

# From Violence to Voting: War and political participation in Uganda\*

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Abstract:

What is the political legacy of a violent civil war? This paper presents evidence for a link between war, violence and increased individual political participation and leadership among former combatants and victims of violence, and uses this link to understand the deeper determinants of political behavior. The setting is Uganda, where conscription by a rebel group has generated quasi-experimental variation in who became a combatant. Original survey data shows that the exogenous element of conscription leads to significantly greater political participation later in life. The principal channel appears to be war violence received rather than perpetrated. Moreover, conscription and violence do not appear to affect non-political forms of community participation. 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

What is the political legacy of a violent civil war? Can perpetrators and victims of violence become productive citizens once the fighting stops? Policy-makers appear pessimistic. A World Bank document suggests that the impacts of civil war are often so adverse that they “cannot reasonably be viewed as social progress” (2003: 32). There is particular concern (and scattered evidence) that former combatants are especially likely to lead lives of crime, violence, and exclusion. The French foreign minister, speaking to the UN, spoke of young ex-soldiers as “a time bomb that threatens stability and growth” (BBC, 2007). A *New York Times* (2006) editorial lamented that such youth return as “damaged, uneducated pariahs”. Perhaps as a consequence, proponents of reintegration programs point to a life of crime and banditry as the primary option for former combatants (Spear, 2006). If these commentators are correct, then the rebuilding of civil society and democracy will be all the more challenging and unlikely in post-conflict states, and may even contribute to the well-known ‘conflict trap’ (Collier, 2003; 2007).

Not all of the evidence is so gloomy. A small literature ties victimization by war violence to greater political and collective action. 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. Likewise, psychologists find that victims of violence are in general resilient, and that exposure has even led to political activism among groups such as Jewish Holocaust survivors (Carmil and Breznitz, 1991) and Palestinian victims of bombardment (Punamaki et al., 1997). Toure (2002) argues that the civil war in Liberia saw the birth of a robust indigenous civil society and human rights organizations. Little of this evidence, however, demonstrates a clear causal link from violence to political engagement, and little of it deals with the perpetrators of violence.<sup>3</sup>

This paper employs new data and an unfortunate natural experiment in northern Uganda to show that combat experiences and exposure to war violence have led to greater political participation and engagement among young men formerly with the rebel group. 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, and this paper will show that patterns of rebel recruitment appear to have generated nearly exogenous variation in participation in warfare and violence. Over the

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<sup>3</sup> There are some exceptions. Humphreys and Weinstein (2007) document the determinants of demobilization and reintegration in Sierra Leone, and note that 62 percent of their survey respondents reported attitudes supportive of the government and democracy.

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 abduction is indeed conditionally exogenous, causal estimates of its impact on later-life outcomes such as social and political participation can be identified. The results in this paper suggest that forced recruitment leads to *greater* political participation—an 22 percent increase in the likelihood of voting, a more than doubling of the likelihood of being a community leader or holding a political job, and a 73 percent increase in the likelihood of being a member of a peace-promoting organization. Abduction, however, does not seem to systematically 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, this paper shows that violence, in particular violence received, can account for the bulk of the impact of abduction on participation. No other war experiences are so significantly and consistently associated with both participation and abduction.

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 little 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, in particular because participation is associated with a difficult-to-observe attribute (violence experienced) rather than an easily more observed and targeted ones (such as abduction itself, or abduction length).

The patterns we observe are consistent, however, 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 runs the risk of being axiomatic, and because it is difficult to demonstrate directly or disprove. Indeed, the case for expressive preferences presented in this paper is based primarily on the elimination of alternative explanations. As we will see, however, the expressive interpretation has intuitive appeal, is consistent with the evidence, and is supported by growing a body of evidence in politics and psychology.

In the course of making this case, this paper contributes to our understanding of the determinants of political participation more generally. Little evidence exists on political participation in developing countries. One third of developing countries (and two thirds of Africa) have experienced a civil war since the end of the Cold War (Marshall and Gurr, 2005). Understanding the impact of violence on micro-political behavior is thus an important frontier in social science.

These micro-level findings also complement the macro-level literature that suggests that war and political development go hand in hand. Wantchekon (2004) argues that nearly forty percent of all civil wars that took place from 1945 to 1993 resulted in an improvement in the level of democracy, generally when warlords saw democratization in their interests. 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. Conversely, in Africa, Herbst (2000) has suggested that state weakness is a product of too little warfare. Like most accounts of state-building and democratization, 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, warlords, and subject populations. This paper instead provides evidence for a micro-level link between conflict, individual political engagement, and democratization after war.

## **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.<sup>4</sup>

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<sup>4</sup> Reviews of this literature include Feddersen (2004), Dhillon and Peralta (2002), and Aldrich (1993).

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.<sup>5</sup> 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.<sup>6</sup> Scattered evidence, largely from the US, suggests several patterns consistent with such expressive voting behavior.<sup>7</sup> 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.<sup>8</sup> Rather, the argument is based on the well-established correlation between voting and education in the U.S. (e.g. Verba et al., 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.<sup>9</sup> 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

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<sup>5</sup> e.g. Edlin, Gelman, and Kaplan (2007), Fowler (2006), Feddersen and Sandroni (2002), and Harsanyi (1992, 1977).

<sup>6</sup> 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)

<sup>7</sup> 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).

<sup>8</sup> 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.

<sup>9</sup> 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).

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.<sup>10</sup>

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).<sup>11</sup> 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.<sup>12</sup>

### **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 education and economic opportunities, and increased injuries and psychological distress among abductees (Blattman & Annan, 2007), all of which could alter the calculus of voting by lowering its cost among former abductees.<sup>13</sup> 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.

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<sup>10</sup> 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.

<sup>11</sup> 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).

<sup>12</sup> 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.<sup>12</sup> 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).

<sup>13</sup> 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.

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 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 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, this paper draws on the experiences of youth embroiled in the twenty-year war in northern Uganda.

The war 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.<sup>14</sup> 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 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

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<sup>14</sup> This account is based on Allen (2005), Behrend (1999), Doom and Vlassenroot (1999), Finnström (2003), Lamwaka (2002), and Omara-Otunnu (1994).

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.

Twenty percent of abductees did not return and sadly can be presumed perished (as few remain with the LRA). The remaining 80 percent escaped, were released, or were rescued after periods of a day up to ten years. Roughly half of these ‘returnees’ reported to and were demobilized by the Ugandan army (the UPDF), and two in five returnees passed through a ‘reception center’ that provided basic health services, family relocation, and reinsertion. In 2006 the Government of Uganda and the LRA reached a truce and peace talks continue.

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 more free and democratic. President Museveni introduced single-party democracy in 1996, and was elected and re-elected in 1996, 2001 and 2006 under moderately free and fair elections.<sup>15</sup>

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.<sup>16</sup> 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, 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

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<sup>15</sup> Official election results suggest that Museveni received 59 percent of the 2006 national vote share. (IFES, 2007)

<sup>16</sup> 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?"

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.<sup>17</sup> 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.

### **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 nearly seven violent acts on average. The survey asked respondents directly about 26 specific *violent acts experienced*, including 12 *violent acts received*, 9 *violent acts perpetrated* by the respondent himself, and 5 *violent acts upon the family* of the respondent.<sup>18</sup> The average youth reported 6.6 violent acts experienced, with abductees reporting 9.8 acts to non-abductees' 4.2 acts (Table 1).

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<sup>17</sup> 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.

<sup>18</sup> Acts received include: witnessing an attack or battle; witnessing beatings or torture of others; witnessing a killing; witnessing a massacre; witnessing rape; witnessing the torching of occupied homes; forced labor; receiving a severe beating; being attacked with a weapon; being tied or locked up; and receiving a serious injury in a battle or attack. Acts perpetrated include: forced to kill a soldier; forced to beat a civilian; forced to beat a family member or friend; forced to kill a civilian; forced to kill a family

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. 44 percent of the youth eligible to vote did so 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.<sup>19</sup> 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 only 4 of the respondents (0.4 percent) reported holding such positions.

Other measures of community participation and collective action were also recorded. 42 percent report membership in at least one of seven community groups, including peace groups (7 percent), water management committees (1.3 percent), cultural groups (16 percent), sports teams (12 percent), farmer’s cooperatives (9 percent), school clubs and committees (5 percent), and church or bible study groups (18 percent).<sup>20</sup> 81 percent also attend church regularly, and 4 percent of youth volunteer for a community organization. Finally, an important part of social life involves cooperation with and obedience to elders. 7 percent indicated that they “sometimes” or “often” disobeyed parents, teachers, and elders.

## 5. The causal 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 characteris-

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member or friend; forced to have sex with a woman; and forced to abuse dead bodies. Violence upon family includes: a parent was abducted; another family member was abducted; a family member was injured in combat or by landmines; and, a parent was murdered or died violently.

<sup>19</sup> 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.

<sup>20</sup> Virtually all report themselves as Christian: 71 percent Catholic, 19 percent Anglican, 9 percent Pentecostal or Evangelical, and less than one percent other (either “No religion” or traditional religion)

tics 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 homesteads 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.<sup>21</sup>

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 militia 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 government 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

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<sup>21</sup> 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).

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**

Assuming conditional unconfoundedness, consistent estimates of the ATE can be calculated using an index model such as the probit. A more efficient and consistent approach, however, is to weight on the inverse of a nonparametric estimate of the propensity score (Hirano et al., 2003). For binary outcome  $Y$ :

$$P(Y_i = 1) = \Phi(\tau \cdot T_i + X_i^s \cdot \beta_i) \tag{1}$$

where the treatment indicator  $T$  equals one if youth  $i$  was abducted, and the  $X^S$  are the subset of covariates  $X$  that are significantly correlated with  $Y$ , conditional on treatment.<sup>22</sup> The resulting ATEs, represented by  $\tau$  and summarized in Table 4, suggest that abduction causes little difference in non-political group participation and social interactions, but higher political participation and activity.<sup>23</sup>

Abduction leads to an increase of 8.5 percentage points in the likelihood that a youth voted in the 2005 referendum (Column 2). Since just 39 percent of eligible non-abducted youth voted (Column 1), this ATE represents an 22 percent increase in the likelihood of voting (Column 3). Abduction also leads to a 3.3 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 145 percent increase—abduction more than doubles the likelihood that a youth becomes a minor community leader. Both results are statistically significant at the one percent level. Furthermore, abduction appears to be associated with an eightfold increase in the likelihood of holding a political job. This estimate, however, is only weakly statistically significant, most of all 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 coefficient on political jobs, the direction and magnitude of the result is consistent with the other political results.

Turning to others forms of community 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). Looking at specific groups or activities, the difference in group participation between abductees and non-abductees is generally small and never statistically significant.

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<sup>22</sup> The weights used are:

$$\omega_i = \omega(T_i, v_i, \rho_i) = \rho_i \cdot \pi_i \cdot \left( \frac{T_i}{\hat{e}(v_i)} + \frac{1-T_i}{1-\hat{e}(v_i)} \right)$$

where  $\rho_i$  and  $\pi_i$  are sampling and attrition weights, and  $\hat{e}(v_i)$  is a nonparametric estimate of the propensity score. A series estimator for the propensity score achieves the efficiency bound (Hirano et al., 2003). It requires linear regression of treatment assignment on each covariate in  $X$ . Those covariates that pass a threshold t-statistic of 1.0 are included in  $X^S$ . Inverse selection weights are normalized so that differences between the inverse  $\hat{e}(v)$  and one sum to one within each treatment group. The  $v_i$  are the subset of the covariates  $X_i$  that have substantial correlation with the treatment (Hirano et al., 2003).

<sup>23</sup> An alternative to testing the coefficients on the abduction indicator in multiple regressions with multiple dependent variables is to stack the equations and run the regressions simultaneously as seemingly unrelated regressions (SURs). This process can offer efficiency gains as well as allow simultaneous testing of hypotheses (such as the nonzero impact of abduction on political participation and the zero impact of abduction on non-political participation). Routines for implementing unweighted linear SUR models are available, and the results are consistent with the conclusions in this paper. A non-linear SUR model of ten or more stacked probit equations (that accounts for the weighting and stratification of the survey data) does not achieve convergence, however.

Only in one group—peace groups—is there a notable difference. Former abducted youth are 3.8 percentage points more likely to participate in such groups, an increase of 73 percent over non-abducted youth. Peace groups are clubs of youth that stage cultural dances, dramatic presentations, debates, and talks, often with peace-building or reconciliation themes. There are three possible explanations. First, some youth join or start these clubs independently, while others are organized by schools and international NGOs. In both cases formerly abducted youth may be targeted to take part to facilitate reintegration, which could account for their disproportionate representation. Second, higher participation by the abducted could also reflect a disproportionate interest in peace activities or in signaling their peacefulness to the community. Third, an interest in peace clubs (and not other cultural or community groups) could reflect the same predilection for political participation we observed in voting and leadership.

Finally, there is little evidence of an impact on social relations. Abductees were 3.6 percent 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.

### *Robustness*

The ATE estimates in Table 4 are all highly robust to the regression model used, including the use of alternative controls and weights. The ATEs for five of the outcomes are recalculated under alternative models in Table 5. The ATEs calculated in the original model (and reproduced in Column 1 of Table 5) are robust to the removal of pre-war household traits (Column 2), and removal of year and location of birth (Column 3), although standard errors increase and statistical significance diminishes somewhat with no controls whatsoever. Reintroducing the control variables, the original results are robust to omission of the selection, or inverse propensity score, weights (Column 4), as well as elimination of the attrition correction (Column 5). The unweighted regressions are further robust to elimination of pre-war controls (Column 6) and again the elimination of age and location controls (Columns 7 and 8). The latter regression is a simple difference of means, and provides similar, and in fact larger, coefficients. Use of alternative models, such as the logit or linear probability models, given similar results as well (not displayed).

### *Sensitivity of the identification strategy*

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.

## **6. Unpacking the causal effects using heterogeneous treatments**

Evidence that conscription into a rebel force is associated with political engagement rather than apathy or exclusion is important and useful information, but the reasons for such a relationship—the causal channel—is even more interesting to the student of conflict and politics. One means of uncovering this channel is to examine the effects of 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 a probit model of socio-political outcomes,  $Y$ , on a set of observable and measured war experiences, including our meas-

ures of violence,  $\mathbf{V}$ , abduction length,  $L$ , and a vector of other abduction experiences,  $\mathbf{Z}$  (defined and summarized in Table 1):

$$P(Y_i = 1) = \Phi(\mathbf{V}_i \cdot \boldsymbol{\delta}_1 + \delta_2 \cdot \ln(L)_i + \mathbf{Z}_i \cdot \boldsymbol{\delta}_3 + \mathbf{X}_i \cdot \boldsymbol{\delta}_4 + \mu_i) \quad \text{if } T_i = 1. \quad (2)$$

For the estimated coefficients on the elements of  $\mathbf{V}$ ,  $L$ , and  $\mathbf{Z}$  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. A linear regression of violent acts experienced on pre-abduction traits, for instance, suggests that these variables are of some but weak influence (Table 6).<sup>24</sup> The coefficients are substantively quite small, suggesting that selection into violence is minor. We are not fully confident that violence is unconfounded, however, and so the results from Equation 2 must be interpreted with caution.<sup>25</sup>

## Results

Violent acts received are most consistently and significantly associated with political in the sample. Among the abducted, each additional act of violence received is associated with a 2.9 percentage point increase in the probability of voting and a 1.2 percentage point increase in the probability of being a community mobilizer (Table 7, Columns 1 and 2). The average abducted youth reports 4.3 more acts of violence received than non-abducted youth, implying that violence received from abduction is associated a 12.5 percentage point increase in voting (from a non-abducted base of 39 percent) and a 5.2 percentage point increase in community leadership (from a base of 2 percent). These effects are roughly comparable to (albeit greater than) the respective ATEs from Table 4.

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<sup>24</sup> In Column 2 of Table 4, the regression allows for non-linear relations between the pre-war traits and violence, through the use of fourth-order terms and dummy variables. 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.

<sup>25</sup> 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.

Violence received is weakly and inconsistently related to non-political forms of participation, however (see Table 7, Columns 3 to 13). Group membership is positively but not statistically significantly associated with violence received. Looking at individual activities and groups, sports team membership and church attendance are negatively correlated with violence received, while being a member of a farmer's group, school club, or church group are positively correlated (albeit sometimes weakly). The other of participation forms have little significant association with violence received.

Interestingly, violent acts perpetrated are negatively correlated with political participation, although neither point estimate is statistically significant. Violent acts upon the family, however, are strongly positively associated with both voting and mobilization, although the result is significant only in the mobilization case. The overall effect and explanatory power of family violence is substantively small, though, since the average number of acts of family violence is small in number (2.0, from Table 1) and since the difference between abducted and non-abducted youth is very small (about 0.2 acts).

Violence perpetrated is, however, strongly associated with being a member of a peace group and with church attendance. The effect is substantively largest for peace group membership, however; the average abducted youth reports one act of violence perpetrated, which is associated with a 1.9 percentage point increase in peace group membership on a non-abducted base of 5 percent—almost half of the treatment effect seen in Table 4.

Longer abductions seem to be associated with lower levels of political and especially group participation, although not always significantly. After controlling for violence, the natural logarithm of abduction length is inversely (but not statistically significantly) associated political participation. This inverse relationship is larger and more statistically significant in the case of community group participation, especially cultural groups, farmer's groups, and school groups. These general results hold for alternative transformations of abduction length (not displayed).

Turning to the other measured war experiences, none are as robustly and as consistently related to our measures of political participation as violence received. Abduction age is hardly associated with any form of participation. Having ever carried a firearm in the LRA is not associated with political participation either, although it is positively associated with cultural group membership and disobeying elders.

Having held a rank or similar leadership position in the LRA (just 7 percent of our sample, in all cases very junior ranks such as sergeant or lieutenant) is negatively associated with several forms of participa-

tion—voting, community group membership, church attendance, and disobedience of elders. Leadership in the rebel group is positively associated with community mobilization, on the other hand, but not statistically significantly so in this specification. In other specifications, the relationship is occasionally significant. 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.

#### *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 perpetrated, 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 8, which displays probit regressions of voting (Panel A), community mobilization (Panel B), and community group membership (Panel C) with five different specification each: with an abduction indicator, replicating the earlier ATE results (Column 1); with the index of violence received (Column 2); with violence received and a linear abduction length term (Column 3); with an abduction indicator and the violence received index simultaneously (Column 4); and the same regression with an interaction between abduction and violence (Column 5).

To be consistent with the main proposition, that violence received accounts for much of the explanatory power of abduction), we should observe a sharp decline in the explanatory power of abduction when violence is added to the specification in Column 4. To the extent that abduction-related violence is no different than general civil war violence received, then the interaction between abduction and violence should hold little explanatory power. Finally, to the extent that the impact of violence is uniquely

political, we should not necessarily observe the same patterns with community group membership as we do with voting and mobilization.

The results in Table 8 are more or less consistent with these propositions. Comparing the results in Columns 1 and 2 to those in 4, we see that for both voting and mobilization the violence coefficients remain roughly similar, while the explanatory power of the abduction indicator move towards zero. While individually the abduction and violence coefficients do not appear significant, they are jointly significant at the one percent level. The coefficient on the interaction term is weakly positive for voting while weakly negative for mobilization, suggesting that violence is likely to be associated with greater political participation among former abductees and non-abductees. From the mobilization regressions, it seems that abduction may have some other incremental effect on participation, however, perhaps arising from the leadership effects discussed above.

Turning to the results for community group membership we see that abduction and violence are individually and jointly not statistically significant (Columns 4 and 5, Panel C).

## **7. Alternative explanations and mechanisms**

The theoretical mechanism linking 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-

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.<sup>26</sup> 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*. An *injury indicator* and an indi-

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<sup>26</sup> 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.

cator 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*.

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 9 assesses the relative explanatory power of each of these potential proxies for the participation cost, social preferences, or information-based theories. Our indices of violence are 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 77 percent of the voting ATE and 145 percent of the mobilization ATE versus a (statistically not significant) -22 percent of the community group membership ATE.

The impacts of abduction on violence received and each of the proxies mentioned above is displayed in Column 1 of Table 9.<sup>27</sup> The coefficients from a probit regression of the political participation measures on violence received and each of the proxies are displayed in Columns 2 and 4.<sup>28</sup> 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

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<sup>27</sup> 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.

<sup>28</sup> Year and location of birth indicators and interactions are included in also both these regressions but are not displayed.

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 explain 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 relatively modest (equivalent to -19 percent of the mobilization ATE).

All the above 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 4.3 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 1.1 percentage point increase in mobilization activities. This excess violence corresponds to 77 percent of the voting ATE and 145 percent of the mobilization ATE—magnitudes that are dramatically larger than the estimated influence of the other factors (and none of which display statistical significance in both abduction and participation impacts). 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 participa-

tion, 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, nor to other countries. For instance, Humphreys and Weinstein (2007) examine attitudes to democracy among Sierra Leonean combatants and find a negative, albeit statistically insignificant relationship, between the abusiveness of one’s military unit and these democratic attitudes. Such abusiveness has significant negative effects on social acceptance, however. Even so, the similarity between the Ugandan results in this paper and those from refugees and victims of war violence in Sierra Leone, Israel, and Palestine (discussed above) suggest some degree of external validity outside Uganda. Generalization of the results, however, awaits more data collection in more situations of violence and conflict.

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 models 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 in 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 selection by the armed group as well as variation in rebel abduction activity over time—crosses this hypothetical threshold. This sensi-

tivity 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 1). 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 ATE’s 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.	8.5 [15.7]	n.a.	8.5 [15.7]	0	137	462
Age abducted	Age at the time of first abduction	14.7 [4.8]	n.a.	14.7 [4.8]	5	29	462
Violent acts experienced (of 26)	Total number of all 26 possible violent events reported (data incomplete for three youth)	6.6 [4.7]	4.2 [2.9]	9.8 [4.8]	0	24	738
Violent acts received (of 12)	Reported number of the 13 violent events inflicted by others upon youth	4.2 [3.3]	2.3 [2.2]	6.6 [2.9]	0	12	738
Violent acts perpetrated (of 9)	Reported number of the 8 violent events committed by the youth upon others	0.5 [1.3]	0.0 [0.2]	1.1 [1.8]	0	8	738
Violent acts upon family (of 5)	Reported number of the 5 violent events inflicted by others upon the youth's family	2.0 [1.4]	1.9 [1.4]	2.1 [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 (excluding underage youth)	0.44 [0.50]	0.39 [0.49]	0.50 [0.50]	0	1	533
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
Community mobilizer	Indicator for currently being a "community mobilizer"	0.039 [0.19]	0.023 [0.15]	0.061 [0.24]	0	1	741
Any community group member	Indicator for being a member in any one of the above seven community groups	0.42 [0.49]	0.41 [0.49]	0.44 [0.50]	0	1	741
Peace group member	Indicator for currently being a member of a peace group	0.07 [0.25]	0.05 [0.22]	0.08 [0.28]	0	1	741
Water committee or group 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
Cultural group member	Indicator for currently being a member of a drama, music, or dance performance group	0.16 [0.37]	0.16 [0.37]	0.15 [0.36]	0	1	741
Sporting group or team member	Indicator for currently being a member of a sports team or group	0.12 [0.32]	0.13 [0.34]	0.09 [0.29]	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 or committee 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
Church or bible group member	Indicator for being a member of a church or bible study group	0.18 [0.38]	0.18 [0.38]	0.18 [0.38]	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
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
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 <sup>‡</sup>		Unconditional mean		Difference in means <sup>‡</sup>	
	Abd	Non-Abd	Unconditional	Conditional	Abd	Non-Abd	Unconditional	Conditional
Year of birth <sup>†</sup>	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 <sup>†</sup>	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 <sup>†</sup>	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 <sup>†</sup>	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 <sup>†</sup>	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 <sup>†</sup>	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 <sup>†</sup>	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 <sup>†</sup>	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	Participation of Non-Abducted Youth	Marginal Impact of Abduction (ATE) <sup>†</sup>	% Change
Voted in 2005	0.39	0.085 [0.028]***	22%
Political employment	0.001	0.012 [0.007]*	833%
Community mobilizer	0.02	0.033 [0.011]***	145%
Any community group member	0.41	-0.007 [0.040]	-2%
Peace group member	0.05	0.038 [0.016]**	73%
Water committee/group member	0.02	-0.012 [0.007]	-70%
Cultural group member	0.16	-0.028 [0.030]	-17%
Sporting group/team member	0.13	-0.029 [0.022]	-21%
Farmer's cooperative member	0.09	0.007 [0.017]	8%
School club/committee member	0.04	0.019 [0.016]	43%
Church or bible study group member	0.18	0.017 [0.029]	10%
Attends church	0.81	0.01 [0.029]	1%
NGO volunteer	0.03	0.006 [0.013]	18%
Disobeys elders	0.07	0.036 [0.024]	54%

**Notes:**

Each item in Column 2 is the product of a separate regression

All variables defined and described in Table 2

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

† The ATE is calculated as the coefficient on an abduction dummy variable in a weighted probit regression of the dependent variable on the abduction dummy, age (including the square and cube), location dummy variables, and pre-war household traits. The regression is weighted on inverse selection, sampling, and attrition probabilities

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

**Table 5: Robustness of abduction impacts to alternative regression models**

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Abduction ATE (from Table 4)	Alternative estimation models						Difference of means
		Alternative controls	Alternative weights	Alternative controls & weights				
Voted in 2005	0.085 [0.028]***	0.106 [0.035]***	0.113 [0.064]*	0.108 [0.031]***	0.102 [0.027]***	0.096 [0.033]***	0.075 [0.044]*	0.115 [0.055]**
Community mobilizer	0.033 [0.011]***	0.033 [0.011]***	0.038 [0.013]***	0.037 [0.012]***	0.034 [0.012]***	0.032 [0.012]***	0.045 [0.021]**	0.042 [0.017]**
Any community group member	-0.007 [0.040]	0.025 [0.037]	0.022 [0.057]	0.019 [0.036]	-0.008 [0.037]	-0.003 [0.039]	-0.006 [0.051]	0.009 [0.051]
Peace group member	0.038 [0.016]**	0.036 [0.017]**	0.03 [0.027]	0.04 [0.018]**	0.045 [0.017]**	0.038 [0.018]**	0.037 [0.023]	0.029 [0.022]
Cultural group member	-0.028 [0.030]	0.015 [0.035]	-0.007 [0.038]	0.006 [0.032]	0.008 [0.041]	0.016 [0.044]	-0.004 [0.041]	0.006 [0.044]
<b>Weights</b>								
Selection correction	×	×	×					
Attition correction	×	×	×	×				
<b>Controls included:</b>								
Year of birth dummies	×	×		×	×	×	×	
Location of birth dummies	×	×		×	×	×		
Household traits in 1996	×			×	×			

Each term is the coefficient on an abduction indicator from a weighted probit 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 6: Determinants of violence experienced**

	(1)	(2)
	<b>Violent acts experienced</b>	
	<b>Simple linear regression coefficients</b>	<b>p-value of higher order regression</b>
Indicator for father a farmer	1.13 [0.511]**	0.055*
Household size in 1996	0.02 [0.046]	0.111
Landholdings in 1996	0.00 [0.005]	0.232
Cattle in 1996	0.01 [0.004]	0.280
Other livestock in 1996	0.00 [0.006]	0.381
Owned plow in 1996	-1.18 [0.544]**	.010***
Father's years of schooling	-0.07 [0.045]	0.378
Mother's years of schooling	0.03 [0.060]	0.020**
Paternal death before 1996	0.21 [0.463]	0.828
Maternal death before 1996	-0.04 [0.500]	0.508
Year of birth dummies	not displayed	0.004***
Location of birth dummies	not displayed	0.989
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**	0.195

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%

**Table 7: Impact of war experiences on social and political participation (former abductees only)**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Voted in 2005	Community mobilizer	Any community group member	Peace group member	Water committee/ group member	Cultural group member	Sports group/team member	Farmer's group member	School group member	Church or bible study group member	Attends church	NGO volunteer	Disobeys elders
Violent acts received	0.029 [0.012]**	0.012 [0.004]**	0.020 [0.012]	0.001 [0.008]	-0.016 [0.018]	0.013 [0.008]	-0.015 [0.006]**	0.024 [0.006]***	0.011 [0.006]*	0.015 [0.008]*	-0.021 [0.012]*	0.002 [0.005]	0.008 [0.005]
Violent acts perpetrated	-0.005 [0.019]	-0.011 [0.007]	0.004 [0.017]	0.019 [0.009]**	0.015 [0.020]	0.001 [0.010]	0.013 [0.010]	0.007 [0.008]	0.007 [0.006]	0.013 [0.012]	0.030 [0.012]**	-0.013 [0.007]*	0.010 [0.008]
Violent acts upon family	0.017 [0.022]	0.020 [0.004]***	0.028 [0.035]	0.003 [0.011]	-0.089 [0.078]	0.021 [0.014]	0.014 [0.011]	-0.019 [0.012]	0.007 [0.009]	0.007 [0.019]	0.021 [0.018]	0.013 [0.007]*	0.005 [0.009]
ln(Months abducted)	-0.039 [0.025]	-0.008 [0.007]	-0.050 [0.017]***	-0.019 [0.010]*	0.008 [0.009]	-0.044 [0.011]***	0.007 [0.009]	-0.025 [0.010]**	-0.018 [0.007]**	-0.017 [0.016]	0.032 [0.012]**	0.008 [0.011]	-0.018 [0.010]*
Age abducted	0.016 [0.008]*	-0.006 [0.004]	-0.007 [0.011]	0.000 [0.003]	-0.002 [0.004]	0.000 [0.006]	-0.002 [0.003]	0.000 [0.006]	0.002 [0.005]	0.005 [0.011]	0.005 [0.005]	0.003 [0.004]	0.004 [0.005]
Carried own firearm	0.066 [0.065]	-0.002 [0.028]	0.139 [0.068]*	0.083 [0.048]*	-0.007 [0.035]	0.143 [0.039]***	0.016 [0.023]	0.022 [0.051]	-0.006 [0.039]	-0.005 [0.066]	-0.091 [0.059]	-0.002 [0.040]	0.110 [0.052]**
Leadership position	-0.203 [0.106]*	0.008 [0.048]	-0.133 [0.064]*	-0.036 [0.025]	n.a.	0.040 [0.071]	-0.069 [0.015]***	-0.036 [0.063]	n.a.	-0.113 [0.045]**	-0.180 [0.091]*	-0.012 [0.047]	-0.070 [0.027]**
Observations	344	459	459	459	459	459	459	459	459	459	459	459	459
Controls not displayed:													
Age (three orders)	x	x	x	x	x	x	x	x	x	x	x	x	x
Location of birth dummies	x	x	x	x	x	x	x	x	x	x	x	x	x
Household traits in 1996	x	x	x	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 8: Impact of war violence on participation (all youth)**

	(1)	(2)	(3)	(4)	(5)
<b>Panel A</b>					
<b>Dependent variable: Voted in 2005</b>					
Ever abducted	0.085 [0.028]***			0.040 [0.053]	0.005 [0.113]
Violent acts received		0.016 [0.008]*	0.021 [0.010]**	0.018 [0.013]	0.014 [0.024]
Abduction × Violent acts					0.007 [0.028]
Months abducted			-0.004 [0.002]**	-0.004 [0.001]***	-0.004 [0.001]***
Observations	533	532	532	532	532
Joint significance of violence and abduction terms (p-value)				0.003***	0.005***
<b>Panel B</b>					
<b>Dependent variable: Community mobilizer</b>					
Ever abducted	0.033 [0.011]***			0.010 [0.015]	0.045 [0.019]**
Violent acts received		0.007 [0.002]***	0.008 [0.002]***	0.007 [0.002]***	0.011 [0.003]***
Abduction × Violent acts					-0.009 [0.004]*
Months abducted			0.000 [0.001]	0.000 [0.001]	0.000 [0.001]
Observations	741	739	739	739	739
Joint significance of violence and abduction terms (p-value)				0.001***	0.002***
<b>Panel C</b>					
<b>Dependent variable: Any community group member</b>					
Ever abducted	-0.007 [0.040]			-0.028 [0.069]	0.038 [0.102]
Violent acts received		0.005 [0.006]	0.012 [0.007]*	0.014 [0.010]	0.022 [0.014]
Abduction × Violent acts					-0.016 [0.016]
Months abducted			-0.005 [0.002]***	-0.005 [0.002]**	-0.005 [0.002]**
Observations	741	739	739	739	739
Joint significance of violence and abduction terms (p-value)				0.215	0.381
Controls included:					
Age (three orders)	×	×	×	×	×
Location of birth dummies	×	×	×	×	×
Household traits in 1996	×	×	×	×	×

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 9: Relative explanatory power of the correlates of participation**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<b>Impact of Abduction (ATE)<sup>†</sup></b>	<b>Voted in 2005 referendum</b>		<b>Community mobilizer</b>		<b>Any group member</b>	
		<b>Correlation</b>	<b>% of ATE<sup>‡</sup></b>	<b>Correlation</b>	<b>% of ATE<sup>‡</sup></b>	<b>Correlation</b>	<b>% of ATE<sup>‡</sup></b>
Violent acts received	4.346 [0.219]***	0.015 [0.007]**	77%	0.011 [0.003]***	145%	0.002 [0.007]	-22%
Violent acts perpetrated	1.072 [0.117]***	-0.006 [0.020]	-8%	-0.015 [0.007]**	-49%	0.003 [0.012]	3%
Violent acts upon family	0.271 [0.085]***	-0.004 [0.017]	-1%	0.026 [0.007]***	21%	0.016 [0.021]	3%
Currently lives in town	0.013 [0.039]	0.018 [0.054]	0%	-0.037 [0.027]	-1%	-0.158 [0.044]***	6%
Currently lives outside home district	0.003 [0.027]	-0.144 [0.079]*	-1%	-0.015 [0.033]	0%	-0.188 [0.082]**	-14%
Serious injury	0.085 [0.022]***	-0.06 [0.047]	-6%	-0.074 [0.021]***	-19%	-0.05 [0.042]	-43%
Top quartile of emotional distress	0.104 [0.033]***	-0.02 [0.068]	-2%	0.017 [0.022]	5%	-0.054 [0.039]	-19%
Asset index	-0.084 [0.017]***	0.015 [0.140]	-1%	0.022 [0.058]	-6%	0.006 [0.099]	1%
Days employed in past four weeks	0.104 [0.572]	0.001 [0.003]	0%	0.001 [0.001]	0%	0.009 [0.002]***	0%
Gross cash earnings in past 4 weeks (USD)	-2.733 [2.010]	-0.001 [0.001]*	3%	0 [0.001]	0%	-0.001 [0.001]*	0%
Community group membership	0.008 [0.039]	0.021 [0.036]	0%	0.069 [0.024]***	2%		
Volunteers for an NGO	0.002 [0.012]	0.271 [0.070]***	1%	0.001 [0.036]	0%		0%
Attends church	0.009 [0.025]	0.141 [0.046]***	1%	0.01 [0.022]	0%		0%
Bottom quartile of pro-social behavior	0.082 [0.034]**	0.014 [0.066]	1%	0.037 [0.033]	9%	0.226 [0.066]***	-44%
Index of social support	-0.225 [0.176]	-0.004 [0.008]	1%	0.001 [0.004]	-1%	0.02 [0.011]*	-3%
Indicator for poor family relations	0.026 [0.021]	-0.03 [0.114]	-1%	0.091 [0.044]**	7%	0.028 [0.105]	4%
Indicator for functional literacy	-0.163 [0.033]***	0 [0.053]	0%	0.003 [0.028]	-1%	0.05 [0.054]	0%
Radio ownership	-0.057 [0.028]*	-0.027 [0.050]	2%	-0.011 [0.026]	2%	0.056 [0.059]	-14%
Educational attainment in years	-0.765 [0.140]***	-0.002 [0.007]	2%	-0.005 [0.003]	12%	0.014 [0.009]	-4%
Observations		531		738		738	
Additional controls (not displayed)							
Year of birth dummies	<b>x</b>	<b>x</b>		<b>x</b>		<b>x</b>	
Location of birth dummies	<b>x</b>	<b>x</b>		<b>x</b>		<b>x</b>	
Year and location of birth interactions	<b>x</b>	<b>x</b>		<b>x</b>		<b>x</b>	
Household traits in 1996	<b>x</b>	<b>x</b>		<b>x</b>		<b>x</b>	

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

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

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

**Table A1: Best case and worst case attrition bounds on treatment effects**

Dependent variable	Percent missing <sup>†</sup>		Treatment effect bounds		
	Non-Abd	Abd	Untrimmed ATE <sup>‡</sup>	"Best case" bound <sup>§</sup>	"Worst case" bound <sup>§</sup>
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 attritors 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