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Civil War, Reintegration, and Gender in Northern Uganda

Jeannie Annan[1], Christopher Blattman[2], Dyan Mazurana[3], and Khristopher Carlson[4]

Abstract

What are the impacts of war on the participants, and do they vary by gender? Are ex-combatants damaged pariahs who threaten social stability, as some fear? Existing theory and evidence are both inconclusive and focused on males. New data and a tragic natural quasi-experiment in Uganda allow us to estimate the impacts of war on both genders, and assess how war experiences affect reintegration success. As expected, violence drives social and psychological problems, especially among females. Unexpectedly, however, most women returning from armed groups reintegrate socially and are resilient. Partly for this reason, postconflict hostility is low. Theories that war conditions youth into violence find little support. Finally, the findings confirm a human capital view of recruitment: economic gaps are driven by time away from civilian education and labor markets. Unlike males, however, females have few civilian opportunities and so they see little adverse economic impact of recruitment.

Keywords

civil war, gender, reintegration, Uganda, Lord's Resistance Army

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After war, nations and people try to rebuild their lives and avoid a slide back to violent conflict. Reintegrating combatants is a particular priority, in part for humanitarian reasons and in part because failed reintegration can threaten economic recovery, social integration, and peace. This article scrutinizes the theoretical and empirical basis for such concerns, especially among females.

The iconic image of the combatant at war is a young man with an automatic weapon. Women are typically depicted as victims: mourning family, fleeing, struggling to care for a child, or sexually abused. Perhaps as a consequence, research on reintegration and recidivism focuses almost exclusively on males. Programs and policy follow suit. Until recently, national programs for disarmament, demobilization, reintegration, and rehabilitation (DDRR) excluded most women and children associated with fighting forces (see McKay and Mazurana 2004; McKay et al. 2006; MDRP and UNIFEM 2005; Schroeder 2005).

Women and girls, however, fight or provide military support in most conflicts. Scholars have begun to assemble narratives of women and girls as combatants—in El Salvador, Columbia, Eritrea, Guatemala, Nicaragua, Sierra Leone, Sri Lanka, Uganda, and elsewhere (e.g., Alison 2003; Luciak 2001; Wood 2009). These studies describe the wide range of female roles in armed groups, including soldiering (Brett 2002; Cohen 2009; McKay and Mazurana 2004). This evidence and related advocacy has led to sweeping policy changes, including surrounding DDRR.[1]

What do we know about reintegration and the threats that ex-combatants pose to economic recovery and social stability? What do we know about the particular vulnerability of females? Two theories dominate the academic literature. On the economic front, research suggests that war leads to injuries, lost education, and lost opportunities. Unaided, human capital may be slow to reaccumulate, leading to persistent poverty. Socially, exclusion and alienation may also create a class with no stake in peace, and the ravages of war could lead to psychological trauma and aggression. Together poverty and exclusion could threaten a nation's long-term stability. Indeed, the fear of alienated, aggressive youth fuels much of the policy and academic interest in DDRR (Annan and Patel 2009; Blattman forthcoming).

Evidence is thin, however, and little is quantified or causally identified. Policy and practice have yielded many lessons learned, but scholars have had few opportunities to assess the impacts of war and to determine why some individuals and not others are able to reintegrate (Humphreys and Weinstein 2007; Tajima 2009). Moreover, most research focuses on males.

In the absence of evidence, policymakers fear the worst. Speaking at a 2007 conference, the French foreign minister warned that young ex-combatants are "a time bomb that threatens stability and growth, ... lost for peace and lost for the development of their countries" (BBC 2007). Former child soldiers in particular are "damaged, uneducated pariahs," according to a *New York Times* editorial (2006). Women and girls, especially those who were sexually abused or bore children to rebels, are said to be the most likely to face family rejection, and to need the most assistance in reintegration (UNIFEM 2004).

This article uses an in-depth study of the insurgent Lord's Resistance Army (LRA) in Uganda to test theories of the consequences of combat and war violence, the determinants of ex-combatant reintegration, and the risks of renewed violence. We conducted extensive interviews and surveys in northern Uganda, where for twenty years the LRA has forcibly recruited tens of thousands of youth.

Previously, we published the effects of forcible recruitment on young men, finding support for the human capital view of reintegration but little evidence of social exclusion or aggression (Blattman and Annan 2010). To the contrary, we see positive political and community engagement among males (Blattman 2009). This article introduces for the first time quantitative data on women and girls in the LRA, building on and integrating earlier qualitative analyses (Annan, Brier, and Aryemo 2009; Carlson and Mazurana 2008; Carlson et al. 2006; McKay and Mazurana 2004).

The central challenge in understanding the effects of combat and the determinants of reintegration is causal inference: males and females in armed forces are usually a select group, including those selected by commanders and those who choose to join. The LRA's forced recruitment presents a tragic natural quasi-experiment; abduction is nearly random, meaning that causal impacts can be estimated using noncombatants of the same age and location as counterfactuals for abducted youth. We also examine patterns of recovery over time and by war experiences.

Our evidence challenges the more pessimistic theories of female psychosocial reintegration: social acceptance is high, many women and girls are psychologically resilient, and there is little evidence of aggression and violence. Distress and difficulties are commonplace, but serious problems are concentrated in the minority exposed to the most violence or with the least social support. These findings hold even for the longest-serving females and those who were forcibly married or bore children.

The evidence also supports the human capital approach. Ill economic effects persist where opportunities for schooling and work experience were lost. Thus, males returning from the LRA are well behind their peers. Not so for most females, however, who appear to have had few opportunities even if they were not abducted. These findings suggest a shift in gender and DDRR policy, especially (but not necessarily limited to) situations of forced recruitment.

War and Reintegration: Theory, Evidence and Stereotypes

Reintegration eludes easy definition. At a minimum, it implies some resumption of livelihoods and social relationships, either to the life led before war or that of noncombatant peers (Kingma 1997). In all cases, reintegration of ex-combatants presupposes some adverse impact of war, and a gap between ex-combatants and noncombatants. What are these impacts, and where do gaps persist? We explore four domains.

Economic livelihoods. Economists consider human and physical capital as the principle determinants of earnings and employment. Those in armed groups may

accumulate capital not relevant to civilian labor markets. Meanwhile, noncombatants continue accumulating education, experience, or wealth. This theory suggests several predictions: (prediction E1) recruitment should be associated with lower human capital, employment, wages, and wealth; (E2) these adverse impacts should increase with the length of enlistment and (E3) decrease with time since return; and (E4) employment and wage gaps should be correlated with lower human and physical capital.

A small empirical literature confirms large and persistent earnings gaps between male veterans and nonveterans. Angrist (1990) finds that White American males drafted into the Vietnam War lost 15 percent of their long-term earnings due to lost work experience, a finding echoed among American volunteers in Vietnam and Western veterans of World War II (Angrist 1998; Angrist and Krueger 1994). The evidence, however, suggests that adverse impacts hinge on the opportunity cost of recruitment into armed forces. Angrist (1990) finds that African American conscripts have higher lifetime earnings than their civilian peers. Either civilian opportunities for young Black males were so poor that military experience provided greater returns, or employers used military experience as a signal of ability. Predictions E1 through E4 thus depend on the relative opportunities available to civilian subgroups.

Humphreys and Weinstein (2007) possess the only systematic data on female veterans, from a 2003 survey in Sierra Leone. They observe no difference in employment between male and female combatants after accounting for factions, war experiences, and prerecruitment characteristics, suggesting that male–female differences may be small. Without data on noncombatants, however, the effect of military service on female well-being is unknown.

Psychological distress. Psychological theory implies that increased exposure to violence causes increased symptoms of depression and traumatic stress (P1), a finding referred to as a dose–response relationship (Johnson and Thompson 2008). This relationship has been seen among ex-combatants in East Africa (Bayer, Klasen, and Adam 2007; Pham, Vinck, and Stover 2009) and events related to combat and sexual assault or rape are more highly associated with symptoms than other traumatic events (Kessler et al. 1995; Weiss et al. 1992). While there is broad agreement on the dose–response relationship, the literature diverges on incidence; some medical studies record extremely high levels of posttraumatic stress and depression in trauma-exposed populations (P2a), while others argue that the majority is resilient (P2b; Betancourt et al. 2008; Masten 2001). Most studies, however, suffer from small sample sizes, unrepresentative samples, or an absence of control groups or causal identification.

In addition to exposure, a number of factors are posited to increase resilience, including social support (P3; Ozer et al. 2003). Empirically, however, it is difficult to establish causation due to the bidirectional relationship of posttrauma factors and distress.

Another robust finding is that females are at greater risk of developing posttraumatic and depressive symptoms after traumatic events—including war trauma—even though males are usually more exposed to direct combat in war (P4; Tolin and Foa 2006).

Psychologists do not have a clear basis for this regularity. One reason may be females' greater exposure to sexual assault, but higher female symptom rates remain even when controlling for violence type (Tolin and Foa 2006). Others posit that females have more ongoing stressors, that females are biologically more vulnerable, or that females are more likely to blame themselves for events (Olff et al. 2007). Much remains unknown.

Social acceptance. Violence and socialization into armed groups may have a direct effect on family or community acceptance, as well as indirect effects due to the impact of poverty and distress on social relations. Conventional wisdom holds that ex-combatants become social pariahs. Women and girls returning from armed groups are thought to be more ostracized than males, and to need specialized reintegration assistance (Corbin 2008; Knight and Özerdem 2004). The most vulnerable females, in this view, are the sexually abused and those who bore children (McKay 2004; Onyango et al. 2005; Sideris 2003). They are thought less likely to marry or find livelihoods and, together with their children, to experience high rates of rejection and stigmatization by their families and communities (McKay et al. 2006; Nordstrom 1991).

There is little evidence, however, that ex-combatants face difficulty gaining social acceptance (Annan and Patel 2009). On the contrary, recent studies suggest that ex-combatants gain social acceptance and function at par with others in their community (Betancourt et al. 2008; Blattman 2009; Blattman and Annan forthcoming; Boothby, Crawford, and Halperin 2006; Humphreys and Weinstein 2007; Muggah and Bennet 2009; Williamson 2006). Most of these studies, however, concern males alone.[2]

Each of these literatures share common predictions: (S1a) armed recruits have difficulty with family and community members upon return and report lower family and community support than their noncombatant peers; (S1b) social rejection increases with violence perpetrated; and (S1c) rejection is greater among females, especially those forcibly married to fighters and those who bore children. The principal difference between the schools of thought is one of magnitude: one sees social rejection as widespread and persistent (S2), while one sees it as confined to a minority and improving with time back (S3).

Hostility. Finally, ex-combatants may pose a threat to peace because they are more likely to engage in violence (H1). There are several theoretical rationales. First, some psychological theories argue that those who suffer more symptoms of distress in response to trauma also exhibit more anger, which sometimes manifests itself in episodes of interpersonal violence such as domestic abuse and physical fights (Catani and Jacob 2008; Olatunji, Ciesielski, and Tolin 2009). If true, we may observe more interpersonal violence (H2) and a relationship between distress symptoms and aggression (H3).

Second, combatants may be accustomed to accomplishing objectives through force, such as the use of violence to solve disputes and sympathy for violence as a means to achieve one's ends (H4), or dissatisfaction with peaceful institutions of dispute resolution (H5). Third, ex-combatants may be more easily mobilized through social networks. Spear (2006) emphasizes the importance of dissolving armed factions and breaking the command structures operating over rebel fighters

which make organized rebellion possible (H6). Fourth, following economic theories of warfare (e.g., Hirshleifer 1995), poor or stigmatized ex-combatants have a lower opportunity cost of violence (H7).

Data

Quantitative. From October 2005 to March 2006, we conducted a representative survey of male youth (aged 14–30) in eight rural subcounties in the Districts of Kitgum and Pader. Due to logistical constraints, we delayed a similar survey of females (aged 14–35) until January 2007. Both surveys collected data on well-being, war experiences, and prewar characteristics.

To survey youth present in 2005 through 2007 would create selection bias due to migration, mortality, and unreturned abductees. Prewar sample frames (such as a census) do not exist. We thus sought to develop a retrospective sample frame. We randomly chose 1,162 households from the earliest comprehensive source available: U.N. World Food Programme population lists from 2002 to 2003. In 2005, a team of local enumerators found 88 percent of households and worked with each household head to develop a roster of all youth in the household in 1996—a year easily recalled as the first election since 1980, and one that predates 85 percent of abductions. We randomly selected 881 male youth and 857 female youth from this retrospective frame, stratified by subcounty and abduction status, oversampling the abducted. Roughly half of sampled youth had migrated from their village of birth, and enumerators sought to track them all. They located 84 percent of the males and 72 percent of the females—the lower tracking rate due largely to the time between female sampling and surveying.

Qualitative. We purposefully selected thirty males and twenty-one females from the sample for in-depth qualitative interviews.[3] We also conducted eight interviews outside the sample with formerly abducted young women in an nongovernmental organization (NGO) "reception center" for returning abductees. Finally, we interviewed seven social workers and fifteen LRA junior officers. Questions addressed daily life; relationships with family, partners, and children; and war and return experiences. The qualitative research allowed theories to emerge inductively from raw data (Charmaz 2006). Interviews were open-coded, and emergent themes help to explain quantitative findings.

Background

In 1986, rebels from southern Uganda overthrew a government dominated by northern ethnic groups, including the Acholi. Several Acholi guerrilla forces resisted the takeover, but settled for peace by 1988. A few hundred fighters refused to settle, and in 1988 gathered under an Acholi prophet named Joseph Kony, forming the LRA.

The decision to keep fighting was unpopular, and the LRA commanded little Acholi support. With no volunteers or resources, the LRA began looting homes for

supplies and forced recruits. The LRA raiders killed and maimed civilians to instill terror in the population and dissuade them from government collaboration (Allen and Vlassenroot 2010).

The LRA activity was initially low scale, but in 1994 Sudan began supplying them with weapons and territory. Abductions climbed, with 60,000 to 80,000 people taken by the LRA for at least a day (Annan, Blattman, and Horton 2006; Pham, Vinck, and Stover 2007). Adolescent males were the primary targets, though females and males of all ages were also taken (Beber and Blattman 2010). In response to the insecurity, some Acholi moved to displacement camps as early as 1996, usually no more than a few miles from their homes. In 2003, the government forcibly displaced the entire rural population to camps as part of their counterinsurgency.

The LRA possessed a puritanical code of conduct that governed all aspects of behavior—fighting, eating, and praying. The LRA supreme commander Kony set codes of conduct and military orders through religious proclamations. His powers as a spirit medium are broadly accepted in the region. Sex was permitted only for combatants in sanctioned, forced marriages. Violations were met with severe punishment. The distribution of "wives" was one of the LRA's only systems of privilege and remuneration. Those with rank and power received multiple girls as forced wives.

The LRA's decline began in 2002, when Uganda escalated its counterinsurgency campaign and Sudan permitted Ugandan forces to invade. By 2004, the rebels weakened and abductions nearly ceased. Peace talks began in 2006 and collapsed in 2008. Kony and a few hundred followers roam central Africa, fleeing Ugandan forces. The LRA continue to abduct and terrorize populations in southern Sudan, eastern Congo, and the Central African Republic. The Acholi population, meanwhile, returned from displacement between 2006 and 2009.

Females in the LRA

Our survey data provide the first representative picture of the LRA. Abduction was widespread; in the areas surveyed, 26 percent of female youth (aged 14–35) and 47 percent of male youth were ever abducted. Abduction length ranged from a few hours to 12 years, averaging 11.4 months for females and 9.1 months for males. A total of 64 percent of females were abducted for more than two weeks, and 11 percent were kept for over a year.

Females served many roles in the rebel group, often servile. Of females abducted longer than two weeks, more than two-thirds said their main role was a supporting one, especially as porters, cooks, and water collectors. Females abducted for more than a few weeks were typically trained on a weapon, and females sometimes took on fighting roles; of those abducted at least two weeks, 11 percent reported combat as their primary role. This figure likely underestimates the number of females who fought, although it captures those who fought as a main role. Our interviews suggest that females carried firearms for defensive more often than offensive use, and typically females were no longer called for battle after their first pregnancy (at least until

later, more desperate stages of the war). Asked differently in the male survey, 50 percent of males abducted more than two weeks were given a gun. The data are not strictly comparable on this measure of fighting roles, but males clearly fought more often, and more for offense, than females.

Nevertheless, both genders report similar levels of violence. The survey asked all respondents, abducted or not, about seventeen specific *violent acts experienced*, including six witnessed, six personally experienced, and five occurring to a family member. It also asked about eight *violent acts perpetrated*. Almost a quarter of all male and female abductees were forced to kill (rising to one third if abducted more than two weeks). Among those abducted more than two weeks, 18 percent of males and 12 percent of females were forced to beat, cut, or kill family members. These acts helped to bind them to the group, reduce their fear of killing, and discourage disobedience. Females reported perpetrating a similar number of acts as males, including many of the worst acts: killing civilians, soldiers, or friends and family.

Females were mainly recruited to become "wives" and mothers. In our sample, 27 percent of all abducted females were forced to marry, including 44 percent of those abducted over two weeks. Rape was relatively rare outside these forced marriages; 93.5 percent of forced wives said they were sexually abused or forced to have sex with a man, compared to 6.9 percent of never-married abductees and 1.7 percent of nonabductees.

Among forced wives, 25 percent were "married" within nine days of abduction, 50 percent within two months, and 75 percent within a year. Interviews suggest that rebels divided females into three groups: prepubescent girls, young adolescents, and older adolescents and adults thought to have had sexual experience. Prepubescent girls were kept as servants to be forcibly married later; young adolescents were forcibly married sooner. Older adolescents and young adults, seen as potential carriers of sexual diseases, were more seldom given as wives and were more often released.

The forced marriages were largely coercive relationships without the consent of the female or her family, characterized by shared domicile, domestic responsibilities, exclusivity, and sex carried out under threat. The relationships were familial, and children were born and raised by abducted mothers and captor husbands. Half of forced wives bore children. The longer a female stayed with the rebels, the more likely she was forced to become a "wife" and mother. Educated abductees also were forced to "marry" sooner—1.5 months faster for each extra year of education.

In interviews, young women described a range of feelings toward their forced marriage. Some described "harsh" and "abusive" men, while others felt they were treated relatively well. One woman explained, "We got along well. You know, he was abducted like me." Despite varied feelings, most forced wives said that they wanted nothing to do with their "bush husband" once they returned home (Carlson and Mazurana 2008). Fewer than 5 percent of forced wives stayed with their LRA husband upon return from captivity.

Abductees typically escaped when supervision was low. A small number were rescued or captured by the Ugandan army. Abductees who were too young or too

old were often released after being forced to carry looted goods or give directions. Almost all abductees return home after escape or release. Over one-third passed through a nongovernmental "reception center" (especially those abducted for long periods), which provided basic medical care and psychosocial support, plus family relocation services.

Empirical Strategy

We use five empirical strategies to examine theories of war impacts and reintegration. First, we measure incidence of distress symptoms, social exclusion, hostility, and reintegration difficulties. Second, to measure the causal impacts of recruitment on well-being and behavior, we use arguably exogenous variation in abduction patterns. Third, to assess whether impacts are persistent, we look at how well-being recovers over time. Fourth, we examine how well-being varies with abduction length, violence, and forced marriage and motherhood. Fifth, to explore causal mechanisms we examine correlations between intermediate and final economic outcomes.

Causal identification. All but the first empirical strategy seek causal identification. One of the main contributions of this article is the unique opportunity it presents to causally identify the impacts of war and the determinants of reintegration.

Combatants are usually unlike noncombatants in unobservable ways, and comparisons conflate the impacts of war with preexisting differences that led the youth to join. Nonfighters offer a reasonable counterfactual, however, when selection is observed. In most wars, such conditions would not hold. In the LRA, however, volunteers were very rare, eliminating bias from self-selection.

Selection by the group was also minimal. Youth were typically taken by small groups of LRA raiders. Acholi households live in the midst of their fields, isolated and vulnerable to abductions. From their Sudanese bases, LRA rebels ventured into Uganda for weeks at a time in groups of roughly fifteen. Abduction parties were instructed to release young children and older adults, but to keep all adolescent and young adult males. In interviews, raiding party leaders said they seldom premeditated attacks or targeted particular households. Survey data support these claims of indiscriminate abduction. After controlling for age (where rebels were explicitly selective), male abduction is independent of prewar household characteristics, including indicators of wealth (like land and livestock), and parent's education, occupation, and death (see Table 1). Abducted males differ only by household size—a difference driven by households greater than twenty-five, in part because small rebel bands appear to have been hesitant to raid large groups.

Female abduction was driven in part by variation in commanders' demand for wives. Abductees and LRA officers explained that orders for more or fewer females typically came down from Kony himself (see also Carlson and Mazurana 2008). Thus, adolescent females were sometimes ignored by raiding parties, while demand for male abductees was steady. Abduction was also related to characteristics of

Table 1. Determinants of Abduction (by Gender)

Prewar trait	Males: difference between abducted and nonabducted	Females: difference between abducted and nonabducted
Respondent age	1.19 [0.424]***	–0.72 [0.386]*
Indicator for father a farmer	0.01 [0.018]	0.04 [0.023]
Household size in 1996	–0.58 [0.190]***	–0.05 [0.342]
Standard normal index of household wealth in 1996	0.07 [0.061]	0.01 [0.083]
Father's education	0.01 [0.262]	0.32 [0.396]
Mother's education	–0.30 [0.339]	0.58 [0.208]**
Paternal death before 1996	0.01 [0.042]	0.03 [0.027]
Maternal death before 1996	0.01 [0.024]	–0.01 [0.032]

Note: Each figure is a conditional mean difference. Each is the coefficient on abduction from a regression of the prewar trait on an abduction dummy and all other prewar covariates, including location of birth. Robust standard errors are in brackets, clustered by sampling location. All estimates weighted by inverse sampling probabilities and inverse attrition probabilities.
* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.

individual girls. Interviews suggest that the LRA sometimes targeted more beautiful girls. Regressions in Table 1 suggest the LRA were also more likely to target females with more educated mothers; each year of mother's education is associated with a 3 percent increase in the probability of abduction. Our interviews suggest that more educated girls were preferred for nursing, midwifery, radio communication, record-keeping, and logistical support (Carlson and Mazurana 2008). Generally, however, the act of abduction itself was not highly selective; as with males, female abduction was unrelated to household wealth, occupation, or parental death.

In general, the LRA screened recruits *after* abduction. We observe this selection in release patterns: Abduction age is the most robust determinant of release for females; each year of age is associated with a 1 percentage point higher probability of release (regressions not shown). Rebels were least likely to release educated females. Each additional year of education at the time of abduction is associated with a 4 percentage point lower probability of release. With the correlation between mother's education and abduction, this suggests an LRA focus on educated girls and adolescents.

To assess abduction impacts, we run a least squares regression, weighting on the inverse of an estimate of the propensity scores of attrition and abduction (Hirano, Imbens, and Ridder 2003). For outcome Y for individual i in subcounty j, we use the regression function:

$$Y_{ij} = \alpha_j + \theta A_{ij} + X_{ij}\beta + \varepsilon_{ij}, \quad (1)$$

where α_j is a subcounty fixed effect, X is a vector of preabduction traits, and A equals 1 if i was abducted. If all selection criteria are included in the propensity score, then

θ estimates an unbiased average treatment effect (ATE). This selection-on-observables assumption is most credible for males but may be violated for females. If characteristics like beauty and health are associated with well-being later in life, estimates from equation (1) underestimate harmful impacts of abduction. In general, we should be worried about the unobserved selection of low-ability recruits into the rebel group, or differentially greater attrition of high-ability types, since both would lead us to overestimate the adverse effects of abduction.[4]

To assess the effects of war experiences, we run the following regression for abductees:

$$Y_{ij} = \alpha_j + \delta_L L_{ij} + \delta_V V_{ij} + \delta_P P_{ij} + \delta_W W_{ij} + \delta_M M_{ij} + X_{ij}\beta + \varepsilon_{ij}, \quad (2)$$

where L is years abducted, V and P are indices of violence experienced and perpetrated, and W and M equal 1 for forced wives and mothers.

War experiences, especially length of abduction and violence, are undoubtedly endogenous. Hence, we should regard coefficients as suggestive correlations. If unobserved characteristics leading to longer or more violent abductions are also associated with lower well-being, then we will tend to overestimate the causal effect of length or violence on youth. Even if endogenous, however, these correlations are still important indicators of reintegration, especially for policy purposes.[5]

To assess the recovery of well-being since return, we run the following regression for abductees:

$$Y_{ij} + \alpha_j + \delta_T T_{ij} + X_{ij}\beta + Z_{ij}\prod + \varepsilon_{ij}, \quad (3)$$

where T is years since return. Time back is conflated with changes in abduction patterns over time, and we control for these factors using preabduction traits X and indicators for year of abduction, Z.

Our ability to test channels of impact is more limited. We can correlate human capital accumulation with labor market outcomes, or psychological distress with family support, but these outcomes are jointly determined. Nevertheless, the correlations are informative and the direction of endogeneity bias can be predicted.

There are two final identification concerns. First, our results will underestimate the adverse impacts of abduction if humanitarian services are targeted to abductees. While we observe such targeting, reintegration programs have been rudimentary in scale and reach (Allen and Schomerus 2006; Annan et al. 2008). Our estimates thus reflect the impact of abduction conditional on youth receiving rudimentary services.

Second, attrition was low considering a decade and a war elapsed since sampling. Nevertheless, survey attrition was higher among nonabductees due to migration; if migration and being missing are associated with greater well-being, we will overstate the adverse impacts of abduction. Nonsurvival is another source of attrition and potential bias, especially since mortality rates were higher among abductees. To account for observable sources of bias, we follow Fitzgerald, Gottschalk, and Moffitt (1998) and weight all estimates to account for observable determinants of attrition (so

that individuals who, based on preabduction traits, look more like the missing or perished respondents receive slightly more weight). Even high rates of attrition can have little impact on estimates (Falaris 2003). Nevertheless, attrition due to war might be particularly selective in unobservable ways.

Measuring well-being. We measure five economic outcomes: an *Index of household wealth* constructed from a set of asset indicators;[6] to proxy for income, average gross *Daily earnings* (2,306 UGX among females, 3,058 UGX among males—or $1.15 and $1.53); a *Skilled work indicator* for work in a trade or business (4 percent for females; 10 percent for males); and two measures of employment, an *Employment indicator* for any income-generating work in the past month (82 percent; 70 percent) and the number of *Days employed* in the past month (11; 8). We also use two human capital measures: highest *Educational attainment* (4.4; 7.4) and an indicator for a *Serious injury* that inhibits physical labor (6 percent; 13 percent).

For social acceptance, we gathered data on five abductee return experiences: an indicator for whether they *Returned home* (100 percent; 99 percent) or *Returned to school* after abduction (40 percent; 58 percent); an indicator for whether the abductee reported *Family problems ever* (18 percent; 8 percent), including insults, blame, or aggression; whether they experience these same *Family problems now* (7 percent; 3 percent); and, finally, indicators for whether they experienced *Community problems ever* (45 percent; 33 percent) and *Community problems now* (6 percent; 3 percent). To gauge impacts of abduction, we use three measures: an additive *Index of social support* composed of seventeen types of support reported in the past month (e.g., being comforted when sad, or helped to find work; 4.6; 5.6); an *Index of family connectedness* ranging from 0 to 6 based on whether a youth reported greater family comfort, closeness, and lack of conflict (3.7; 5.2); and a *Group member* indicator for membership in at least one of eight social or political groups (54 percent; 46 percent).

To measure psychological impacts, we use an *Index of emotional distress* consisting of seventeen self-reported symptoms of depression and traumatic stress (e.g., nightmares, difficulty concentrating).[7] Females' average is 4.8 and males' is 4.0; maximum values are 13.7 and 15 for females and males. These averages could indicate a youth experiencing a few symptoms frequently or several symptoms rarely. The nightmares and hallucinations associated with posttraumatic stress are often interpreted as being *Haunted* by the spirits of those harmed (10 percent; 5 percent).

Measuring propensity for violence is challenging. For interpersonal aggression, we have three indicators: one (unfortunately, asked of males only) for whether the respondent reported being *In a physical fight* in the past 6 months (7 percent); a second for self-reported *Aggressive behaviors* such as being quarrelsome, threatening others, and using abusive language (13 percent; 6 percent); and a third for having trouble getting along with neighbors in the past year (29 percent for females). We have weaker measures of attitudes toward peaceful dispute resolution: an indicator for *Respect for community elders*, the main source of local dispute resolution (97

percent; 93 percent); and an additive *Index of antidemocratic attitudes* (1.40 for females) for support for a military, autocratic or single-party government, plus non-support of multiparty democracy.

Results

We estimate impacts of abduction (Equation 1) in Table 2, the effects of war experiences (Equation 2) in Table 3, and the effects of time back (Equation 3) in Table 4. Finally, we report return experiences in Table 5, and how they vary with war experiences (Equation 3) in Table 6. We also describe evidence on causal channels. Results are generally robust to alternative estimators (e.g., matching or nonlinear regression) and to alternative sets of controls.

Economic and educational impacts. The human capital approach to reintegration finds reasonable support, though with divergent implications for males and females.[8] Looking at males, patterns in Table 2 confirm that abduction leads to a large human capital deficit (E1): a 10 percent drop in education and a more than doubling of injuries. We also see a 0.4 standard deviation decrease in wealth, a 45 percent fall in earnings and a 31 percent fall in skilled work. There is no statistically significant change in employment levels, and both metrics have small but positive coefficients. For male abductees, it appears to be the quality rather than the quantity of employment that shifts.

Consistent with prediction E2, longer abductions are associated with lower human capital among males, especially in terms of education (0.51 fewer years of education for every year abducted, in Table 3). This human capital deficit is fairly persistent. Consistent with prediction E3, males do attempt to return to school, and education rises by 0.33 years for each year since return (Table 4), but the education gap never completely disappears. Only 58 percent return to school after abduction (Table 5). One reason may be that adult education programs were almost nonexistent.

Longer abductions are not significantly associated with lower wealth, earnings, or employment (Table 3) and neither wages nor employment increase with time back. One possibility is a weak relationship between human capital and these economic outcomes. We can examine correlations between economic outcomes and human capital among males (E4, regressions not shown). Each additional year of education is correlated with a 16 percent increase in wages, but there is no substantive or statistical effect on employment levels. The pattern is consistent with the idea that abduction impacts quality and not quantity of employment. The coefficients are, however, sizable enough that it is surprising we do not see economic outcomes falling with abduction length and increasing in time back.

Turning to females, we see a different pattern: no adverse effect on human capital or labor market outcomes (Table 2). Rather, the point estimates are generally small and not statistically significant. The only significant impacts are a 0.28 standard deviation lower wealth and two fewer days employed. Nor do predictions E2 or E3 hold for females: we

Table 2. Average Impacts of Abduction (by Gender)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Female, 2007			Males, 2005–2006			Female–Male	
	Nonabd mean	Impact of abduction[a]	% Change	Nonabd mean	Impact of abduction[a]	% Change	Impact of abduction[a]	*N*
Economic and human capital outcomes								
Educational attainment (years)	4.76	0.06 [0.312]	1	7.59	–0.74 [0.174]***	–10	0.80 [0.366]**	1,244
Serious injury (indicator)	0.07	0.00 [0.024]	0	0.09	0.11 [0.030]***	121	–0.11 [0.038]***	1,244
Wealth index (standard normal)	0.00	–0.28 [0.108]**	n.a.	0.25	–0.40 [0.086]***	n.a.	0.11 [0.140]	1,243
Daily earnings in UGX (2,000 UGX = 1 USD)	2485.51	–547.74 [390.426]	–22	3610.34	–1619.06 [756.238]**	–45	1071.32 [754.951]	911
Capital or skill-intensive occupation (indicator)	0.04	–0.01 [0.019]	–28	0.13	–0.04 [0.023]*	–31	0.03 [0.031]	923
Employed in last 4 weeks (indicator)	0.79	0.03 [0.039]	4	0.66	0.04 [0.047]	6	–0.01 [0.061]	1,244
Days employed in last 4 weeks	9.99	–1.94 [0.677]***	–19	7.06	1.22 [0.909]	17	–3.17 [1.171]***	1,244
Social outcomes								
Additive index of social support (seventeen forms)	4.57	0.21 [0.192]	5	5.63	–0.14 [0.150]	–2	0.35 [0.247]	1,244
Index of family connectedness (0–6, low to high)	3.81	–0.23 [0.128]*	–6	5.28	–0.42 [0.085]***	–8	0.19 [0.153]	1,244
Member of at least one group	0.55	–0.04 [0.044]	–7	0.45	–0.01 [0.042]	–2	–0.03 [0.060]	1,244
Psychological outcomes								
Index of emotional distress	4.46	0.91 [0.313]***	20	3.73	0.57 [0.201]***	15	0.34 [0.380]	1,244
Top quartile of emotional distress (indicator)	0.31	0.08 [0.056]	26	0.14	0.11 [0.035]***	79	–0.02 [0.068]	1,244
Haunted (indicator)	0.06	0.16 [0.030]***	271	0.02	0.09 [0.025]***	409	0.07 [0.039]*	1,244
Hostility (attitudes and behaviors)								
In physical fight (indicator)				0.07	–0.02 [0.020]	–27		741
Aggressive behaviors (indicator)	0.14	–0.02 [0.024]	–15	0.05	0.03 [0.012]**	67	–0.05 [0.025]*	1,244
Trouble getting along with neighbors	0.30	–0.01 [0.028]	–3					500
Antidemocratic attitudes (Index of 4)	1.40	0.10 [0.087]	7					495

Note: Each row represents a separate regression. Robust standard errors in brackets, clustered by sampling location.

[a]Calculated as the coefficient on an abduction dummy variable in a weighted least squares regression of the dependent variable on the abduction dummy, age (including the square and cube), location dummy variables, and prewar household traits. The regression is weighted on inverse selection, sampling, and attrition probabilities.

* Significant at 10%.

** Significant at 5%.

*** Significant at 1%.

Table 3. Reintegration Outcomes and War Experiences

	Economic and Human Capital Outcomes			
	(1) Education attainment	(2) Serious injury	(3) Wealth index	(4) Daily earnings
Panel A: males				
Years abducted (total)	–0.51 [0.086]***	0.04 [0.020]**	–0.0 2 [0.040]	–45.75 [116.511]
Sum of seventeen violent acts received, witnessed, or upon family	–0.03 [0.047]	0.0 2 [0.006]**	–0.02 [0.017]	–253.02 [118.258]**
Sum of eight violent acts perpetrated	0.11 [0.083]	0.00 [0.011]	0.00 [0.023]	410.28 [257.952]
Observations	458	458	458	318
Panel B: females (same coveriates as Panel A)				
Years abducted (total)	–0.58 [0.103]***	0.01 [0.013]	0.01 [0.033]	172.03 [333.090]
Sum of seventeen violent acts received, witnessed, or upon family	0.01 [0.065]	0.00 [0.005]	0.01 [0.021]	–15.43 [77.093]
Sum of eight violent acts perpetrated	0.03 [0.131]	0.00 [0.010]	0.04 [0.027]	–169.87 [145.113]
Forced wife[a]	0.03 [0.738]	–0.01 [0.027]	–0.43 [0.177]**	–505.77 [564.052]
Forced mother[a]	–0.67 [0.936]	0.03 [0.088]	0.06 [0.189]	1003.55 [889.020]
Observations	228	228	228	191
Panel C: females (including education at abduction)				
Years abducted (total)	–0.05 [0.096]	0.00 [0.011]	0.03 [0.034]	202.97 [358.308]
Sum of seventeen violent acts received, witnessed, or upon family	–0.03 [0.034]	0.00 [0.005]	0.00 [0.017]	–13.30 [63.929]
Sum of eight violent acts perpetrated	0.01 [0.071]	0.01 [0.011]	0.04 [0.023]	–178.91 [131.610]
Forced wife[a]	0.11 [0.259]	–0.01 [0.044]	–0.32 [0.174]*	–550.28 [494.083]
Forced mother[a]	–1.13 [0.514]**	0.05 [0.087]	0.03 [0.234]	1154.30 [896.601]
Education at the time of abduction	0.92 [0.047]***	0.01 [0.009]	0.05 [0.036]	33.83 [47.883]
In school at the time of abduction	1.98 [0.239]***	–0.09 [0.036]**	0.24 [0.110]**	803.14 [348.216]**
Observations	228	228	228	191

(continued)

do not see a correlation between abduction length and human capital or economic outcomes (Table 3C) or strong correlations between time back and most outcomes (Table 4).[9] Education appears to increase with time back, but the effect is statistically significant at just the 10 percent level and the coefficient is less than half of that of males (0.14 vs. 0.33). What explains this gendered difference? One possibility is omitted variables: high-ability females are more likely to be abducted, biasing the results in Table 2 toward zero. Of course, this ability would have to be unaccounted for by our preabduction controls: parental education, occupation, and wealth.

Unfortunately, the data provide another explanation: for most females the alternative to abduction is dismal—low educational investment and few opportunities for skilled employment. Two patterns suggest that, even in the absence of abduction, women and girls may not have been educated. First, nonabducted females are less likely to be enrolled than males at all ages. We see this in Figure 1a, which displays the probability of currently being in school among nonabducted youth (where each line represents a running mean with unit bandwidth). Current enrollment understates the historical gap, however, as enrollment among both males and females is high in the displacement camps, and universal primary education (UPE) was only introduced after 1997.

Table 3. (continued)

	Economic and Human Capital Outcomes		
	(5) Capital or skill-intensive occupation	(6) Employed	(7) Days employed
Panel A: males			
Years abducted (total)	0.00 [0.006]	0.00 [0.013]	–0.15 [0.299]
Sum of seventeen violent acts received, witnessed, or upon family	–0.01 [0.005]	0.00 [0.012]	0.09 [0.235]
Sum of eight violent acts perpetrated	–0.01 [0.007]	0.00 [0.012]	0.06 [0.359]
Observations	458	458	458
Panel B: females (same coveriates as Panel A)			
Years abducted (total)	–0.01 [0.005]	–0.04 [0.019]**	–0.47 [0.593]
Sum of seventeen violent acts received, witnessed, or upon family	0.00 [0.004]	–0.01 [0.006]	0.13 [0.224]
Sum of eight violent acts perpetrated	0.00 [0.008]	0.02 [0.016]	0.05 [0.467]
Forced wife[a]	–0.04 [0.023]	0.03 [0.059]	0.47 [2.466]
Forced mother[a]	0.00 [0.026]	0.07 [0.086]	1.61 [2.645]
Observations	228	228	228
Panel C: females (including education at abduction)			
Years abducted (total)	0.00 [0.003]	–0.04 [0.020]*	–0.21 [0.565]
Sum of seventeen violent acts received, witnessed, or upon family	0.00 [0.004]	–0.01 [0.008]	0.16 [0.201]
Sum of eight violent acts perpetrated	0.00 [0.009]	0.02 [0.016]	–0.05 [0.480]
Forced wife[a]	–0.05 [0.026]*	0.05 [0.046]	0.70 [2.323]
Forced mother[a]	0.00 [0.025]	0.07 [0.071]	0.41 [2.435]
Education at the time of abduction	0.01 [0.005]	0.00 [0.014]	0.26 [0.424]
In school at the time of abduction	0.03 [0.027]	–0.03 [0.039]	–1.19 [1.613]
Observations	228	228	228

(continued)

Figure 1b displays educational attainment of nonabducted youth. Male attainment is increasing in age, a pattern consistent with continued enrollment in high school among older males. Female attainment falls steeply, especially among the older cohort who did not benefit from UPE. For most females, life at home bore certain resemblances to life with the rebels: withdrawal from school, early marriage, and childbearing.

We do observe schooling deficits among one group: forced mothers. Females who bore children with the rebel group have more than a year less education than their peers, abducted or nonabducted, after controlling for initial education and abduction length (Table 3C). Looking at return experiences (Table 5), females are less likely to return to school than males after their return from abduction, in part because females are less likely to be schooled in the first place. But forced motherhood is also closely associated with a lower likelihood of returning to school; forced mothers are 45 percentage points less likely than forced wives (and 40 percentage points less likely than female abductees not forcibly married) to return to school (Table 6B). Figure 1c shows rates of return to school by age back from abduction. The difference is stark; girls who return without children go back to school at least 80 percent of the time before the age of 12 (vs. 90 percent of boys). The decision to return to school falls with age; for those returning from abduction at age 18 roughly

Table 3. (continued)

	Social Outcomes		
	(8) Social support	(9) Family connectedness	(10) Member of group
Panel A: males			
Years abducted (total)	–0.14 [0.081]	0.03 [0.044]	–0.05 [0.012]***
Sum of seventeen violent acts received, witnessed, or upon family	0.06 [0.052]	–0.06 [0.027]**	0.01 [0.009]
Sum of eight violent acts perpetrated	0.18 [0.130]	–0.01 [0.032]	0.02 [0.015]
Observations	458	458	458
Panel B: females (same coveriates as Panel A)			
Years abducted (total)	–0.07 [0.090]	0.15 [0.077]*	–0.02 [0.038]
Sum of seventeen violent acts received, witnessed, or upon family	0.09 [0.038]**	0.01 [0.035]	–0.02 [0.013]
Sum of eight violent acts perpetrated	0.18 [0.054]***	–0.11 [0.066]	0.04 [0.023]*
Forced wife[a]	–1.02 [0.411]**	–0.59 [0.375]	–0.19 [0.113]
Forced mother[a]	0.51 [0.458]	0.52 [0.516]	0.15 [0.247]
Observations	228	228	228
Panel C: females (including education at abduction)			
Years abducted (total)	0.04 [0.089]	0.14 [0.080]	0.00 [0.035]
Sum of seventeen violent acts received, witnessed, or upon family	0.04 [0.036]	0.01 [0.042]	–0.02 [0.013]
Sum of eight violent acts perpetrated	0.14 [0.057]**	–0.14 [0.086]	0.05 [0.025]*
Forced wife[a]	–0.76 [0.421]*	–0.60 [0.426]	–0.14 [0.100]
Forced mother[a]	0.25 [0.475]	0.64 [0.539]	0.16 [0.241]
Education at the time of abduction	0.10 [0.046]**	–0.08 [0.040]*	0.03 [0.016]*
In school at the time of abduction	1.01 [0.200]***	0.07 [0.219]	–0.02 [0.067]
Observations	228	228	228

(continued)

40 percent of girls and 50 percent of boys return to school. Fewer than 10 percent of forced mothers return to school.

Social acceptance. Broadly, the results suggest that, as predicted, armed recruits have initial difficulty with social acceptance (S1a). Evidence that social rejection is widespread and persistent (S4) is weak; it is more likely that social troubles are confined to a minority and improve with time (S5).

We first turn to descriptive statistics on return (Table 5). Females and males return home in almost all cases. In the beginning, some face difficulties with at least one family member or neighbor, including insults, fear, or aggression. A total of 18 percent of females and 8 percent of males report at least one problem within the family, while 45 percent of females and 33 percent of males report at least one problem within the community. After adjusting for differences in age, preabduction household characteristics and war experiences (abduction length and age of return), females were 9 percentage points more likely to report family problems and 7 percentage points more likely to report community trouble (not statistically significant when controlling for abduction experiences, but significant without abduction controls, suggesting that community difficulties are associated with the intensity of abduction). For the majority of returnees, however, these troubles were temporary.

Table 3. (continued)

	Psychological Outcomes		
	(11) Emotiona distress	(12) Top quartile of distress	(13) Haunted
Panel A: males			
Years abducted (total)	0.03 [0.114]	0.00 [0.019]	0.02 [0.007]**
Sum of seventeen violent acts received, witnessed, or upon family	0.15 [0.042]***	0.03 [0.006]***	0.01 [0.004]
Sum of eight violent acts perpetrated	0.18 [0.072]**	0.02 [0.013]	0.04 [0.015]***
Observations	458	458	456
Panel B: females (same coveriates as Panel A)			
Years abducted (total)	–0.27 [0.195]	–0.04 [0.034]	–0.01 [0.013]
Sum of seventeen violent acts received, witnessed, or upon family	0.34 [0.072]***	0.05 [0.010]***	0.01 [0.008]
Sum of eight violent acts perpetrated	0.30 [0.120]**	0.04 [0.023]*	0.08 [0.020]***
Forced wife[a]	–1.47 [0.466]***	–0.22 [0.076]***	0.03 [0.066]
Forced mother[a]	0.72 [1.120]	0.04 [0.192]	–0.16 [0.121]
Observations	228	228	226
Panel C: females (including education at abduction)			
Years abducted (total)	–0.19 [0.211]	–0.02 [0.035]	0.00 [0.013]
Sum of seventeen violent acts received, witnessed, or upon family	0.34 [0.070]***	0.05 [0.009]***	0.01 [0.008]
Sum of eight violent acts perpetrated	0.34 [0.120]**	0.05 [0.025]*	0.09 [0.021]***
Forced wife[a]	–1.16 [0.517]**	–0.23 [0.089]**	0.01 [0.087]
Forced mother[a]	0.40 [1.059]	0.04 [0.181]	–0.18 [0.124]
Education at the time of abduction	0.09 [0.095]	0.03 [0.023]	0.02 [0.016]
In school at the time of abduction	–0.36 [0.361]	–0.06 [0.089]	0.05 [0.052]
Observations	228	228	226

(continued)

Just 7 percent of females and 3 percent of males report that family problems persisted—improvements of 58 percent and 61 percent, respectively. Similarly, just 6 percent of females and 3 percent of males report persistent community problems—improvements of 87 percent and 79 percent over time. After controlling for age and other prewar covariates, however, we see that women who ever reported a family problem (admittedly a small group) were 26 percentage points less likely than males to see those problems improve.

Comparing abductees to civilian youth (in Table 2), neither male nor female abductees display levels of social support different from their peers or each other. Both males and females are as likely to belong to a community group as their nonabducted peers. But abducted females report 6 percent less family connectedness than nonabducted females and abducted males 8 percent less connectedness—that is, more quarrels or fewer feelings of comfort and closeness. Females are at least twice as likely to report persistent family and community problems as males (Table 5).

Are these females rejected by families outright? In qualitative interviews, those who reported problems tended to focus on difficulty with a single family member or neighbor, and other relationships were generally described as positive. Thus, conflicts are localized, usually to a single relationship. The interviews also suggest that

Table 3. (continued)

	Hostility			
	(14) In physical fight	(15) Aggressive behaviors	(16) Trouble getting along	(17) Antidemocratic attitudes
Panel A: males				
Years abducted (total)	0.00 [0.008]	0.00 [0.006]		
Sum of seventeen violent acts received, witnessed, or upon family	0.00 [0.004]	0.00 [0.004]		
Sum of eight violent acts perpetrated	0.02 [0.009]**	0.00 [0.008]		
Observations	458	458		
Panel B: females (same coveriates as Panel A)				
Years abducted (total)	.	0.02 [0.023]	–0.05 [0.030]	0.01 [0.046]
Sum of seventeen violent acts received, witnessed, or upon family	.	0.00 [0.005]	0.03 [0.008]***	–0.01 [0.017]
Sum of eight violent acts perpetrated	.	0.02 [0.011]*	–0.02 [0.017]	–0.02 [0.030]
Forced wife[a]	.	0.03 [0.048]	0.01 [0.057]	0.14 [0.144]
Forced mother[a]	.	–0.23 [0.151]	0.19 [0.184]	–0.13 [0.264]
Observations	.	228	228	224
Panel C: females (including education at abduction)				
Years abducted (total)	.	0.02 [0.025]	–0.04 [0.027]	0.01 [0.046]
Sum of seventeen violent acts received, witnessed, or upon family	.	0.00 [0.006]	0.03 [0.008]***	0.01 [0.019]
Sum of eight violent acts perpetrated	.	0.01 [0.012]	–0.02 [0.016]	–0.03 [0.030]
Forced wife[a]	.	0.07 [0.055]	0.01 [0.064]	0.20 [0.145]
Forced mother[a]	.	–0.21 [0.149]	0.07 [0.191]	–0.23 [0.253]
Education at the time of abduction	.	0.02 [0.010]*	0.01 [0.012]	0.00 [0.024]
In school at the time of abduction	.	0.00 [0.045]	0.16 [0.069]**	–0.04 [0.155]
Observations	.	228	228	224

Note: Robust standard errors in brackets, clustered by sampling location. All estimates weighted by inverse sampling probabilities and inverse attrition probabilities. Year and location of birth dummies and prewar covariates are included in regressions but coefficients are not displayed. *(continued)*

[a]coded as 0 if abducted for less than two weeks.

* Significant at 10%.

** Significant at 5%.

*** Significant at 1%.

those who returned to extended family, rather than parents, had more strained relationships because of scarce food and resources.

If social impacts of abduction are small, then we may not observe improvement since time of return. None of our social measures vary with years since return for females or males (Table 4). The weak or inconsistent evidence of social improvements contrasts with the evidence discussed above, where abductees who had difficulties report improvements between the time they returned and today. There are at least two possibilities. First, in interviews, abductees usually reported difficulties with just one or two people, rather than the whole family or community. Thus, overall social support is consistent with isolated conflicts. Second, if social reintegration occurs quickly (in less than a year, for instance) then we should not expect the "time back" regressions in Table 4 to show significant results.

Table 4. Average Impacts of Years Since Return (by Gender)

	(1)	(2)	(5)
	Years Back		
	Females	Males	*N*
Economic and human capital outcomes			
Educational attainment (years)	0.14 [0.074]*	0.33 [0.090]***	652
Serious injury (indicator)	0.00 [0.009]	–0.02 [0.008]**	652
Wealth index (standard normal)	0.00 [0.013]	0.07 [0.023]***	652
Daily earnings in UGX (2,000 UGX = 1 USD)	–37.77 [93.242]	39.02 [105.667]	478
Capital or skill-intensive occupation (indicator)	0.01 [0.003]	0.01 [0.006]	652
Employed in last 4 weeks (indicator)	0.01 [0.007]	–0.01 [0.010]	652
Days employed in last 4 weeks	0.34 [0.264]	0.08 [0.130]	652
Social outcomes			
Additive index of social support (seventeen forms)	–0.01 [0.045]	0.05 [0.048]	652
Index of family connectedness (0–6, low to high)	0.00 [0.038]	–0.01 [0.033]	652
Member of at least one group	–0.01 [0.012]	0.02 [0.014]	652
Psychological outcomes			
Index of emotional distress	–0.01 [0.045]	–0.03 [0.059]	652
Top quartile of emotional distress (indicator)	0.00 [0.011]	–0.01 [0.010]	652
Haunted (indicator)	–0.02 [0.008]**	–0.02 [0.0065]***	648
Aggression outcomes			
In physical fight (indicator)		0.00 [0.003]	462
Aggressive behaviors (indicator)	–0.01 [0.008]	0.00 [0.004]	652
Trouble getting along with neighbors	0.02 [0.010]**		190
Antidemocratic attitudes (Index of 4)	0.00 [0.019]		186

Note: All estimates weighted by inverse sampling probabilities and inverse attrition probabilities. Location of birth dummies are included in regressions but coefficients are not displayed.
* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.

Violence perpetrated is associated with higher levels of ever having family and community problems, and with current family problems, as suggested by prediction S1b. These effects are reasonably large; an additional act of violence perpetrated by females, for instance, is associated with a 5 percentage point increase in reports of family difficulty ever (Table 6). Curiously, and contrary to this result, violence perpetrated is *positively* correlated with social support and group membership among both women and men, though the effects are only significant for women (Table 3). It is impossible to interpret this result with our data, but one possible explanation is that formerly abducted women (especially those that fought or perpetrated the most violence) support one another or form groups together, in spite of or because of family and community difficulties.

Table 5. Return Outcomes (for Youth Abducted more than Two Weeks)

	(1)	(2)	(3)	(4)
	Sample mean [std dev]		Adjusted nean difference (females–males)	
	Females	Males	Adjusted for prewar covariates	Adjusted for prewar and abduction covariates
Returned home	1.00 [0.061]	0.99 [0.081]	0.01 [0.004]*	0.00 [0.004]
Returned to school	0.40 [0.491]	0.58 [0.494]	–0.13 [0.051]**	–0.14 [0.052]**
Family problems ever	0.18 [0.381]	0.08 [0.275]	0.10 [0.036]***	0.09 [0.035]**
Family problems now	0.07 [0.261]	0.03 [0.174]	0.06 [0.032]*	0.06 [0.030]**
Family problems improved	0.58 [0.497]	0.61 [0.493]	–0.26 [0.103]**	–0.25 [0.147]
Community problems ever	0.45 [0.498]	0.33 [0.470]	0.09 [0.042]**	0.07 [0.043]
Community problems now	0.06 [0.230]	0.03 [0.181]	0.04 [0.023]*	0.04 [0.025]*
Community problems improved	0.87 [0.332]	0.79 [0.405]	0.04 [0.060]	0.04 [0.067]

Note: Robust standard errors in brackets, clustered by sampling location. All estimates weighted by inverse sampling probabilities and inverse attrition probabilities.
* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.

Finally, theory and practice predict that forced wives and, especially, mothers to children born in rebel captivity should have the most difficulty reintegrating into family and community (S1c). In northern Uganda, however, forced marriage and motherhood are not consistently associated with (statistically significant) lower rates of family and community acceptance. Our sample size, however, is modest; of 228 abducted women, there were fifty-nine forced wives, twenty-nine of whom bore children. Hence, we must be careful not to treat the absence of statistical significance as evidence of absence—the confidence intervals include sizable adverse effects. From Table 3, panel B, forced marriage is associated with 1.02 fewer forms of social support, a 26 percent decline relative to abductees.

Qualitative interviews reveal that some community members called children born in rebel captivity names, particularly when the children were troublesome, such as when fighting with other children. Yet, most forced mothers said their families welcomed their children. Social workers and returned females also explained that the parents of forced mothers took care of their grandchildren, as is customary when a female has a child out of wedlock. However, this does not imply a problem-free relationship.

Table 6. Reinsertion Outcomes and War Experiences

	(1)	(2)	(3)	(4)	(5)
	Returned to school after longest-lasting abduction	Equals 1 if reported family problems ever	Equals 1 if report family problems now	Equals 1 if reported community problems ever	Equals 1 if report community problems now
Panel A: males					
Years abducted (total)	–0.05 [0.016]***	–0.01 [0.008]	0.00 [0.006]	0.05 [0.011]***	–0.01 [0.004]
Sum of seventeen violent acts received, witnessed, or upon family	0.00 [0.011]	0.01 [0.007]*	0.01 [0.006]*	0.01 [0.009]	0.01 [0.007]*
Sum of eight violent acts perpetrated	0.02 [0.017]	0.02 [0.008]*	0.01 [0.006]*	0.04 [0.014]**	0.01 [0.005]
Observations	330	330	330	330	330
Panel B: females					
Years abducted (total)	–0.01 [0.021]	0.02 [0.019]	0.00 [0.013]	0.03 [0.028]	–0.01 [0.016]
Sum of seventeen violent acts received, witnessed, or upon family	0.01 [0.008]	0.03 [0.008]***	0.02 [0.010]*	0.05 [0.011]***	0.02 [0.006]**
Sum of eight violent acts perpetrated	0.00 [0.017]	0.05 [0.025]*	0.03 [0.013]*	0.06 [0.025]**	–0.01 [0.016]
Forced wife[a]	0.05 [0.049]	–0.17 [0.084]*	0.00 [0.054]	–0.03 [0.105]	0.01 [0.034]
Forced mother[a]	–0.40 [0.098]***	–0.04 [0.115]	–0.01 [0.100]	0.04 [0.162]	0.11 [0.088]
Education at the time of abduction	0.04 [0.014]**	–0.02 [0.012]	0.00 [0.007]	0.00 [0.018]	0.00 [0.005]
Observations	190	190	190	190	190

Note: Robust standard errors in brackets, clustered by sampling location. Year and location of birth dummies and prewar covariates are included in regressions but coefficients are not displayed. All estimates weighted by inverse sampling probabilities and inverse attrition probabilities.

[a]coded as 0 if abducted for less than two weeks.

* Significant at 10%.

** Significant at 5%.

*** Significant at 1%.

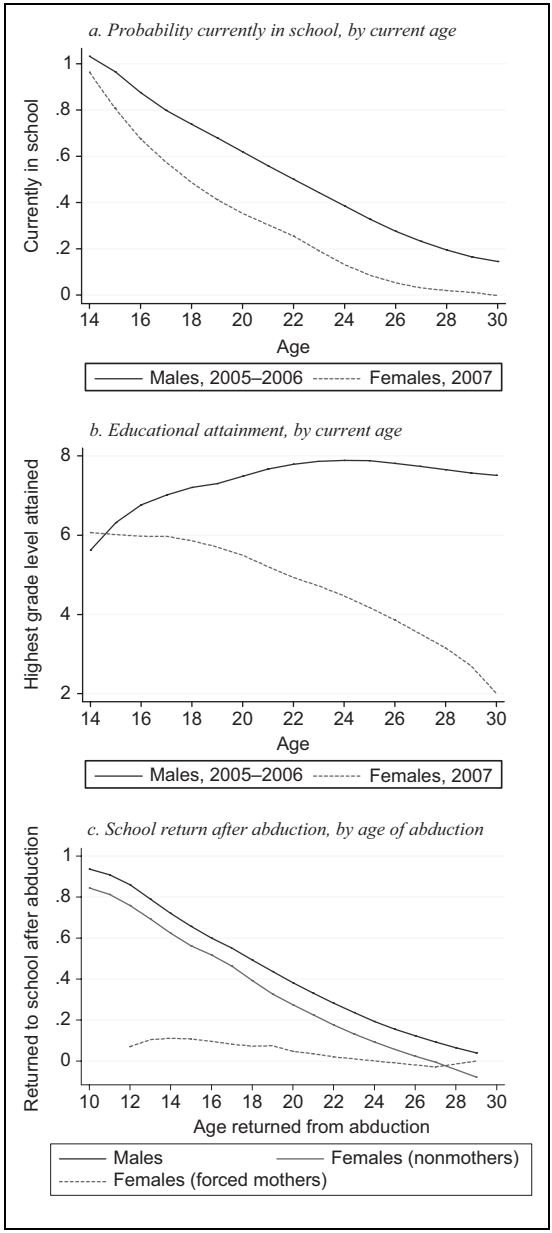

Figure 1. Age and schooling

Psychological distress. While social impacts appear small, we observe adverse psychological impacts of abduction. Abducted females report an average of 20 percent more symptoms of emotional distress than their nonabducted peers, and abducted males 15 percent more symptoms (Table 2). The difference between genders, however, is not significant. As noted above, symptoms of distress are often interpreted as spiritual haunting. Male abductees are nearly four times as likely as nonabductees to report feeling haunted by cen (spirits), and females are nearly thrice as likely (this gender difference is weakly significant). Note, however, we must make any gender comparison with caution, since surveys occurred in different years. Stressors were greater at the time of the males' survey (with war and displacement ongoing) and so we may understate the male–female difference.

Higher levels of distress are concentrated rather than broad-based. At the median, abducted/nonabducted differences are small. Rather, higher symptoms of distress are concentrated in a minority of youth whom are disproportionately abductees. Abducted females are 1.25 times more likely than nonabductees to be in the top quartile of the distress index. For instance, nearly 42 percent of female abductees report nightmares "sometimes" or "often" versus 25 percent of nonabducted youth.

Violence received and violence perpetrated are the main correlates of distress and haunting. Among males, each act of violence experienced or perpetrated is associated with a 0.15 and a 0.18 increase in reported symptoms of distress (Table 3A); among females, each act of violence experienced and perpetrated is associated with a 0.34 increase in reported symptoms of distress (Table 3C). For violence experienced, the difference between the male and female coefficients is statistically significant; women's symptoms appear to be more sensitive to violent trauma than males, in spite of being interviewed later and with fewer war stressors.

Most striking and puzzling, controlling for violence and abduction length, emotional distress is actually significantly *lower* among forced wives than other abductees (Table 3C).

These findings confirm that exposure to violence is related to increased symptoms of depression and traumatic stress (P1) but support a resilience view over the view that debilitating traumatic symptoms are broad-based among the abducted, although this is limited without a clinical cutoff for this population (P2). Other studies of war populations suggest that family connectedness and social support are important protective factors related to reduced symptoms of distress (P3; Betancourt 2004). Last, there is suggestive evidence that females develop more distress symptoms in response to violence, though with our evidence we are unable to distinguish the mechanism (P4). This, along with the reduced number of symptoms among forced wives, remains a subject for further research.

Hostility. Finally, we see little evidence of elevated hostile attitudes or behaviors among former abductees (H1). From Table 2, male ex-combatants are no more likely to report a physical fight than nonabducted males (in fact, the coefficient is negative). Male abductees are, however, 3 percentage points more likely to report aggressive

behaviors—67 percent greater than nonabductees. These results may indicate greater hostility. This result, however, is fragile and disappears in other specifications.

We see no relationship between abductions and aggressive behaviors among female abductees (the coefficient is negative). Females also report no more troubles with neighbors in the last year, nor do they report any difference in antidemocratic attitudes (these attitudinal data were not collected in the males' survey).

We also see little relationship between war experiences and fights, aggressive behavior, and antidemocratic attitudes (Table 3). Males who perpetrated more violence are more likely to have been in a physical fight, although the effect is potentially endogenous (i.e., more aggressive people committing more violence during and after abduction). Females who experienced more violence are much more likely to report trouble with neighbors. Given the absence of a relationship with aggressive behaviors, this could simply be picking up the specific community problems discussed above and in Table 6.

Our qualitative interviews suggest that former abductees have strong incentives not to behave aggressively. Anger and aggressive behavior can be stigmatizing, as friends and neighbors are quick to interpret it as a sign of "bush behavior" (Annan, Brier, and Aryemo 2009). Most abductees return to their families and communities, and seek to signal their reintegration with composure. If anything, they react meekly rather than aggressively to tense situations and avoid confrontations. This integration and restraint, and the absence of evidence for a combat–hostility relationship (H1), also weigh against the causal channels (H2-H7). Aggression may be context dependent, however, and ex-combatants who returned to city streets rather than rural homes and communities might react differently. Moreover, given the difficulty of measuring hostility, and the multiple interpretations of these particular measures (especially antidemocratic attitudes), these results must be taken with caution. Nevertheless, we see no evidence for the view that ex-combatants are a source of social disruption.

Discussion

The LRA is one of Africa's largest and longest running insurgencies and this article provides a detailed and representative picture of life in the group, especially sexual violence and the experiences of females. We hope it will inform the broader study of insurgency and repertoires of violence.

More importantly, however, this article is preoccupied with testing theories of the gendered impacts of war and the determinants of reintegration success. Advocacy groups and policymakers produce a great deal of hype, much of it gloomy, about women after war. These pessimistic views drive postconflict policy and practice. We try to provide a more balanced view using new data and a rare quasi-experiment in northern Uganda.

In the economic realm, our evidence weighs in favor of human capital theories of the impact of war and reintegration. We learn at least two important lessons: first, that human capital accumulation is a crucial component of the quality and returns

to work after war, but is unrelated to the quantity of employment; second, that the economic cost is largely a function of the opportunity cost, namely education and employment opportunities for civilian women.

In the psychosocial realm, our evidence confirms that the experience and perpetration of violence lead to social problems and emotional distress, but that serious distress and acceptance problems persist in a minority, and acceptance problems are often limited to a few rather than all relationships. Support from families, not rejection, is the norm. Finally, we see little relationship between wartime violence and current aggression. In northern Uganda ex-combatants do not appear to be an outsized source of social instability.

Are these results relevant outside Uganda, outside forced recruitment, or even this war? In the absence of data or rigorous causal evidence in other developing countries, it is difficult to say. In the economic realm, there are reasons to believe that the patterns we observe in Uganda have a high level of external validity. Blattman (forthcoming) and Blattman and Miguel (2010) review the micro-level conflict literature and find broad support for the human capital approach: war commonly disrupts education and other capital accumulation, both for veterans and noncombatants. As seen above, the results for males in Uganda also closely resemble those of populations as diverse as Sierra Leonean ex-combatants and White US Vietnam veterans. Context matters, but if we understand the opportunities available to civilians in a particular locale, this evidence helps us predict the direction and magnitude of the economic impacts.

In the psychosocial realm, effects could be more context-dependent. The results could differ where females join armed forces or groups voluntarily for nationalist or other motives, or where females have more opportunity for equality within armed groups, such as in the Liberation Tigers of Tamil Eelam (LTTE) in Sri Lanka (Alison 2003) or the People's Liberation Army (PLA) in Nepal. The results may also differ in contexts where families and communities are not as welcoming of their children, or where forces are victorious rather than defeated. We note, however, that a growing number of qualitative studies tell a similar story of resilience rather than rejection and disabling distress among youth returning from fighting forces (e.g., Boothby, Crawford, and Halperin 2006; Shepler 2005; Wessells 2006).

Ultimately, however, external validity is difficult to assess because of the paucity of micro-level data in areas of armed conflict. This suggests there is a need for more research in more zones of conflict, and a greater focus on females as well as males. For this research to be accurate and comparable, greater attention ought to be paid to representative samples, accounting for attrition, and the careful identification of comparison groups.

We conclude with words from one of the young mothers we interviewed, who returned after five years with the LRA along with a child, a severe injury, and the news that her parents had both been killed. After remarrying and having another child, she stunned us with her ability to strive for a better life for both of her children. This is the advice she offered to parents of girls who return from the LRA: "Take good care of her. It is not the end of her life. She should forget what happened.

Be a good example for her. She is still surviving. She should not see this as the end of her life. She can still continue."

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Notes

1. In 2000, the UN Security Council passed Resolution 1325, encouraging "all those involved in the planning for disarmament, demobilization, and reintegration to consider the different needs of female and male ex-combatants" (2000, para. 13).
2. Reports on central African demobilization have found that female ex-combatants were generally well received by their families (MDRP 2007, 2008). Humphreys and Weinstein (2007), however, find that while Sierra Leonean women report more problems gaining acceptance, that correlation arises from factional differences; after controlling for faction, male–female acceptance levels are similarly high.
3. The qualitative sample was selected to include variability in current age, length and age of abduction, war experiences, level of psychological symptoms, and level of social reintegration. Twenty-one interviews were taped and transcribed in Luo and then translated into English, and thirteen interviews were transcribed from field notes.
4. Several plausible sources of unobserved selection exist, including youth "self-selecting" out of the LRA via a better ability to hide from the rebels, or survival of only the physically strongest. Sensitivity analysis (not shown, but illustrated for males in Blattman and Annan forthcoming) shows that modest violations of the identification assumption—either selective survival or selective recruitment—would not change the general direction or magnitude of the treatment effects; only unobserved factors that are as influential as our primary determinants of abduction (location and age) could materially change the results.
5. The fact that abduction length is endogenous does not bias average treatment effect (ATE) estimates from equation (1). Rather, potentially endogenous exposure simply changes the

interpretation of the ATE. When treatment is heterogeneous a binary ATE can be interpreted as the average per-unit effect along a response function mapping treatment exposure to outcomes. When exposure is endogenous, however, the ATE should be interpreted as the ex ante expectation of this amount for a youth randomly selected from the prior distribution.

6. Based on a principal components analysis following Filmer and Pritchett (2001).
7. The measure is an adapted version of the Northern Ugandan Child and Youth Psychosocial Adjustment Scale by Loughry and MacMullin (2002). Each symptom is scaled between zero and one according to its reported intensity. For each of the nineteen symptoms, "often" receives a full value of 1, "sometimes" 0.66, "rarely" 0.33, and "never" a zero. Questions were selected for inclusion in the index of distress additively if, in a factor analysis, they shared a loading over 0.3.
8. Male impacts were discussed in more detail in Blattman and Annan (forthcoming).
9. To be precise, looking at Table 3B, we see large, negative, and statistically significant correlations between abduction length and education, almost identical to the coefficients on males (in 4A). This finding seems incompatible with the results in Table 2, where no adverse impacts are found for all abducted females. But, educated females tend to escape more quickly—1.3 months more quickly for every extra year of education (regressions not shown). Thus, the correlation between education and abduction length in Table 3B appears to be spurious, driven by the propensity of more educated females to escape. When we control for education at the time of abduction for females, as in 4C, the correlation between abduction length and educational attainment disappears.

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