rule. In terms of general trust, the mean response to both questions was close to midway between the indicator of low trust and the indicator of high trust.

The mean score on the traumatic events index is 8.28 of a possible 43, which is comparable to the mean scores found in the PNA data (approximately 9.0 on PNA1 and 7.2 on PNA2).[15] The score of 4.01 on the indicator of the highest education in the household equates to finishing junior secondary school but not senior secondary school. The highest education level of the average household head is 3.19; a score of 3 indicates finishing elementary school but not junior secondary school. Finally, 67% of respondents indicated they owned land or a fishery and 87% reported owning a home before displacement from their area of origin occurred.

A final note on what is presented in Table 4 relates to the results of the imputation procedure. By and large, the means of the imputed data are quite close to the means of the data before imputation. For example, there is in most cases little to no difference between the means of the pre-imputation and post-imputation dependent variables. Attendance at community meetings shows the largest change; the mean pre-imputation score is 2.11 and the mean post-imputation score is 1.92. However, there are considerably larger differences between the pre- and post-imputation numbers for some of the pre-conflict participation measures. Where 19% of responses in the pre-imputation data indicate that someone in the household was in a political leadership position prior to the conflict, this number increases to 33% in the post-imputation data. Even more noteworthy is the change from 2% to 21% of respondents reporting someone in their household participated in a political party before the conflict in the pre- and post-imputation data, respectively. To guard against the possibility that the imputation procedure is somehow driving the results, I ran all the estimations that follow both while controlling for pre-conflict participation and while not controlling for pre-conflict participation. I report here only the results

[15] The PNA reports do not provide these figures. I calculated them based on the tables given in the two reports showing for each type of trauma the percentage of respondents who indicated they had experienced that type of trauma.

while controlling for pre-conflict participation, but there is no significant difference between the two.

[TABLE 4 HERE]

Estimations

To keep the presentation manageable, I present here only the estimates for the independent variables of interest for each outcome measure and do not discuss estimates for any of the control variables. The results are presented using a graphical representation of the point estimates of the coefficient of interest and both the 50% and 95% confidence intervals for each model estimated. Each graph shows the results from four model specifications. At the center of each horizontal line is a point representing the center of the confidence interval for that estimate. The thick part of the horizontal line represents the width of the 50% confidence interval, which extends 1 standard deviation away from the point estimate. The thinner part of the horizontal line represents the 95% confidence interval, which extends 2 standard deviations away from that point estimate. The farther the point estimate is from the dotted vertical line at 0, the larger the coefficient estimate. Where the horizontal line crosses the dotted vertical line at 0, the estimate does not reach statistical significance at that significance level.

In recognition of the fact that the sample selected for this interview is weighted heavily toward households that were displaced by the conflict, I use Aceh-level estimates of the number of people in each category (never displaced, displaced and returned, displaced and not returned) to weight the estimates accordingly.[16] I present both weighted and unweighted findings.

In the graphs that follow, the results shown for 7 of the outcome measures (*vote, meetings, comorg, trust, trust_r, mosttrust,* and *mosthelp*) are for the same four model specifications, regardless of whether the model being run is ordered probit, logit, or linear regression. These model specifications include, in order from top to bottom:

- Fixed effects for enumeration site, weighted by displacement status;
- Fixed effects for enumeration site, not weighted;
- Fixed effects for home of origin, weighted by displacement status;
- Fixed effects for home of origin, not weighted.

[16] These estimates come from data collected for a survey of villages in Aceh conducted by the World Bank in 2006 (The Kecamatan Development Program 2007).

For several of the dichotomous outcome measures (*leader*, *party*, *polar*, *polar_r*, *otherNKR*, and *otherGAM*), the four horizontal lines, from top to bottom, represent the following four models:

- Logit model, control for province of enumeration, weighted by displacement status;
- Logit model, control for province of enumeration, not weighted;
- Linear model, fixed effects for enumeration site, weighted by displacement status;
- Linear model, fixed effects for home of origin, weighted by displacement status.

Political and Social Participation

I begin by presenting the results for the estimations of trauma's effect on post-conflict participation. Figure 2 shows the estimates for a stripped down model that includes no control variables (though, as discussed above, they may include fixed effects). Figure 3 shows a fully specified model with all the control variables discussed above. Both figures show consistent and, in many cases, statistically significant positive relationships between wartime trauma and political and social participation. These findings are not inconsistent with H1. There is a clear pattern across all the outcome measures indicating that those who experienced higher levels of trauma are more likely to participate. The outcomes are statistically significant at conventional levels in nearly half of the models, and the fact that the outcomes are positive in all but one of the models strongly suggests that the relationship exists. These findings are thus consistent with previous findings in post-conflict Africa by Blattman (2008) and by Bellows and Miguel (2008) that traumatic experiences can lead to increased political participation.

The outcome measure with the most statistically significant positive relationship between traumatic events and participation is the measure capturing the number of community organizations in which someone in the respondent's household participates. This is also arguably the best indicator of the household's overall level of participation in associational civic life. Elections and, to a lesser extent, village meetings happen regardless of how many people show up. Participation in them is certainly voluntary, but there are likely to be more significant social pressures for everyone to join. In contrast to these two outcome measures, the index capturing participation in community groups includes groups that require more initiative on the part of the individual and therefore face more significant obstacles to overcoming collective action problems.

Participation in political parties is extremely low; only 2% of respondents indicate that someone in their household currently participates in such groups, suggesting that although this captures an important dimension of participation, it is a less frequently observed dimension. It is thus not surprising that we would have lower confidence that traumatic events would be correlated with increases in such participation. Participation in local leadership groups is higher; 17% of respondents indicate someone in their household participates in such groups. The findings regarding the effect of traumatic events on this type of participation are positive and, for the fully specified model, statistically significant, supporting the idea that trauma's effects on participation are more likely to be observed in groups that have a wider reach. Also consistent with this interpretation is the observation that the index of participation is the most statistically robust of outcomes on which a positive relationship with trauma is observed.

The different models for each of the five outcome measures are also generally consistent with one another. The most visible exception is between the top two and bottom two results for the political leadership and political party membership outcome measures. However, it is important to keep in mind that for these two measures the top two results use a logit model and the bottom two use a linear model, which means the coefficients themselves are not directly comparable with one another. What can be inferred is that in both cases the relationship between trauma and participation is positive.

[FIGURES 2 & 3 HERE]

Even if there is a consistently statistically significant relationship between traumatic events and different measures of participation, how substantively significant is that effect? Simulation is a convenient way to address this question.[17] Table 4 presents the results of simulations conducted to estimate the coefficients for traumatic events regressed on each of the measures of participation..[18]

[TABLE 4 HERE]

[17] The simulations are all conducted using either the Stata program *Clarify* or the R program *Zelig*

[18] For simplicity, all the simulated results are calculated with all independent variables (including the dichotomous indicators of gender and ethnicity) set at their weighted mean. The simulations also use an indicator variable for living in North Sumatra but do not use fixed effects for enumeration site or home of origin. Finally, the outcome measures that are estimated using ordered probit in the main results are estimated using linear regression for the simulations in order to make it possible to present the outcomes as means rather than as categories.

The two rightmost columns show in practical terms how variation in the level of trauma experienced is expected to impact participation. As expected, the impact is small on voting participation and meeting attendance. For example, respondents who are in the 10th percentile of the trauma index (2 traumatic incidents) are expected to participate in 1.75 elections, while those in the 90th percentile (16 traumatic incidents) are expected to participate in 1.81 elections (out of a possible 2). The effect is larger with respect to participation in local government leadership groups; 13% of those at the 10th percentile on the trauma index are expected to report that their household participates in such organizations compared to 21% of those at the 90th percentile on the trauma index, an increase of nearly 59%. The effect of trauma on the overall level of participation in community organizations is also large and even more statistically robust. At the 90th percentile of the trauma index, members of respondents' households are expected to participate in 2.97 community organizations, 21% more than is expected of households whose respondents were in the 10th percentile of traumatic events. The 95% confidence intervals for these two predictions just barely overlap, suggesting a fairly high level of confidence in the finding of higher levels of participation among those who experience more trauma.

Political Polarization and Perceptions of Others' Polarization

The findings regarding the effect of traumatic events on own polarization and perceptions of others' polarization are given in Figures 4 and 5, with Figure 4 showing coefficients on the traumatic events index for regressions without controls and Figure 5 showing the same coefficients when controls are included. As was the case with participation, there is a clear pattern; without exception across all 32 models for which coefficients are shown, the coefficient point estimates are negative, with many reaching conventional levels of statistical significance, indicating increased polarization and perceptions of others' polarization. These findings are not inconsistent with H2; they show a clear pattern indicating that those who experience more traumatic events are more polarized in terms of their post-conflict voting preferences and their perceptions of others' voting preferences. When we keep in mind the caveat that not all participation is normatively desirable, these findings serve as a corrective to the generally positive tone of the findings regarding participation.

The results show that the polarizing effect of wartime trauma on perceptions of others' current voting preferences are stronger, both in substantive terms and in terms of statistical significance,

than the effect on respondents' own current voting preferences. While it is difficult to know exactly what to make of this observation, one possible interpretation is that trauma's effect generally is not as politically polarizing on people's opinions as it is on their perceptions of others' opinions. If this is accurate, it is an interesting twist on the psychological literature on pluralistic ignorance (e.g., Prentice and Miller 1993; Van Boven 2000), which tends to show that people perceive others to behave better and hold more tolerant views than they do themselves. In this post-war context, the evidence suggests the reverse; people are generally less polarized than they perceive others to be, a situation that is at least partly a consequence of trauma. This would be consistent with the common observation in civil wars that to be moderate is to be not extreme enough. Unlike in the contexts in which the pluralistic ignorance research is conducted, the social pressure in the post-war context is to be less tolerant than in fact most people are themselves.

[FIGURES 4 & 5 HERE]

I turn now to the substantive significance of the findings regarding polarization, once again using simulations to generate expected values for each outcome at different levels of trauma. The results of the simulations are shown in Table 5.

The first noteworthy point to emphasize here is that both polarization and perceptions of others' polarization are lower than might be expected in a post-conflict setting. Under even the more restrictive definition of polarization, 62% of respondents qualify as not polarized (56% in the unweighted sample). And the number of people who think others would vote for someone across the lines of cleavage is similarly high; 62% when asked whether pro-NKR people would vote pro-GAM (62% in the unweighted sample); 59% when asked whether pro-GAM people would vote pro-NKR (59% in the unweighted).

The effect of trauma on these findings is in the expected direction. Those in the 90th percentile on the traumatic events index are more likely to be polarized than those in the 10th percentile and more likely to perceive others as polarized. The magnitude of the change is three percentage points in the lenient definition of own polarization and eight percentage points in the more restrictive definition of own polarization. The effect of trauma on perceptions of others' polarization is more striking. Respondents in the 90th percentile on the traumatic events index are 19 percentage points less likely to say pro-NKR people would vote pro-GAM and 187

percentage points less likely to say pro-GAM people would vote pro-NKR when compared to respondents in the 10th percentile of the traumatic events index.

[TABLE 5 HERE]

Trust

Figures 6 and 7 show that wartime trauma has a consistently negative effect on post-conflict trust. Not surprisingly, the results are more robust in terms of statistical significance in questions that ask specifically about trust of people who are pro-GAM and pro-NKRI than they are in the general trust questions. These findings are not inconsistent with H3; they show a clear pattern indicating that those who experience more traumatic events are less trusting and more polarized in terms of their trust in others than those who experience fewer traumatic events.

Existing research on trust suggests an interesting possible interpretation of the difference between the findings regarding the general trust measures and those regarding the measures specific to people who are aligned with a side in the conflict. Glaeser, Laibson, et al (2000) find experimental evidence to suggest that the general trust questions used in this research actually measure *trustworthiness* rather than the level of trust people have in others. While we must of course be careful about assuming that experimental findings based on research among college students applies to people living in post-conflict Aceh, if this is true it suggests that wartime trauma is not only affecting one's trust in others who are aligned with a side, but also affecting one's own trustworthiness.

[FIGURES 6 & 7 HERE]

Finally, I turn to the substantive significance of the findings regarding trust. These numbers parallel the findings regarding polarization. General measures of trust are higher than might be expected in a post-conflict setting. Under the more restrictive definition of trust, 56% of respondents qualify as not polarized, while under the less restrictive version 80% so qualify. The effect of trauma on these findings is in the expected direction–those in the 90th percentile on the traumatic events index are more likely to be polarized on trust than those in the 10th percentile by 11 percentage points in the lenient definition of trust and 17 percentage points in the more restrictive definition. The effect of trauma on the general measures of trust is not as large, but is

in the same direction. The change from an average score of 2.13 to 2.42 on the question about whether most people are willing to help represents a 12% change.

[TABLE 6 HERE]

Conclusions

I focus in this paper on the relationship between traumatic events experienced during war and the nature of political and social life after the war, pursuing a line of research that has been largely ignored in both the post-conflict and the social capital literatures. Two main findings emerge. The first finding is consistent with limited existing evidence from other post-conflict settings. Participation in post-conflict social and political life is higher among those who experience more wartime trauma than it is among those who experience less wartime trauma. On its surface, this seems a somewhat hopeful finding in terms of the prospects for building a functional and constructive post-conflict social and political life.

However, the second finding cast the first finding in a different light. The second finding is that wartime trauma is also consistently correlated with increases in various measures of political polarization and decreases in measures of trust. Some such findings are stronger than others, but the consistency of the relationship across a variety of measures and model specifications strongly suggest that wartime trauma brings with it decreases in social trust and increases in political polarization and perceptions of others' polarization. As I argue in Chapter 2, high participation combined with high polarization is a recipe for anything but post-conflict reconstruction.

From a policy perspective, this paper highlights the importance of dealing with the trauma that accompanies war, as it is likely to make it easier to for spoilers to mobilize people along lines of cleavage in their effort t to undermine the peace. The finding that perceptions of others' polarization appears to be even stronger than individual polarization suggests one avenue for dealing with the effects highlighted here may be to intervene to reverse misperceptions about the extent to which it is socially acceptable to be "unpolarized."

Table 1: Traumatic Events Checklist

The following 43 questions, which constitute the traumatic events yes-no checklist, were asked of each respondent in the survey used in the analysis in this paper. They were also asked by the International Organization for Migration and Harvard Medical School in a joint psycho-social needs assessment (PNA) of conflict affected communities in Aceh (IOM/Harvard Medical School 2006; IOM/Harvard Medical School 2007). The first phase of the PNA was conducted in February 2006; the second phase conducted in July and November 2006. The questions asked were specifically adapted to represent typical forms of trauma experienced during the conflict in Aceh. Table 1 shows the mean score in the data used here as well as the combined score for the two phases of the PNA.

Did you ever experience […] event during the conflict/displacement?	Data used in this analysis* n=1,752		PNA1 + PNA2† n=1,972
	% yes	Std Dev	% yes
Combat situation (bombs, shooting, etc.)	62%	1.2%	74%
Evacuation because of burning buildings, homes, and schools or other dangerous conditions	59%	1.2%	35%
Forced evacuation under dangerous conditions	71%	1.1%	46%
Forced to hide	15%	0.9%	11%
Beating to the body	24%	1.1%	28%
Attacked with a knife or other weapon	13%	0.8%	17%
Torture (while in captivity, you received deliberate and systematic infliction of mental or physical suffering)	8%	0.7%	12%
Serious physical injury because of the conflict	10%	0.8%	11%
Witness physical punishment	36%	1.2%	44%
Publically humiliated	10%	0.7%	12%
Rape	2%	0.3%	1%
Forced to rape a member of the family	1%	0.3%	<1%
Other types of sexual abuse or sexual humiliation	3%	0.4%	3%
Murder or death of spouse	3%	0.4%	3%
Disappearance or kidnapping of spouse	5%	0.6%	2%
Murder or death of child	4%	0.5%	4%
Disappearance or kidnapping of child	4%	0.5%	2%
Murder or death of other family member or friend	39%	1.2%	38%
Disappearance or kidnapping of other family member or friend	39%	1.2%	31%
Kidnapped	5%	0.6%	4%
Held captive either by TNI/POLRI or GAM-TNA	7%	0.6%	10%
Imprisonment	3%	0.4%	3%
Forced separation from family members	8%	0.7%	8%
Forced isolation from others	6%	0.6%	6%
Confiscation or destruction of personal property	53%	1.2%	40%

Did you ever experience […] event during the conflict/displacement?	Data used in this analysis* n=1,752		PNA1 + PNA2† n=1,972
	% yes	Std Dev	% yes
Extortion or robbery	23%	1.1%	24%
Forced labor	13%	0.8%	24%
Forced to provide food or housing to either TNI/POLRI or GAM-TNA	15%	0.9%	19%
Forced to fight against either TNI/POLRI or GAM-TNA	10%	0.7%	18%
Punished for refusing to fight against either TNI/POLRI or GAM-TNA	8%	0.7%	11%
Forced to find and bury bodies	10%	0.7%	9%
Not permitted to give corpses a proper burial	4%	0.5%	4%
Forced to physically harm family member, or friend	2%	0.4%	3%
Forced to physically harm someone who is not a family member or friend	2%	0.3%	4%
Forced to destroy someone else's property, farm land, or other possessions	4%	0.5%	3%
Forced to betray family member or friend place them at risk of death or injury	3%	0.4%	5%
Forced to betray someone who is not a family member or friend, placing them at risk of death or injury	4%	0.5%	4%
Someone was forced to betray you and place you at risk of death or injury	5%	0.5%	6%
Forced to humiliate others	4%	0.5%	5%
Forced to search for a GAM member in the forest	18%	1.0%	26%
Lack of shelter due to the conflict	57%	1.2%	26%
Lack of food or water due to the conflict	76%	1.1%	77%
Ill health without access to medical care due to the conflict	65%	1.2%	61%

* Means and standard deviations are calculated on the multiply imputed data using the "mim" function in Stata.
† Combined mean scores for the two phases of the IOM/Harvard PNA.

Table 2: Interview Sites

Province	District	Weighted mean of conflict in the district	Interviews conducted in the district	Respondents identifying this district as home of origin
Aceh	Aceh Barat	1.45	0	8
	Aceh Barat Daya	1.06	0	0
	Aceh Besar	1.20	0	7
	Aceh Jaya	1.78	24	22
	Aceh Selatan	1.79	96	109
	Aceh Singkil	1.00	0	9
	Aceh Tamiang	1.17	48	7
	Aceh Tengah	1.22	24	35
	Aceh Tenggara	1.00	24	16
	Aceh Timur	2.79	593	683
	Aceh Utara	2.26	0	75
	Bener Meriah	1.27	583	413
	Bireuen	2.56	0	3
	Gayo Lues	1.43	24	20
	Lhokseumawe	na	0	6
	Nagan Raya	2.21	0	0
	Pidie	1.91	0	6
	Simeulue	1.00	0	0
Sumatra Utara	Dairi	na	24	na
	Deli Serdang	na	72	na
	Langkat	na	216	na
	Tanah Karo	na	24	na

Table 3: Respondent Demographics

	Before imputation*		**After imputation**	
Name	**N**	**Mean**	**N**	**Mean**
Gender	1752	0.50	1752	0.50
Age	1722	39.50	1752	39.53
Ethnicity	1741		1752	
◦ Aceh		0.44		0.44
◦ Gayo		0.20		0.20
◦ Jawa		0.32		0.32
Respondent's education	1687	3.25	na	na
Main activity in past month	1747			
◦ Working or clearing land		.66		na
◦ Looking for work		.06		na
◦ Working in the house		.17		na
◦ School		.01		na
◦ Retired / not working		.03		na

* na is indicated for those variables not imputed or compiled after imputation

Table 4: Dependent and Independent Variables

			Before imputation*		After imputation	
Name	**Min**	**Max**	**N**	**Mean**	**N**	**Mean**
Dependent Variables						
Participation						
Vote in recent elections	0	2	1724	1.56	1752	1.55
Attend community meetings	1	5	836	2.11	1752	1.92
In political leadership position	0	1	1731	0.17	1752	0.17
Member of political party	0	1	1716	0.02	1752	0.02
Participate in community orgs	0	10	na	na	1752	2.02
Polarization						
Polarized voting (lenient)	0	1	na	na	1752	0.62
Polarized voting (restrictive)	0	1	na	na	1752	0.56
Other pro-NKRI people polarized	0	1	1583	0.59	1752	0.59
Other pro-GAM people polarized	0	1	1570	0.61	1752	0.62
Trust						
Polarized trust (lenient)	0	1	na	na	1752	0.64
Polarized trust (restrictive)	0	1	na	na	1752	0.41
Most can be trusted	1	3	1622	1.94	1752	1.94
Most try to be helpful	1	3	1610	1.96	1752	1.96
Independent Variables						
Traumatic events index	0	40	na	na	1752	8.28
Highest education in household	1	7	na	na	1752	4.01
Education of household head	1	7	na	na	1752	3.21
Owned land to farm / fishery before displacement occurred	0	1	1620	0.72	1752	0.67
Owned house before displacement occurred	0	1	1624	0.85	1752	0.87
Attended meetings before displacement occurred	1	5	1237	2.06	1752	2.33
Participated in gvmt funded groups before displacement occurred	0	1	1453	0.19	1752	0.33
Participated in political party before displacement occurred	0	1	1415	0.02	1752	0.21
Index of community organizations before displacement occurred	0	10	na	na	1752	4.12

* na is indicated for those variables compiled after imputation

Figure 2: Coefficients for traumatic events index
Regressions of participation on trauma (no control variables)

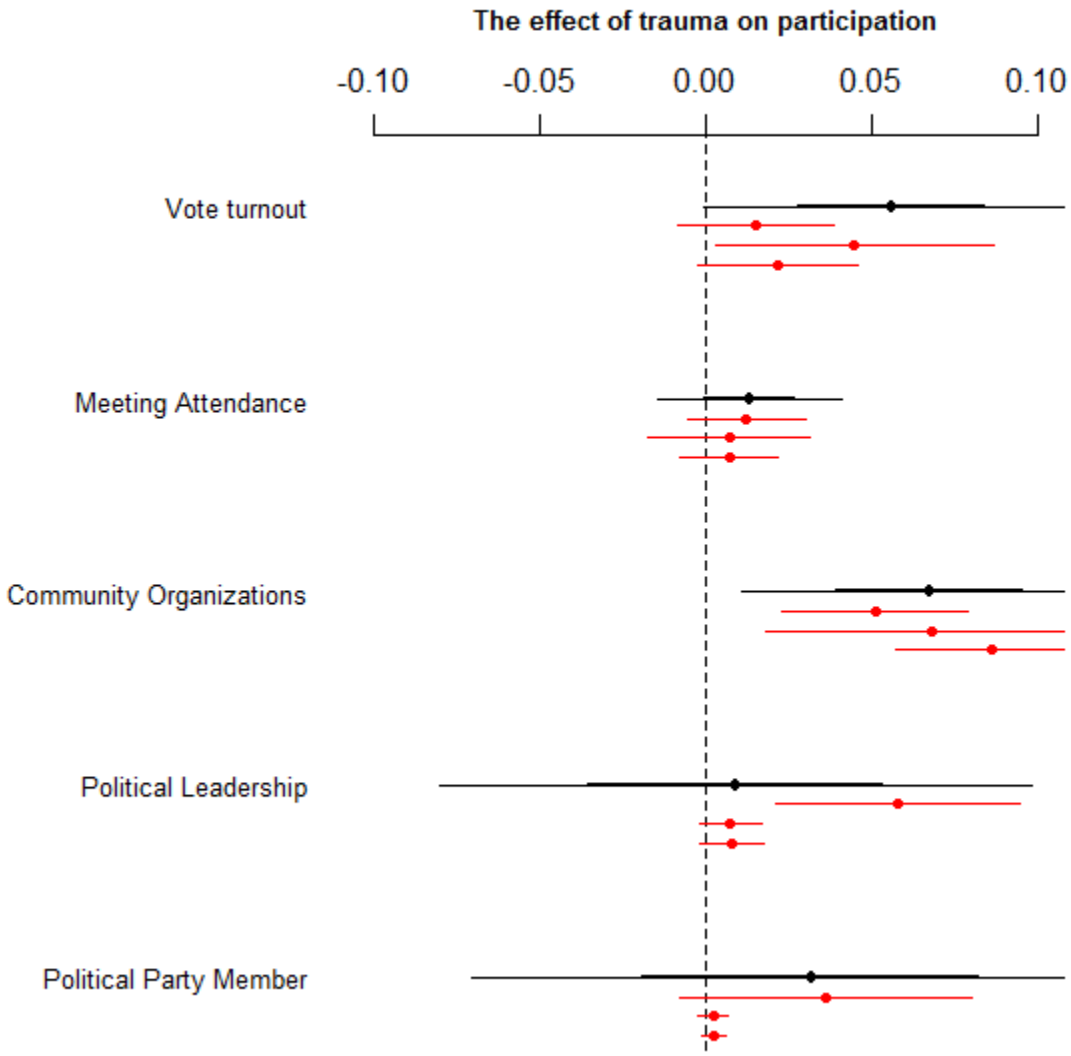


Figure 3: Coefficients for traumatic events index
Regressions of participation on trauma (including control variables)

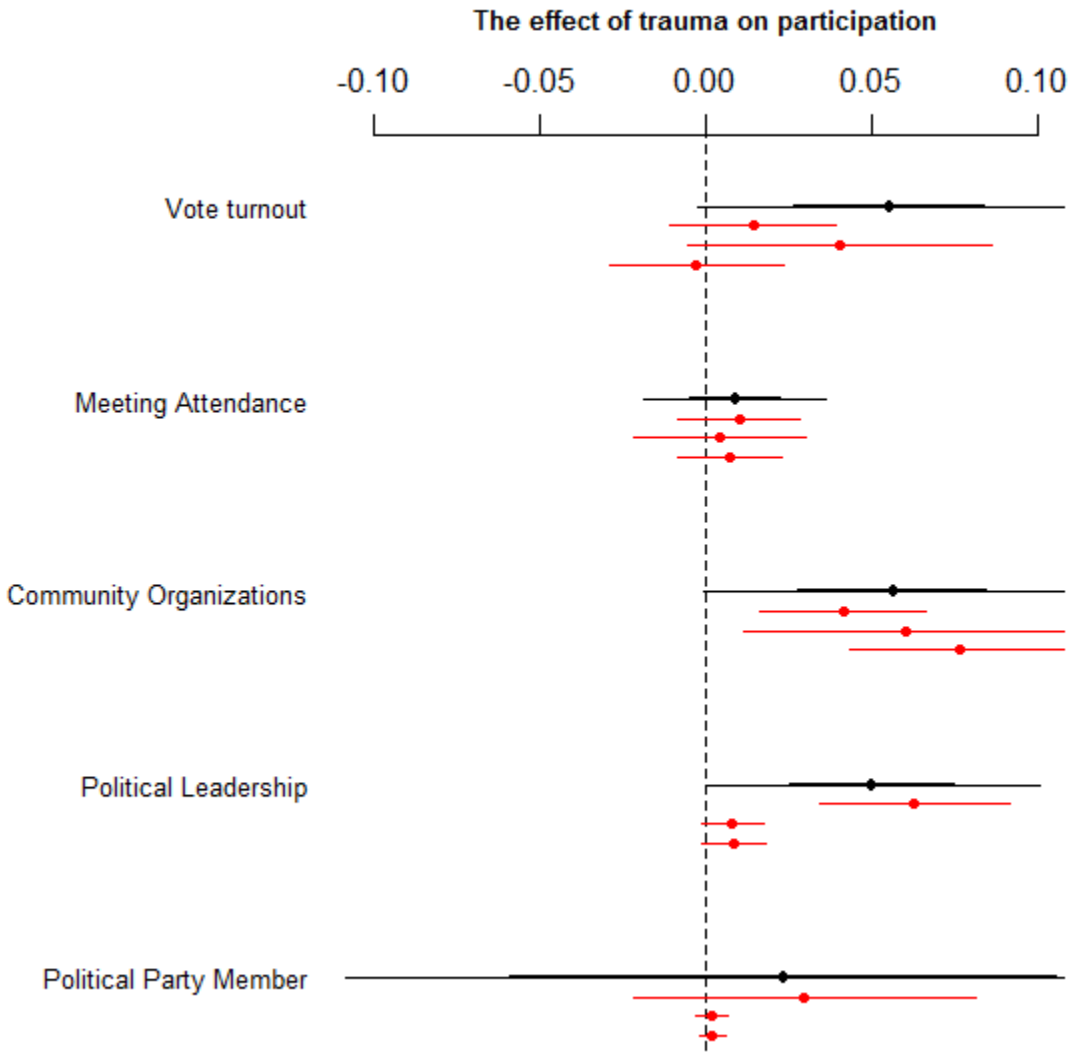


Table 4: Simulation of quantities of interest
The effect of traumatic events on participation

	10th % of trauma index (2 incidents)	90th % of trauma index (16 incidents)
Vote		
Mean	1.75	1.81
Std Error	0.03	0.03
95% CI	1.69	1.75
	1.82	1.87
Meetings		
Mean	2.09	2.16
Std Error	0.08	0.09
95% CI	1.96	2.00
	2.25	2.33
Community organizations		
Mean	2.46	2.97
Std Error	0.11	0.16
95% CI	2.26	2.65
	2.67	3.30
Political Leadership		
Mean	0.13	0.21
Std Error	0.02	0.03
95% CI	0.09	0.16
	0.18	0.26
Political Party		
Mean	0.01	0.01
Std Error	0.00	0.01
95% CI	0.00	0.00
	0.01	0.04

Figure 4: Coefficients for traumatic events index
Regressions of polarization on trauma (no control variables)

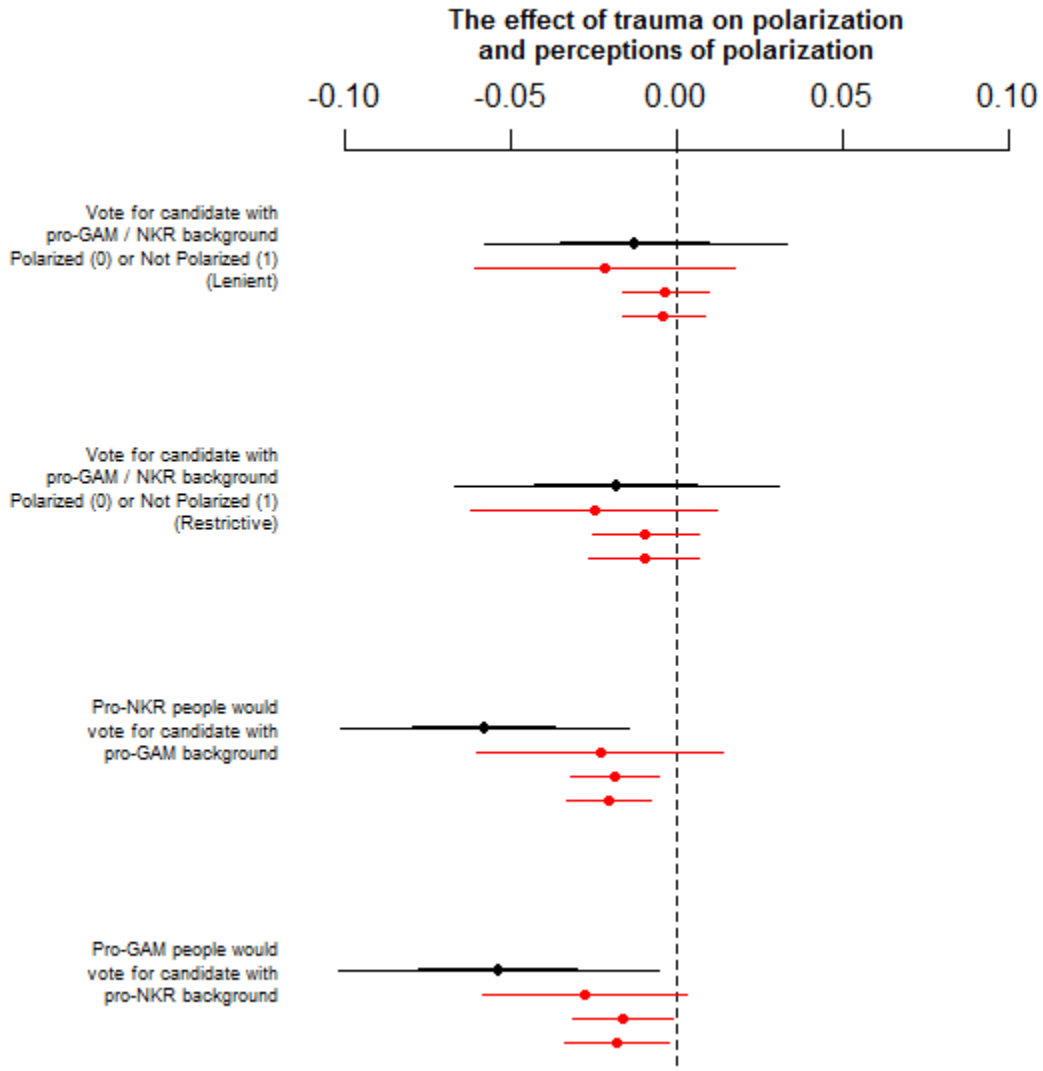


Figure 5: Coefficients for traumatic events index
Regressions of polarization on trauma (including control variables)

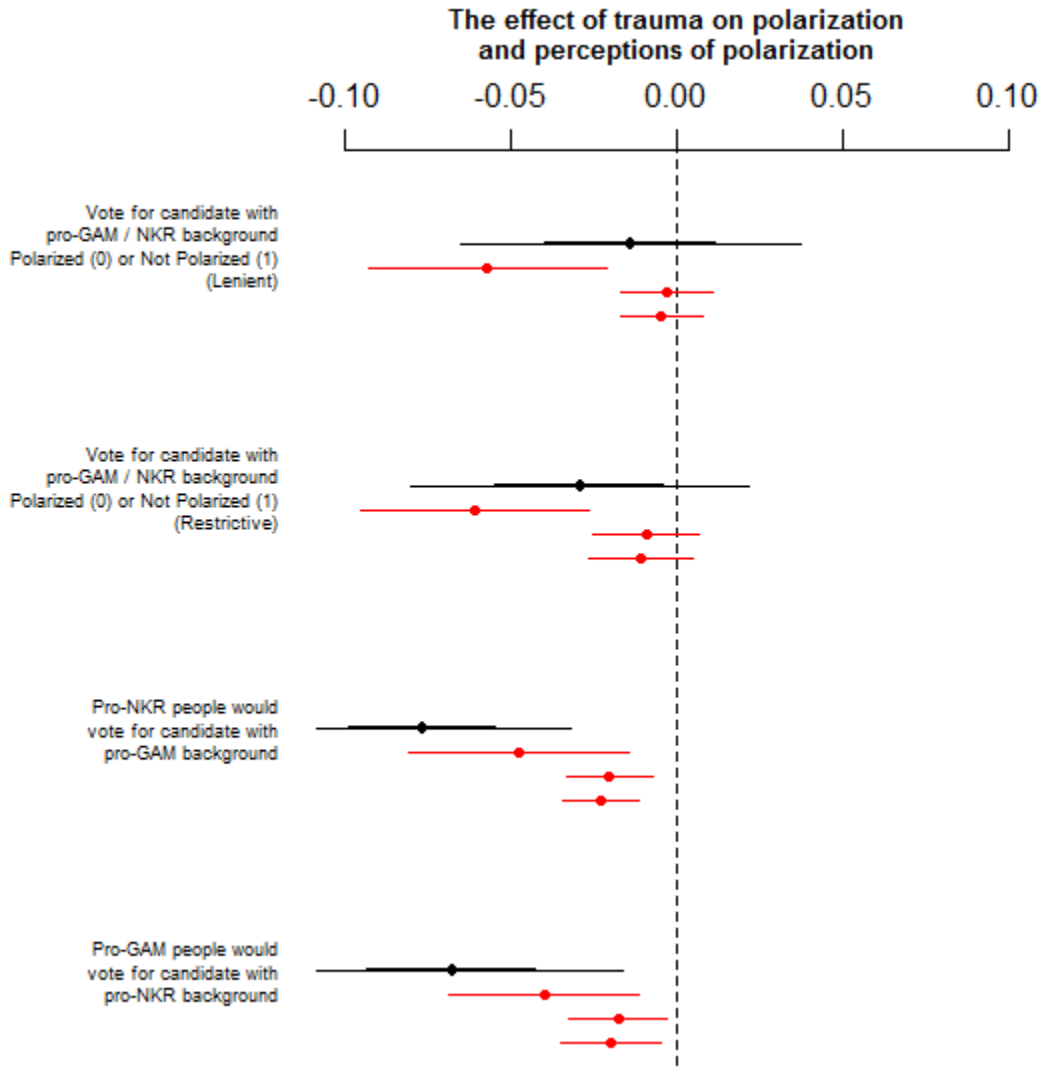


Table 5: Simulation of quantities of interest for the effect of traumatic events on polarization in politics

	Weighted mean current	10th % of trauma index	90th % of trauma index
Odds of being NOT polarized in own vote choice (lenient)			
Mean	0.70	0.72	0.69
Std Error	0.03	0.04	0.04
95% CI	0.65	0.63	0.61
	0.75	0.79	0.77
Odds of being NOT polarized in own vote choice (restrictive)			
Mean	0.62	0.66	0.58
Std Error	0.03	0.05	0.04
95% CI	0.56	0.56	0.50
	0.68	0.75	0.67
Other pro-NKR people would vote for a pro-GAM candidate			
Mean	0.62	0.71	0.52
Std Error	0.03	0.04	0.04
95% CI	0.56	0.63	0.43
	0.68	0.78	0.59
Other pro-GAM people would vote for a pro-NKR candidate			
Mean	0.59	0.67	0.49
Std Error	0.03	0.04	0.05
95% CI	0.53	0.59	0.41
	0.65	0.74	0.58

Table 6: Simulation of quantities of interest for the effect of traumatic events on trust

	Weighted mean current	10th % of trauma index	90th % of trauma index
Most can be trusted			
Mean	1.99	2.01	1.96
Std Error	0.04	0.07	0.07
95% CI	1.91	1.88	1.82
	2.07	2.15	2.11
Most try to help			
Mean	2.29	2.42	2.13
Std Error	0.04	0.04	0.06
95% CI	2.21	2.34	2.01
	2.37	2.50	2.25
Odds of being NOT polarized on trust (lenient)			
Mean	0.80	0.87	0.76
Std Error	0.02	0.02	0.02
95% CI	0.76	0.83	0.71
	0.84	0.90	0.81
Odds of being NOT polarized on trust (restrictive)			
Mean	0.56	0.63	0.46
Std Error	0.03	0.03	0.04
95% CI	0.51	0.57	0.38
	0.61	0.68	0.54

Figure 6: Coefficients for traumatic events index
Regressions of trust on trauma (no control variables)

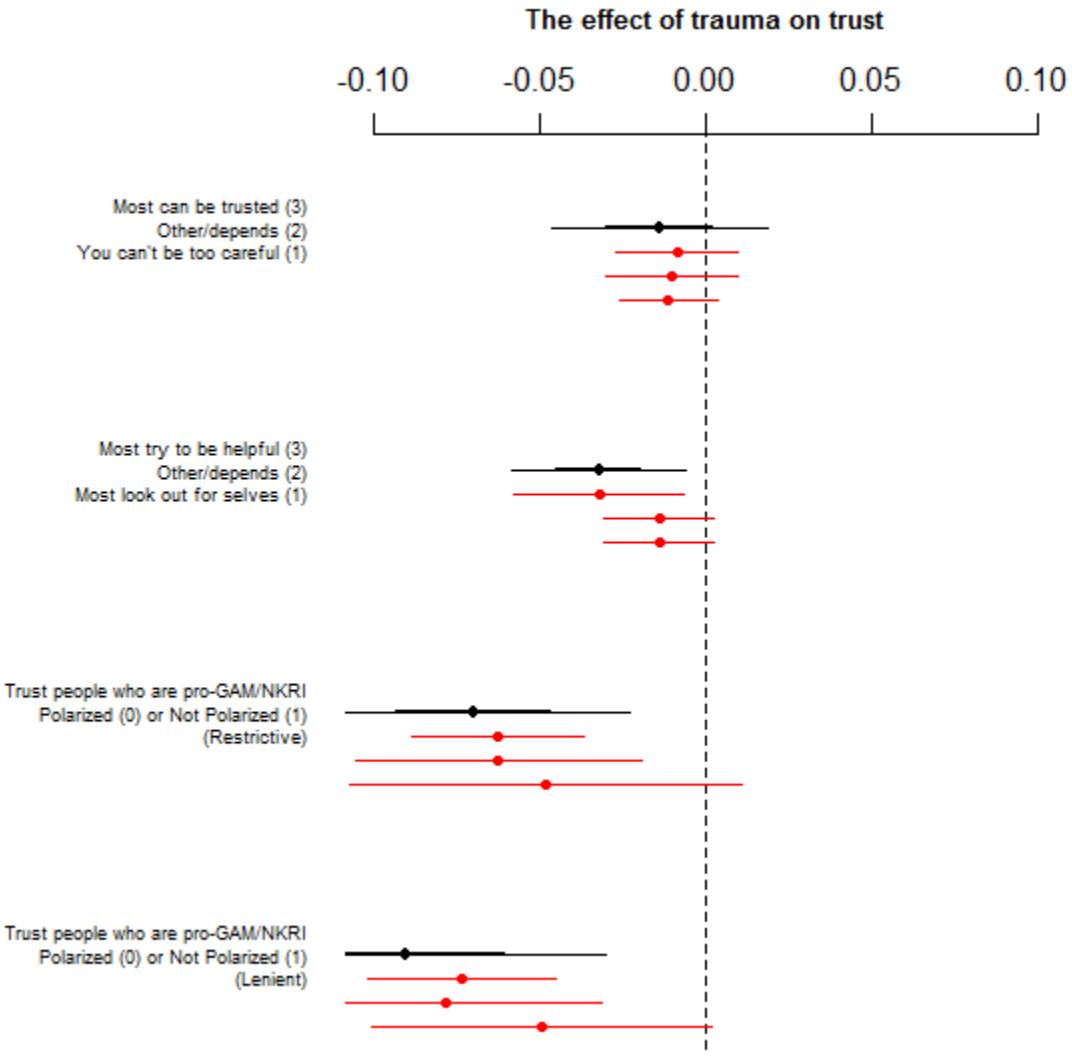
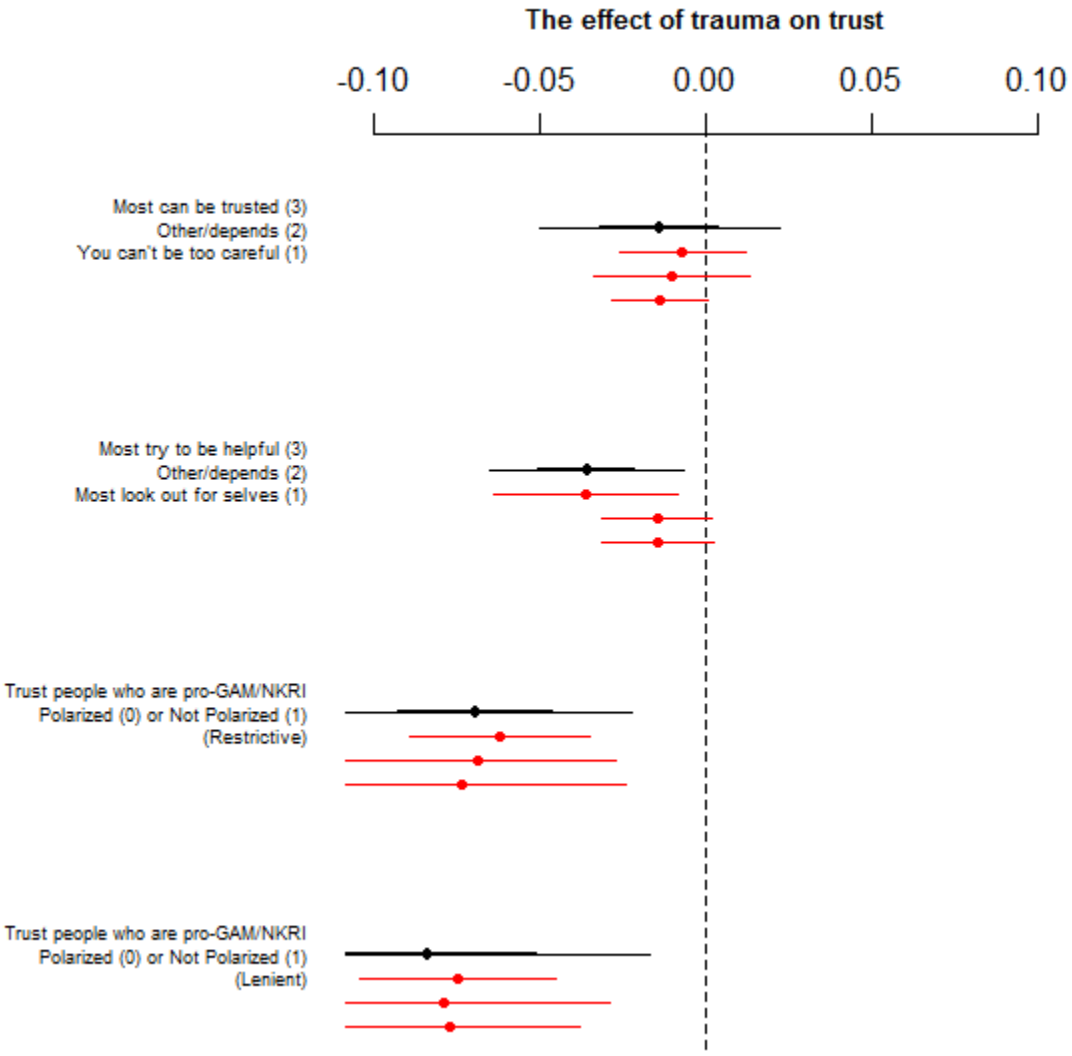


Figure 7: Coefficients for traumatic events index
Regressions of trust on trauma (including control variables)



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