

**Disentangling the Determinants of Successful
Demobilization and Reintegration**
By Jeremy Weinstein and Macartan Humphreys

Abstract

Since 1989, international efforts to end protracted conflicts in Africa, Latin America, and Asia have included sustained investments in the disarmament, demobilization, and reintegration (DDR) of combatants from the warring parties. Yet, while policy analysts have debated the organizational factors that contribute to a successful DDR program, little is known about the factors that account for successful DDR at the micro level. Using a new dataset of ex-combatants in Sierra Leone, this paper analyzes, for the first time, the individual level determinants of demobilization and reintegration. Conventional views about the importance of age and gender for understanding reintegration find little support in the data. Instead, we find that an individual's prospect of gaining acceptance from family and neighbors depends largely on the abusiveness of the unit in which he or she fought. Finally, while internationally-funded programs designed to assist the demobilization and reintegration process may have had an effect at the macro-level, we find no evidence that those who participated in DDR programs had an easier time gaining acceptance from their families or communities as compared to those who did not participate.

Disentangling the Determinants of Successful Demobilization and Reintegration

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I. Introduction

Since 1989, international efforts to end protracted conflicts in Africa, Latin America, and Asia have included sustained investments in the disarmament, demobilization, and reintegration (DDR) of combatants from the warring parties. Many of these programs have been part of comprehensive political settlements, negotiated and agreed to under the watchful eye of international observers after years of inconclusive fighting. Other demobilization efforts have been led by governments victorious in civil war. In a small number of instances, outside actors have employed coercive means to facilitate disarmament and the reestablishment of security. Yet across all these cases, the basic purpose of DDR has been clear: to reestablish a legitimate monopoly over the use of force by the government and return former fighters to civilian activities (Berdal 1996).

Formal programs to facilitate DDR date back to the operations of the United Nations Observer Group in Central America (ONUCA) in 1989. Since then, DDR has figured prominently as part of UN operations in El Salvador, Cambodia, Mozambique, Angola, Liberia, Sierra Leone, Guatemala, Tajikistan, and Burundi, to name a few. By 2000, when the Secretary General was asked to report to the Security Council on the role of the UN in DDR efforts, he felt confident enough to conclude that DDR has “a process of disarmament, demobilization, and reintegration has *repeatedly proved to be vital* to stability in a post-conflict situation” (United Nations 2000, emphasis added).

This certainty among policymakers about the need for disarmament, demobilization, and reintegration efforts after civil conflict should not blind us to the difficulty of the task at hand. In post-conflict situations, following years of fighting between warring parties, distrust and uncertainty are rife. Disarmament efforts, which aim to remove the means by which the war was fought, also leave factions and combatants vulnerable, without the weapons they would need to protect themselves if the other side reneges on an agreement. Demobilization represents the formal disbanding of military organizations – a process that strips combatants of the prestige, comradeship, and economic opportunities that may have been channeled through their participation in the fighting. Losing those ties can be profoundly threatening to ex-combatants. Reintegration programs often thrust largely illiterate soldiers back into communities that suffered enormous violence during the fighting. Without skills and isolated from social networks, combatants face an uphill battle in reestablishing a non-military way of life.

While policymakers recognize that DDR is fraught with complexity, few systematic efforts have been launched to evaluate the determinants of successful reintegration by ex-combatants after conflict. The literature is chock full of ‘lessons-learned’ assessments which attempt to parse the factors that account for the success (or failure) of a given DDR program. But this debate has been carried out in the absence of micro-level data that can reveal why, at the individual level, demobilization and reintegration is successful. To our knowledge, no rigorous attempt has been made to identify factors that might explain why some individuals and not others are able to successfully reintegrate after conflict.

Focusing on demobilization and especially reintegration, we argue in this paper for a reframing of the question. Efforts to assess the impact of DDR require a source of variation in the use of DDR programs. At the macro-level, this can be achieved by comparing countries that did or did not have DDR programs. At the micro-level, this can be achieved by comparing individuals that did and did not participate in DDR programs. Does DDR work for individual i in country X ?

What explains whether individuals are able to demobilize and reintegrate into society after war? To what extent does participation in internationally-funded DDR programs impact the likelihood of reintegration? We address these questions using results from a systematic survey of ex-combatants representing the five warring factions in Sierra Leone's civil war.

Sierra Leone's DDR process is widely regarded as a success story, and elements of the Sierra Leone 'model' are being replicated in neighboring Liberia, in Burundi, and now as far away as Haiti (World Bank 2003). Our empirical evidence largely validates this story of success. More than 70,000 fighters – 89% of the total pool of ex-combatants – were demobilized by the international community and peace has been maintained in the four years since the war came to an end. Participation rates in the DDR program were high and nearly equal across the five major factions, and there is little evidence that an individual's political affiliation is associated with his or her ultimate satisfaction with the program. Complaints about the program centered mainly on its administrative efficiency and bureaucratic design – common criticisms of UN-sponsored programs, but not evidence of a politically-manipulated process.

Success at the macro-level does not mean, however, that no variation existed at the micro-level. Our estimates suggest that at least six percent of fighters experienced severe problems – in gaining acceptance, finding employment, and accepting the democratic process – after the demobilization and reintegration process concluded.² From a substantive point of view, this estimated pool of nearly 5000 struggling fighters is no small matter. For a civilian population that bore the brunt of a war initiated by less than 200 fighters, the failure to reintegrate thousands of ex-combatants may represent a threat to continued stability that cannot be ignored. From a methodological point of view, this variation provides a key to working out what works in DDR and why. In particular, if the macro effects of DDR programs work through the positive effects they have on individual combatants, and if participants and non-participants in DDR programs are otherwise similar (a point we return to below), then we should be able to observe evidence indicating the success of these programs at the micro-level. In such cases, a lack of variation in reintegration success across participants and non-participants (which we find in Sierra Leone), would be inconsistent with the claim that DDR programs are responsible for the macro-level outcomes.

In exploring why some fighters successfully reintegrated while others did not, we examine reintegration along multiple dimensions – whether combatants have been accepted by their families and communities, obtained employment, rejected their faction as a political actor, and accepted the democratic process – but highlight the degree of acceptance as a key indicator of a combatant's long-term prospects. We first explore individual-level, group level, and community-level determinants of reintegration success that should figure in the design and implementation of DDR programs. Then we turn to an examination of those interventions specifically designed to ease reintegration – the use of stop gap programs (road-building, infrastructure, etc.), the deployment of peacekeeping troops and the DDR program itself.

Our analysis of reintegration success finds that, contrary to conventional wisdom, there is little evidence that women or young people faced a significantly harder time gaining acceptance into civilian life after conflict. Instead, the most important determinant of whether an individual was accepted by his family and his community is the abusiveness of the unit in which he or she fought. Proxies for the level of abuse perpetrated by an individual's unit are strongly associated with

² The margin of error for this estimate (with 95% confidence) is plus or minus 1.9%.

problems in gaining acceptance, even controlling for unobserved attributes correlated with membership in the different factions. In addition, there is weak evidence that individuals who settle in communities that suffered high levels of abuse during the war encounter more difficulty in gaining acceptance from family and friends.

Surprisingly, we also find that the multiple dimensions of reintegration are not highly correlated with one another. It does not appear that combatants who have given up their guns and broken away from their factions, will also find acceptance in their communities and embrace the post-war political process. Different logics seem to drive the processes of gaining acceptance, finding employment, breaking away from one's faction, and gaining confidence in the democratic process.

Finally, in our study of program effects, we find little evidence that participation in the DDR program increases the likelihood that combatants will gain acceptance from their families and communities in the aftermath of fighting. Non-participants do just as well in the post-war period as participants, controlling for other major determinants of an individual's prospects. We examine three possible explanations for this finding. The simplest explanation is that participation in DDR had no impact on reintegration: the programs happened to exist in a climate where other features facilitated reintegration. A second is that effects on individuals are masked by a selection effect: the DDR program may have incorporated those fighters that would have had the greatest difficulty reintegrating. Finally, it is possible that the impact of DDR is dispersed: even non-participants may benefit through spillovers from the programs. We find little or no support for the second and third stories, reinforcing our confidence in our finding. In Sierra Leone, the DDR program may have been only one small part of a larger peace-making and peace-building effort that ended the war and eased reintegration regardless of whether individuals themselves participated in the demobilization.

The next section of this paper situates demobilization and reintegration in the context of existing theoretical arguments about the determinants of successful peace-building. The third section reviews recent work that evaluates the impact of DDR programs at the macro-level. A fourth section introduces the case of Sierra Leone and describes our research method. The fifth and sixth sections describe our empirical strategy for studying the determinants of reintegration success and identifying the effects of international programs. A conclusion discusses the relevance of our results for broader discussions of DDR and post-conflict strategy.

II. DDR in the Transition from War to Peace

International peace-building is now considered a critical instrument of the international community for addressing countries in conflict (Doyle and Sambanis 2000). In the 1990s, from Somalia to Haiti and Cambodia to Liberia, the international community has invested significant resources in efforts to bring conflicts to an end and reduce the likelihood that they will recur. Investments in the disarmament, demobilization, and reintegration of combatants have been fundamental to the United Nations' growing role in post-conflict situations.

The United Nations defines the demobilization and reintegration aspects of DDR as follows (United Nations 2000):

- (a) Demobilization refers to the process by which parties to a conflict begin to disband their military structures and combatants begin the transformation into civilian life. It generally

entails registration of former combatants; some kind of assistance to enable them to meet their immediate basic needs; discharge, and transportation to their home communities. It may be followed by recruitment into a new, unified military force.

- (b) Reintegration refers to the process which allows ex-combatants and their families to adapt, economically and socially, to productive civilian life. It generally entails the provision of a package of cash or in-kind compensation, training, and job- and income-generating projects.

While much of the literature on DDR is practical – outlining how programs should be designed and implemented – the demobilization of armed factions occupies a central place in theories of civil war termination and post-conflict peace-building as well. In particular, the literature helps us identify what successful DDR should look like in terms of changing patterns of behavior on-the-ground.

The literature on civil war termination suggests that adversaries in post-conflict environments face a security dilemma (Walter 1997). Civil war is characterized by an anarchical environment – no government exists to ensure order, no judicial system enforces contracts, and groups are divided into independent, armed camps. But signing a peace agreement to end the war does little to address the core security dilemma that exists in a state of anarchy. A peace agreement requires that armed factions demobilize their forces, yet those forces are the only thing that stands in the way of their defeat by an adversary. In one statement of this argument, Walter claims that “any attempt to end a civil war and unify the country also eliminates any ability to enforce and secure the peace.” (Walter 1997, p. 338) The implication is that warring factions cannot be expected to disarm, demobilize, and disengage their military forces when no legitimate institutions exist to enforce the contract. A solution to this dilemma is a credible third-party guarantee – an outside actor that monitors the terms of the peace agreement, verifies the actions taken by each side, and sanctions violations with force if necessary. Third-party enforcers can offer assurances that warring factions will be protected, terms will be fulfilled, and promises will be kept (at least as long as they exert some authority in the post-conflict environment). With external enforcement, cheating becomes difficult and costly, and the payoffs to implementing a peace agreement rise.

This literature thus identifies a critical role for external actors in enabling the reciprocal demobilization of competing forces at the end of a conflict. External intervention is associated with a more stable peace, in part, because it provides an environment in which warring partners can dismantle their structures of command-and-control.

Other research on civil war resolution focuses on spoilers (Stedman 1997). Spoilers are, “leaders and parties who believe that peace emerging from negotiations threatens their power, worldview and interests, and use violence to undermine attempts at achieving it.” (Stedman 1997, p. 5) If not properly engaged, spoilers can destroy negotiated settlements, plunging countries back into civil war. Spoilers come in many shapes and sizes; differences in their motivations and goals dictate the types of strategies international actors might employ to bring them to the table. In particular, three types merit special consideration: limited spoilers who advance concrete goals, total spoilers who will reject the process regardless of the benefits and costs, and greedy spoilers whose goals can be affected by calculations about the likelihood of realizing gains or losses. Total spoilers, by definition, cannot be accommodated, but limited and greedy spoilers can be managed during the peace process. In particular, Stedman identifies a strategy of inducement in which positive measures

can be taken to address the grievances of factions who stand in the way of peace. Demands may include greater protection, greater benefits, or legitimization as part of the peace process.

Increasingly, DDR programs are one of the key inducements used by international actors to manage spoilers in post-conflict situations. The design of demobilization efforts offers a host of carrots (and some sticks) outsiders can employ. Reintegration packages and training programs enable leaders to deliver concrete benefits to combatants at the conclusion of the fighting, some of which can be designed to address underlying grievances that gave rise to the conflict. The process itself provides a mechanism to legitimize the warring factions (or exclude them), and engages the leadership of the armed groups in both program design and implementation. Thus, DDR can play a key role in neutralizing spoilers—and thereby promoting peace.

A third insight of the war termination literature is that institutional redesign in the peace agreement may provide a channel through which warring parties can send costly signals of their commitment to a permanent settlement (Hoddie and Hartzell 2003). In particular, parties can agree to participate in new institutions with potentially high costs to themselves, helping them to overcome the distrust that exists in the post-war period. Possibilities include the integration of armed forces from competing factions, the appointment of key military officers from formerly adversarial groups into the same hierarchy, and perhaps provisions that allow groups to maintain small forces for a set period of time. Walter offers a broader view of institutional reconfiguration that envisions groups committing to power-sharing arrangements (such as a decentralized form of federalism). These new arrangements might address concerns of political elimination and could increase parties' buy-in to the political process (Walter 1999). Thus DDR programs also contribute to post-war stability by incorporating formerly opposing groups into new, unified political and military structures. Successful DDR will likely be characterized then by signals of buy-in from ex-combatants themselves to the new political and social order.

A brief look at the war termination literature points to a critical, yet implicit role for disarmament, demobilization, and reintegration in the resolution of civil conflict. It suggests three aspects of successful reintegration that are measurable and believed to be linked to a stable post-war political order: (1) the breaking down of command, control, and capacity in the warring factions; (2) the reintegration of ex-combatants into the economy and community life and; (3) the development of a political and military structure that gives combatants a stake in the future of the country (and allows them to signal their commitment to peace). In section five, we use these three related concepts to develop multiple measures of reintegration success for Sierra Leone.

What this literature does not offer, however, is significant traction on the factors that may account for successful reintegration at the level of individual combatants. The mechanisms linking DDR programs to successful peacebuilding are hypothesized to operate largely at the macro-level. For a given conflict, it is the presence of outside actors, the use of inducements, and the institution of power-sharing arrangements that are believed to contribute to sustainable conflict resolution. Of course, we can explore the micro-level corollaries to these macro-level theories. For example, we can gain some leverage on the impact of DDR as an inducement to reintegration by comparing the post-war trajectories of participants and non-participants in DDR. In addition, the scale and scope of external presence is something that varies across geographic areas and over time. We can explore whether variation in the external troop presence is correlated with successful reintegration. But the theories outlined above do not explicitly address the micro-level processes through which peacebuilding is achieved. In fact, our review of the literature yields little in the way of systematic

theories about the conditions under which combatants will give up their arms and reintegrate into civilian life in the aftermath of war. Our primary purpose in this paper is thus empirical: to document the factors that account for successful reintegration across individual combatants.

III. Past Attempts to Evaluate DDR Programs

With more than a decade of UN experiences in DDR, there has been no shortage of attempts by policy analysts and practitioners to cull the lessons learned from various processes of implementation around the globe. The optimal way to identify program effectiveness is to identify a control group using a method of “randomized intervention.”

The process of randomized intervention works as follows: if there are 100 people that will receive some treatment and 200 people who are eligible to receive the treatment, then 100 people are chosen randomly from the group of 200 eligible people and assigned the treatment. All 200 people, however, are tracked. The fact that the 100 are chosen randomly means that there is no systematic difference between those that did and those that did not receive the treatment – the only *systematic* difference lies in the treatment itself. While individuals and communities differ from one another for a range of reasons, the purpose of evaluation is to identify the systematic effects of DDR. Randomized intervention provides enormous power for understanding the impacts of interventions. It may be the only realistic strategy to get at key questions on which policy practitioners in DDR have yet to come to consensus: whether benefits should be targeted to individuals or communities, to what extent special groups (women and children) should be included in the process, and what forms of training are linked to future economic success.

While some experts within the United Nations have taken interest in and debated the feasibility of employing randomized intervention, this approach has not yet been used in practice. The idea is still new and UN staff with the ultimate responsibility for implementing programs in post-conflict environments are cautious about altering the structure of programs which are highly political and sensitive, in order to allow for better evaluation, even though there are multiple aspects of DDR over which there is considerable uncertainty. To date, we know of no attempt to employ the principle of randomization in evaluating the impact of DDR. The result is that, despite the cost of these programs, our knowledge about whether these programs actually work is very limited.

The evaluations that have been undertaken divide into three categories: lessons that emerge from dialogues among policy experts, from cross-country comparisons of program design, and from the outside evaluation of specific DDR programs. Dialogues among policymakers and practitioners have produced a number of lessons drawn from retrospective evaluation of the successes and failures of individual DDR programs. Workshops of this type have been hosted by UN agencies, U.S. government departments, and research think-tanks including the Institute for Security Studies in South Africa and the International Peace Academy. A recent volume bringing together the diverse insights of practitioners and researchers offers six lessons learned that ought to guide the design and implementation of DDR efforts (Meek and Malan 2004). These include the need for integrated planning from the earliest stages; a focus on prioritizing and linking reintegration more fully to disarmament and demobilization; efforts to employ a regional approach, recognizing that borders do not constrain conflicts; clear and articulated objectives for the DDR program; active efforts to manage the expectations of ex-combatants; and attention to the inequities DDR programs create between combatants and community members. Evaluations of this type aim to illuminate *processes* of program design and implementation hypothesized to matter for the successful

demobilization of armed forces. The focus is on identifying how better to organize and design programs, by drawing on the constraints and difficulties faced by practitioners in different contexts. Strikingly however, little attention is paid to the measurement of success, by comparing the success rates among participants and non-participants either at the country or at the individual level.

A second approach employs cross-country comparisons of program implementation in an effort to extract those factors that account for the success or failure of DDR programs. Perhaps the most well-known work in this area has been produced by the World Bank, which sought to make sense of its involvement in military demobilization by comparing program experiences in seven countries (World Bank 1993). The World Bank authors advance a series of measurable outcomes linked to four aspects of success for a DDR program: security, political, economic, and fiscal. For example, on the security front, the authors argue that success might be measured by looking for a reduction in the number of guns circulating, the dispersal of ex-combatants, the resumption of normal economic activity, and a decline in civilian violence, among other indicators. These measures are focused on outcomes, but only at the national level. The comparative study comes up short, however, in its efforts to isolate the factors that account for success or failure across the different programs. As in the studies described above, attention is paid almost entirely to issues of program design (such as the extent of involvement of veterans in program management, for example). The study hints at some deeper variables of causal importance, including whether or not DDR programs are implemented in an environment in which political and economic agreements among ex-combatants have already been forged ahead of time. Looking ahead, the authors argue for more sustained data collection at the individual level that would allow for improved program design *and* evaluation – a challenge we attempt to answer in this study.

In another version of the cross-country comparison, Spear identifies five factors that are “particularly important in determining the likelihood of successful disarmament and demobilization.” (Spear 2002) Specifically, the success of DDR depends, he argues, on the feasibility and aims of the peace agreement, the implementation environment, the capability and resources of the implementers, the attitudes of the warring parties, and the effective verification of treaty implementation. Little effort is made however to measure success or to examine the trajectory of demobilization in countries that did *not* receive a UN DDR program. Without more systematic comparisons, we are hard pressed to say anything concrete about the factors that matter.

A final approach involves the evaluation of country-specific programs. Here attention is directed toward the impact of DDR programs within a country on specific populations of ex-combatants. Sierra Leone’s “Tracer Study” provides a good example of this method (Stavrou et. al., 2003). In the Tracer Study, funded by the Multi-Donor Trust Fund, the authors use quantitative survey techniques to follow the post-war trajectory of a cohort of 250 ex-combatants. Special attention is paid to the measurement of two dependent variables: economic and social reintegration. In terms of economic reintegration, the survey aimed to assess the quality and nature of employment found by ex-combatants after their participation in the DDR program. Social reintegration referred to levels of family and community acceptance. The Tracer Study is a model effort in terms of developing more systematic measures to assess the impact of DDR. Its weakness, however, is that by talking to only those who participated in DDR programs (a subset of ex-combatants), we cannot know anything about the impact of those programs on economic and social reintegration. Moreover, driven by donor considerations, the authors collected few covariates that might help to explain progress at the individual-level, including information about how individual soldiers experienced the civil war.

In reviewing the literature on the implementation of DDR, one fact is apparent: past attempts at evaluation have not recognized the importance of having a control group in order to estimate the impacts of a program. Effective evaluation of DDR requires a data strategy that allows us to compare countries in which DDR was implemented with those where it was not, communities where programs were established with those that did not receive investments, individuals who participated with those who did not, or areas in which one type of DDR program was implemented with places where other techniques were used. In the absence of a randomized intervention, researchers can still bring a comparative approach and statistical techniques to bear in an attempt to isolate the determinants of reintegration success and assess the impact of particular programs. These approaches are only second best at identifying causal patterns, but still provide valuable information about the relationship between interventions and outcomes. The remainder of this paper describes one such attempt that uses survey research of fighters that did and did not participate in DDR programs in Sierra Leone.

IV. Surveying DDR in Sierra Leone

In January 2002, when the government of Sierra Leone declared its more than decade-long war officially over, the international community showered it with plaudits for a successful disarmament, demobilization, and reintegration program that paved the way for a stable post-war political order. This turn of events was unexpected for a country that experienced a brutal civil war which captured international attention, a stop-and-start peace-building effort lasting more than four years, and the persistent negative spillover effects of violence in neighboring Liberia. The stable, post-war period now provides an opportunity to ask three questions: To what extent have former combatants reintegrated in Sierra Leone? What are the factors that account for successful reintegration? Have DDR programs and other international efforts increased the likelihood of successful reintegration? Before we turn to an analysis of the data, we provide some brief background on the conflict, the demobilization process, and the survey itself.

The war in Sierra Leone began when a small group of combatants – calling themselves the Revolutionary United Front (RUF) – entered Sierra Leone from neighboring Liberia, backed by Charles Taylor. Over the course of nearly ten years of fighting, Sierra Leone experienced violence of horrific proportions. Tens of thousands of civilians were killed, and hundreds of thousands were displaced from their homes.

Soon after the war began, the national government fell to a coup, replaced by the National Provisional Ruling Council (NPRC), which sought to defeat the RUF by hiring a South African security firm (Executive Outcomes) in support for the Sierra Leone Army (SLA). Following a second coup, the country returned to civilian rule in 1996, when President Kabbah and the Sierra Leone People's Party were elected to power. Kabbah sought to end the war through an abortive peace process in 1997 and by forging an alliance with a federation of local militia that had formed to fight the rebellion (the CDF). But with the war on-going, Kabbah was quickly deposed in a coup, and the Armed Forces Revolutionary Council (AFRC) took power. The AFRC invited the RUF into a power-sharing arrangement which lasted until March 1998, when Nigeria, leading a West African intervention force, restored Kabbah and his democratically-elected government to power.

Following Nigeria's intervention, a fifth faction formed (the West Side Boys (WSB)), incorporating elements of the AFRC, RUF, and SLA, and the AFRC/RUF alliance retreated to the

bush, plotting a major attack on Freetown. That attack in January 1999 caused bloodshed which was beamed around the world. The warring parties were soon pressured into a peace agreement at Lomé, which incorporated the RUF into a power-sharing arrangement. A UN force (UNAMSIL) was deployed to take the reigns from the Nigerians, but it was poorly organized. With mistrust high, the treaty broke down and the RUF took hundreds of peacekeepers hostage. With the country returning to violence, the British intervened and reestablished security. Along with Guinean troops, the British forced the RUF into submission, substantially weakening its capacity. Finally an effective presence, the UN took a leadership role in disarming and breaking down the warring factions.

Given the ups and downs of the war itself, it should come as no surprise that the DDR process faced innumerable hiccups in its implementation. The first effort to demobilize soldiers began in 1998, with the goal of dismantling the belligerent parties, and transforming their organizations into political parties. Kabbah's government led this process after it was returned to power by the Nigerians. But it was wholly unsuccessful, as fewer than 5000 ex-combatants registered for disarmament and demobilization. A second phase began in 1999, after the Lomé Accord was signed, and it continued until 2000 when the war broke out anew. During this period, slightly more than 20,000 combatants turned up to be demobilized. The bulk of demobilization took place after UNAMSIL was beefed up, following the British intervention, in 2001-02. In the third and final phase close to 50,000 combatants disarmed. This brought the total caseload to nearly 74,000 fighters.

The disarmament process was conducted at reception centers distributed around the country. It included five phases: the assembly of combatants, collection of personal information, the verification and collection of weapons, the certification of eligibility for benefits, and transportation to a demobilization center. Once disarmed, combatants were prepared to return to civilian life in demobilization sites where they received basic necessities, reinsertion allowances, counseling, and eventually transportation to a local community where they elected to live permanently. In the community, combatants benefited from training programs (largely vocational skills including auto repair, furniture-making, etc.) designed to ease their reentry into the local economy. Moving more than 70,000 soldiers through this process is from an operational standpoint an accomplishment in itself.

While recent analyses have conducted an institutional post-mortem of the DDR process – looking at how the UN operations might have been better organized, the programs better targeted, community ownership better obtained – they also point to serious challenges that remain in the reintegration process (Meek et. al. 2004). Combatants in Sierra Leone committed widespread atrocities and destroyed much of the country's infrastructure. The challenges of gaining acceptance, finding employment, and accepting that the war has come to an end are often overwhelming for many soldiers who grew up knowing nothing other than war (Ginifer 2004).

To assess the extent to which combatants have been able to reintegrate and identify the relative importance of participation in the DDR program, we gathered systematic data on a sample of ex-combatants, some of whom participated in the formal DDR effort and others who remained outside of it. The survey was conducted between June and August 2003, slightly more than a year after the war came to an end. The study targeted a sample of 1000 ex-combatants; a total of 1043 surveys of ex-combatants were completed. The main method for gathering information was through the administration of a closed-ended questionnaire by an enumerator in the respondent's

local language. Interviews were conducted at training program sites and in community centers around the country.³

To ensure as unbiased a sample as possible, the survey employed a number of levels of randomization. First, teams enumerated surveys in geographic locations and chiefdoms that were randomly selected. Estimates of the population of ex-combatants presently residing in the chiefdoms were made based on data from the National Commission on Demobilization, Disarmament, and Reintegration (NCDDR), the National Statistics Office, and estimates of experts in Sierra Leone. The estimates of the population distribution were used to generate weights that were used to draw 63 clusters of 17 subjects throughout the country. These clusters fell within forty-five chiefdoms or urban localities and these forty-five localities formed the basic enumeration unit. The fact that the sampling frame depended in part on NCDDR estimates implies that it is possible that areas in which NCDDR was most inactive were under-represented in our sample.

Within each enumeration unit, sites were also randomly selected, with both urban and rural areas represented. For each enumeration unit, specific numerical targets were set for the major factions, based on the randomization and the estimated national distribution of faction members. Broad goals were also provided to guide survey teams in meeting gender and age targets based on the estimated national share of women and children in the groups: enumerators were instructed that on average one in twelve individuals interviewed should be a woman, and one in nine should have been under the age of 16 at the end of the conflict. Enumerators were instructed to compare actual numbers of children and faction members to target goals each day.

Enumerators worked through both official (UN and government) contacts and local community leaders to develop lists of ex-combatants. Teams identified pools of candidates from more than one source: some from the town or village Chief, some from the village youth coordinator, some from various DDR and NCDDR skills training centers, and so on. In every case, the teams aimed to identify two to three times the targeted number of potential respondents and then to randomly select respondents using a variety of methods. In most instances, Chiefs and DDR staff asked a number of ex-combatants to meet at a public location and teams selected candidates randomly from that pool (by choosing every third person or selecting numbers from a hat). While this method worked well, in some areas less than twice the target population was identified, particularly in very remote rural areas, areas with small ex-combatant populations, and areas with highly polarized communities.

The survey elicited a detailed profile of each of the combatants including their socio-economic backgrounds, their experience of the war itself, their involvement in the DDR process, and the realities they have faced in the post-war period. The data are rich and textured, in spite of its closed-ended format. It allows for a careful analysis of the determinants of reintegration success, which we undertake in this paper. But it also provides data useful for systematic examination of the strategies of the warring factions and the determinants of levels of violence, which are reported elsewhere (Humphreys and Weinstein 2005).

³ An obvious concern with survey work is truth telling. Respondents may have strong incentives to misrepresent the facts. With the Special Court operative in Sierra Leone during the administration of the survey, some respondents might have been concerned that their answers could be used as evidence for the prosecution. In the training, a script was developed for enumerators to help allay these concerns. It was also important that survey teams administered the survey in private, in an effort to protect people's privacy, that anonymity was preserved throughout, and that questions of an incriminating nature were not asked.

V. Empirical Strategy for Identifying Determinants of Successful Reintegration

The main dependent variable in our analysis, *accepted today*, is an index of the degree to which individuals face difficulties in gaining acceptance from their families and communities. We created the index by calculating the average of respondents' answers to two related questions in which they report whether they are facing problems in gaining acceptance from family members and neighbors in the post-war period. This is our preferred measure of reintegration because it captures the most local dynamics of the reintegration process and likely has spillover consequences for the extent to which combatants maintain ties with their factions and embrace the democratic process.

The dependent variable is highly skewed but displays important variation. The vast majority of ex-combatants report high levels of acceptance, with more than 90% facing no problems. At the same time, over 6% of combatants report facing minor or major problems gaining acceptance at the time of the survey (more than a year after the war was declared over).⁴ While our measures support the idea that across individuals in Sierra Leone, reintegration has proceeded with great success, the difficulties faced by 6% of respondents should not be underemphasized. If our sample were entirely representative of the ex-combatant population, this figure of 6% would correspond to nearly 5000 former soldiers facing significant challenges in reintegrating into civilian life. In fact, our sample does not include those combatants that failed to reintegrate and elected instead to continue fighting in Liberia or Côte d'Ivoire. Insofar as these migrant fighters represent a source of bias in our sample, the implication is that our estimate of dissatisfaction is a lower bound. Making sense of the factors that explain why some individuals struggle to gain acceptance, while most find success, is the main task for the remainder of the paper.

Recognizing that there are multiple components of reintegration, we also explore variation in three additional elements of reintegration that follow from our analysis of the literature on civil war termination. First, successful reintegration requires that combatants break their ties with the warring factions, so that previous command and control structures no longer operate in the post-war period. We examine a dependent variable, *broken ties to faction*, that captures the extent to which combatants still turn to faction leaders for assistance. Second, reintegration also depends on the degree to which combatants gain entry to the local economy. We explore a dependent variable, *employment*, which records the employment status of combatants. Third, successful reintegration requires that combatants accept the democratic political order and view participation in elections as a realistic means for affecting political change. We constructed an additional variable – *believe in the democratic system* – which represents combatants' beliefs about the viability of affecting change through participation in elections. For completeness, we also present some results on a variable, *accepted initially*, which represents the extent of difficulty individual combatants faced in gaining acceptance immediately when they returned to their communities. But this variable – because it describes experiences of fighters before the DDR process began – is not used in our subsequent analysis of the impact of external programs.

⁴ For the empirical results presented in the paper, we use a continuous measure of our index which ranges from 0 to 1. Because the distribution is skewed, we also re-ran all of our results using probit models using a dummy variable constructed to differentiate those who face no problems from those who have encountered difficulties. All of the results presented in the paper hold up with these different specifications.

On each of these dimensions, while most combatants are returning to civilian life, there remains significant cause for concern. More than 12% of former fighters report having no work at all; a broader definition of unemployment which recognizes the underemployment of individuals cultivating land for subsistence purposes, would record a much higher number. 21% of combatants still turn to their faction leaders for assistance in the post-war period. Nearly 30% of ex-combatants do not believe the democratic system is a viable means for affecting change in Sierra Leone. Yet, as Table 1 indicates, these distinct aspects of reintegration do *not* appear to be highly correlated and can be treated as capturing different aspects of reintegration success. Different factors are likely important for understanding the reintegration process on each of these dimensions.

(Table 1)

In our empirical analysis, we distinguish between the characteristics of individual fighters, the factions in which they fought, and the communities in which they elected to reintegrate on the one hand, and the impact of programs that were implemented explicitly, by the government of Sierra Leone and the international community, in order to ease reintegration.

Individual, Group, and Community Characteristics

Individual background characteristics relevant to prospects for reintegration include a number of socio-economic variables such as an individual's age, ethnic group membership, gender, his or her income, and the highest level of education he or she has attained. In addition, we include measures reflective of an individual's personal experience of the war including whether he was abducted into a faction, whether he joined because he supported the political causes of the faction, and whether he served as an officer. Each of these individual background characteristics is measured using a single question administered during the survey.

It may also be the case that the *characteristics of an individual's unit or faction* matter for the likelihood of successful reintegration. Substantial differences exist in Sierra Leone across the fighting factions, and within them, in terms of their make-up, structure of command and control, and strategies employed during the war (Humphreys and Weinstein 2005). For the purposes of this analysis, we focus on one key group characteristic that is likely to affect an individual's prospects in the post-war period: the impact of fighting with a unit that was highly abusive toward civilian populations. To the extent that individuals committed heinous crimes against non-combatants, one might expect that they would face a more difficult process of gaining acceptance by community members and resettling into a non-military way of life. We constructed a variable that describes the abusiveness of the unit in which an individual fought, by using answers to eight-related questions given by respondents who fought in the same chiefdom, for the same faction, during the same period of the war. The weights derived from a factor analysis were then used to create a single measure, the *extent of civilian abuse*, which ranges from 0 to 1.⁵

⁵ The measures used to construct the index include three distinct types of questions. First, we include questions that assess the likelihood that an individual in a fighting unit would be punished for stealing, amputating, and raping a civilian if these were done without the expressed order of a commander. Consequently, the responses capture levels of abuse or indiscipline *not* ordered by superiors and hence the extent to which the fighters operated in an environment that was permissive of abuse. Second, we add questions about the ways in which food was collected, including whether food was taken forcibly or through more contractual arrangements from civilians. Finally, the index includes the respondents' evaluation of actions undertaken by the group for the benefit of civilian populations, including educational and ideological training. The three components of the index combine negative sanctions (violence, forcible food collection)

Importantly, our proxy for civilian abuse is not a measure of actual violence committed by fighters during the war. Instead, it captures the strategies and behaviors of the warring factions as reported by the perpetrators – something likely to be correlated with actual levels of abuse. In particular, the structure of the survey instrument asked respondents whether a combatant would be punished for certain actions if they were committed without the expressed order of a commander. Consequently, the responses capture levels of abuse or indiscipline *not* ordered, but nonetheless permitted, by superiors. Of course, one can imagine a warring group in which all violence against non-combatants is expressly ordered by the commanding officers, but no other violence is permitted. However, we assume that a group’s likelihood of allowing violence that follows from indiscipline (ie. without the order of a commander) is closely correlated with a more general permissive environment for the abuse of non-combatants.

We employ three measures that capture the *characteristics of the communities* into which combatants have reintegrated. First, we create a measure of district wealth using data from the Sierra Leone Central Statistics Office. The index – which ranges from 0 to 1 – uses factor analysis to combine measures of typical (imputed) rent payments in each district and an index of food poverty. Both use information gathered just as the war came to an end, but before the survey was completed. We also generate data on the percentage of soldiers in a chiefdom that went through the formal demobilization process – an effort to capture potential spillover effects from participation in DDR.

Third, we develop a measure of how host communities experienced the war. A number of our respondents highlighted how membership in a faction affected their experience in the post-war period not because of their personal characteristics, but because of the reputation of the faction in the area where they lived. As one respondent complained, “People cast all sorts of blame on me for being an ex-RUF. They say we destroyed lives and property. They provoke me. I am not happy about my life. People talk about me.”

To estimate these effects, we calculate a measure of community suffering. This variable captures the average level of abusiveness of combatants who were operational, during the course of the war, in each of the chiefdoms. In computing these averages, we utilize the index of abusiveness for all fighters who declared themselves active in a chiefdom at any time during the war (even if these fighters did not subsequently attempt to reintegrate in those areas).

Program Effects

We also focus on the *interventions* mounted by the international community to improve the prospects for reintegration. First, we capture whether an individual participated in the formal demobilization process. 89% of our sample joined the DDR program, while 11% elected to reintegrate on their own. This estimate fits with the Sierra Leone government’s assessment that slightly more than 7000 of 79,000 total combatants, did not join the DDR program (NCDDR 2002).

and positive benefits (security, education) to create an aggregate measure of the extent of civilian abuse. In some cases, the logics that influence the use of force and the provision of public goods may be different. However, results in previous work with this variable are robust to more finely disaggregated indicators, including one that measures only abusive and violent tactics. For more information on this measure, see Humphreys and Weinstein (2005).

In addition to these measures we include a variable that indicates whether chiefdoms had a Stop-Gap program – an investment in local public works provided by the UN as the demobilization process unfolded, with the specific purpose of easing reintegration. Finally, we include measures of the UN troop presence in each chiefdom. The primary role of these forces was to maintain security. In doing so, they limited the freedom of action of ex-combatants, but also contributed to a resolution of the security dilemma that might have made it difficult for communities to accept combatants. Data for this measure was provided by UNAMSIL forces and records official deployment.

VI. Individual, Group, and Community Characteristics: Analysis and Results

Table 2 presents a first cut at evaluating the effects of the explanatory variables on whether individuals have been accepted by their family and communities. We provide the results of bivariate regressions on each of the explanatory variables. In addition, the table includes a tougher test of each relationship – regressions with controls added for average faction-specific effects. If we are to be confident of the independent effect of the explanatory variables, they should survive in regressions that account for the unobserved features of membership in a particular faction that might impact the likelihood of successful reintegration.

(Table 2)

A number of individual background characteristics emerge as significant correlates of acceptance, even after controlling for faction fixed effects. In particular, the ethnic group membership of the individual is strongly associated with different patterns of post-war reintegration. Members of the Mende ethnic group – more strongly associated with the CDF faction and the current ruling government – exhibit higher levels of acceptance. Members of the Temne ethnic group – more strongly associated with the RUF and AFRC – face more difficulties.⁶ And importantly, these ethnic effects survive the inclusion of faction fixed effects, suggesting that they may help to explain patterns of reintegration within groups as well. In addition, combatants from the poorest backgrounds – measured by the materials with which the walls of their home before the war were constructed – also appear to have an easier time gaining acceptance.

We find, however, weak or no support for a number of characteristics thought to matter in the reintegration process including age and the gender of combatants. The bivariate relationship suggests a strong link between age and reintegration success, with younger participants likely to have greater problems in reintegrating. We cannot, however, distinguish the effects of *length of time within the units* and age, as these two measures are too highly correlated. The relationship between age and acceptance, however, is no longer significant at conventional levels once we take account of fixed effects.⁷ We find no relationship between gender and success in either the simple bivariate or the fixed effects bivariate analyses.

⁶ Although the conventional wisdom is that the CDF was a group of Mende and the RUF composed of Temne, our own survey results suggest that the ethnic differences between groups are vastly overstated. Indeed, the ethnic make-up of the factions is almost identical. What differs is the extent to which sub-units of the faction were ethnically homogenous or heterogeneous. The CDF was composed of largely homogenous units – Mende in the South and Temne in the North and East – while the RUF had largely heterogeneous units in all regions.

⁷ This finding should be interpreted with caution. Human subjects concerns prevented us from interviewing soldiers who were children at the end of the fighting. Nonetheless, our sample includes a substantial proportion of individuals who joined the factions as children and were over 18 when the war came to an end.

Three other individual characteristics, related to how individuals experienced the war, also appear to impact the degree of acceptance. There is a strong negative relationship between whether an individual was abducted and his or her progress in gaining acceptance. But this result disappears when controls for factions are included, reflecting the fact that abduction was largely a characteristic of RUF fighters, and not of members of the other groups. If individuals joined because they supported the cause of the group, however, they face more difficulty gaining acceptance in the post-war period. Strong believers or ideologues, across factions, have a harder time readjusting to civilian life. Similarly, officers in the various military factions encounter more problems in gaining acceptance from family and neighbors.

The bivariate results are more striking when it comes to group characteristics. Controlling for faction-level fixed effects, the level of abusiveness of an individual's unit is strongly and negatively associated with successful reintegration. Individuals from non-abusive units exhibit reintegration success levels nearly one standard deviation higher than those from highly abusive units. The size of the coefficient is large relative to most other bivariate relationships and accounts for about 9% of total variation in acceptance (with and without fixed effects).

Two characteristics of the community in which a combatant resettles appear to matter as well. Individuals who settle in wealthier locations face more difficulty reintegrating. The effect, though significant in the fixed effects model, is substantively small; a one standard deviation change in the district wealth index, is associated with a change in reintegration success on the order of less than one-tenth of a standard deviation. Second, we find that the degree of abuse of local communities during the war is powerfully related to the level of acceptance of ex-combatants. This effect accounts for 6% of the total variation in acceptance in the pooled model.

Finally, in bivariate regressions, variables measuring intervention exhibit weak or mixed relationships to levels of acceptance. Participation in the DDR program is empirically unrelated to reintegration. The presence of a public works program is associated with better prospects for reintegration, although the effect is small and only weakly significant. The presence of UN troops appears related to *greater* difficulties for ex-combatants in gaining acceptance.

The most important test of these explanatory variables involves evaluating their effects after controlling for a host of confounding factors. Table 3 presents multivariate regression results in which the impact of personal, group, and community characteristics are estimated simultaneously, before we turn to the effect of outside interventions.

(Table 3)

Column 1 reports the results for our preferred dependent variable – whether individuals are accepted today by family and community. The most important finding is the statistically strong relationship between the abusiveness of an individual's unit and his or her prospects for reintegration. The coefficient is more than twice as large as any other. Controlling for the factions in which individuals fought, those who participated in units that perpetrated high levels of abuse face significant hurdles in gaining acceptance. This may be the result of a community's awareness of the crimes perpetrated by particular individuals or their units; it might also be the case that individuals in abusive units were the most 'hard-core' fighters and have faced difficulty accepting the

end of the conflict.⁸ It appears, however, to be independent of the suffering of the communities in which an ex-combatant settles – an effect which weakens substantially once a combatant’s experience of abuse is accounted for.⁹

One other individual characteristic emerges as significant in the multivariate model, although the relative size of its coefficient is small. Individuals who described joining a faction because they supported its political goals face a more difficult time gaining acceptance from their families and communities. This may reflect a gap between the periods of fighting – in which factions were extremely powerful – and a new political reality in which the warring parties have been largely discredited. Strong supporters and ideologues may face an uphill battle in accepting the terms of the post-war period.

Interestingly, the inclusion of faction fixed effects in column one only marginally improves the explanatory power of the model, suggesting that while significant, these fixed effects are not markedly increasing our ability to explain variation in levels of acceptance. It is clear that much of the variation goes unexplained. This is likely the result of the significant clustering of observations at very high levels of reintegration success. The model is likely doing little to help us understand why some individuals score a 0.96 and others score a 0.98 on our index of acceptance.

Table 3 also reports the results of our core model, employing variations on the dependent variable. Our goal here is to explore whether there is an underlying set of factors that impact reintegration more generally, or whether different factors matter for different aspects of reintegration. Columns 2-5 report the results for four distinct dependent variables: whether an individual was accepted by family and community initially after the war ended, whether the individual found employment, whether he or she has broken ties to the faction, and whether the individual believes the democratic process is an effective avenue for achieving political change.

(Table 3)

The results suggest that different causal processes may be at work for different aspects and periods of reintegration. Consider first the impact of the abusiveness of an individual’s unit. Abusiveness has a strong negative impact on the degree to which an individual is accepted by family and community members, initially after the war and one year later when the survey was conducted.¹⁰ But it is unrelated to the likelihood of an individual finding employment. Moreover, it has a slightly positive relationship with the likelihood that an individual has broken ties to his or her faction. A plausible interpretation treats these seemingly contradictory results as evidence for the *alienation* of a

⁸ We ran an additional robustness check, employing a variation in the measure of abusiveness. For each individual, we recalculated his/her unit’s score for abusiveness based only on the responses of *others* who served in the same chiefdom and faction at the same point in time. In doing so, we sought to check for the possibility that certain types of individuals are more sensitive to or otherwise more willing to report social pathologies, including whether their unit was abusive and whether they are facing difficulty gaining acceptance. This new measure of abusiveness, while strongly significant, is weaker in size than the original measure in the bivariate regressions. It does, however, disappear in fixed effects and multivariate models.

⁹ The impact of community suffering is on the margin of significance at conventional levels in the specification reported here. Results on this variable are not robust to the inclusion and exclusion of other right-hand side variables.

¹⁰ Our measure of abusiveness is particularly important right after the war ended, and its effect (although strong and significant) seems to diminish over time. One might realistically ask whether the challenges individuals face in gaining acceptance may simply continue to decrease over time as the violence recedes into memory. Further research will be needed to answer this question.

certain population of ex-fighters who, owing to their experience of the war, have rejected their factions in the post-war period, yet failed to find acceptance in the communities in which they have resettled. The results on our measure of political support further underscore this interpretation – strong supporters have broken from their factions, but fail to gain acceptance in their new environments.

Employment prospects seem to follow a logic of their own.¹¹ Combatants who resettled in wealthier districts have more difficulty finding employment. This may reflect the large population of urban unemployed in Freetown and the difficulty of finding consistent work in the wealthy diamond-mining districts which have come under increasing control since the end of the fighting. Education levels are also significant explanatory variables for finding employment, although they work in an opposite direction. Controlling for all other factors, those with more than a primary school education are four percentage points *less* likely to find employment.

It also appears that whether individuals accept the democratic process is driven by a distinct set of factors. People who experience more difficult economic circumstances – either because they lack education or income – are more likely to accept the democratic process and believe in its viability. This is good news as poor and uneducated combatants represented the vast majority of fighters in the war. Members of the Temne ethnic group also exhibit significantly more faith in the democratic process – a positive sign given the purported Mende bias of the ruling Sierra Leone People’s Party (SLPP). This might be reflective of a strong desire on the part of Temne to forge a peaceful existence in the post-war environment. Similarly, those who were strong supporters of various factions exhibit stronger beliefs in the democratic system. This embrace of democracy by those who were true believers during the war may be endogenous to the difficulties they have faced in gaining acceptance from their families and communities. Encountering significant hurdles to reintegration, strong supporters may be adjusting their behavior to be more accommodating of the post-war order to gain greater acceptance.

VII. Program Effects: Analysis and Results

We examine three forms of intervention mounted by external actors to ease the demobilization and reintegration of former fighters, and to prevent a recurrence of fighting: the establishment of formal DDR programs, investments in public works projects, and the maintenance of security through high levels of foreign troop presence. In this section, we focus exclusively on our preferred dependent variable – the degree to which individuals still struggle to gain acceptance from family and community in the post-war period.

(Table 4)

Table 4 presents results from a model that examines the effects of intervention controlling for all factors included in the previous specifications. Evidence from Sierra Leone does not support the hypothesis that participation in a DDR program increases the degree to which combatants are

¹¹ The employment variable is coded based on a question about the respondent’s occupation, rather than whether individuals have a job. When asked about their occupation, only 12.5% indicate that they have no employment whatsoever. 23% report farming as their primary occupation; 16% are artisans; approximately 5% are traders. If one asked most of these individuals whether they have a “job”, they would say no. Insofar as jobs are thought of as formal sector occupations, a broader definition of unemployment than the one we use – to include those in the informal sector and the underemployed – might yield substantially different results.

accepted by their families and communities. There are no statistically significant differences between reintegration success across those combatants that participated and those that did not participate in formal demobilization programs. Moreover, it does not appear that participation in DDR programs reduces the impact of being from an abusive group on the prospects for acceptance. This non-result on DDR participation is important and deserves further discussion. In interpreting it as evidence that the DDR process had no effect at the individual-level, we face two challenges: selection effects and spillover effects.

The first is that a real effect may exist but be obscured by selection effects. In particular, the population of combatants who participate in DDR may be systematically different from those who elected to reintegrate without external assistance. It may be that DDR took on the very difficult cases – such as members of the RUF – while individuals who fought with the CDF (which was widely seen as victorious in the conflict) decided to return home on their own. These differences if unobserved and not controlled for in our models might explain the non-result.

There are statistical approaches we can employ to look for this effect. An optimal approach is to employ an instrument, but finding a variable that explains participation but is otherwise unrelated to reintegration success is difficult.¹² We concentrate here on another approach: controlling for selection variables, using propensity matching estimators. We take a first cut at looking for differences across those who joined DDR and those who did not by comparing participation rates across a range of independent variables. These results are presented in Table 5.

(Table 5)

The most striking finding is that there are no real differences in participation rates across the major factions. If the DDR program was taking on the hardest cases, we would have expected to find CDF combatants enrolling in DDR programs at a much lower rate than the AFRC/RUF. There is no evidence to support that argument. At the same time, it appears that members of the Temne ethnic group do enroll in DDR at higher rates, and the analysis in previous sections has suggested that Temne do face a more difficult path to reintegration. The strongest finding is that people from the Southern region participate at much lower rates – a full 22 percentage points. So if individuals from the South have an *ex-ante* easier time reintegrating and DDR focused on those in the East and North with more difficult prospects, this might explain the non-result on our variable for participation.¹³

¹² To employ instrumental variables estimation, we constructed an instrument based on the distance between where an individual fought in the closing stages of the war and the closest DDR site. This instrument is plausibly related to whether an individual joined DDR, in terms of the costs of moving oneself to a DDR site. We constructed a second instrument that records the distance between the nearest DDR site and an ex-combatant's pre-conflict home. While it is plausible that remoteness is not otherwise related to acceptance, one could imagine arguments that suggest a violation of the exclusion restriction for this instrument. Our results using both of these instruments, not reported here, are disappointing. The first stage of the instrument is, in both cases, extremely weak. The use of an instrument thus does not provide new evidence supporting a link between DDR and the successful reintegration of individuals into their families and communities.

¹³ We also checked to see whether the abusiveness of an individual's unit varied in systematic ways between those who joined DDR and those who did not. Although there is a small difference, it is not statistically significant at conventional levels. There were also no statistically significant differences in the degree of initial acceptance between those who joined DDR and those who did not.

But these factors are observable differences across individuals that we can control for in multivariate regressions. Including controls for ethnic group membership, faction, and region does not seem to change the general finding. Still participation in DDR does not seem to be associated with higher levels of reintegration success.

This finding is supported by results from propensity matching estimators using these same determinants of selection into the DDR programs. Propensity matching indicators estimate, for each individual, a probability of entering DDR based on all relevant available data. Based on these probabilities, the method matches pairs of individuals that have the same estimated propensity of joining, but one of whom did and the other of whom did not join. If our estimates for the propensity of joining are accurate, then for any pair matched in this way, we can treat the difference in reintegration success for those that do join DDR and those that do not, as a result of the fact of joining.

We employ this technique on our sample of respondents, using as predictors of joining DDR the age, gender, wealth, educational attainment, factional affiliation, and their location in 2000 at the end of the war. Together these account for just 7% in the variation in affiliation with DDR. Among this sample for which we have full data on all of these determinants (947 observations), those that went to DDR recorded an average reintegration score of .96, those that did not go also had an average reintegration score of .96, with the difference between the two groups being zero. After matching observations based on propensity scores, the difference is still zero. This finding is robust to variation in our measures of reintegration.

The second challenge to the no-impact interpretation of our result focuses on spillover effects. Plausibly DDR programs impact non-participants as well as participants. Arguably, the fact that close to 90% of combatants did participate may generate positive spillovers in communities that ease the reintegration of others. We test explicitly for these positive spillover effects and find no evidence in support of this hypothesis. The results in Table 4 on the percent of soldiers demobilized in a given community, suggest that positive spillovers do not seem to impact the level of acceptance.

Turning to public works programs, the data do not suggest that individuals in chiefdoms that benefited from public works programs found greater acceptance than those in chiefdoms without Stop Gap projects. As with participation in DDR, this non-result should be interpreted with caution. UN-funded public works programs may have been initiated in the communities facing more difficult challenges in reintegration, offering one possible explanation for the non-finding.¹⁴ At a minimum, our results suggest that if this was the case, the beneficial effects of these programs were not sufficient to overcome the initial adverse conditions.

Finally, the data suggest that, controlling for other factors, the presence of UN troops is not empirically related to an individual's prospects for gaining acceptance. Moreover, the evidence suggests that the presence of UN troops is actually negatively related to the prospect of acceptance for RUF combatants – suggesting an adverse effect. Given the history of difficult relations between the UN and the RUF, in particular, one could put forth a plausible causal story explaining this

¹⁴ Using our measure of the difficulty combatants faced immediately at the cessation of hostilities, however, we find no evidence for a selection effect in Stop Gap programs. It does not appear that these programs were implemented in places where combatants faced early difficulties reintegrating.

relationship. But again, it is possible that UN troops were assigned to especially difficult areas with high concentrations of RUF fighters where gaining acceptance, ex-ante, was likely to be difficult.¹⁵

In summary, while selection effects make interpreting many of these results difficult, there is no strong relationship between the various external programs mounted by the international community and the degree to which ex-combatants have gained acceptance in Sierra Leone. While external intervention may be having an effect at the macro-level – as evidenced by the skewed distribution of our dependent variables – we cannot identify these effects at the micro-level.

VIII. Conclusion

With the growing involvement of external actors in post-conflict situations, increasing attention is being dedicated to the challenges of peace-building. The disarmament, demobilization, and reintegration of combatants is a central component of efforts to reestablish legitimate governance and prevent the recurrence of conflict. The demobilization of competing factions sends credible signals of the intent of factions to commit to a peace process and programs that support reciprocal demobilization can aid in the management of spoilers and increase the stake of former fighters in the post-war political and economic order.

In spite of nearly a decade of involvement in demobilizing warring factions, there is little evidence about the factors that explain whether individuals can successfully reintegrate after conflict and the precise causal impact of externally-funded programs to reintegrate combatants. Instead, the scant literature on demobilization has focused attention on details of program design and implementation in an effort to come to grips with the challenges that practitioners have faced on the ground.

This paper charts a new course for research on post-conflict reintegration and international efforts to demobilize and reintegrate combatants. In particular, it proposes shifting the analysis from the macro to the micro. To design effective DDR programs that contribute to peace-building, we need rigorous research on the factors that explain whether combatants reject their factional affiliations, reintegrate into the community and the economy, and embrace the post-war political order. We present the results of a large-N survey of combatants in Sierra Leone which allowed us to track the progress of DDR participants and non-participants in the post-war period.

The findings provide insights useful to practitioners of post-conflict reconstruction. Specifically, the growing chorus in support of specially targeted programs to help female combatants and those recruited as children appears to rest on shaky empirical ground. At least in Sierra Leone, women and young combatants face no more difficulty reintegrating once other potential factors are taken into account. Again, this finding should be interpreted with caution, as no data was gathered from combatants who were *still* children when the survey was enumerated.

Whether individual combatants gain acceptance, the evidence suggests, is also not directly related to the socio-economic characteristics of former fighters. But individual level factors do

¹⁵ Further work is required to investigate the selection mechanisms for the distribution of UN troops. Preliminary empirical analysis suggests that the three most important factors that explain where UN troops go in Sierra Leone are population size of the chiefdom, size of the combatant population, and the existence of diamonds. Together, these account for 60% of the variation in troop presence.

matter. A combatant's experience of the war – in particular, the extent to which he or she engaged in abusive practices – is the most important determinant of acceptance. Individuals who perpetrated widespread human rights abuses face significant difficulty in gaining acceptance from their families and communities after the war.

Perhaps the most surprising result is that we find no evidence that UN operations were instrumental in facilitating DDR at the individual level and we find some evidence of adverse effects. Non-participants in DDR do just as well as those who entered the formal demobilization program. We find no evidence that UN troop presence helps resolve community security dilemmas, and find that if anything, UN troops are associated with greater difficulties.

Without a complete handle on selection effects in the employment of interventions, these negative results should be treated with caution. These results may suggest that other factors – measurable only at the country-level – may be far more important for determining the path of reintegration. In particular, the fact that the war in Sierra Leone ended decisively, with a major military intervention by the British, may be consequential for the high rates of reintegration success both among soldiers formally demobilized and those who returned home on their own. At a minimum, however, they suggest that if there were positive effects at the individual level, they were not great enough to overcome the selection effects.

This poses a challenge for political scientists working to explain the determinants of successful peacebuilding. The factors that matter for successful reintegration in Sierra Leone seem to operate at the level of the individual combatant—notably his or her experience in the war—as well as through the mechanisms identified by political scientists as being important for war termination. While high levels of reintegration success can plausibly be linked to the presence of external actors, as Walter's work might suggest, macro-level theories make no predictions about the individual-level attributes that correlate with an individual's post-war prospects. If spoilers represent as serious a threat to conflict resolution as Stedman suggests, our research points to the need for more serious theorizing and empirical attention to the micro-level processes that underpin post-conflict reconstruction.

There is also a very clear lesson here for practitioners: to discount the *prima facie* evidence presented here that external interventions have no effect - or even an adverse effect – the design of DDR programs must employ methodologies that can account for selection effects that operate at the level of the individual directly. The best approach involves the development of monitoring and evaluation systems that employ some degree of randomized intervention.

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Table 1: Correlation Matrix of Measures of Reintegration

	Accepted Today?	Accepted Initially?	Employment?	Broken ties to faction?
Accepted initially?	0.64			
Employment?	0.01	0.06		
Broken ties to faction?	-0.05	-0.09	-0.05	
Believe in the democratic system?	-0.02	-0.05	0.00	-0.07

Table 2: Determinants of Acceptance: Bivariate Relationships With and Without Fixed Effects

Individual Characteristics						Group Characteristics					
Variable	Coefficient	t-statistic	N	R ²	Model	Variable	Coefficient	t-statistic	N	R ²	Model
Age	0.001	[2.72]***	1018	0.01	OLS	Abusiveness	-0.154	[4.56]***	1004	0.09	OLS
	0.000	[1.26]	1017	0.05	FE		-0.162	[3.15]***	1003	0.09	FE
Mende	0.016	[2.04]**	1022	0.01	OLS	Community Characteristics					
	0.019	[2.60]**	1021	0.05	FE	Variable	Coefficient	t-statistic	N	R ²	Model
Temne	-0.025	[3.22]***	1022	0.01	OLS	District	-0.021	[1.14]	1022	0.00	OLS
	-0.022	[3.33]***	1021	0.05	FE	Wealth	-0.037	[2.09]**	1021	0.06	FE
Female	-0.030	[1.54]	1014	0.01	OLS	% Chiefdom	0.023	[0.74]	1022	0.00	OLS
	-0.007	[0.36]	1013	0.05	FE	Demobilized	0.032	[1.11]	1021	0.05	FE
Educated	-0.011	[1.65]	1022	0.00	OLS	Community	-0.191	[4.54]***	1020	0.05	OLS
	-0.010	[1.38]	1021	0.05	FE	Suffering	-0.137	[3.14]***	1019	0.06	FE
Poor	0.016	[3.55]***	1021	0.01	OLS	Interventions					
	0.012	[2.36]**	1020	0.05	FE	Variable	Coefficient	t-statistic	N	R ²	Model
Abducted	-0.031	[3.06]***	1022	0.02	OLS	DDR	0.000	[0.05]	1019	0.00	OLS
	0.026	[1.09]	1021	0.05	FE		0.001	[0.16]	1018	0.05	FE
Political Support	0.011	[1.77]*	1022	0.00	OLS	Stop	0.015	[1.29]	1022	0.00	OLS
	-0.015	[2.35]**	1021	0.05	FE	Gap	0.021	[1.80]*	1021	0.05	FE
Officer	-0.033	[1.77]*	1022	0.01	OLS	UN Troops	-0.019	[3.90]***	1003	0.04	OLS
	-0.029	[1.73]*	1021	0.05	FE		-0.016	[3.26]***	1002	0.07	FE

Notes: Each row in this table presents the results of a bivariate regression. The dependent variable is *accepted today*. All regressions allow errors to be clustered geographically. For each independent variable, we report results for both OLS and fixed effects models (with fixed effects for factions).

Table 3: Multivariate Results with Clustering by Chieftdom

	(1) Accepted today?	(2) Accepted Initially?	(3) Employment?	(4) Broken ties to faction?	(5) Believe in the democratic system?
Age	0.000 [0.83]	0.001 [1.81]*	0.000 [0.43]	0.003 [1.41]	-0.001 [0.95]
Female	-0.006 [0.38]	-0.016 [0.50]	-0.047 [0.93]	0.035 [0.67]	0.025 [0.47]
Temne	-0.012 [1.33]	-0.036 [2.27]**	0.005 [0.15]	0.105 [2.44]**	0.135 [3.16]***
Educated	-0.004 [0.72]	-0.016 [1.22]	-0.037 [1.96]*	0.053 [1.93]*	-0.062 [2.31]**
Poor	0.004 [0.56]	0.005 [0.32]	0.007 [0.34]	0.006 [0.21]	0.101 [2.58]***
Abducted	0.027 [1.10]	0.050 [1.55]	-0.032 [0.77]	0.034 [0.56]	0.004 [0.07]
Political Support	-0.008 [2.87]***	-0.016 [1.73]*	0.008 [0.48]	0.123 [3.02]***	0.086 [1.96]*
Officer	-0.021 [1.41]	-0.028 [1.21]	-0.042 [1.06]	-0.029 [0.56]	-0.069 [1.36]
Abusiveness	-0.131 [2.44]**	-0.435 [4.69]***	0.043 [0.77]	0.249 [1.91]*	0.155 [1.54]
District Wealth	-0.023 [1.53]	-0.022 [0.86]	-0.060 [1.89]*	0.054 [1.09]	0.130 [1.76]*
Community Suffering	-0.056 [1.44]	-0.035 [0.58]	-0.280 [3.16]***	0.183 [1.04]	-0.260 [1.63]
Constant	1.044 [30.46]***	1.024 [17.91]***			
Observations	990	995	1005	967	974
Pseudo R-squared	0.11	0.22	0.06	0.07	0.05

Note: *significant at 10%. **significant at 5%, ***significant at 1%. Robust z-statistics or t-statistics in brackets. Columns 1 and 2 report multivariate regression models. Columns 3-5 reports the results of probit estimation with marginal coefficient estimates (at mean values for the explanatory variables). Faction fixed effects are included in all specifications. All models allow errors to be clustered geographically at the chieftdom level.

Table 4: Impact of Interventions on Reintegration

	(1) Accepted today?
DDR Participant	-0.007 [0.87]
Abusiveness*DDR Participant	0.003 [0.04]
Percent Demobilized	0.022 [1.14]
STOPGAP	-0.006 [0.99]
UN Troops	0.002 [1.06]
RUF*UN Troops	-0.031 [2.33]**
Constant	1.020 [34.20]***
Observations	969
R-squared	0.13

Note: *significant at 10%. **significant at 5%, ***significant at 1%. Robust z-statistics or t-statistics in brackets. Column 1 reports multivariate regression models. Faction fixed effects are included and the model allows errors to be clustered geographically at the chiefdom level. Additional controls include all variables in previous multivariate models (Table 3).

Table 5: Rates of Participation in DDR

		Rate of Participation in DDR	Difference (p-value)
Gender	Male	0.86 (920)	0.05 (0.14)
	Female	0.91 (111)	
Faction	AFRC/RUF	0.88 (419)	0.03 (0.21)
	All Others	0.85 (620)	
Faction II	CDF	0.87 (552)	0.02 (0.48)
	All Others	0.86 (487)	
Ethnic Group I	Temne	0.91 (207)	0.06** (0.02)
	All Others	0.85 (832)	
Ethnic Group II	Mende	0.85 (545)	0.02 (0.27)
	All Others	0.88 (494)	
Education	Above Primary Education	0.85 (429)	0.02 (0.29)
	Primary or Below	0.87 (610)	
Poverty Level	Poor (Mud Walls)	0.89 (711)	0.09*** (0.00)
	Non-Poor	0.81 (328)	
Officer	High Ranking	0.93 (98)	0.07* (0.06)
	Low Ranking	0.86 (801)	
Region	South	0.66 (95)	0.22*** (0.00)
	All Other Regions	0.89 (944)	

Notes: Column 4 reports the p-value of a test of the null hypothesis that the participation rates are equal across the two categories.
*significant at 10%; ** significant at 5%; *** significant at 1%.

Appendix: Summary Statistics

Variable	N	Mean	SD	Min	Max
Accepted today?	1022	0.98	0.11	0	1
Accepted initially?	1028	0.92	0.22	0	1
Employment?	1039	0.87	0.33	0	1
Broken ties to faction?	1007	0.79	0.41	0	1
Believe in democratic system?	1006	0.72	0.45	0	1
Age	992	24.49	10.03	3	73
Female	1037	1.11	0.31	1	2
Temne	1045	0.20	0.40	0	1
Abducted	1045	0.36	0.48	0	1
Political Support	1045	0.39	0.49	0	1
Educated	1045	0.41	0.49	0	1
Poor	1042	0.68	0.47	0	1
Officer	1045	0.09	0.29	0	1
Abusiveness	1026	0.20	0.21	0	1
District Wealth	948	0.17	0.26	0	1
Community Suffering	1503	0.20	0.11	0.13	0.89