

From violence to voting: War and political participation in Uganda*

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Abstract:

How do war and violence impact long-run political development? The bulk of existing theory and evidence concerns macro-level actors and processes. This paper presents evidence for a micro-level link between war and individual political engagement. I demonstrate that conscription by a Ugandan rebel group generates quasi-experimental variation in who became a combatant, and use original survey data to show that conscription leads to significantly greater political participation later in life, and that the principal channel appears to be war violence received (rather than perpetrated). Conscription and violence do not appear to affect non-political forms of community participation, however. I show that these patterns are not easily explained by models of participation based on simple rational preferences, social preferences, mobilization by elites, or information availability. Only expressive theories of participation appear consistent with the patterns observed, whereby exposure to violence augments the value a person places on the act of political expression itself.

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1. Introduction

The modern state is said to have been forged with iron and blood. Charles Tilly (1992) argued that European wars of conquest led to the creation of centralized states when rulers in need of taxes and recruits built bureaucracies and bargained with subject populations. In Africa, Jeffrey Herbst (2000) has suggested that state weakness is a product of too little warfare—international norms against redrawing state boundaries have led to weak states that control their sparsely populated peripheries in name only.

Like most accounts of state-building, however, the lines drawn from warfare to political development typically take a bird's eye view, exploring the interactions between group actors such as states, elites, and subject populations. This paper instead provides evidence for a micro-level link between warfare and individual political engagement. New survey data from a war in northern Uganda suggests that exposure to war violence leads to increased political participation among young men, most likely because exposure to violence augments the inherent value individuals place upon acts of political expression.

Uganda provides a natural, albeit tragic, testing ground for theories about the individual impacts of war. A low scale guerrilla war has plagued the north of the country for nearly twenty years. There, patterns of rebel recruitment appear to have generated exogenous variation in participation in warfare and violence. Over the past two decades tens of thousands of adolescent and young adult males have been forcibly recruited, or abducted, by the Lord's Resistance Army (LRA). Abduction was large-scale and, according to rebel leaders themselves, indiscriminate. Survey data support this unusual claim, and suggest that rebel conscription is exogenous conditional on year of location of birth. If true, causal estimates of the impact of forced recruitment on later-life outcomes like political participation can be identified.

The results suggest that forced recruitment leads to *greater* political participation—an 18 percent increase in the likelihood of voting, and a more than doubling of the likelihood of being a community leader or holding a political job. Abduction, however, does not seem to affect non-political forms of social participation such as community group membership or public goods management, suggesting that the impact of conscription is uniquely political.

Of course, conscription simply represents a package of war experiences—violence experienced, violence perpetrated, military training, indoctrination, time away from school and work—and it is these experiences that probably account for any long term impacts we observe. Exploring the effect of such (potentially endogenous) experiences among the abducted, we see that violence, in particular violence

received, can account for more than three-quarters of the impact of abduction on participation. No other war experiences are so significantly and consistently associated with both participation and abduction.

Such a violence–participation link, while not so strongly causally identified as the abduction–participation one, is nevertheless consistent with findings from West Africa, Europe, and the Middle East. Bellows and Miguel (2007) find that war-related displacement or deaths in the family lead to greater political participation and awareness in Sierra Leonean households. A psychology literature likewise suggests that exposure to violence led to political activism and extremism among Jewish Holocaust survivors (Carmil and Breznitz, 1991) and Palestinian victims of bombardment (Punamaki et al., 1997).

Why should we expect abduction and violence to have any impact on an individual’s political expression at all? Almost none of the dominant theories of political participation appear consistent with the patterns we observe. First, there is no evidence that abduction or violence reduces the shoe leather costs of participation, making simple rationalist explanations unattractive. Second, there is no relationship between abduction, violence, and non-political forms of participation and volunteering, suggesting that the channel of impact is not the augmentation of “social” preferences by violence. Third, there is no evidence that abductees are more likely to be targeted for mobilization by outsiders—such targeted mobilization efforts are uncommon. Moreover, participation is associated with a difficult-to-observe attribute, violence experienced, rather than an easily observed one, such as abduction itself or abduction length.

The patterns we observe are however consistent with “expressive” theories of participation, whereby voters and leaders are motivated to participate because violence augments the inherent value placed on political expression. The expressive interpretation should be accepted with caution, if only because it is difficult to demonstrate or disprove any such shift in preferences, and because the case is based primarily on the elimination of the alternative explanations. As we will see, however, the expressive interpretation is both intuitively appealing and consistent with a body of evidence from politics and psychology.

These findings suggest that the consequence of conflict and violence is political activism rather than apathy, contributing an individual-level link to the typically macro-level observation that war and state-building go hand in hand. The evidence also strengthens the appeal and explanatory power of expressive theories of political participation. Nevertheless, the latter evidence is far from complete, and the paper concludes with a discussion of limitations of the current evidence and areas for future research.

2. Violence and political participation in theory

Social science has yet to produce a standard and empirically-supported theory of political participation. One of the most vexing issues is exemplified by the “paradox of voting”: in large elections, the chance that a single vote will change the outcome is so unlikely that the expected private benefit to voting is zero, and so even a small cost of voting should deter a rational individual from participating (Riker and Ordeshook, 1968; Downs, 1957). Yet voters do turn out in large numbers, confounding rationalists.³

Three main adjustments to the rational model have been offered to overcome the paradox. One set of theories suggest that voters have *social preferences* and consider the benefit of their vote to others in their rational calculus.⁴ A second set propose that a consumption benefit is received from the act of voting itself, and are known as *expressive* theories for the emphasis they place on the inherent value of expressing one’s preferences.⁵ Scattered evidence, largely from the US, suggests several patterns consistent with such expressive voting behavior.⁶ A third set of theories argue that political leaders are able to *mobilize* voters by applying social pressure, attention, or material goods from political leaders (Shachar and Nalebuff, 1999; Uhlaner, 1989), and experimental and non-experimental evidence suggests that personal requests and shaming are effective in turning out U.S. voters (Gerber and Green 2000; Green and Gerber, 2004; Verba et al., 2000). While scattered evidence provides support for all three explanations, we have little sense of the specific forms or determinants. All three theories are also difficult to prove directly, since they theorize difficult-to-observe changes in an individual’s objective function.

Finally, a fourth set of *information-based* explanations propose that better educated and informed voters are more likely to participate, although the theoretical rationale is not clear.⁷ Rather, the argument is based on the well-established correlation between voting and education in the U.S. (e.g. Verba et al.,

³ Reviews of this literature include Feddersen (2004), Dhillon and Peralta (2002), and Aldrich (1993).

⁴ e.g. Edlin, Gelman, and Kaplan (2007), Fowler (2006), Feddersen and Sandroni (2002), and Harsanyi (1992, 1977).

⁵ For instance when individuals value the preservation of democracy (Downs, 1957), feel a civic duty to vote (Blais, 2000; Riker and Ordeshook, 1968), or receive psychological gains from voting with one’s preferences or ideological affiliation (Schuessler, 2000; Brennan and Buchanan, 1984; Fiorina, 1976)

⁶ Surveys of U.S. voters suggest several regularities: that the propensity to vote is associated with expressive acts such making a donation to the election commission; that the likelihood of voting is greater among ideologues than moderates; that pre-election feelings about candidates influence vote choice; and that individuals vote to show disapproval of an disfavored candidate (Greene and Nelson, 2002; Copeland and Laband, 2002; Kan and Yang, 2001). Several mock voting exercises also suggest that altruistic voting is more likely when the chance of influencing the vote is small (Fischer, 1996; Carter and Guerrette, 1992).

⁷ Feddersen and Pesendorfer (1999, 1996) propose a model where uninformed independent voters find it strategically optimal to abstain and delegate their vote to more informed voters.

2000) and the causal impact of news media exposure on U.S. voter turnout (George and Waldfogel, forthcoming; DellaVigna and Kaplan, 2006; Gentzkow, 2006).

A smaller literature has sought to explain participation in acts such as protest, community meetings, and rebellion.⁸ Analogous to the paradox of voting, the challenge faced in explaining such active participation is in most cases a problem of collective action—participation is individually costly, while many of the benefits are shared regardless of participation (Olson, 1965). To explain such participation, scholars typically look for the provision of selective benefits of a material or social nature.⁹

Selective incentives are not always apparent, however, and in these cases expressive motives—ideology, grievances, and moral outrage—are most commonly proposed as an alternative solution to the collective action problem. For instance, expressive values are commonly cited by activists (e.g. Verba et al., 2000) and ideology is frequently observed to be associated with membership in political associations (Leighley, 1995).¹⁰ In the context of violent rebellion, Gurr (1971), Wood (2003) and Scott (1976) argue that grievances and moral outrage are the primary motivators of participation.

There are several reasons to be cautious about expressive interpretations, however. First, expressive rationales could be developed by individuals after the fact to justify their actions. Second, the available studies (with the exception of the rebellion literature) are oriented towards the U.S. and Europe. Third, causal identification is often poor, demonstrating correlation and not causation.¹¹

The link from war and violence to participation

Each of the above theories offers a potential mechanism for linking war, violence, and participation. According to the simple rational model, abduction can influence participation if it results in differential private costs of participation. Abduction in Uganda resulted in decreased migration, diminished educa-

⁸ This paper follows Verba et al. (2000) in conceiving of political participation more broadly, as acts that are “intended to have the consequence of influencing the choice of governing official or the policies they make and implement” (pp. 245).

⁹ In the context of rebellion, for instance, Lichbach (1995) emphasizes material incentives in the decision to engage in violent collective action. Alternatively, Petersen (2001), Ostrom (1990), Taylor (1988), and Popkin (1988, 1979) emphasizes social groups, norms and institutions, while Weinstein (2006) finds evidence for both material and social selective incentives.

¹⁰ Other examples, especially concerning protest, include Muller et al. (1991), who find a correlation between dissatisfaction with public goods provision and protesting, as well as similar studies in West Germany and the U.S. argue that protesters receive psychological selective incentives from valuing public goods (e.g. Opp, 1988; Klosko et al., 1987; Muller and Opp, 1986).

¹¹ This is especially true of the voter turnout literature. A vast number of U.S. voter surveys find a strong correlation between participation and socio-economic traits such as income and education.¹¹ These findings have supported a “socio-economic status model”, where participation is thought to be influenced by individual resources and civic attitudes (e.g. Verba et al., 2000, Verba and Nie, 1972). Yet such studies are vulnerable to misspecification and causal identification problems, and are not empirically supported in non-Western contexts (e.g. Mattes and Bratton, 2003).

tion and economic opportunities, and increased injuries and psychological distress among abductees (Blattman & Annan, 2007), all of which could plausibly alter the calculus of voting by lowering its cost among former abductees.¹² For community leadership in particular, abduction could also have a positive impact if it is associated with training or experience in leading others. Of course, abduction could diminish leadership if it is associated with social stigmatization.

Abduction and violence could also explain voting behavior in a mobilization model if it met two conditions: first, if it is easily observed by political leaders; and second, if exposure to abduction or violence augments the ease of mobilization. Abduction in northern Uganda is associated with lower wealth and employment, lower literacy and education, and higher levels of distress (Blattman and Annan, 2007, each of which could plausibly make an abductee more susceptible to vote buying or pressure. To the extent that information-based theories are influential, however, lower education and literacy should have the opposite impact, leading to lower turnout among abductees.

Violence could also affect participation if it influences “social” or “expressive” preferences. For instance, violence could directly affect psychological features of the individual. Post-traumatic growth theory in psychology supports the notion that positive political and psychological responses to war violence are common, especially when young (e.g. Powell et al., 2003; Tedeschi and Calhoun, 1996). Some social preference theorists such as Edlin, Gelman, and Kaplan (2007) distrust such appeals to variation in psychological traits and preferences, however. In their model, one’s social preference is a function only of the probability of one’s vote being pivotal and the size of the constituency—a simple setup that is consistent with a broad range of turnout patterns across time and space. Unfortunately, such parsimonious models cannot explain the significant variation in turnout within a particular country and election.

It is difficult to predict, however, how violence should affect psychology and preferences. On the one hand, if adversity stimulates solidarity, grievances and moral outrage, then participation should be increasing in the intensity of exposure to that adversity. On the other hand, if adversity results in discouragement or disenfranchisement, then participation will diminish with violent exposure.

A small but growing body of evidence suggests that the former case is dominant, including the post-traumatic growth theory discussed above. Psychologists also routinely find youth resilient to violence and

¹² Lower migration levels imply less re-registration and travel to vote, and stronger community connections (potentially needed for leading). Lower earnings and wealth may lower the opportunity cost of voting or being a community leader. Serious injuries or psychological distress, meanwhile, may make the act of voting or leading itself more costly or difficult.

other trauma (e.g. Dyregrove et al., 2002; Masten, 2001; Ajdukovic & Ajdukovic, 1998; Nader et al., 1993). Other evidence suggests that voters respond to other types of negative shocks with increased participation. Bloom and Price (1975) show that U.S. voters are more likely to vote following negative macroeconomic outcomes than positive ones, while Hastings et al. (2006) find that parents of school lottery losers were more likely to vote in later school board election than those of winners. A related literature has focused on how voters punish incumbent politicians for bad macroeconomic performance and reward them for good, even when those events are beyond political control (Lewis-Beck, 1988; Markus, 1988; Kramer, 1971). Voters even appear to punish incumbents for natural disasters, droughts, and shark attacks (Achen and Bartels, 2004).

3. War, abduction, and politics in northern Uganda

To examine the impact of war and violence on participation, we drew on the experiences of youth embroiled in the twenty-year war in northern Uganda.

War and violence in Uganda has both spiritual and political roots. In 1988, a spirit medium named Joseph Kony assembled the remnants of several failed insurgent groups from northern Uganda into a new guerrilla force, the Lord's Resistance Army, or LRA.¹³ Locally Kony is believed to possess great spiritual powers, and his stated goal is to seek a spiritual cleansing of the nation. Kony's movement, however, is also rooted in a longstanding political grievance and economic disparity between northern ethnic groups (including the Acholi, to which he and the bulk of the LRA belong) and ethnic groups from south-central Uganda. Following Independence, northern peoples came to dominate the military while southerners dominated the commercial sector, and until 1986 Uganda was governed by a series of brutal dictators from the north. In 1986, however, rebels from the southwest of the country led by Yoweri Museveni overthrew an Acholi-dominated government. Several guerrilla forces in the north initially resisted the takeover, but for the most part settled for peace or were defeated by 1988. The handful of fighters that would not settle for peace gathered under Kony to continue the fight.

In spite of widespread antipathy for Museveni among the Acholi, Kony and the LRA attracted little popular support. The poverty and unpopularity of Kony's movement limited his military options and

¹³ This account is based on Allen (2005), Behrend (1999), Doom and Vlassenroot (1999), Finnström (2003), Lamwaka (2002), and Omara-Otunnu (1994).

ultimately accounts for the LRA's total dependence on forcible recruitment. From its earliest days the rebels looted homes and abducted youth to obtain supplies and recruits. Many Acholi responded by joining a government-sponsored local defense militia. To punish them for this betrayal, and to dissuade them from further collaboration, Kony ordered the massacre and mutilation of civilians. Thus from 1991 the war was waged not only against the government but against the Acholi populace at large.

In 1994 the Sudanese government began supplying the LRA with supplies, weapons and territory upon which to build bases—support that enlarged and invigorated a small and weak LRA. Abduction from 1995 to 2004 was large-scale and indiscriminate, with at least 60,000 youth estimated to have been taken by the LRA for at least a day (Annan et al., 2006). The majority of these were adolescent males, though men and women of all ages were commonly taken. In 2006 an informal truce was reached, followed by (ongoing) peace talks brokered by the new government of Southern Sudan.

The two decades of instability and economic destruction in the north stand in stark contrast to the success and stability of the rest of Uganda. Outside Acholiland, violence has abated, infrastructure has expanded, HIV infection rates have fallen, and economic growth has been a robust 6 percent for the past decade (Government of Uganda, 2007). Moreover, the country has become steadily more free and democratic. President Museveni introduced single-party democracy in 1996, and was elected and re-elected in 1996, 2001 and 2006 under increasingly (albeit not entirely) free and fair elections.¹⁴

In 2005, Museveni proposed constitutional amendments which would allow for multi-party democracy as well as eliminate term limits, allowing him to run again. A peaceful national referendum was held in August 2005 on the question of multi-party politics—just two weeks before our survey began.¹⁵ 47 percent of eligible voters turned out, with 92 percent voting in favor of the amendments (IFES, 2007).

4. Data & measurement

The data come from Phase I of the Survey of War Affected Youth, or SWAY—an original, representative survey of 741 rural male youth (ages 14 to 30) in the Acholi districts of Kitgum and Pader,

¹⁴ He continues to hold a relatively high degree of popular support outside of the north, and received 59 percent of the 2006 national vote share. (IFES, 2007)

¹⁵ This referendum asked voters: "Do you agree to open up the political space to allow those who wish to join different organizations/parties to do so to compete for political power?"

Uganda. Surveys were administered by local enumerators in eight rural sub-counties between September 2005 and March 2006. Former abductees were over-sampled, with 462 interviewed in total.

The survey sought to select its respondents from a sample frame of youth living in the region *before* the conflict in order to minimize sample attrition due to the migration and mortality. 1100 households were sampled from U.N. World Food Programme lists compiled in 2002, and 92.5 percent of these household heads were tracked down and interviewed.¹⁶ Enumerators then worked with household heads to develop a retrospective roster of all youth living in the household in 1996. The year 1996 was chosen as it was easily recalled as the date of the first election since 1980, and because it dates to the time of the war's escalation (and pre-dates 85 percent of local abductions).

A sample of 870 surviving youth was drawn from this retrospective roster of youth. Of these youth, 41 percent had moved since 1996 and were followed across the country to their current location. 741 of sampled youth (or 84 percent) were located, including virtually all non-migrants and 70 percent of migrants. Absentee questionnaires were conducted with the families of all 129 unfound young men, collecting extensive data on current outcomes and abduction experiences in order to adjust for observed attrition. Demographic data were also collected on the 349 youth from the retrospective roster that had died or not returned from abduction. Twenty percent of abductees did not return and sadly can be presumed perished as few remain with the LRA. The remaining 80 percent were released, escaped, or rescued.

Measuring war and abduction experiences

The survey collected self-reported, retrospective information on war and abduction experiences, described in Table 1. More than two in five male youth reported an abduction of any length. Many of these abductions were short, usually because the youth was too young or too old to be kept as a recruit, and so was quickly released after showing the way or carrying looted goods. Indeed, a third of abductions were less than two weeks in length, and just half were longer than six weeks. Abductions ranged as long as 10 years in the sample, with the average abduction lasting 8.5 months.

Even short abductions could be quite traumatic, however; youth abducted two weeks or fewer reported experiencing seven violent acts on average. The survey asked about 31 specific violent events and

¹⁶ Potential selection arises from the 7.5 percent of households not located, as well as from the fact that the sample frame dates from 2002 (by which time many households may have had the opportunity to out-migrate). Interviews with community leaders suggest that very few households left the region entirely before 2002—most left family members (especially parents) behind, who remain on the lists. Many migrants also took pains to get onto these lists in 2002 even when away to increase food rations.

whether the youth had ever experienced them. These events are listed in Appendix Table 1 along with an analysis of their principal factors. The first factor weighs heavily on violent acts inflicted upon the youth, the second factor on acts perpetrated by the youth, and the third factor on violence directed at the youth's family. Three additive indices of violence were created based on this analysis, one for each factor. An index of 25 violent acts experienced is obtained from adding all three indices together. The average youth reported 7 violent acts, with abductees reporting more than 10 acts to non-abductees' 4 acts.

Other war experiences are displayed in Table 1, including percentages reporting fighting, leadership roles, rebel loyalty, serious injuries, elements of the return process, and self-reported acceptance at home.

Measuring participation

Current socio-political outcomes are listed in Table 2. Our main measures of political participation are voting, community leadership, and holding of political jobs. Approximately half of the 503 youth over 18 years of age voted in the 2005 referendum. Four percent of youth also report that they are currently a volunteer "community mobilizer"—members of the community who are responsible for gathering the community together for political and community meetings.¹⁷ This role is one of the most common forms of leadership in the community among young adults. The youth were also asked about other forms of political employment, but (in part because we restricted the sample to those 30 or under) only 4 of the 741 respondents (0.4 percent) reported holding a formal political job.

Other measures of community participation and collective action were also recorded. 81 percent attend church regularly, and four percent of youth report volunteering for a community organization. 42 percent report membership in at least one community group, including farmer's cooperatives (9 percent), water committees (1.3 percent) and school clubs and committees (5 percent).¹⁸ Finally, an important part of social life involves cooperation with and obedience to elders. Seven percent of youth indicated that they "sometimes" or "often" disobeyed parents, teachers, and elders.

¹⁷ Each five years, or when a position otherwise becomes available, a community meeting is held and a call is made for nominations. Nominees are given a chance to give a short speech, and are typically elected by a show of hands or by lining up behind the nominees. Community mobilizers are unpaid, although they may occasionally receive small tokens of thanks (e.g. food rations or household items) from the NGOs for which they mobilize community members.

¹⁸ The other six groups (not displayed in Table 1) include dance/drama clubs (15% of the sample), peace clubs (7%), farmer cooperatives (9%), sporting teams (12%), religious groups (5%), and other youth groups (2%).

5. The casual impact of abduction on participation

Estimating the impacts of military service and war violence is a challenging task. In the case of recruitment into armed groups, combatants are usually unlike non-combatants in unobservable ways, and a comparison of their behavior is likely to conflate the impact of war with any pre-existing differences that led the youth to join or be selected by the armed group. We are particularly concerned that characteristics typically associated with participation in armed groups (such as poverty, social exclusion, ideological commitment, or malleability) are traits that also affect social consciousness or political activity.

Empirical strategy

A possible solution to this potential endogeneity is the counterfactual approach, whereby a relevant control group is found for the war-affected (or “treated”) individuals. The impact, or average treatment effect (ATE), is estimated by taking the difference in the outcomes of the treated and controls (Imbens, 2004; Rubin, 1974). The estimated ATE is only as reliable as the counterfactual, of course, and it will be unbiased only when treatment assignment—in this case, rebel recruitment or the degree of violence experienced—is independent of the potential outcomes. The ATE is unbiased only when treatment is conditionally unconfounded—that is, when any selection into treatment is based wholly on characteristics observed and measured by the researcher (Imbens, 2004; Rosenbaum and Rubin, 1983; Rubin, 1978).

Evidence for the conditional unconfoundedness of abduction in Uganda

In most armed conflicts, such stringent identification conditions would be unlikely to hold. Evidence from northern Uganda, however, suggests that the LRA’s large-scale and indiscriminate use of abduction and violence tragically provide a natural experiment where abduction and (to a lesser extent) violence experienced, are unrelated to personal characteristics and potential participation.

Rebel testimonies provide the first indication that the most common types of selection into armed groups are not present in the case of the LRA. First, volunteering for the LRA (self-selection into the armed group) was virtually unknown—volunteers likely comprised less than 0.5 percent of all LRA recruits. Nearly all of these volunteers joined before 1991, however, and the majority appear to have come from the neighboring district of Gulu, however, so none were captured in our sample.

Second, interviews with the leaders of LRA raiding parties suggest that by neither design nor accident did they abduct a select group of youth. Abduction targets were unplanned and arbitrary, and homes-

teads were raided regardless of wealth, and household composition. From their Sudanese bases, rebels ventured into Uganda for weeks at a time in groups of 15 or 20 fighters. Typical of East Africa, nearly all Acholi households live in relatively isolated homesteads in their fields, arrangements which made them particularly vulnerable to LRA raids. Raiding parties had two aims: ambushing government forces, and raiding homesteads along their path for food and new recruits. Rebels usually invaded homesteads at night, abducting all able-bodied members of the household to carry looted goods. These abduction parties were under instruction to release only young children and older adults, but to keep all adolescent and young adult males. Fewer than 5 percent of males abducted between the ages of 10 and 24 report being released. Abductions were large-scale, with thousands of youth taken every year.

The survey data support such claims of indiscriminate abduction. The survey gathered data on pre-war levels of household wealth (land, livestock, and plows), parent's education, father's occupation, and parental death—each of which are thought to predict participation in armed groups (Honwana, 2006; Humphreys and Weinstein, 2006; Cohn and Goodwin-Gill, 1994). We observe little difference in these pre-war traits by abduction status. The means of each of these pre-war traits for abducted and non-abducted youth are listed in Columns 1 and 2 of Table 3, with unconditional and conditional mean differences calculated in Columns 3 and 4. None of the unconditional differences in means except year of birth are significant at even a 10 percent level, and nearly all differences are close to zero. Conditional mean differences, which control for all other pre-treatment covariates, are generally insignificant as well. Abducted and non-abducted youth only differ by year of birth and pre-war household size. This relationship between year of birth and abduction is expected, as a youth's probability of ever being abducted depended on how many years of the conflict he fell within the LRA's target age range. Moreover, abduction levels varied over the course of the war, so youth of some ages were vulnerable for longer than others. Meanwhile the significance of household size is driven entirely by households greater than 25 in number, which perhaps implies that rebel raiders, who traveled in small bands, were less likely to raid such large households as they would be difficult to control.¹⁹

The inability of these pre-war traits to predict abduction can be contrasted with their success in predicting another form of military service: participation in Local Defense Units, or LDU—a voluntary mili-

¹⁹ All of the difference in the distributions of abducted and non-abducted youth is driven by year and location of birth. The addition of other pre-war covariates to a logit regression of abduction on age and location indicators leaves the distribution of the predicted probabilities undisturbed. An F-test of their joint significance yields a p-value of 0.18 (not statistically significant).

tia under government command. Five percent of youth were current or past LDU members. A comparison of pre-war traits in Table 3, Columns 5 to 8, suggests that militia members came from poorer and more agricultural households. Collectively our pre-war covariates strongly predict militia membership—a test of the joint significance of all pre-war traits in predicting LDU membership yields a p-value of 0.02. Moreover, the coefficients in the militia participation regressions are much more sizable than in the abduction likelihood ones. The ability of these pre-war traits to significantly predict militia participation but not abduction is striking, and lends support to the case for unconfounded abduction.

Dealing with selective attrition and survival

A final challenge is that any association between participation and war experiences may be biased by selective attrition. In this study, there are two main types of ‘attritors’: non-survivors and unfound migrants. We are concerned because our estimates of the impact of abduction will be biased if personal qualities that determine survival also influence later social and political behavior. Plausible candidates include intelligence, self-confidence, or the tenacity to resist abduction. In general, studies of survey attrition in developing countries have concluded that attrition due to death or migration has little impact on coefficient estimates, even with attrition rates up to 50 percent (e.g. Fitzgerald et al., 1998; Falaris, 2003). The tracking success rate of this study, 84 percent, meets or exceeds the rates achieved by several ‘gold-standard’ youth tracking surveys in poor countries (e.g. Hamory and Miguel, 2006; Thomas et al., 2001). Even so, differential attrition rates by treatment status still raise some concern; mortality rates were double among the abducted, while out-migration rates were double among the non-abducted.

To correct for attrition on observables, enumerators collected demographic data and data on current activities and well-being from the surviving family members of any attritors. Following Fitzgerald et al. (1998), these data were used to calculate attrition probabilities, and regression estimates are weighted by the inverse of these attrition probabilities to eliminate bias from attrition on observed traits. Even with this correction, however, there remains a risk of bias arising from any unobserved traits that influence survival, abduction, and potential outcomes. In the sensitivity analysis below, the ATE is bounded with best- and worst-case scenarios to see if the estimates are robust to such potential bias.

Results: The ATE of abduction

Under the assumption of conditional unconfoundedness, consistent ordinary least squares (OLS) estimates of the ATE can be calculated for individual i and outcome Y as follows:

$$Y_i = \beta_0 + \tau \cdot T_i + \mathbf{X}_i \cdot \boldsymbol{\beta}_1 + \varepsilon_i$$

where the treatment indicator T equals one if abducted and \mathbf{X} is a vector of pre-treatment controls.²⁰ The resulting ATEs, summarized in Table 4, suggest that abduction causes little difference in non-political group participation and social interactions, but higher political participation and activity.

Abduction leads to an increase of 8.2 percentage points in the likelihood that a youth voted in the 2005 referendum (Column 2). Since just 45 percent of non-abducted youth voted (Column 1), this ATE represents an 18 percent increase in the likelihood of voting (Column 3). Abduction also leads to a 3.1 percentage point increase in the likelihood that a youth is a community mobilizer. Relative to the non-abducted mean of 2 percent, this represents a 136 percent increase—abduction more than doubles the likelihood that a youth becomes a minor community leader. Furthermore, abduction appears to be associated with a doubling of political employment. This estimate, however, is not statistically significant, most likely because there are only four people reporting such employment out of 741 respondents. Three of the four, however, are former abductees. While we must be cautious about the impact on political jobs, the direction and magnitude of this result is consistent with the other results.

Turning to non-political participation, the causal impact of abduction on group membership and church membership from Table 4 is generally small and not statistically significant (even though large numbers of both abducted and non-abducted youth participate). Former abductees appear to be 38 percent more likely to volunteer with an NGO, but this estimate is not statistically distinguishable from zero. Looking at specific groups, there is little significant difference in participation in farmer's groups and school clubs or committees. Only in one group—water committees, whose purpose is to monitor and regulate community water access, cleanliness, and rights—is there a notable difference. Here abductees

²⁰ Only year of birth controls are necessary for consistent ATE estimation, and are entered as a series of indicator variables for each age for maximum flexibility. Location of birth indicator, year/location interaction variables, and the pre-abduction household characteristics are also included to improve efficiency of estimation. A slightly more efficient and equally consistent approach than OLS, proposed by (Hirano et al., 2003), is a semi-parametric weighted least squares (WLS) regression with weighting on the inverse of a nonparametric estimate of the propensity score. A nonparametric matching estimator is also possible. Both are employed in Blattman and Annan (2007) to estimate the economic and health ATEs of abduction, but are not used here as their efficiency gain with the socio-political estimates is minimal.

are 70 percent *less* likely to be members, however. Baseline membership is quite low, however—1.3 percent of all youth—and so this ATE is relevant for a relatively small group of youth. Moreover, if a binary dependent variable model is employed, the water committee ATE is no longer statistically significant (Appendix Table 3, Column 6).

Finally, there is little evidence of an impact on social relations. Abductees were more likely to report that they disobey elders, but the estimate is not statistically significant. Moreover, as discussed in Blattman and Annan (2007), abductees report almost no difference in levels of aggression and social support. As seen in Appendix Table 3, all of the above results are highly robust to the regression model used.²¹

Sensitivity analysis

In spite of the evidence presented above, several plausible sources of unobserved selection into the LRA exist, including less clever youth “self-selecting” into the LRA because of a poorer ability to hide, or survival of only the physically strongest. Such selection could lead to overestimation of the ATEs — bias that would arise from the systematic selection of more politically active youth into the rebel group, or from differentially greater death or attrition of less politically-inclined abductees. While there is no obvious reason for either case to be true, it cannot be proven otherwise. What can be estimated, however, is the degree of selection that would be necessary to generate the ATEs we observe, which can then be judged as plausible or implausible. Two means of such sensitivity analysis are presented in Appendix A. A first method, based on Imbens (2003), explicitly model relaxations of the unconfoundedness assumption and finds that moderate amounts of unobserved selection are highly unlikely to account for the treatment effects observed. A second method, based on Lee (2005), estimates “best-case” and “worst-case” scenarios for attrition, and finds that even in the (unlikely) worst-case, the sign of the treatment effects remain intact.

²¹ Appendix Table 3 recalculates the ATE for four of the outcomes under the original model (Column 1), with the attrition correction removed (Column 2), as well as with successive removal of the pre-treatment household traits (Column 3), the year and location of birth interactions (Column 4), and even with removal of the year and location of birth indicators themselves (Column 5). The latter regression is a simple difference of means. In each case the voting and community mobilizer ATEs are relatively stable and highly significant, while the group membership ATE remains small and statistically not significant. Finally, the ATE is estimated using a (non-linear) limited dependent variable model, in this case a logit (Column 6).

6. Unpacking the causal effects: Impact heterogeneity

Abduction by the LRA represents a bundle of experiences, including exposure to varying violence, time away from school and work, military training, indoctrination, and leadership. To the extent that it is these underlying and varying experiences that account for the observed relationship between abduction and violence, we should observe a relationship between their incidence and political participation.

Empirical strategy

In order to unpack the causal impact of abduction on participation, we can confine our analysis to the abducted alone and examine treatment heterogeneity. Specifically, we can estimate an OLS regression of socio-political outcomes, Y , on a set of observable and measured war experiences, including violence (of all types—received and perpetrated), abduction length, and a vector of other abduction experiences defined and summarized in Table 1 (and summarized by the vector \mathbf{Z}) as follows:

$$Y_i = \delta_0 + \delta_1 \cdot \text{Violence}_i + \mathbf{Length}_i \cdot \delta_2 + \mathbf{Z}_i \cdot \delta_3 + \mathbf{X}_i \cdot \delta_4 + \mu_i \quad \text{if } T_i = 1.$$

The relationship between length and other variables is unlikely to be linear, and so length is controlled for with multiple indicators for months abducted rather than a linear term. Furthermore, \mathbf{Z} includes a set of indicator variables for the years of abduction is included to control for changes in abduction practices and ages over time.

For the estimated coefficients on violence, length and the elements of \mathbf{Z} to have a causal interpretation, their incidence must be assumed to be conditionally unconfounded. Yet while abduction itself was shown to be arguably exogenous, these war experiences are less plausibly so. The length of abduction, a youth's ease of indoctrination, or his inclination to commit violence are plausibly related to underlying traits unobservable to the researcher. If these traits are themselves associated with later social and political participation, then any relationship between participation and war experiences will conflate the effect of these pre-existing differences with the causal impact of the war experience itself.

In some cases, such as with the number of violent acts experienced, the variable is nearly uncorrelated with observable pre-abduction traits, suggesting that any selection bias may be minor. As seen in Appendix Table 5, violence is nearly unrelated to observed pre-war covariates, suggesting that selection into

violence may be minimal.²² We are not fully confident, however, that violence is fully unconfounded, and so the point estimates must be interpreted with caution. We are most concerned about overstating the relationship between violence and participation, a situation that would arise from unobserved factors that are significantly associated with both violence and participation in the same direction.

Results

Only violence and length appear to be consistently and significantly correlated with political participation. Among the abducted, each additional act of violence experienced and/or perpetrated is associated with a 2.1 percentage point increase in the likelihood of voting and a 0.7 percentage point increase in the likelihood of being a community mobilizer (Table 5, Columns 1 and 2). Abducted youth report six more acts of violence on average than non-abducted youth (Table 1), and so these point estimates suggest that the violence associated with abduction leads to a 12.6 percentage point increase in voting and a 4.2 percentage point increase in community leadership—both roughly comparable to (albeit greater than) the respective ATEs from Table 4.²³ As we will see in the following section, this effect is driven primarily by violence received, rather than violence perpetrated.

Violence is meanwhile only weakly related to non-political forms of participation. Group membership is weakly positively associated with violence (at the 10 percent level) but volunteering, church attendance, farmer’s group and water committee membership, and relations with elders are not. Each act of violence is associated with a 0.6 percentage point increase in school committee membership, however, which translates to a 12.6 estimated percentage point increase from six extra acts of violence.

After controlling for violence, abduction length is weakly but negatively associated with participation. The coefficients on the abduction length indicators are not displayed, but suggest that political participation is declining in abduction length. Indeed, if the level or logarithm of months abducted is used instead of the indicator variables, the sign is negative (regression not shown).

²² However, an OLS regression that allows for non-linear relations between the pre-war traits and violence, through the use of fourth-order terms and dummy variables implies that there is mild observed selection into violence (Table 4, Column 2). Four orders of household size are jointly significant at the one percent level, a dummy for plow ownership is significant at the 10 percent level, and all pre-war traits are jointly significant at the 1 percent level, although in all cases the selection appears substantively small.

²³ These calculations are only a rough and therefore imprecise measure of a large change in violence, since the point estimate is by definition relevant only for marginal changes in violence.

Turning to the other measured war experiences, few are as robustly and as consistently related to our measures of political participation as violence.²⁴ There are two exceptions, however. First, having passed through a reception center is positively and significantly related to voting (although not to community mobilization). Here the relationship is quite large—the association identified is in magnitude about 85 percent of the voting ATE.²⁵ The reason for this relationship is not clear, however. The result could be spurious, or it could be the result of selection into reception centers (a third of those abducted three months went straight home), or it could be the result of services provided in the center or after return. Of these the latter seems least likely, since reception center services were quite modest—basic medical treatment and counseling (really just advice-giving).

Second, leadership in the rebel group is positively associated with community mobilization but not with voting. It is unclear, however, whether this is a causal effect of leadership experience in the LRA on later leadership, or whether pre-abduction leadership aptitude is driving both behaviors. Interviews with a reception center social worker, who also worked as an election poll supervisor during the previous two elections, suggest that these leadership experiences are not immaterial. In his experience, formerly abducted youth “feel like they can take control of their lives.” Former abductees, he continued, “are subjected to hardship where... they mature very fast.” Moreover, they “comfortably speak their views in a group of people or a crowd.” Such a view suggests that leadership may explain part of the treatment effect. The part it explains, however, may be quite small owing to the rarity of formal leadership experience in the LRA. In fact, the magnitude of the leadership effect is moderate to small relative to that of violence—the association is equivalent to a quarter of the mobilization ATE.²⁶

²⁴ Abduction age, self-reported allegiance, carrying a firearm, receiving NGO services after return, and experiencing rejection by the community are not significantly associated with voting or being a community mobilizer. Having been rewarded by the rebel group is negatively associated with both voting and mobilization, but is substantively quite small and only significant in the case of mobilization, and then only at the 10 percent level. Having received an injury from the LRA is meanwhile weakly associated with voting, again at the 10 percent level, and again the effect is substantively small. No significant effect is found for injuries in general in either case. Finally, returning home via the UPDF is not associated with changes in participation, but being abused while with the UPDF is weakly negatively related to mobilization, and again here the average effect is minor.

²⁵ Passing through a reception center is associated with an 18 percentage point increase in voting (Table 13) among the 38 percent of abductees who passed through a reception center (Table 10), suggesting a rough impact of $38 \times 0.181 = 6.88$ percentage point increase in voting on average—about 84 percent of the ATE in Table 13.

²⁶ Leadership is associated with an 11 percentage point increase in mobilization (Table 13, Column 2) among just 7 percent of the abductees report ever leading others or holding a rank (Table 10), and so the point estimate implies a $11 \times 0.07 = 0.77$ percentage point increase in mobilization on average—about one quarter of the ATE in Table 12.

Violence and political participation in the full sample

Unlike other war experiences, both abducted and non-abducted youth report experiencing war violence, although non-abducted youth report far less—one third the violence received, almost no violence committed, and about 88 percent of the violence upon family (Table 1). Can violence account for the impact of abduction we observed in the full sample? To examine this proposition, we can regress the participation outcomes on violence and abduction length in the full sample. The results are displayed in Table 6, which displays OLS regressions of voting and community mobilization on the index of violence experienced alone (Columns 1 and 5) and with a linear abduction length term (Columns 2 and 6). We can run the same regression on three subcomponents of the violence index, divided by the nature of the violence (Columns 3 and 7). Finally, Table 6 also assesses the explanatory power of violence relative to abduction by further including an abduction indicator and an interaction between abduction and violence (Columns 4 and 8). As with abduction, for the estimated coefficients on violence to have a causal interpretation, violence must be assumed to be conditionally unconfounded.

Violence continues to be positively correlated with political participation and unrelated to non-political participation in the full sample of youth, although the former relationship is only statistically significant when we control for abduction length (Columns 1 and 2). Decomposing violence into its component parts, it seems that violent acts *received* are driving the correlation between violence and voting—each act of violence is associated with a 1.9 percentage point increase in the likelihood of voting (Column 3).

Violence accounts for most of the explanatory power of abduction as well. When we add an abduction indicator and interaction term to the voting regression, the coefficient on abduction falls to nearly zero, the coefficient on the violence is small and negative, and the sign on the violence-abduction interaction is large and positive (these are jointly significant at the 1 percent level). While the wide confidence intervals on each term makes the exact relationship difficult to pinpoint, the results suggest that violence is most associated with voting when it occurs during abduction (or arises from the violence experienced by abductees).

The results for community mobilization are even stronger and more conclusive. The number of violent acts experienced is strongly and significantly associated with community mobilization both when entered alone (Column 5) and with an abduction length term (Column 6). In the latter case, each act of violence is associated with a 0.5 percentage point increase in mobilization activities. Thus an abductee's 6

greater reported acts are associated with a 3 percentage point increase—almost exactly the same as the treatment effect. Both the indices of violence received and violence upon a youth’s family are significantly associated with community mobilization, with violence committed again apparently unrelated to the outcome (Column 7). Since gap the between abductees and non-abductees in violence received is three times larger than that in violence upon the family (Table 1), violence received appears to be driving the impact on community mobilization, just as we saw with voting behavior.

Again, violence seems to be the main driver of the abduction treatment effect. When abduction and interaction terms are introduced (Column 8), violence remains positive and influential, and the coefficient on the abduction indicator remains positive but the statistical significance falls. The coefficient on the interaction term is negative and statistically insignificant. Collectively all three terms are significant at the 1 percent level, however.²⁷

7. Alternative explanations and mechanisms

The theoretical mechanism between violence and participation is difficult to test directly, not least because social and expressive preferences, and the mobilization activities of leaders, are not easy to observe or measure. We can, however, identify a number of patterns that we would expect to hold if one or the other mechanism is influential, and examine our data for the presence or absence of these patterns.

First, Edlin, Gelman and Kaplan (2007) note that a prediction of their social preferences model is that individuals who vote should also be more likely to make other social contributions, such as charitable donations. While donations are not especially relevant in a displaced persons camp, we do measure contributions to public goods (such as participation in school and water management committees) and volunteering for an NGO. Yet as we saw in Tables 4 and 5, none are positively and significantly associated with abduction or violence in the sample.

Second, the mobilization model supposes that political leaders or elites can and do identify their target group. What makes the mobilization channel unlikely in this case is that political participation is not correlated with the abduction experiences that are common knowledge in the community (including whether a youth has been abducted, for how long, or whether he received an injury there). Rather, partic-

²⁷ The latter finding may be due to a diminishing relationship between violence and participation; a regression of community mobilization on a violence and violence-squared term (not shown) implies a sharply diminishing impact of violence.

ipation has everything to do with exposure to violence, which is difficult to observe and often known only to the youth himself. Furthermore, there is no evidence of the mobilization of abductees to vote or to become mobilizers themselves. The field research team did not observe the political mobilization of abducted youth at any time around voting day, and none of the interviewed community leaders could recall any such activities or focus. Moreover, the position of community mobilizer is an elected one; they are not mobilized to lead by political actors, nor do they have explicit party or political affiliations.

Third, the relationship between leadership in the rebel group and becoming a community mobilizer might be construed as evidence for the simple rational model of participation. In this view, leadership experience is a part of military training, and either augments the private returns to leadership or reduces the private cost. (Of course, an argument could be made that such experience augments social or expressive preferences. Such is the hazard of preference-based explanations.) Regardless of the specific mechanism at work, the evidence suggests that leadership experience can indeed account for at least part of the observed impact on later community leadership.²⁸ Such experience cannot, however, account for the larger and more robust relationship between violence and mobilization, and so is only a partial explanation.

Finally, note that from a mechanical point of view, any other factor that could plausibly lead to the impact of abduction on political participation must meet three conditions: first, it must differ between abducted and non-abducted youth (that is, there must be a significant treatment effect of abduction on the factor itself); second, it must also be a determinant of voting and community leadership; and third, it must not be a determinant of non-political participation such as group and church membership.

Each theory of participation implies a number of factors, some of which have proxies in our data that can be tested against these three criteria. The list is not exhaustive or complete, but provides suggestive evidence in favor of or against a particular mechanism.

For the simple rational model we desire measures of the individual's shoe leather and opportunity costs of participation. Proxies for shoe leather costs include indicators for no longer living in one's district of origin—for instance having *migrated to a town* or *migrated out of district*.²⁹ An *injury indicator* and an indicator for being in the *top quartile of emotional distress* proxy for health conditions that impede participation. Finally, the opportunity cost of voting is proxied by an *asset index*, *days employed*, and *gross earnings*.

²⁸ While its role may be overestimated by endogenous selection into leadership, its role could also be underestimated in that there is leadership training and experience that we do not observe.

²⁹ See Appendix Table 1 for descriptive statistics for these and the other measured potential determinants of participation.

The social preferences model, as noted, supposes that the individual holds social or altruistic preferences. As noted above, in this setting we might expect such preferences to be associated with *membership in community groups* and *volunteering for an NGO*, and possibly with *church attendance* as well. The survey also contained a psychosocial questionnaire that measured culturally appropriate pro-social attitudes and behaviors—including whether the youth feels that he is helpful to elders, helpful to younger youth, cares for his peers, shares freely with other youth, and enjoys of community participation. An indicator for being in the *bottom quartile of pro-social behavior* might capture whether a youth places value on his community. Finally, we might expect an inverse relationship between social preferences and social exclusion, measured by an *index of 17 forms of social support received* and an indicator for reporting *poor family relations*.

Last, levels of political information and understanding, central to information-based explanations of participation, can be proxied by indicators for *functional literacy*, *radio ownership*, and *educational attainment*.

Table 7 assesses the relative explanatory power of each of these potential proxies for the participation cost, social preferences, or information-based theories. *Violence received* is included as well. The results are striking. None of the proxies meet more than one of the three criteria. Indeed, even after controlling for these factors, violence continues to explain the vast bulk of the observed treatment effect—approximately 87 percent of the voting ATE and 77 percent of the mobilization ATE.

The impacts of abduction on violence received and each of the proxies mentioned above is displayed in Column 1 of Table 7.³⁰ The coefficients from a regression of the political participation measures on violence received and each of the proxies are displayed in Columns 2 and 4.³¹ Finally, the relative influence of each determinant on the voting and leadership ATEs is listed in Columns 3 and 5 (calculated as the abduction ATE in Column 1, multiplied by the relationship with participation in Column 2 or 4, divided by the relevant ATE from Table 4).

In virtually all the cases where abduction has a substantive and significant impact on a factor (such as educational attainment), the relationship between that determinant and voting or mobilization is small and statistically insignificant. Where the determinant has a robust relationship with participation (such as that between earnings and voting), there is a small and statistically not significant impact of abduction on the determinant. As a consequence, for the vast majority of potential determinants, their ability to ex-

³⁰ As with the participation ATEs, they represent the coefficient on abduction in a regression of each determinant on an abduction indicator, year and location of birth indicators and interactions, and pre-war household traits.

³¹ Year and location of birth indicators and interactions are included in also both these regressions but are not displayed.

plain the ATE appears close to zero (Columns 3 and 5). In the case of mobilization, serious injuries are the only factor that exhibit a statistically significant relationship with both abduction and participation, but this relationship is negative (abduction decreases the likelihood of participation when it causes injury) and fairly modest (equivalent to 12.5 percent of the mobilization ATE). These estimates are undoubtedly prone to bias from omitted variables, measurement error or endogeneity. Even if greatly underestimated, however, their ability to explain abduction's impact on participation would continue to be low.

The clearest exception is, of course, violence received. Abductees report 4.75 more acts of violence received than non-abductees, significant at the one percent level. Moreover, each act of violence inflicted is associated with a 1.5 percentage point increase in voting and a 0.5 percentage point increase in mobilization activities, significant at the five percent level. This excess violence corresponds to 87 percent of the voting ATE and 77 percent of the mobilization ATE—magnitudes that are 6 to 20 times larger than the estimated influence of the other factors. Violence is so influential relative to the other potential determinants that even dramatic amounts of bias from potential unobservables or endogeneity would not likely change violence's central role in determining participation.

8. Discussion and Conclusions

What are we to conclude from this analysis? The data imply a large and robust causal impact of abduction on political participation in northern Uganda, mediated it seems by violence received. Several theories of behavior—simple rationality, social preference, mobilization, and information-based explanations—could in theory generate the abduction-participation link. None are supported by the patterns we observe, however. We do not see an impact of violence perpetrated on participation, and we do not observe any form of violence impacting non-political forms of participation. There is no evidence of elite mobilization of abducted youth (or other victims of violence), and there is no education-voting association like that we see in the U.S. While there is some evidence of leadership training influencing participation, it seems to explain only a small fraction, and explains mobilization alone. A higher incidence of injuries also seems to influence participation, but acts in the opposite direction of the average treatment effect of abduction that we observe, and so only moderates the powerful influence of violence.

The only major theoretical account of participation that is consistent with these facts is that of expressive voting. By this account, exposure to war violence creates grievances that augment the inherent

value individuals place upon political expression, motivating them to increase voting and community leadership. As discussed above, this interpretation is shared with a growing body of political and psychological research linking violence to political activism via psychological growth and transformation.

The expressive explanation, however, is only a residual one. It is simply a label given to a broad category of unexplained behavior based on an under-researched association between violence and psychological growth. More work remains to be done to measure and test expressive behaviors before we can be fully confident of the conclusions in this paper. In the absence of such tests, and without conclusive evidence against the alternative mechanisms, we must accept the expressive interpretation with caution.

Five additional caveats are in order. First, as discussed earlier, the violence–participation relationship could be biased upwards by pre-existing characteristics that lead to both victimization by violence and later political expression—such as a defiant or independent character.

Second, the number of political outcomes available in the survey, particularly political ones, is quite small. Thus we should take caution in generalizing the findings to political participation generally, as the determinants of different forms of political participation may be quite different.

Third, the results in this paper arise from data on male youth alone, and so are not necessarily generalizable to females or older adults. Their close correspondence victims of violence in Sierra Leone (Bellows and Miguel, 2007) suggest some degree of external validity outside Uganda. Generalization of the results, however, awaits more data collection in more situations of violence and conflict.

Fourth, several patterns observed in northern Uganda remain unexplained by the theory and evidence presented in this paper. The reasons for the inverse relationship between voting and abduction length and for the positive relationship between voting and passing through a reception center remain unclear. These patterns could indicate a hitherto unknown determinant of participation.

Finally, if we accept the expressive explanation, a more important question remains unanswered: that is, if violence leads to expressive participation, why has this participation been peaceful and productive rather than contentious? Any number of explanations is possible—the opportunities for free and effective political action in Uganda, or a declining tolerance for insurgency. Each is plausible but not easily tested with these data. The decision to work within rather than outside the system is one of the most important micro-political decisions to understand, and is likewise a productive area for future research.

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Appendix: Sensitivity analysis

Relaxation of the assumption of conditional unconfoundedness in estimating the ATE

One means of sensitivity analysis, suggested by Imbens (2003), explicitly model relaxations of the unconfoundedness assumption. To induce selection bias an observed covariate, X , must be sufficiently correlated with both treatment assignment, T , and the outcome of interest, Y , to induce a degree of bias worthy of concern. The same argument applies to a hypothetical unobserved covariate, U . By making some simple assumptions about the distribution of U we can calculate all the possible combinations of correlation between U and T and between U and Y that would lead the ATE estimate to be biased by a fixed amount and judge whether the existence and influence of such a U is plausible by benchmarking it against observed covariates.

Appendix Figure 1 plots each of the observed pre-war controls (X) according to their ability to explain variation in abduction (T) and one of our principal dependent variables of interest, an indicator of being a community mobilizer (Y). The vertical axis indicates the influence of each element of X in explaining variation the likelihood that a youth is a community mobilizer ($Y = 1$). Specifically, the axis represents the marginal increase in the R^2 -statistic from adding the covariate in question to a regression of Y on all other covariates. The horizontal axis indicates the influence of each element of X in explaining additional variation in abduction. With the exception of age and location, the observed covariates explain little variation in either Y or T —a fact which accounts for the unresponsiveness of the ATE to their exclusion in Appendix Table 3.

The downward sloping curve in Appendix Figure 1 represents all the combinations of correlation between U and T and between U and Y that would be sufficient to reduce the estimated voting abduction ATE by half, from 0.031 to 0.0155. The U in question is modeled as a binomial variable independent of all other covariates that is assumed to have a logistic conditional distribution with both Y and T . The curve is therefore a threshold, beyond which the hypothetical U is influential enough to reduce the treatment effect by such a significant amount. It is also a threshold, we should observe, that (despite the dramatic hypothetical endogeneity) leaves the sign of the ATE intact.

The traits that normally influence military recruitment such as household wealth or orphaning lie far beneath the threshold. Not even year of birth—a variable that represents the primary criterion for selec-

tion by the armed group as well as variation in rebel abduction activity over time—crosses this hypothetical threshold. This sensitivity analysis thus suggests that moderate amounts of unobserved selection are unlikely to account for the ATE of abduction on community mobilization. The same analysis performed on the indicator of voting yields similar conclusions.

Bounding the ATE for selective attrition

A second method of sensitivity analysis can be used to assess the potential bias from selective attrition. In a method proposed by Lee (2005), “best-case” and “worst-case” scenarios for differential attrition are constructed by trimming the distribution of the outcome in the group with less attrition, which in this case the non-abducted (see Appendix Table 5). The worst case scenario bound is calculated by dropping those with the highest values of the outcome and calculating the ‘trimmed’ ATE. The best-case bound is likewise calculated by dropping the worst-performing non-abducted youth. Lee’s method compares the untrimmed ATE (Column 3) to the trimmed means—the best and worst case scenarios (Columns 4 and 5). The ATEs under the “best-case” scenario are larger than (and at least as robust as) the untrimmed ATEs. The ATEs under the “worst-case” scenario are generally closer to zero and less than robust than the untrimmed ATEs. However, not one of these lower bounds changes sign, implying even under austere assumptions, abduction has the predicted effect on outcomes.

Table 1: Summary statistics on war experiences

Variable	Description	(1)	(2)	(3)	(4)	(5)	(6)
		Sample Mean [<i>Std Dev</i>]			Min	Max	Obs
		All	Non-abd	Abd			
Ever abducted	Indicator for ever having been abducted by the LRA for any length of time	0.44 [0.50]	n.a.	n.a.	0	1	741
Months abducted	Total length of the respondent's abductions, in months.	8.48 [15.7]	n.a.	8.48 [15.7]	0	137	462
Age abducted	Age at the time of first abduction	14.67 [4.8]	n.a.	14.67 [4.8]	5	29	462
Violent acts experienced	Total number of all 26 possible violent events reported (data incomplete for three youth)	6.90 [5.0]	4.25 [2.9]	10.34 [5.0]	0	25	738
Violent acts received	Reported number of the 13 violent events inflicted by others upon youth	4.45 [3.6]	2.37 [2.2]	7.16 [3.2]	0	13	738
Violent acts committed	Reported number of the 8 violent events committed by the youth upon others	0.48 [1.3]	0.02 [0.2]	1.07 [1.8]	0	8	738
Violent acts upon family	Reported number of the 5 violent events inflicted by others upon the youth's family	1.97 [1.4]	1.86 [1.4]	2.11 [1.4]	0	5	739
Leadership position	Indicator for ever having received a rank or leading other youth while with the LRA	0.07 [0.25]	n.a.	0.07 [0.25]	0	1	462
Ever rewarded	Indicator for reporting ever receiving rewards or remuneration from the LRA	0.04 [0.19]	n.a.	0.04 [0.19]	0	1	462
Ever loyal	Indicator for reporting ever having felt allegiance to Kony and the LRA	0.23 [0.42]	n.a.	0.23 [0.42]	0	1	462
Carried own firearm	Indicator for having been given and allowed to keep (to 'slep with') a firearm by LRA	0.28 [0.45]	n.a.	0.28 [0.45]	0	1	462
Serious injury	Indicator for currently having a serious injury	0.13 [0.34]	0.11 [0.31]	0.17 [0.38]	0	1	741
LRA inflicted injury	Indicator for having a serious injury that was inflicted by rebels	0.04 [0.20]	0.00 [0.05]	0.09 [0.29]	0	1	741
Returned via army	Indicator for having passed through the army (UPDF) after escape or rescue	0.53 [0.50]	n.a.	0.53 [0.50]	0	1	462
Abused by army	Indicator for reporting having been beaten or otherwise abused while in custody	0.06 [0.24]	n.a.	0.06 [0.24]	0	1	462
Reception center	Indicator for having passed through a reception center upon return	0.38 [0.49]	n.a.	0.38 [0.49]	0	1	462
Received NGO services	Indicator for ever having received NGO services after return home	0.21 [0.41]	n.a.	0.21 [0.41]	0	1	462
Community rejection	Indicator for having felt not accepted by community upon return	0.03 [0.18]	n.a.	0.03 [0.18]	0	1	462

Note: Sample means weighted by inverse sampling and inverse attrition probabilities

Table 2: Summary statistics on social and political participation

Variable	Description	(1)	(2)	(3)	(4)	(5)	(6)
		Sample Mean [<i>Std Dev</i>]			Min	Max	Obs
		All	Non-abd	Abd			
Current age	Self-reported age in years	19.72 [5.11]	19.20 [5.03]	20.40 [5.15]	14	30	741
Voted in 2005	Indicator for having voted in a 2005 referendum (excludes the 238 youth too young to vote)	0.49 [0.50]	0.45 [0.50]	0.53 [0.50]	0	1	503
Community mobilizer	Indicator for currently being a "community mobilizer"	0.039 [0.19]	0.023 [0.15]	0.061 [0.24]	0	1	741
Political employment	Indicator for reporting a political position as a main occupation	0.004 [0.06]	0.001 [0.04]	0.007 [0.08]	0	1	741
NGO volunteer	Indicator for currently being a volunteer for a non-governmental organization	0.04 [0.20]	0.03 [0.18]	0.06 [0.23]	0	1	741
Attends church	Indicator for attending church "often"	0.81 [0.39]	0.81 [0.39]	0.81 [0.39]	0	1	741
Community group member	Indicator for being a member in any one of seven types of community groups	0.42 [0.49]	0.41 [0.49]	0.44 [0.50]	0	1	741
Farmer's cooperative member	Indicator for currently being a member of a farmer's cooperative.	0.09 [0.29]	0.09 [0.28]	0.10 [0.30]	0	1	741
School club member	Indicator for currently a school prefect or member of a school committee/club	0.05 [0.22]	0.04 [0.21]	0.06 [0.23]	0	1	741
Water committee member	Indicator for currently being a member of a water committee	0.013 [0.11]	0.017 [0.13]	0.007 [0.08]	0	1	741
Disobeys elders	Indicator for disobeying parents, teachers or elders "sometimes" or "often"	0.07 [0.26]	0.07 [0.25]	0.08 [0.27]	0	1	741

Note: Sample means weighted by inverse sampling and inverse attrition probabilities

Table 3: Determinants of LRA abduction and recruitment into government militias

Pre-treatment Covariate	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Abducted versus non-abducted youth				Militia versus non-militia members			
	Unconditional mean		Difference in means [†]		Unconditional mean		Difference in means [†]	
	Abd	Non-Abd	Unconditional	Conditional	Abd	Non-Abd	Unconditional	Conditional
Year of birth [†]	21.54 [0.44]	20.47 [0.29]	1.08 [0.44]**	1.44 [0.61]**	22.94 0.72	19.54 0.41	3.39 [0.83]***	2.67 [0.69]***
Indicator for father a farmer [†]	0.90 [0.01]	0.90 [0.03]	0.01 [0.02]	-0.03 [0.03]	0.96 0.03	0.89 0.03	0.07 [0.04]*	0.07 [0.04]*
Household size in 1996 [†]	8.48 [0.33]	8.81 [0.55]	-0.33 [0.41]	-1.15 [0.33]***	9.42 0.83	8.37 0.61	1.05 0.98	1.25 [0.68]*
Landholdings in 1996 [†]	26.78 [1.48]	26.36 [2.44]	0.42 [2.10]	1.00 [2.41]	15.28 3.02	22.35 1.55	-7.07 [3.02]**	-4.55 [2.94]
Top 10% of Landholdings [†]	0.16 [0.02]	0.16 [0.04]	0.00 [0.03]	0.01 [0.02]	0.03 0.02	0.11 0.02	-0.08 [0.03]***	-0.07 [0.03]**
Cattle in 1996 [†]	17.73 [7.68]	12.66 [4.89]	5.07 [4.12]	5.95 [7.44]	3.29 1.96	14.03 7.16	-10.73 7.13	-6.45 [2.41]**
Other livestock in 1996 [†]	14.18 [2.11]	13.23 [3.09]	0.94 [2.72]	1.17 [0.98]	6.23 1.83	11.42 2.52	-5.20 [2.45]**	-4.22 [2.26]*
Owned plow in 1996 [†]	0.23 [0.03]	0.19 [0.04]	0.04 [0.04]	0.02 [0.05]	0.09 0.04	0.19 0.04	-0.11 [0.06]*	-0.13 [0.06]**
Uneducated father	0.12 [0.01]	0.13 [0.02]	-0.02 [0.02]	0.01 [0.01]	0.07 0.04	0.13 0.01	-0.05 0.04	-0.11 [0.03]***
Father's years of schooling	6.11 [0.19]	5.73 [0.27]	0.38 [0.34]	0.22 [0.25]	6.03 0.48	5.89 0.18	0.15 0.50	0.33 [0.47]
Uneducated mother	0.53 [0.04]	0.55 [0.02]	-0.01 [0.04]	-0.02 [0.04]	0.66 0.11	0.53 0.02	0.13 0.10	0.12 [0.10]
Mother's years of schooling	2.32 [0.23]	2.42 [0.16]	-0.09 [0.28]	-0.10 [0.28]	1.95 0.66	2.40 0.13	-0.45 0.64	-0.32 [0.66]
Paternal death before 1996	0.34 [0.03]	0.33 [0.02]	0.00 [0.04]	0.01 [0.04]	0.42 0.09	0.33 0.02	0.09 0.10	0.10 [0.09]
Maternal death before 1996	0.13 [0.02]	0.12 [0.02]	0.01 [0.03]	0.02 [0.03]	0.06 0.05	0.13 0.01	-0.07 0.05	-0.02 [0.04]
Orphaned before 1996	0.07 [0.01]	0.08 [0.02]	0.00 [0.02]	-0.02 [0.02]	0.02 0.02	0.08 0.02	-0.05 [0.03]*	-0.01 [0.03]

Notes:

Robust standard errors in brackets, clustered by location

All estimates weighted by inverse sampling probabilities and inverse attrition probabilities

* significant at 10%; ** significant at 5%; *** significant at 1%

† Mean differences include data from unfound and non-surviving youth, and omit inverse attrition weights.

‡ The unconditional difference is a simple difference in means, while the conditional difference is the coefficient on abduction from a weighted least squares regression of the covariate on abduction and all other pre-war covariates (weighted by inverse sampling and attrition probabilities).

Table 4: Impact of abduction on social and political participation

	(1)	(2)	(3)
Dependent Variable	Non-abd mean (from Table 2)	Impact of abduction (ATE) †	% Change (relative to non-abducted mean) ‡
Voted in 2005	0.45	0.082 [0.027]***	18%
Community mobilizer	0.02	0.031 [0.012]**	136%
Political employment	0.001	0.003 [0.003]	208%
NGO volunteer	0.03	0.013 [0.013]	38%
Attends church	0.81	0.013 [0.033]	2%
Community group member	0.41	-0.003 [0.036]	-1%
Farmer's cooperative	0.09	-0.012 [0.015]	-14%
School club member	0.04	0.025 [0.015]	56%
Water committee member	0.02	-0.012 [0.006]**	-70%
Disobeys elders	0.07	0.029 [0.021]	43%

Notes:

Each row represents a separate regression

All variables defined and described in Table 2

Robust standard errors in brackets, clustered by sampling unit (location and abduction status)

† The ATE is calculated as the coefficient on an abduction indicator variable in an ordinary least squares regression of the dependent variable on abduction and controls (age and location dummies, age/location interactions, and pre-treatment individual and household characteristics). Weights include inverse sampling probabilities and inverse attrition probabilities.

‡ The percentage change is calculated as the ATE relative to the mean value for non-abducted youth

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5: Impact of war experiences on social and political participation (abductees only)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Voted in 2005	Community mobilizer	Political employment	NGO volunteer	Attends church	Group member	Farmer's cooperative	Water committee member	School club member	Disobeys elders
Violent acts experienced	0.020 [0.006]***	0.007 [0.002]***	0.000 [0.000]	-0.003 [0.002]	0.003 [0.005]	0.012 [0.007]*	0.005 [0.004]	-0.001 [0.001]	0.005 [0.002]**	0.007 [0.005]
Age abducted	-0.019 [0.022]	0.018 [0.020]	0.001 [0.002]	0.004 [0.010]	-0.016 [0.024]	0.065 [0.033]*	0.020 [0.010]*	0.004 [0.007]	0.012 [0.007]	0.032 [0.020]
Leadership position	-0.002 [0.111]	0.119 [0.055]**	0.006 [0.008]	-0.048 [0.051]	-0.258 [0.131]*	-0.134 [0.133]	-0.040 [0.064]	-0.022 [0.018]	-0.019 [0.035]	-0.099 [0.062]
Ever rewarded	-0.093 [0.094]	-0.083 [0.040]*	-0.003 [0.014]	-0.001 [0.057]	0.206 [0.116]*	0.042 [0.141]	0.126 [0.104]	0.001 [0.011]	-0.053 [0.047]	-0.026 [0.059]
Ever loyal	0.028 [0.058]	-0.003 [0.034]	0.001 [0.004]	-0.014 [0.034]	-0.036 [0.056]	0.126 [0.057]**	-0.023 [0.032]	-0.007 [0.012]	0.000 [0.028]	-0.005 [0.046]
Carried own firearm	-0.072 [0.048]	-0.019 [0.028]	-0.001 [0.005]	0.042 [0.027]	0.045 [0.043]	0.187 [0.061]***	-0.022 [0.059]	0.009 [0.017]	-0.025 [0.032]	-0.010 [0.047]
Serious injury	-0.060 [0.072]	-0.037 [0.061]	0.000 [0.005]	0.080 [0.052]	-0.064 [0.043]	0.147 [0.107]	-0.042 [0.062]	-0.007 [0.010]	-0.017 [0.057]	0.016 [0.050]
LRA inflicted injury	-0.153 [0.079]*	0.018 [0.055]	0.001 [0.005]	-0.024 [0.071]	0.097 [0.052]*	-0.202 [0.097]**	-0.016 [0.066]	0.024 [0.022]	0.015 [0.066]	-0.058 [0.049]
Returned via army	-0.015 [0.066]	-0.002 [0.038]	0.007 [0.006]	0.034 [0.040]	-0.019 [0.049]	-0.045 [0.041]	0.013 [0.028]	0.032 [0.015]*	0.012 [0.021]	0.022 [0.032]
Abused by army	0.200 [0.133]	-0.083 [0.047]*	0.003 [0.005]	-0.099 [0.048]*	-0.066 [0.069]	0.098 [0.064]	0.045 [0.062]	-0.013 [0.017]	0.036 [0.044]	-0.078 [0.049]
Reception center	0.181 [0.072]**	-0.013 [0.037]	0.000 [0.004]	0.020 [0.031]	0.169 [0.048]***	-0.020 [0.051]	0.029 [0.040]	-0.012 [0.013]	-0.014 [0.039]	0.057 [0.037]
Received NGO services	-0.085 [0.091]	0.054 [0.036]	-0.001 [0.003]	0.020 [0.027]	-0.014 [0.040]	0.124 [0.084]	0.038 [0.052]	0.011 [0.010]	0.022 [0.031]	-0.046 [0.029]
Community rejection	-0.075 [0.086]	-0.005 [0.063]	0.005 [0.007]	-0.027 [0.042]	-0.006 [0.094]	0.096 [0.093]	0.052 [0.067]	-0.002 [0.010]	0.042 [0.073]	0.043 [0.071]
Observations	327	456	456	456	456	456	456	456	456	456
R-squared	0.52	0.35	0.58	0.37	0.41	0.4	0.28	0.21	0.36	0.38
Controls not displayed:										
Year of birth dummies	x	x	x	x	x	x	x	x	x	x
Location of birth dummies	x	x	x	x	x	x	x	x	x	x
YOB / location interactions	x	x	x	x	x	x	x	x	x	x
Household traits in 1996	x	x	x	x	x	x	x	x	x	x
Abduction length dummies	x	x	x	x	x	x	x	x	x	x
Abduction year dummies	x	x	x	x	x	x	x	x	x	x

Each column represents a separate regression

All variables defined and described in Tables 1 and 2

Robust standard errors in brackets, clustered by location

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 6: Impact of war violence on social and political participation (all youth)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Voted in 2005				Community mobilizer			
Violent acts experienced	0.006 [0.005]	0.010 [0.005]*		-0.003 [0.017]	0.004 [0.001]***	0.005 [0.001]***		0.008 [0.003]**
Violent acts received			0.019 [0.009]**				0.007 [0.003]**	
Violent acts committed			-0.008 [0.023]				-0.01 [0.007]	
Violent acts upon family			-0.01 [0.018]				0.016 [0.006]***	
Ever abducted				0.006 [0.124]				0.04 [0.022]*
Abduction × Violent acts				0.011 [0.018]				-0.005 [0.004]
Months abducted		-0.003 [0.001]**	-0.003 [0.001]***	-0.003 [0.001]***		0.000 [0.001]	0.000 [0.001]	0.000 [0.001]
Observations	502	502	502	502	738	738	738	738
R-squared	0.28	0.28	0.29	0.29	0.12	0.12	0.13	0.12
Joint significance of violence and abduction terms (p-value)	0.166	0.071*	0.090*	0.006***	0.001***	0.000***	0.002***	0.004***
Controls not displayed:								
Year of birth dummies	×	×	×	×	×	×	×	×
Location of birth dummies	×	×	×	×	×	×	×	×
YOB / location interactions	×	×	×	×	×	×	×	×
Household traits in 1996	×	×	×	×	×	×	×	×

Each column represents a separate regression

All variables defined and described in Tables 1 and 2

Robust standard errors in brackets, clustered by location

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7: Relative explanatory power of alternative determinants of participation

	(1)	(2)	(3)	(4)	(5)
	Impact of Abduction (ATE)[†]	Voted in 2005 referendum		Community mobilizer	
		Correlation	% of Voting ATE[‡]	Correlation	% of Voting ATE[‡]
Violence received	4.755 [0.266]***	0.015 [0.006]**	87.0%	0.005 [0.002]***	76.7%
Currently lives in town	0.017 [0.037]	-0.009 [0.055]	-0.2%	-0.041 [0.017]**	-2.2%
Currently lives outside home district	0.012 [0.027]	-0.175 [0.081]**	-2.6%	0.011 [0.021]	0.4%
Serious injury	0.086 [0.022]***	-0.081 [0.056]	-8.5%	-0.045 [0.019]**	-12.5%
Top quartile of emotional distress	0.108 [0.031]***	-0.042 [0.068]	-5.5%	0.006 [0.020]	2.1%
Asset index	-0.075 [0.015]***	-0.02 [0.189]	1.8%	0.004 [0.041]	-1.0%
Days employed in past four weeks	0.076 [0.564]	0.001 [0.003]	0.1%	0.002 [0.001]	0.5%
Gross cash earnings in past 4 weeks (USD)	-2.629 [1.900]	-0.001 [0.001]**	3.2%	0 [0.000]	0.0%
Community group membership	-0.003 [0.036]	-0.002 [0.041]	0.0%	0.04 [0.014]***	-0.4%
Volunteers for an NGO	0.013 [0.013]	0.266 [0.071]***	4.2%	-0.01 [0.034]	-0.4%
Attends church	0.013 [0.033]	0.117 [0.054]**	1.9%	0.005 [0.016]	0.2%
Bottom quartile of pro-social behavior	0.084 [0.036]**	0.043 [0.072]	4.4%	0.033 [0.026]	8.9%
Index of social support	-0.228 [0.163]	0 [0.011]	0.0%	0.002 [0.004]	-1.5%
Indicator for poor family relations	0.032 [0.017]*	-0.023 [0.131]	-0.9%	0.068 [0.039]*	7.0%
Indicator for functional literacy	-0.152 [0.029]***	0.033 [0.056]	-6.1%	-0.004 [0.019]	2.0%
Radio ownership	-0.035 [0.028]	-0.017 [0.053]	0.7%	0.007 [0.018]	-0.8%
Educational attainment in years	-0.786 [0.138]***	-0.003 [0.009]	2.9%	-0.002 [0.003]	5.1%
Observations		502		738	
R-squared		0.28		0.12	
Additional controls (not displayed)					
Year of birth dummies	×	×		×	
Location of birth dummies	×	×		×	
Year and location of birth interactions	×	×		×	
Household traits in 1996	×				

All variables defined and described in Tables 1 and 2 and Appendix Table 2

Robust standard errors in brackets, clustered by sampling unit (location and abduction status)

* significant at 10%; ** significant at 5%; *** significant at 1%

Figures in bold represent correlates that exhibit a statistically significant ATE (at the 5 percent level) in Column 1 and a statistically significant

[†] Each item in Column 1 is a separate regression. Each ATE is calculated as the coefficient on an abduction indicator variable in an ordinary least

[‡] Calculated as the ATE in Column 1 multiplied by the coefficient in Column 2, divided by the relevant ATE in Table 4.

Table A1: Factor analysis of violence experienced

		(1)	(2)	(3)	(4)	(5)	(6)
Indicator of Violence	(1=Yes, 0=No)	Mean	Std Dev	Eigenvectors			Uniqueness
				1st	2nd	3rd	
1	Personal property destroyed	0.78	0.42	0.09	0.01	0.12	0.98
2	Heard gun fire regularly	0.75	0.43	0.12	-0.02	0.02	0.98
3	Bullets shot at you	0.43	0.50	0.26	-0.07	0.26	0.86
4	Witnessed an attack or battle	0.50	0.50	0.61	-0.15	0.10	0.60
5	Received a severe beating	0.37	0.48	0.59	-0.14	0.07	0.63
6	Was attacked with a weapon	0.12	0.33	0.38	-0.28	0.10	0.76
7	Was tied or locked up	0.30	0.46	0.61	-0.21	-0.04	0.59
8	Received a serious injury in battle	0.22	0.41	0.53	-0.23	0.12	0.65
9	Forced to carry heavy loads	0.44	0.50	0.67	-0.22	-0.06	0.50
10	Betrayed by someone	0.16	0.36	0.31	-0.19	0.11	0.86
11	Witnessed beatings or torture of others	0.68	0.47	0.57	-0.05	0.17	0.65
12	Witnessed a killing	0.54	0.50	0.65	-0.08	0.12	0.55
13	Witnessed a massacre	0.37	0.48	0.62	-0.22	0.19	0.53
14	Saw torching of homes with people inside	0.37	0.48	0.49	-0.20	0.08	0.72
15	Witnessed a rape	0.11	0.32	0.33	-0.30	-0.03	0.81
16	A parent died violently	0.29	0.46	0.02	-0.11	0.37	0.85
17	A parent was abducted	0.15	0.36	0.06	-0.15	0.40	0.81
18	Other family member/friend died violently	0.53	0.50	0.13	-0.12	0.55	0.66
19	Other family member/friend was abducted	0.64	0.48	0.13	-0.08	0.48	0.74
20	Family member received a serious war injury	0.36	0.48	0.16	-0.07	0.38	0.82
21	Forced to steal property	0.26	0.44	0.56	-0.34	-0.10	0.56
22	Forced to kill an opposing soldier	0.06	0.23	0.20	-0.55	-0.02	0.66
23	Forced to beat or cut a family member/friend	0.05	0.22	0.11	-0.70	0.01	0.50
24	Forced to beat or cut a civilian	0.09	0.28	0.26	-0.73	0.06	0.40
25	Forced to kill a family member or friend	0.03	0.18	0.04	-0.65	0.04	0.58
26	Forced to kill a civilian	0.07	0.26	0.21	-0.78	0.09	0.34
27	Forced to have sex with a woman	0.01	0.10	0.10	-0.16	0.02	0.96
28	Forced to abuse the dead bodies	0.09	0.29	0.37	-0.41	0.05	0.69
29	Forced to betray a family member or friend	0.03	0.18	0.10	-0.57	0.03	0.66
30	Forced to betray a civilian	0.05	0.22	0.11	-0.55	0.07	0.68
Eigenvalue				6.55	1.82	1.04	
Proportion of variation explained				0.64	0.18	0.10	
Cumulative variation explained				0.64	0.81	0.91	

Note: Data weighted by inverse sampling and inverse attrition probabilities

Table A2: Summary statistics of economic and psychosocial performance

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Sample Mean [<i>Std Dev</i>]			Min	Max	Obs
	All	Non-abd	Abd			
Currently lives outside home district	0.15 [0.35]	0.16 [0.37]	0.13 [0.34]	0	1	741
Currently lives in a town	0.45 [0.50]	0.44 [0.50]	0.48 [0.50]	0	1	741
Index of psychological distress	4.16 [2.57]	3.91 [2.35]	4.49 [2.78]	0	16	741
Normalized index of household assets	0.48 [0.25]	0.50 [0.25]	0.45 [0.24]	0	1	741
Indicator for currently having land access	0.29 [0.45]	0.33 [0.47]	0.23 [0.42]	0	1	741
Days employed in past four weeks	7.16 [9.68]	6.59 [9.53]	7.91 [9.83]	0	30	741
Gross cash earnings in past four weeks (in USD)	9.81 [30.35]	9.50 [31.15]	10.21 [29.30]	0	320	741
Index of social support	5.37 [2.42]	5.35 [2.42]	5.39 [2.42]	0	13	741
Indicator for poor family relations	0.09 [0.28]	0.08 [0.28]	0.09 [0.29]	0	1	741
Educational attainment in years	6.99 [2.76]	7.13 [2.75]	6.82 [2.77]	0	16	741
Indicator for functional literacy	0.71 [0.45]	0.76 [0.43]	0.65 [0.48]	0	1	741

Note: Data weighted by inverse sampling and inverse attrition probabilities

Table A3: Robustness of abduction impacts to alternative regression models

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Abduction ATE (from Table 5)	Alternative ATE model 1	Alternative ATE model 2	Alternative ATE model 3	Alternative ATE model 4	Alternative ATE model 5
Voted in 2005	0.082 [0.027]***	0.090 [0.024]***	0.084 [0.032]**	0.079 [0.031]**	0.098 [0.051]*	0.372 [0.157]**
Community mobilizer	0.031 [0.012]**	0.032 [0.013]**	0.03 [0.014]**	0.031 [0.015]**	0.042 [0.017]**	1.119 [0.387]***
Community group member	-0.003 [0.036]	-0.018 [0.035]	-0.016 [0.039]	-0.018 [0.039]	0.009 [0.051]	-0.034 [0.165]
Water committee member	-0.012 [0.006]**	-0.015 [0.007]**	-0.02 [0.008]**	-0.022 [0.009]**	-0.014 [0.012]	-1.588 [2.511]
Regression method						
Linear (OLS)	×	×	×	×	×	
Non-linear (logit)						×
Controls not displayed:						
Year of birth dummies	×	×	×	×		×
Location of birth dummies	×	×	×	×		×
Year and location interactions	×	×	×			
Household traits in 1996	×	×				×
Inverse attrition weights	×					×

Each term is the coefficient on an abduction indicator from an OLS regression of the dependent variable on an abduction indicator and the listed controls.

All variables defined and described in Table 2

Robust standard errors in brackets, clustered by sampling unit (location and abduction status)

* significant at 10%; ** significant at 5%; *** significant at 1%

Table A4: Best case and worst case attrition bounds on treatment effects

Dependent variable	Percent missing [†]		Treatment effect bounds		
	Non-Abd	Abd	Untrimmed ATE [‡]	"Best case" bound [§]	"Worst case" bound [§]
Voted in 2005	33%	35%	0.098 [0.047]**	0.122 [0.058]**	0.084 [0.055]
Community mobilizer	28%	30%	0.042 [0.017]**	0.067 [0.044]	0.042 [0.0167]**
NGO volunteer	28%	30%	0.011 [0.016]	0.038 [0.043]	0.010 [0.017]
Attends church	28%	30%	-0.018 [0.030]	-0.013 [0.031]	-0.037 [0.046]
Community group member	28%	30%	0.009 [0.038]	0.024 [0.045]	-0.002 [0.043]
Community group memberships	28%	30%	0.007 [0.078]	0.086 [0.121]	-0.011 [0.085]
School club member	28%	30%	0.014 [0.018]	0.038 [0.044]	0.013 [0.018]
Water committee member	28%	30%	-0.014 [0.010]	0.010 [0.005]**	-0.015 [0.011]
Disobeys elders	28%	30%	0.019 [0.019]	0.045 [0.044]	0.018 [0.020]
In fight	28%	30%	-0.004 [0.020]	0.022 [0.044]	-0.005 [0.020]

Notes:

Each row represents the results of the trimming procedure suggested by Lee (2005) to account for selective attrition and survival

Treatment is binary and equals 1 if ever abducted and 0 otherwise

Standard errors in brackets, but are not clustered or heteroskedastic-robust

All estimates are weighted by inverse sampling probabilities and inverse propensity scores

* significant at 10%; ** significant at 5%; *** significant at 1%

† Missing youth include attriters and non-survivors. 31% of non-abducted youth and 30% of abducted youth are missing. Data collected from families on the education, employment status, and major injuries of migrant youth reduce these missing percentages to 14% and 23%. In the case of wages, additional observations are missing due to unemployed youth.

‡ The untrimmed ATE is the difference in the means of the abducted and non-abducted groups, and is not a regression estimate. No control variables are used. The means are analogous to the WLS estimates in Column 4 of Table 4.

§ Best and worst-case bounds are calculated as the difference in the means of the abducted and non-abducted groups after 'trimming' the top or the bottom of the distribution of the outcome variable in the treatment group with less attrition. They are not

Table A5: Determinants of violence experienced

	(1)	(2)
	Violent acts experienced	
	Simple linear regression coefficients	Joint significance of regression with higher-order terms
Indicator for father a farmer	0.95 [0.691]	0.175
Household size in 1996	-0.053 [0.042]	0.001***
Landholdings in 1996	0.004 [0.005]	0.117
Cattle in 1996	0.004 [0.004]	0.517
Other livestock in 1996	-0.002 [0.006]	0.374
Owned plow in 1996	-0.825 [0.551]	0.094*
Father's years of schooling	-0.047 [0.048]	0.517
Mother's years of schooling	0.023 [0.056]	0.537
Paternal death before 1996	0.211 [0.534]	0.745
Maternal death before 1996	-0.65 [0.781]	0.513
Orphaned before 1996	0.664 [1.056]	0.591
Year of birth	0.174 [0.035]***	0.003***
Location of birth dummies	not displayed	0.900
Observations	738	738
R-squared	0.08	0.19
Joint test of significance (p-value)		
All 1996 household traits	0.3857	0.000***
All variables	0.019**	0.056*

Notes:

Robust standard errors in brackets, clustered by location

All estimates weighted by inverse sampling probabilities and inverse attrition probabilities

* significant at 10%; ** significant at 5%; *** significant at 1%