



## UvA-DARE (Digital Academic Repository)

### True Believers, Deserters, and Traitors: Who Leaves Insurgent Groups and Why

Oppenheim, B.; Steele, A.; Vargas, J.F.; Weintraub, M.

**DOI**

[10.1177/0022002715576750](https://doi.org/10.1177/0022002715576750)

**Publication date**

2015

**Document Version**

Final published version

**Published in**

Journal of Conflict Resolution

**License**

Article 25fa Dutch Copyright Act

[Link to publication](#)

**Citation for published version (APA):**

Oppenheim, B., Steele, A., Vargas, J. F., & Weintraub, M. (2015). True Believers, Deserters, and Traitors: Who Leaves Insurgent Groups and Why. *Journal of Conflict Resolution*, 59(5), 794-823. <https://doi.org/10.1177/0022002715576750>

**General rights**

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

**Disclaimer/Complaints regulations**

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

# True Believers, Deserters, and Traitors: Who Leaves Insurgent Groups and Why

Journal of Conflict Resolution  
2015, Vol. 59(5) 794-823  
© The Author(s) 2015  
Reprints and permission:  
sagepub.com/journalsPermissions.nav  
DOI: 10.1177/0022002715576750  
jcr.sagepub.com



Ben Oppenheim<sup>1,2</sup>, Abbey Steele<sup>3</sup>, Juan F. Vargas<sup>4</sup>,  
and Michael Weintraub<sup>5</sup>

## Abstract

Anti-insurgent militias and states attempt to erode insurgent groups' capacities and co-opt insurgent fighters by promising and providing benefits. They do so to create a perception that the insurgency is unraveling and to harness inside information to prosecute more effective counterinsurgency campaigns. Why do some insurgents defect to a paramilitary group and others exit the war by demobilizing, while still others remain loyal to their group? This article presents the first empirical analysis of these questions, connecting insurgents' motivations for joining, wartime experiences, and organizational behavior with decisions to defect. A survey of ex-combatants in Colombia shows that individuals who joined for ideological reasons are less likely to defect overall but more likely to side-switch or demobilize when their group deviates from its ideological precepts. Among fighters who joined for economic reasons, political indoctrination works to decrease their chances of demobilization and defection to paramilitaries, while opportunities for looting decrease economically motivated combatants' odds of defection.

<sup>1</sup>Center on International Cooperation, New York University, New York, NY, USA

<sup>2</sup>Center on International Conflict and Negotiation, Stanford University, Stanford, CA, USA

<sup>3</sup>Department of Political Science, University of Amsterdam, Amsterdam, the Netherlands

<sup>4</sup>Department of Economics, Universidad del Rosario, Bogotá, Colombia

<sup>5</sup>Department of Political Science, Binghamton University (SUNY), Binghamton, NY, USA

## Corresponding Author:

Ben Oppenheim, New York University Center on International Cooperation, 726 Broadway, Suite 543,  
New York, NY 10003, USA.

Email: benoppenheim@nyu.edu

**Keywords**

militias, civil wars, side switching, internal armed conflict, demobilization, insurgency, ideology, defection, Colombia

Multipart civil wars—armed conflicts that feature more than one armed non-state actor—constituted a third of civil wars between 1816 and 2007 and have become more common over time (Christia 2012). Most of these conflicts have involved anti-insurgent paramilitaries: in nearly two-thirds of civil wars since 1989, governments have used militias for counterinsurgency (Stanton 2015).<sup>1</sup> Recent work seeks to explain the emergence of militias (e.g., Carey, Colaresi, and Mitchell 2015; Eck 2015), investigate their impact on violence (e.g., Cohen and Nordås 2015; Stanton 2015), and explore how states interact with them (e.g., Staniland 2015; for excellent case studies of paramilitaries, see Romero 2003, Staniland 2012a, Schubiger 2012, and Jentzsch 2012). This article contributes to our understanding of who joins paramilitaries (Humphreys and Weinstein 2008; Arjona and Kalyvas 2011; Forney 2015). Specifically, we ask who abandons insurgent groups to fight with these militias and who instead opts to demobilize, leaving the conflict altogether.

Recent research on the micro-foundations of civil war has shed light on who joins insurgents and counterinsurgent militias (e.g., Weinstein 2007; Humphreys and Weinstein 2008; Daly 2012; Forney 2015). These factors include poverty, lack of access to education, political alienation, and embeddedness in social networks that facilitate recruitment. In Colombia, scholars have also drawn on surveys of ex-combatants to answer a related but distinct question, that is, among those willing to fight, what explains who joins insurgents versus paramilitaries? Arjona and Kalyvas (2011) find that all fighters are similarly poor and aggrieved and that the best indicator of which side joined is group presence in the recruit's community. Ugarriza and Craig (2013) find that ex-combatants who favor leftist ideology and have families that supported leftist political parties are much more likely than a paramilitary group to have been members of an insurgent group.

If we know something about who fights, we lack similar evidence about who becomes a traitor to their cause. Combatants can abandon their armed group in a variety of different ways. Here we focus on the following two: side-switching and demobilization. We define side-switching as leaving an armed group to fight for another group representing a different ideological or ethnic constituency. We define individual demobilization as leaving an armed group and exiting the war with the promise of receiving benefits from the government, typically in exchange for information.

Although the defection of fighters from one armed group to another is common (Kalyvas 2008), civil war scholars have not established clear causal mechanisms that explain what drives individual combatants to leave their armed groups or to fight for (formerly) opposing militias (see also Rosenau et al. 2014). Such side-switching is

typically perceived to be a puzzle in the context of ethnic civil wars (e.g., Kalyvas 2008; Staniland 2012c) because ethnic affinity is assumed to be a strong motivation for loyalty and a readily identifiable trait that is “sticky” (Fearon 1999), rendering it difficult for combatants to join a rival.

In contrast, side-switching in nonethnic civil wars has an intuitive logic: loyalties in ideological conflicts are fluid, with recruits for all groups drawn from a shared base (Kalyvas and Kocher 2007). A similar logic holds for greedy combatants thought to populate “new” wars, that is, for the right price, fighters with no commitment to a political agenda could be enticed to switch sides (Kaldor 1999; Collier et al. 2003; Mueller 2000). Scholars of peasant revolutions would find such assessments to be overly cynical (e.g., Wolf 1969; Gurr 1970; Scott 1976; Paige 1978) and side-switching in nonethnic civil wars surprising; why would rebels motivated by political and economic exclusion not only abandon the fight but also join the enemy to help defeat the revolution? We draw on the insights of the peasant revolutions literature to explore the role of ideology in committing to or abandoning an armed group and subject the intuition to systematic analysis.

We argue that three key factors explain the choice to switch sides or demobilize. First, combatants’ initial reasons for joining provide them with differing capacities and incentives to manage the difficulties encountered in conflict. We argue that ideologically motivated combatants are more likely to resist attempts by the state and paramilitaries to encourage defection. Those who are economically motivated, by contrast, are more likely to be incentivized by attractive outside offers, defecting to militias (side-switching) or the state (demobilizing). Second, although reasons for joining provide baseline risk factors, combatants’ experiences. While in the group—including undergoing ideological indoctrination and receiving orders to abuse civilians—should interact with initial motivations in patterned ways. Finally, combatant trajectories are likely driven by endogenous conflict dynamics, including counterinsurgency campaigns that increase insurgents’ likelihood of capture or death (Kenny 2010; McLaughlin 2011; Staniland 2012a).

To test our hypotheses, we use a representative survey of ex-combatants in Colombia. The data set is unique among ex-combatant surveys because it includes a subset of insurgents who were captured during combat. We use captured combatants as a baseline against which to compare fighters across two categories. First, those guerrillas who joined right-wing paramilitaries and then demobilized collectively in the context of peace negotiations with the government,<sup>2</sup> and, second, guerrillas who elected to demobilize individually. We assume that fighters who were captured are representative of the broader population of non-captured, non-demobilized, and non-side-switching combatants and assess what factors make fighters more likely to choose individual demobilization, on one hand, and side-switching, on the other. Given the centrality of this assumption to our research design, we test for and rule out potential confounding factors—military training and geographic clustering—that might influence the probability of capture. The survey data allow us to test implications of the theory because they contain unique

information on the motivations that drove combatants to join the war and their experiences during conflict. We use multinomial regression analysis to model the relationships between these factors and the propensity for combatants to stay in their armed groups, demobilize, or switch sides.

This article makes three contributions to debates on armed groups in civil war. First, we present theory and testable hypotheses to explain side-switching and demobilization that incorporate motivations for joining, armed group organizational factors, and endogenous conflict dynamics. Second, we focus on how ideology influences combatants' decisions in the face of diverse wartime experiences. Although ideology is difficult to define and capture empirically (Ugarriza and Craig 2013; Gutiérrez Sanín and Wood 2014), our results indicate it is fundamental in shaping individuals' choices. Third, we provide the first test of side-switching and demobilization using micro-level survey data. In so doing, we explore how the aforementioned factors affect combatant trajectories in multiparty civil wars. We consider this one step toward Jentzsch, Kalyvas, and Schubiger's (2015) call to integrate the study of insurgents and militias.

This article proceeds in five sections. The next section presents our theoretical framework and hypotheses. The third section provides an overview of the Colombian civil war and the government's demobilization program. The fourth section presents the data and statistical tests, while the fifth section discusses the results. The last section explores future avenues of research and concludes.

## Theory

Governments and paramilitaries both seek to erode the capacity of rebel movements by encouraging defection through the promise and provision of benefits. They do so for three principal reasons. First, to decrease the number of active insurgent combatants. Second, to score political points against insurgents by demonstrating their inability to retain fighters. Third, to harness information on insurgent tactics and strategy to prosecute more effective counterinsurgency (Gutiérrez Sanín 2008, 16). Governments use targeted benefits to encourage insurgent defection through demobilization; recent examples include well-funded campaigns by the governments of Afghanistan, Colombia, and Iraq to whittle away at insurgent ranks. Demobilization entails individual or collective disengagement from an armed group with the objective of reintegrating into society and/or benefitting from government demobilization programs.<sup>3</sup> The act of demobilization is similar to that of side-switching, in that both involve abandoning the original armed group. However, fighters who demobilize leave their arms and the war behind, at least for a time, while side-switchers remain in the fight.<sup>4</sup>

If militias and governments try to entice rebels to switch sides and demobilize, who responds? We theorize that three dimensions account for rebels' decisions, namely, motivations for joining, armed group behavior, and wartime experiences. To systematically examine the determinants of side-switching and demobilization,

we compare ideological and economic motivations for joining and consider how those initial motivations are likely to be reinforced, changed by, or resilient to experiences in the armed group and during conflict.

### *Motivations for Joining the Armed Group*

The literatures on insurgency, revolution, and terrorism have identified a range of motivations that prompt individuals to engage in high-risk collective action, activities that hold an uncertain payoff for both the individual and the group. These include economic motivations (Collier et al. 2003), the desire for improved social status or social solidarity (Abrahms 2008), the relative danger of remaining a civilian (Kalyvas and Kocher 2007), a need for adventure or escape from boredom (Young 1997; Nussio and Ugarriza 2013), and the powerful pull of social networks that involve familial/kinship recruiting or bands of friends joining up together (Peterson 2001; Staniland 2014). Finally, an ideological commitment to a cause (Gutiérrez Sanín 2008) is another reason that individuals might rebel.

We argue that combatants motivated by ideology are more likely to remain in their armed groups rather than side-switch or demobilize. What is ideology, and why should we expect ideologically motivated combatants to be more likely to stay? We follow recent work in defining ideology as a set of political beliefs that delimits the boundaries of a particular group, advances a set of grievances facing that group, zeroes in on objectives the group ought to achieve, and specifies a series of actions necessary and sufficient to meet those objectives (Ugarriza and Craig 2013; Gutiérrez Sanín and Wood 2014, 215).<sup>5</sup> Defining ideology in this way allows us to remain agnostic about whether it is primarily used by elites to motivate and manipulate mass actors (i.e., foot soldiers) through the top-down transmission of doctrines, narratives, symbols, and myths, or whether mass actors bring ideological beliefs from the time of recruitment and, once in the group, alter group behavior from the bottom-up. In the civil war context, there appears to be support for both top-down and bottom-up mechanisms.<sup>6</sup> Individuals are also motivated by personal and communal grievances that they articulate in ideological ways (Kalyvas 2003).

Across armed groups there is considerable variation in ideological content, ranging from ideologies that stress the importance of civilian collaboration (e.g., Marxist-inspired, peasant-based insurgencies, such as those in El Salvador and Colombia) to those that demonize ethnic others (e.g., the extremist Hutu ideologies in mid-1990s Rwanda), and to those defined by opposition to foreign influence (e.g., Boko Haram's campaign to eradicate Western ideas and establish an Islamic state in northern Nigeria).<sup>7</sup> Despite this heterogeneity, each of the aforementioned ideologies puts forth a program of action with the critical components of ideology identified earlier, namely, group delimitation, articulation of grievances, specification of objectives, and proposals for action. While the case of Colombian insurgent groups that we study here involves a Marxist-inspired ideology, we expect that with some

variation our theoretical framework for explaining side-switching and demobilization will apply to contexts where ideologies have radically different content.

Ideology constitutes an important method by which armed groups recruit and train their combatants (Wickham-Crowley 1990; Eck 2010; Pachico and McDermott 2011; Hoover Green 2011; Gutiérrez Sanín and Wood 2014; Oppenheim and Weintraub 2015). Recruits frequently receive not only military training but also political training that focuses on broad goals and ideological commitments (Clapham 1998). The clearest evidence comes from Marxist groups in which ideological motivations help recruit and mobilize troops (e.g., Kalyvas and Balcells 2010b). Political indoctrination is widespread in ethnic insurgent groups such as Sri Lanka's Liberation Tigers of Tamil Eelam (LTTE) and the multiple ethnic minority insurgent groups along Burma's frontiers (Becker 2009). It is also widely employed by religiously motivated Salafist Jihadi and other violent Islamist movements to cultivate recruits, prepare rank-and-file fighters, and develop new leaders (Jenkins 2002; Ugarriza 2009).<sup>8</sup>

Recruiting and retaining ideologically motivated recruits—true believers—provide a number of advantages to commanders. Ideologically motivated fighters are willing to make costly investments today for the promise of future rewards, are more likely to demonstrate discipline, and less likely to abuse civilians than those motivated by economic opportunities (Weinstein 2007; Gutiérrez Sanín 2008). Commanders of ideologically driven fighters therefore need not rely on the immediate distribution of benefits to motivate compliance with orders (Lidow 2011), implying that ideologically motivated combatants are more likely to sublimate their personal desires for the good of the group. In other words, ideological motivation provides fighters with tools that allow them to remain committed to the armed group despite the inevitable hardship and risks that insurgency imposes and despite outside offers by the state and paramilitaries to defect. This leads to our first hypothesis.

**Hypothesis 1:** Combatants who joined for ideological reasons should be less likely to side-switch or demobilize than those who joined for other reasons.

At the other end of the spectrum from ideologues, we find those motivated by material interests and willing to sell their services, absent ideological attachment. As noted by Bahney et al. (2013), many insurgent organizations pay wages to their soldiers. This practice allows groups to select higher skilled or otherwise desirable operatives from a larger pool of potential recruits (De Mesquita 2005). Even when wages are not paid, recruits may join armed groups to take advantage of looting and extortion opportunities (Collier and Hoeffler 2004). Whether paid or not, those motivated by material incentives are likely to form more predatory, less cohesive armed groups (Weinstein 2007). These types of combatants should also be more likely to side-switch or demobilize when outside options are sufficiently attractive.

**Hypothesis 2:** Combatants who joined for economic reasons should be more likely to side-switch or demobilize than those who did not.

## *Armed Group Behavior and Attributes*

We argue that combatants' motivations for joining will shape their interpretation of experiences while in the group. In particular, we focus on two aspects of armed group behavior, namely, (1) ideological training and (2) treatment of civilians. We expect that the ideologically motivated rebels will find the training to be redundant, but they are more likely to be sensitive to perceived mistreatment of civilians.

To unify members' disparate aims and commitments to the group and to change both their capabilities and preferences, armed organizations invest significant time and resources in training and indoctrinating recruits. Indeed, the way armed groups train and indoctrinate combatants has important effects on how combatants behave (Hoover Green 2011). Marxist organizations in particular regularly inculcate beliefs through political training and indoctrination (Kalyvas and Balcells 2010a).

Only a few studies assess the effect of training or indoctrination on the likelihood of leaving or remaining in an armed group. One analysis finds that ideology, morale, and company homogeneity all reduced the odds of desertion (Costa and Kahn 2003).<sup>9</sup> Another holds that soldiers' opportunities for leaving the group—rather than their motivations—explains their likelihood of exit (McLaughlin 2011).<sup>10</sup> Eck's examination of the role of ideological indoctrination by Maoist insurgents in Nepal finds that ideological training was important both in the initial recruitment phase and in reducing desertion by active combatants (Eck 2010).

We expect that exposure to ideological indoctrination should increase group cohesion. Yet indoctrination should be less likely to influence those initially motivated by ideology to join: it is, in effect, preaching to the choir. Political training may best generate ideological commitment among those not initially motivated by ideology. In other words, exposure to ideological content should make economically motivated combatants less likely to defect.

**Hypothesis 3:** Combatants who joined for economic reasons but were ideologically indoctrinated should be less likely to demobilize and less likely to switch sides.

Although armed groups invest in indoctrinating and training their troops, they do not always act in concert with their guiding ideologies. Ideologically driven fighters are more likely to face disillusionment if the armed group behaves in ways contrary to its professed ideology. If the group's behavior significantly departs from a combatant's expectations, to the extent that important norms are violated, disillusionment may escalate to outright rejection of the group. In such cases, the combatant may prefer to abandon or betray the group rather than remain within it. Fighters who joined because they believed the group would benefit the masses should be more likely to defect when their group encourages civilian predation.



**Hypothesis 4:** Combatants who joined for ideological reasons and whose units provided opportunities for personal material gain will be more likely to demobilize and more likely to switch sides.

In contrast, we argue that rent-seeking combatants are more likely to be content to remain with an armed group that neither explicitly punishes nor effectively prevents opportunities to predate on civilians. Such combatants will benefit materially and stay with the group to enjoy the benefits of plunder rather than either demobilizing or side-switching.

**Hypothesis 5:** Combatants who joined for economic reasons and whose units provided opportunities for personal material gain will be less likely to demobilize and less likely to switch sides.

### *Wartime Experiences*

One strand of research has emphasized how the local balance of power between competing sides drives individual choices to defect. To explore when individuals fight against their co-ethnics in ethnic civil wars, Kalyvas (2008) argues that territorial control is the key to incentivizing defection to a former enemy. In a similar vein, Staniland (2012a) explains “fratricidal flipping,” when ethnic insurgents join forces with the government, as the product of competition among insurgent factions, sparked by effective counterinsurgency. We test an implication of this logic, that combatants under pressure, facing a heightened risk of physical harm from counter-insurgents, are more likely to switch sides or demobilize.<sup>11</sup> Again, we argue that initial motivations for joining remain important. We argue that ideologically motivated rebels will have a higher tolerance for risk because the risk is understood as the necessary cost for achieving legitimate and worthwhile goals.

**Hypothesis 6:** Combatants who feel besieged by the armed forces but joined for ideological motivations are less likely to side-switch or demobilize.

The literature on economically motivated combatants would lead us to make the opposite prediction, that economically motivated fighters should be less willing to sustain risk of death for a cause to which they are not fully committed (Jablonski and Oliver 2013).

**Hypothesis 7:** Combatants who feel besieged by the armed forces but joined for economic motivations are more likely to side-switch or demobilize.

These hypotheses reflect an effort to theorize the relative importance of ideology and economic motivations in explaining combatant trajectories. The next section provides background on the Colombian conflict before moving on to the quantitative tests.

## Background on Colombia

Colombia tragically provides an opportunity to test our hypotheses, given the proliferation of ideologically motivated armed groups in the country, the presence of lootable natural resources that might incentivize mercenaries to join, significant abuse of civilian populations, and empirical variation in our outcome of interest. The internal conflict in Colombia has persisted and morphed over the past five decades and has featured multiple attempts to demobilize armed groups and reintegrate combatants.

Two of the leftist insurgent groups that still exist today—the *Fuerzas Armadas Revolucionarias de Colombia* (FARC) and the *Ejército de Liberación Nacional* (ELN)—emerged in the 1960s at the end of a previous conflict known as *La Violencia*.<sup>12</sup> Efforts to reach peace agreements with the FARC and the ELN have failed.<sup>13</sup> The negotiations between the FARC and the Betancur administration in the 1980s led to the creation of paramilitary groups. Disgruntled military officers allied with local elites who created “self-defense” groups to fight insurgents in their communities (Romero 2003). Drug trade resources and military training enabled these small, regionally based militias to consolidate their power, officially forming the *Autodefensas Unidas de Colombia* (AUC) in 1997.<sup>14</sup>

During the 1990s, fighting intensified. The FARC routinely embarrassed a demoralized Colombian military, maintaining presence in 622 municipalities out of roughly 1,000 in 1995 (Echandía Castilla 1999). Paramilitary groups also expanded, and violence and displacement increased as the two sides contested territory.

In 1997, the government approved amnesty for insurgents who demobilized individually or as part of a group as long as they had not committed crimes against humanity.<sup>15</sup> At the time, paramilitary groups were not recognized as political actors, so were ineligible for amnesty. Peace negotiations launched by President Pastrana in 1998 ceded territory the size of Switzerland to the FARC. Talks failed in early 2002. That same year, Colombians elected Álvaro Uribe who promised to take a hard line against the insurgents.

The AUC called a ceasefire and Uribe signed Law 782 shortly after his inauguration, extending amnesty to paramilitaries who had not committed crimes against humanity. In July 2005, Law 975, known as the Justice and Peace law, was approved. It covers demobilized members of all illegal armed groups excluded from earlier amnesty legislation, and “establishes judicial benefits based on their contribution to justice and reparation” (Colombia: The Justice and Peace Law 2012). It creates maximum prison sentences of five to eight years, even for crimes against humanity, as long as commanders confess all their crimes.<sup>16</sup>

The human cost of the conflict in Colombia has been high. The Center for Historical Memory estimates that at least 220,000 people died in the conflict between 1958 and 2012, of whom roughly 80 percent were civilians. At least 5 million people have been displaced, ranking Colombia among the countries with the highest

number of internally displaced people in the world. Finally, another 25,000 were reported forcibly disappeared, and roughly 27,000 were kidnapping victims (Centro Nacional de Memoria Histórica [CNMH] 2013).

### *Anchoring the Theoretical Framework in the Colombian Case*

We now briefly return to the theoretical framework from the second section and provide context from Colombia.

*Motivations for joining.* Ideology—or beliefs and grievances consistent with the insurgents’ ideology—motivates some portion of recruits to join the FARC (Arjona and Kalyvas 2011). A key structural feature of the FARC is consistent with this, that is, unlike paramilitary groups, the FARC do not provide salaries to rank-and-file soldiers (Gutiérrez Sanín 2008). While most Colombian armed groups, including the FARC, have access to lucrative trades such as narcotics and gold, they differ in how they distribute those resources among combatants. Gutiérrez Sanín (2004, 270) documents that while paramilitary groups pay their recruits a salary and allow fighters to individually profit from war via looting, FARC insurgents are not paid wages and “carry on a hard and dull life.” Consistent with Humphreys and Weinstein (2008), recruits join the rebellion for different reasons: the FARC and ELN attracted large numbers of ideologically motivated combatants (13.5 percent) and economically motivated fighters (17.3 percent) simultaneously.<sup>17</sup> While Arjona and Kalyvas (2011) point to the centrality of personal motivations, most notably revenge in attracting recruits to the insurgents, those citing revenge in our sample (5.2 percent) is much lower than theirs (13 percent).

*Armed group behavior.* Accounts from former combatants suggest that the FARC places tremendous emphasis on ideological indoctrination. Fighters receive daily lessons in “FARC’s political ideology and discipline, [and] absorbing the many rules that make up life in a FARC camp” (Pachico and McDermott 2011). Training focuses on doctrine, including how to treat civilians. One former fighter interviewed by Human Rights Watch (HRW 2003) noted that, “[t]hey taught us how to obtain the support of the civilian population and the right conduct, like not to go into the population and take their animals and behave badly and trick them with words. That’s forbidden. There are rules for all of that.” As Alberto de Jesus Morales (alias “Pajaro”) describes, “[t]hey gave us training for something like 20 days, teaching the laws and the rules and what are the rules you have to follow when you’re in there, the discipline you’re supposed to have . . .” (Pachico and McDermott 2011). Although the FARC’s political training reflects its nominal commitment to the defense and liberation of the peasantry, FARC units and combatants routinely violate its principles, through targeted killings and forced displacement (see, for instance, *Annual Report: Colombia 2011* 2011). As we explained earlier, such transgressions could provoke ideologically committed combatants to reject the group.

*Wartime experiences.* Finally, both the state and its paramilitary allies have engaged in fierce armed contestation with insurgents, especially beginning in the second half of the 1990s. Nonetheless, the FARC remained quite strong, using the territory ceded by the government during the 1998 to 2002 peace talks to enhance its capacity. The strategy implemented by the Uribe administration, known as *Seguridad Democrática* (Democratic Security), and backed by Plan Colombia, the military-oriented aid package from the United States starting in 2001, increased the size of the Colombian military and improved its ability to respond to insurgents. The FARC was forced to withdraw from strategic territories and faced difficulties communicating among its fronts. Critics argue that accompanying the robust military response was a lax respect for human rights, in terms of both colluding with paramilitaries and direct violations by the armed forces. The military attributes success to effective counterinsurgency, along with a targeted and aggressive program to encourage demobilizations starting in 2003.<sup>18</sup>

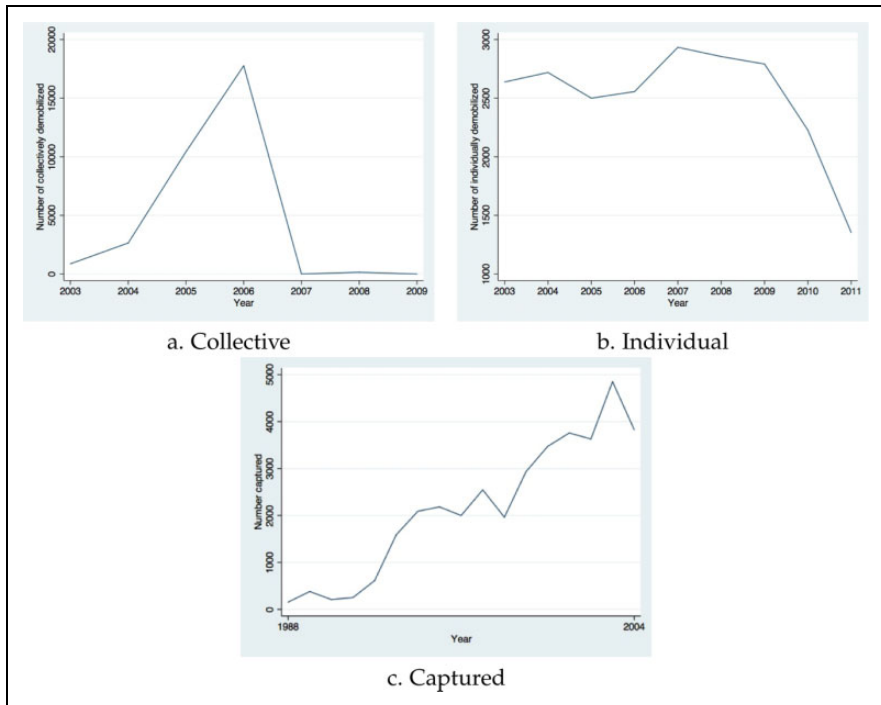
*Active demobilization programs.* Ex-combatants participating in the Colombian government's reintegration program entered through one of two paths, namely, collective demobilization or individual demobilization. There are approximately 30,000 combatants currently registered with the Agencia Colombiana para la Reintegración (ACR, previously Alta Consejería para la Reintegración), the government agency charged with managing reintegration. Collective demobilization occurred only with paramilitary *bloques* between 2003 and 2006. Figure 1a shows collective demobilization trends over time, with a peak in 2006. Rank-and-file paramilitaries who demobilized collectively did so involuntarily, that is, commanders decided if and when to turn weapons and soldiers over to the government.

The vast majority of individually demobilized fighters are leftist guerrillas. Figure 1b shows the individually demobilized over time, according to the ACR. Combatants who are members of politically recognized armed groups can approach any representative of the state and surrender.<sup>19</sup> After about three months of receiving benefits in exchange for information, ex-combatants are transferred to the reintegration side of the program.

The government runs an outreach program through its Program for Humanitarian Attention to the Demobilized (PAHD), a section of the Ministry of Defense (MoD). The program, started in 2003, attempts to persuade combatants to demobilize and asks family members of combatants to do the same. It is unclear how successful these programs are. Anecdotally, demobilizations increased following aggressive actions by the armed forces under Uribe's presidency (roughly 2002 to 2010), and as demobilized combatants communicated to their former comrades that they were safe.

## Data and Empirical Strategy

The survey data that we use were collected by *Fundación Ideas para la Paz* (FIP), a Colombian nongovernmental organization. Composed of 1,485 demobilized



**Figure 1.** Ex-combatants (a) collectively demobilized, (b) individually demobilized, and (c) captured, in Colombia per year.

combatants, the survey was administered using a stratified random sample of the entire population of demobilized combatants between February 5, 2008, and May 31, 2008, in various regions across Colombia. Interviewers conducted the survey on the Caribbean Coast (with the exception of Córdoba and Sucre), in Antioquia (with the exception of Urabá), Valle del Cauca, Nariño, and Bogotá. The sample was randomly drawn from the full list of ex-combatants processed through the Colombian government's reintegration program. The difficulties of constructing a representative sample of ex-combatants is well known, especially during an ongoing conflict, given that some combatants desert without participating in a demobilization process (Nussio 2011), some ex-combatants leave their armed groups but join criminal gangs, while others are unwilling to speak to enumerators for fear of retribution from former groups. The first two problems are common to virtually all surveys of demobilized combatants. The latter problem was partially overcome as reintegration program staff acquainted with respondents initiated contact to introduce the survey and the enumerator, facilitating an atmosphere of trust. Additionally, the survey questions do not require individuals to take responsibility for behaviors seen to be objectionable, thereby mitigating concerns about untruthful responses.

Of the total survey sample, we focus on a specific subsample: those who originally joined the FARC, ELN, and other left-wing guerrilla groups. Our baseline group consists of guerrilla fighters who were *captured* by the Colombian armed forces, as opposed to those who chose to individually demobilize or switch sides to the paramilitaries. The sample comprises 49 captured insurgents, 506 insurgents who chose to individually demobilize, and 27 insurgents who switched sides to the paramilitaries. Side-switchers are defined as those who entered a left-wing insurgent groups such as the FARC or ELN yet demobilized collectively from the paramilitaries.<sup>20</sup>

Focusing the analysis on individual insurgent demobilizers and insurgent-to-paramilitary switchers mitigates a problem of sample selection. Because the vast majority of paramilitaries demobilized en masse rather than on an individual basis, we need not worry that side-switchers to the paramilitaries might also be those most likely to individually demobilize. Demobilization was the decision of paramilitary commanders, rather one taken by rank-and-file fighters. Less than 4 percent of paramilitaries chose not to wait for their *bloque* commanders to reach a collective demobilization deal with the government. Although we also observe combatants who switched from the paramilitaries to FARC in our data, these fighters first switched sides and then demobilized individually. By excluding this subsample, we avoid another potential source of selection bias.

We assume that captured combatants are representative of the broader population of guerrilla fighters, including those that remain in active combat, and use this sample to determine the factors that lead combatants to individually demobilize or switch sides. The capture of guerrillas is common in the Colombian conflict, as Figure 1c demonstrates. The trend reflects the gradual but significant improvement in the Colombian government's counterinsurgency capabilities as well as increasing levels of external financial and military support.<sup>21</sup>

We assume that the probability of capture is, over time, more or less equal across guerrilla fighters engaged in active combat. Capture of individual combatants during wartime is essentially stochastic, governed by a complex set of individual, group-level, and situational factors. Although tactical success in combat is driven by military capabilities—individual skill, training, the strength of opposing units—it is also, as Clausewitz argued, driven by luck.<sup>22</sup>

Ideally, we would be able to test the composition of our captured combatant sample by comparing it to still-active guerrilla fighters. Since this is impossible, we test for selection problems by probing factors that might influence the probability of capture. First, combatants who have not received military training may be at greater risk of capture, as they lack skills to protect themselves and their units during combat. Second, capture may occur at the subunit level, with entire groups of combatants simultaneously captured by opposing fighters. If spatially clustered, our sample of captured combatants might reflect the idiosyncrasies of a single guerrilla unit or front rather than the broader population characteristics we hope to measure.

We conduct differences-in-means tests across the different populations of captured, demobilized, and side-switching ex-combatants. There are no statistically

significant differences in the proportion of captured, demobilized, and side-switching combatants that received military training.<sup>23</sup> This allows us to rule out the possibility that our sample of captured combatants reflects a pool of untrained, unskilled fighters. Second, we conduct a Kolmogorov–Smirnov nonparametric test to determine whether the distribution of combatants’ primary area of operations differed across the three samples. We find no evidence of spatial clustering.<sup>24</sup>

### *Independent Variables*

We begin with the data on motivations for joining. Demobilized fighters were asked to identify the most important reason for joining the first armed group. *Ideological reasons* codes whether an individual reported having joined due to a belief in that group’s ideology. Fourteen percent of our subsample reported joining for this reason. In contrast, *economic need* codes whether combatants reported having joined to escape poverty because of promises of salary or money, or because they had no other options for work. Seventeen percent of our subsample reported joining for this reason.

We code variables that measure experiences while in the group. To assess the effect of ideological and political training, we create *ideological training*, which takes a value of 1 if an ex-combatant reported having attended meetings where ideology and political objectives were discussed. Reflecting the widespread use of ideological indoctrination across guerrilla forces, 78 percent reported having attended indoctrination meetings.

Our hypotheses ask how motivations for joining interact with armed group behavior, particularly civilian abuse. To test these mechanisms, we use a survey question that asks how the group obtained goods for consumption and create a dummy variable, *peasant abuse*, which takes a value of 1 if the ex-combatant reported that his or her group “took goods by force from peasants.” Peasant abuse is relatively rare in the data, reported by only 6.5 percent of respondents.<sup>25</sup> To assess how endogenous conflict dynamics affect combatant trajectories, we create *under pressure*. That variable takes a value of 0 if a combatant reported not having felt at all besieged by the armed forces prior to demobilization (15 percent of sample), 1 if very little (8 percent of sample), 2 if a little besieged (18 percent of sample), 3 if somewhat besieged (8 percent of sample, and 4 if “a lot” (48 percent of sample).

As control variables, we use sociodemographic attributes of fighters that might influence both their trajectories and our independent variables. *Age at time of recruitment*, a variable that captures an ex-combatant’s age when she or he joined the first armed group. *Year of birth* codes when the combatant was born, given that we want to control for the fact that individuals born during particularly violent or comparatively more peaceful years may be systematically more or less likely to demobilize or side-switch. *Education* codes the age at which an ex-combatant stopped formal education. *Male* codes whether an ex-combatant is female or male, taking a value of 1 if a fighter is male. Table 1 presents descriptive statistics for these variables.

**Table 1.** Descriptive Statistics for Independent Variables.

	Mean	Standard error
Ideological reasons	0.135	0.014
Economic need	0.173	0.015
Political indoctrination	0.884	0.013
Peasant abuse	0.065	0.010
Under pressure	2.665	1.510
Age at recruitment	18.336	7.036
Year of birth	1,979.246	0.346
Education	11.959	0.200
Male	0.746	0.018

### Addressing Potential Confounds

Some argue that combatants engage in *ex post facto* reconstruction about their reasons for joining insurgent movements, choosing to privilege ideological reasons retrospectively (Kalyvas 2004). This is the case, as Ivan Ermakoff argued, “because unsettled periods generate simultaneously a need for both strategic non-ideological action and for an ideological explication of those actions” (Kalyvas 2004, 17). There are two reasons why this argument should not here pose a threat to inference. First, our survey data from Colombia demonstrate tremendous heterogeneity in reasons for joining given by combatants. If casting motivations in terms of ideology were as common as suggested, we should expect to see relatively few individuals admitting having joined for economic reasons. Yet in our data, combatants frequently provided such responses. As Table 1 shows a substantial proportion of surveyed combatants report having joined for economic reasons (17 percent of our subsample).

It is still possible that respondents could be purposefully or unconsciously editing their life histories in ways that would generate systematic bias. Respondents might, for example, retrospectively erase justifications for action considered to be shameful in favor of morally or ideologically rooted explanations. Such social desirability bias is a frequent concern in survey research (Bradburn, Rips, and Shevell 1987; Schulhofer-Wohl 2014). But scholars must be cautious in assuming what respondents consider shameful. Research from the psychology of religious conversion, for example, suggests that instead of hiding reasons for having committed actions now considered unacceptable, converts draw resolve and strength from truthfully admitting former failings (Rambo 1993, 134-38). Moreover, ethnographic research among Colombian demobilized combatants finds that fighters often give detailed and open testimonies regarding past choices they now regret and reject (Nussio 2012). Given these two observations, the care taken to introduce and conduct the survey, and results from other studies of former combatants in Colombia, we believe the threats to inference are limited.



**Table 2. Correlates of Demobilization and Side-switching in Colombia.**

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Demobilized	Switchers	Demobilized	Switchers	Demobilized	Switchers	Demobilized	Switchers	Demobilized	Switchers
Ideological reasons	0.832 (0.380)	0.165*** (0.102)			0.833 (0.365)	0.102** (0.0942)			0.0780* (0.111)	0.00000120*** (0.000000193)
Economic need			1.609 (0.873)	3.827** (2.578)	409,755.5*** (202,521.2)	295,294.5*** (212,450.0)			1.986 (1.175)	5.457** (3.943)
Economic need × Political indoctrination					0.00000344*** (0.00000227)	0.0000159*** (0.0000156)				
Political indoctrination			1.069 (0.443)		0.125*** (0.0746)					
Ideological reasons × peasant abuse					41,158.1*** (44,588.9)	170,885.9*** (364,518.8)				
Economic need × peasant abuse										
Peasant abuse							1.674 (1.241)	2.628 (2.577)	3.345 (3.445)	8.169* (9.682)
Age at recruitment	1.096 (0.0636)	1.038 (0.0716)	1.092 (0.0632)	1.044 (0.0707)	1.090 (0.0625)	1.026 (0.0687)	1.098 (0.0637)	1.045 (0.0741)	1.087 (0.0628)	1.042 (0.0720)
Year of birth	0.994 (0.0400)	0.904** (0.0393)	0.996 (0.0380)	0.927* (0.0404)	0.996 (0.0372)	0.915** (0.0391)	0.994 (0.0409)	0.907** (0.0422)	0.993 (0.0382)	0.926* (0.0416)
Education	1.020 (0.0338)	1.106 (0.0699)	1.020 (0.0334)	1.094 (0.0657)	1.022 (0.0333)	1.089 (0.0583)	1.018 (0.0340)	1.101 (0.0690)	1.019 (0.0337)	1.089 (0.0676)
Male	2.122* (0.825)	3.135* (2.118)	2.150* (0.861)	3.258* (2.180)	2.145* (0.881)	3.445* (2.253)	2.098* (0.815)	3.055 (2.080)	2.146* (0.880)	3.273* (2.269)
Constant	340,314.5 (27,269,705.2)	3.21738e+85** (2.80024e+87)	1,762.5 (133,892.9)	2.04702e+63* (1.78586e+65)	1,129.1 (83,745.8)	5.53491e+75** (4.73801e+77)	213,628.2 (17,471,417.0)	6.50699e+82** (6.06972e+84)	2,197,319.1 (168,251,982.1)	1,701,04e+64* (1.52918e+66)
Observations	582	582	582	582	582	582	582	582	582	582

Note: Standard errors, clustered on department of recruitment, are in parentheses. Coefficients presented as relative risk ratios (RRRs).

\* $p < .1$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

## Results

To test our hypotheses, we employ a multinomial logit estimator (e.g., Maddala 1983). Multinomial logit is useful to model nominal outcome variables, allowing us to estimate the probability of membership in various categories compared to the probability of membership in the reference category, conditional on covariates. While multinomial logit is frequently criticized for making the independence of irrelevant alternatives (IIA) assumption, recent work has shown that it provides more accurate results than multinomial probit, even when the IIA assumption is violated (Kropko 2008).

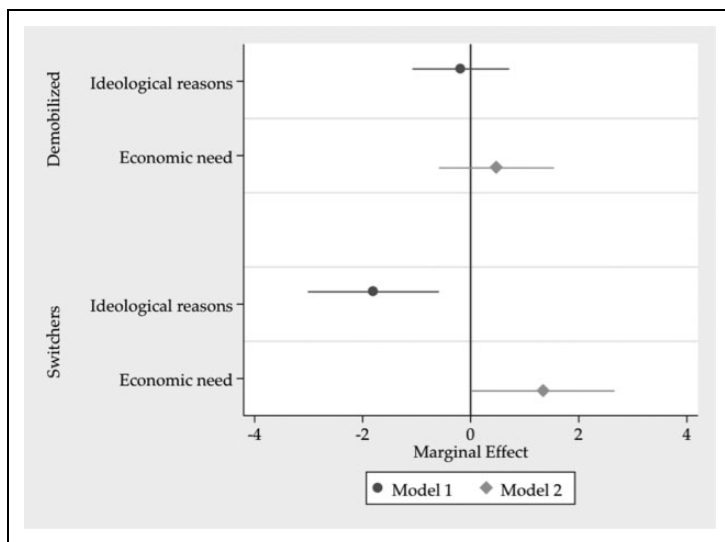
We report coefficients as relative risk ratios (RRRs), given the difficulty of interpreting coefficients from multinomial logit. RRRs are interpreted like odds ratios: a coefficient larger than 1 represents a positive effect, while a coefficient less than 1 a negative effect.<sup>26</sup> Results are all in reference to the baseline category of captured ex-combatants. Because individuals are correlated in space, our statistical models include standard errors clustered at the departmental level where an ex-combatant was located prior to recruitment.<sup>27</sup>

Table 2 addresses the relationship between reasons for joining an armed group and choosing to demobilize or side-switch.<sup>28</sup> Model 1 tests whether ideologically motivated combatants are more likely to demobilize or switch sides. Those who joined for ideological reasons were nearly 85 percent less likely to side-switch than those who did not join for that reason. There is no statistically significant relationship between ideological reasons and individual demobilization.

Model 2 assesses the relationship between joining for economic need and our two outcomes of interest. Economic need is statistically significant in explaining side-switching when compared to the captured baseline, that is, ex-combatants who joined for economic need are 3.8 times more likely to side-switch than those who joined for other reasons. There does not, however, appear to be a relationship between individual demobilization and economic need.

We calculate marginal effects of ideological reasons on side-switching, when compared to the captured baseline and do the same for economic need.<sup>29</sup> The results are visually depicted in Figure 2 and show the sharply negative effect that ideological reasons has on the likelihood of a combatant's switching sides as well as the positive effect of economic need on switching sides.<sup>30</sup> Both are statistically significantly different from zero.

Model 3 begins to address interactions between motivations for joining and experiences while in the armed group. It evaluates whether political indoctrination induces sufficient group cohesion to decrease the likelihood that even economically motivated combatants will leave their armed group. In model 3, the coefficient on the interaction term *economic need* × *political indoctrination* suggests a highly negative and statistically significant effect for *both* demobilization and side-switching. Political indoctrination appears capable of transforming the preferences of combatants who, absent indoctrination, would be more likely to leave their group. The



**Figure 2.** Marginal effects of reasons for joining on combatant trajectories.

“true” effect of indoctrination may even be stronger because insurgent groups screen potential civilian recruits on the basis of their ideological commitments, such that some combatants seeking individual material benefits have already been excluded. Examples include recruitment and screening through youth wings in the Irish Republican Army (Gill and Horgan 2013), among Maoist rebels in Nepal (Eck, Kreutz, and Sundberg 2010), and the North Vietnamese Army (Henderson 1979).<sup>31</sup>

Model 4 tests whether those who joined for ideological reasons and witnessed civilian abuse are more likely to demobilize or switch sides. The interaction term between ideological reasons and peasant abuse is extremely large, positive, and significant for *both* individual demobilization and side-switching.<sup>32</sup> Disillusioned, ideologically motivated combatants are more likely to leave their armed groups by either demobilizing or switching sides. At first glance, the link between ideological disillusionment and side-switching is surprising. Why would combatants switch sides, risking active combat, rather than simply demobilizing? Although more research is necessary, opportunity costs may provide some insight into this choice. Combatants motivated by ideology take significant risks—and bear significant costs—to forward group goals. The realization that such sacrifices were in vain may be sufficient to drive dramatic action, leading to a desire to punish one’s former comrades rather than desistance. Combatants not motivated by ideology, having joined for self-seeking reasons, would lack this intense motive for revenge.

Model 5 tests whether, in contrast, economically motivated combatants remain in their armed groups when goods are taken by force from peasants, the constituency insurgents claim to represent. We find support for that hypothesis. The interaction term

**Table 3.** Correlates of Demobilization and Side-switching.

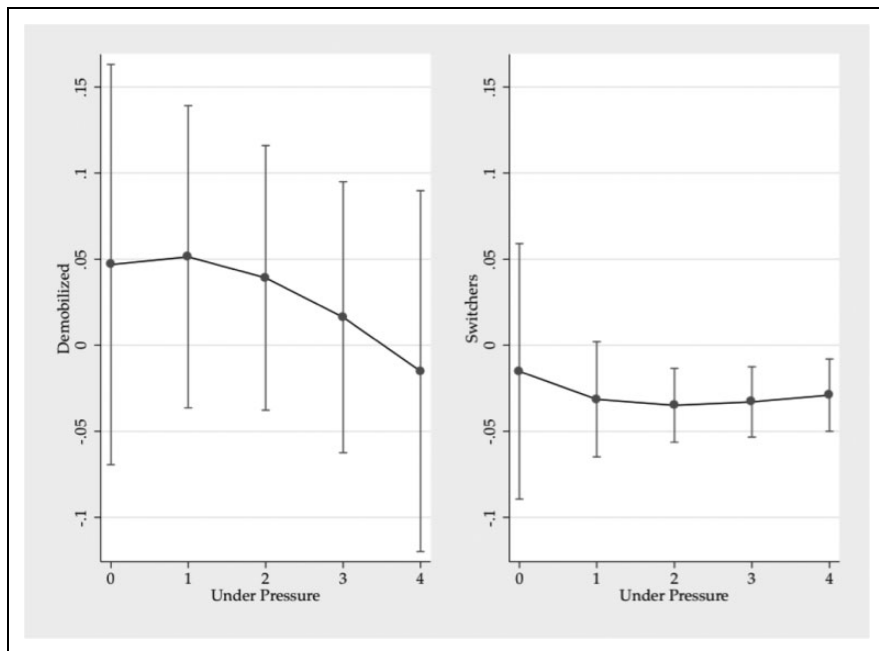
	Model 1		Model 2	
	Demobilized	Switchers	Demobilized	Switchers
Ideological reasons × under pressure	0.724 (0.209)	0.400** (0.149)		
Ideological reasons	2.131 (2.150)	1.558 (1.604)		
Economic need × under pressure			1.040 (0.394)	1.072 (0.523)
Economic need			1.449 (1.740)	3.443 (4.850)
Under pressure	1.000 (0.131)	0.820 (0.135)	0.964 (0.124)	0.727 (0.154)
Age at recruitment	1.099 (0.0638)	1.028 (0.0739)	1.093 (0.0638)	1.038 (0.0728)
Year of birth	0.992 (0.0387)	0.891*** (0.0394)	0.997 (0.0373)	0.920* (0.0408)
Education	1.020 (0.0347)	1.108 (0.0737)	1.019 (0.0336)	1.094 (0.0684)
Male	2.117* (0.842)	3.347* (2.352)	2.165* (0.875)	3.653* (2.531)
Constant	4,528,546.3 (351,501,506.9)	6.55057e+97** (5.79425e+99)	685.9 (51,168.3)	4.22467e+70* (3.75876e+72)
Observations	582	582	582	582

Note: Standard errors, clustered on department of recruitment, are in parentheses. Coefficients presented as relative risk ratios (RRRs).

\* $p < .1$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

between economic need and peasant abuse suggests a strong negative relationship for both demobilization and side-switching. Economically motivated combatants are more likely to remain in their groups when opportunities for personal enrichment occur.

Table 3 turns to wartime experiences, particularly pressure exerted by the military. In models 1 and 2, under pressure is interacted with the two reasons for joining. The interaction of ideological reasons and under pressure is negative and statistically significant for side-switching but not for demobilization. Because under pressure is a continuous variable, to assess its effect on demobilization and side-switching we graph the marginal effect of ideological reasons across values of under pressure in Figure 3. At higher levels of self-reported military pressure, ideological reasons has no effect on demobilization, and a negative and statistically significant effect on side-switching. Future work could assess whether military pressure from *paramilitaries* rather than the armed forces incentivizes even ideologically motivated insurgents to switch sides.<sup>33</sup>



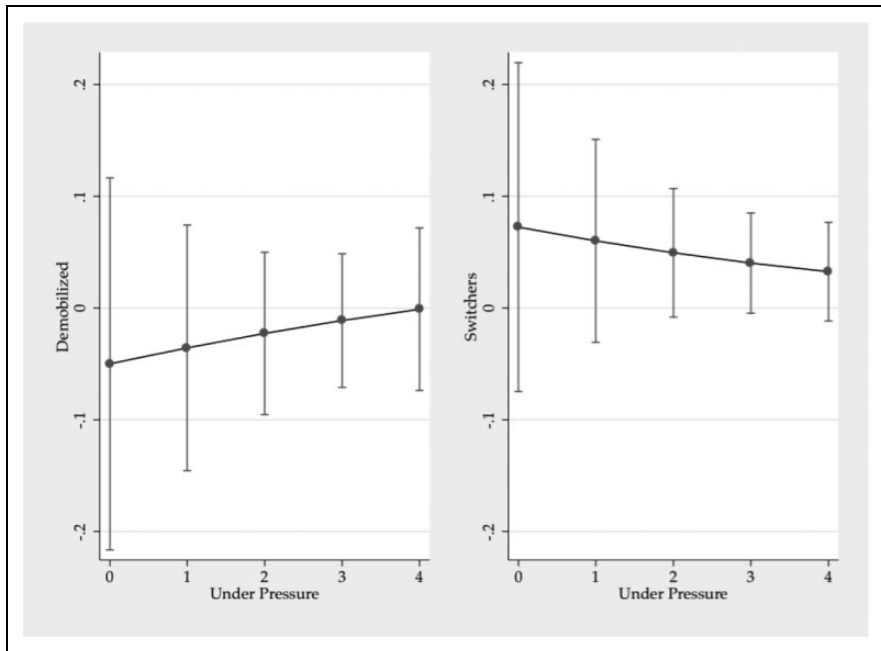
**Figure 3.** Marginal effect of ideological reasons at varying levels of under pressure.

Model 2 appears to indicate that those who joined for economic need are no more nor less likely to demobilize or side-switch when under pressure from the military. Figure 4 tells a more complex story. With increasing military pressure, combatants who joined for economic reasons are more likely to switch sides, as predicted,<sup>34</sup> but are no more likely to demobilize.

The control variables provide insight into demobilization and side-switching. Age at recruitment is consistently positively correlated with demobilization but not with side-switching. Year of birth is negatively related to side-switching. Education does not reach significance in any model. Male is positive and significantly related to demobilization and side-switching, across all specifications.

### Conclusion

Multiparty conflicts exhibit complex and often counterintuitive properties. Some combatants switch sides to fight alongside hated rivals, many demobilize, trading information for economic benefits, while others simply desert. Governments engaged in such conflicts are innovating, adapting “technologies” such as aid programs developed for post-conflict contexts (Oppenheim 2012) and disarmament, demobilization and reintegration programs as tools of counterinsurgency (World Bank 2009). The cohesion of armed groups has significant consequences for



**Figure 4.** Marginal effect of economic need at varying levels of under pressure.

wartime dynamics, particularly in multiparty civil wars, where insurgent groups compete with state-aligned militias and formal state security forces for territory and recruits (Arjona and Kalyvas 2011). Until now, there has been scarce empirical evidence on the factors that cause combatants to abandon armed groups and switch sides or demobilize. This article sheds light on these dynamics.

We find that motivations for joining help explain combatant trajectories in multiparty civil wars. There is strong evidence that ideologically motivated combatants are less likely to side-switch, and no evidence they are more likely to demobilize. We also find strong evidence that economically motivated combatants are more likely to switch sides, and no evidence that they are more likely to demobilize. Combatants with different motivations for joining also seem to have different reactions to armed group behavior. We find strong evidence that ideological indoctrination decreases the likelihood of both side-switching and demobilization for economically motivated combatants, underscoring the reasons why groups invest heavily in such training. We find strong evidence that ideologically motivated combatants will either demobilize or switch sides when their group permits opportunities for looting, and economically motivated combatants remain committed. Finally, we find strong evidence that motivations for joining condition the impact of conflict dynamics on combatant defection. Ideologically motivated combatants whose units come under significant military pressure are less likely to switch sides, yet no effect can be found for demobilization.

Military pressure displays the opposite pattern for economic need, increasing the likelihood of switching but demonstrating no effect on demobilization.

Our article contributes to a growing body of work that provides evidence for the importance of ideology. This includes studies of how ideology shapes patterns of civilian targeting (Asal and Rethemeyer 2008; Thaler 2012; Ugarriza and Weintraub 2015) as well as government choices about whether to collude with, suppress, or incorporate pro-state armed groups (Staniland 2015). Here we find that ideology explains individual-level trajectories within civil wars.

The framework and arguments advanced in this article are likely to be relevant across a broad range of civil wars. In particular, our findings regarding the ideological consistency of armed groups may have analogues in ethnic conflict, that is, asking fighters to predate on coethnic civilians may incur desertion by combatants motivated by a desire to protect the interests of their identity group. This remains to be tested. Dynamics in multiparty civil wars with multiple rebel groups but no counterinsurgent militia might differ, however. In such contexts, switching teams—switching to a different group with similar ideology or ethnic roots—rather than switching sides, will be of primary importance. We see limited evidence of team-switching in the Colombian context. Only 1.3 percent of those who joined the FARC demobilized from the ELN, while 6.2 percent of those who joined the ELN demobilized from the FARC. Because all those who switched teams in our data also made the decision to individually demobilize and therefore might differ from those who switched teams but remain in the war, we do not formally analyze that phenomenon here. This as an important avenue for further data collection and research.

Future research could also address incentives and offers made by competing groups seeking to lure side-switchers. It could also address how supra-individual factors influence individual-level behavior. Notably, Daly's (2012) and Staniland's (2012b) theories about links between cohesion and social networks could exert an important influence on the outcomes we study, which we excluded due to data limitations. Finally, more fine-grained information on the timing of side-switching could allow for analysis of its relationship to wartime trends.

The results of our research have several policy implications. First, the traditional lever of military pressure may not be successful at driving demobilization—especially by true believers. Second, given that political indoctrination can decrease the odds that economically motivated combatants demobilize or side-switch, opponents have an incentive to disrupt training schools that inculcate revolutionary beliefs. Third, our finding that ideologues betray groups when ideology and actions diverge suggests that as groups become “impure” they may put themselves at risk for defections. It may also suggest an avenue for counterinsurgent information campaigns. Finally, better understanding the varied motivations driving combatant defections may help governments design more effective demobilization packages. While economically motivated combatants appear no more likely to demobilize, more generous demobilization packages that could compete with compelling offers to side-switch may help convince such combatants to return to civilian life.

### **Authors' Note**

All errors that remain are the authors' own. Replication materials are available at <http://jcr.sagepub.com/>. Authors' names appear in alphabetical order.

### **Acknowledgment**

The authors thank Anjali Dayal, Jesse Driscoll, David Edelstein, Corinna Jentzsch, Desha M. Girod, Kelly Greenhill, Stathis N. Kalyvas, Enzo Nussio, Andrew Reddie, Jacob Shapiro, Livia Schubiger, Paul Staniland, Megan Stewart, Henning Tamm, Erik Voeten, and participants at the Yale University Conference on Paramilitaries, Militias, and Civil Defense Forces in Civil Wars, the Georgetown University Comparative Government Working Group, and the International Studies Association 2013 Annual Meeting for helpful comments. The authors are grateful to María Victoria Llorente and Juan Carlos Palou of the Fundación Ideas Para La Paz (Ideas for Peace Foundation) for providing access to the survey data on which this research is based.

### **Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### **Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### **Notes**

1. We define "paramilitary," following Jentzsch, Kalyvas, and Schubiger (2015) in this issue, as "... armed groups that operate alongside regular security forces or work independently of the state to shield the local population from insurgents." Paramilitary is the common term in Colombia, but we use militia and paramilitary interchangeably.
2. We argue in the fourth section that this comparison minimizes potential selection bias.
3. Side-switching and demobilization are only two of several possible ways that an individual combatant could leave an armed group, which also include desertion and switching teams. Desertion involves leaving the insurgency without participating in demobilization programs, while switching teams means leaving an armed group to fight for another group that represents the same ideological or ethnic constituency (Daly and Steele 2011). In this article, we focus on demobilization and side-switching chiefly due to data limitations: deserters are difficult to identify and survey and, as explained subsequently, we do not have an unbiased sample of insurgents who switched teams.
4. Violent recidivism of demobilized combatants is a potential challenge for governments. See, for example, Daly (2011).
5. This conceptualization is compatible with classical definitions in political science and psychology defining ideology as a set of beliefs through which individuals "posit, explain and justify ends and means of organised social action, and specifically political action,



irrespective of whether such action aims to preserve, amend, uproot or rebuild a given social order” (Seliger 1976, 14).

6. Because motivations for joining vary across combatants within the same armed group (Humphreys and Weinstein 2008; Arjona and Kalyvas 2011), commanders attempt to inculcate ideological commitments across individuals. Preference harmonization is pursued to forward the blueprint for action that ideological narratives provide.
7. We thank an anonymous reviewer for this suggestion. There may also be marked gaps between ideological content espoused and behavior on the ground.
8. In addition, variation in the intensity of ideological/political training among leftist guerrillas in Colombia correlates with levels of civilian abuse (Oppenheim and Weintraub 2015). Cohen and Nordås (2015) find no evidence that ideology affects the prevalence of sexual violence perpetrated by militias.
9. For a contrasting perspective, see Bearman (1991). Note that this study concerns desertion or desistance rather than demobilization and side-switching.
10. For a survey of desistance in criminology, see Laub and Sampson (2001). Many theories of criminal desistance do not apply here. Full-time participation in armed groups means that leaving behind a peer group (e.g., Akers 1990) is not a viable path to desistance, as that would already constitute desertion, demobilization, or switching.
11. Kalyvas’s principal dependent variable, militia recruitment, does not capture our phenomenon of interest, that is, when combatants *who are already fighting* choose to change sides to another group. Staniland looks at defection to the government side, necessarily excluding combatant moves from one armed group to another.
12. Notably, founding members of the Fuerzas Armadas Revolucionarias de Colombia (FARC) received amnesty for their actions during *La Violencia* and received reintegration benefits (Karl 2009).
13. Other efforts led to the demobilization of smaller leftist insurgent groups. In addition, current peace talks between the FARC and the Colombian government in Havana have achieved agreement on three of the six agenda items.
14. Many former members of the *Ejército Popular de Liberación* (EPL), which agreed to peace talks with the government in 1991, were early members of the paramilitaries, effectively switching sides (Daly and Steele 2011).
15. In Colombia, those include barbarism, terrorism, kidnapping, genocide, and homicide.
16. This law was upheld in 2006 by Colombia’s Constitutional Court, only if government investigations demonstrated that commanders fully disclosed their crimes. If they did not, commanders would be excluded.
17. Those motivated by economic need may not only seek looting opportunities but also the more basic promise of steady meals. Although the FARC does not pay combatants, there are reports that FARC recruiters lie about this and use promises of access to resources to encourage recruitment.
18. Although rank-and-file insurgents who wanted to demobilize were welcomed by the government starting in about 1999, the military’s effort to encourage demobilization increased significantly around 2003.

19. Drug-trafficking group's reconstituted paramilitary groups are ineligible for government programs.
20. Note that the survey did not include a direct question on side switching, rather switchers are coded based on whether they joined one faction and demobilized from another. As such, while respondents might generally seek to explain desistance in terms of frustrated ideological principles that could not bias our results here.
21. Two surges in the capture rate roughly match the initial phase of the United States' "Plan Colombia" and the "Andean Counterdrug Initiative," which provided military equipment, technical assistance, and financial support to the government.
22. "There is no human affair which stands so constantly and so generally in close connection with chance as war" (Clausewitz 1908, 19).
23. The difference-in-means between captured and demobilized is 0.019, with a *t* statistic of 0.439. The difference-in-means between captured and switchers is 0.091, with a *t* statistic of 1.209.
24. The *p* values of the combined Kolmogorov–Smirnov test are as follows: captured versus individually demobilized is .99, captured versus switchers is .26, and individually demobilized versus switchers is .22. Full results available upon request.
25. While social desirability bias may introduce downward bias into this self-reported measure, the question focuses on the group as opposed to not the individual, and so does not force the combatant to admit culpability. Moreover, seizure of goods is minor compared to other acts of violence committed against peasants by armed groups.
26. Odds ratios approximate the relative risk when the incidence of an outcome in the study population is low (<10 percent). See Zhang and Kai (1998).
27. Departments in Colombia are similar to states in the United States. Results are robust to clustering standard errors at various geographic units, including the municipality of recruitment.
28. Where we find consistent statistically significant findings in favor, we denote evidence as "strong." Where we find suggestive but inconsistent data, including coefficients that are not significant in some specifications, we denote the evidence as "weak."
29. Control variables are set to mean values. Estimates for ideological reasons taken from model 1, while estimates for economic need are taken from model 2.
30. The positive impact of joining for economic reasons on the likelihood of switching sides supports Gutierrez-Sanín's (2004) argument that desertion from the FARC is driven by its organizational structure. He also notes that right-wing paramilitary organizations have attempted to lure FARC fighters with combat skills into changing sides by offering material rewards. For combatants motivated to gain a livelihood or material benefits, such an offer may be attractive enough to outweigh the risks of retribution.
31. We thank the special issue editors for this suggestion.
32. The sheer size of the relative risk ratio can be explained by the fact that all those who joined for ideological reasons and answered yes to the question about peasant abuse either individually demobilized or switched sides.
33. Because our data do not contain information on when individual combatants switched sides, we also cannot assess whether macro-level changes in conflict dynamics—for

example, more effective counterinsurgency during the Uribe administration—drove switching. Even if we did have such data, individual risk perceptions and combatant assessments about probable war outcomes may not track *true* shifts in the tide of war, as local successes may lead combatants to overestimate chances for a broader victory. While local defeats may convince fighters that the broader contest is hopeless. Informational problems prevent rank-and-file combatants from understanding how their daily, lived experiences match up to broader conflict dynamics. We thank an anonymous reviewer for this suggestion.

34. Marginal effects are significant at  $p < .10$  where under pressure equals 3 and 4.

## References

- Abrahms, Max. 2008. "What Terrorists Really Want: Terrorist Motives and Counterterrorism Strategy." *International Security* 32 (4): 78-105.
- Akers, Ronald L. 1990. "Rational Choice, Deterrence, and Social Learning Theory in Criminology: The Path Not Taken." *Journal of Criminal Law and Criminology* 81:653.
- Annual Report: Colombia 2011*. 2011. Technical Report. Amnesty International. Accessed July 31, 2014 <http://www.amnestyusa.org/research/reports/annual-report-colombia-2011-0>.
- Arjona, Ana, and Stathis N. Kalyvas. 2011. "Recruitment into Armed Groups in Colombia: A Survey of Demobilized Fighters." In *Mobilizing for Violence: Armed Groups and Their Combatants*, edited by Yvan Guichaoua, 143-72. Palgrave-Macmillan.
- Asal, Victor, and R. Karl Rethemeyer. 2008. "The Nature of the Beast: Organizational Structures and the Lethality of Terrorist Attacks." *Journal of Politics* 70 (2): 437-49.
- Bahney, Benjamin W., Radha K. Iyengar, Patrick B. Johnston, Danielle F. Jung, Jacob N. Shapiro, and Howard J. Shatz. 2013. "Insurgent Compensation: Evidence from Iraq." *American Economic Review* 103 (3): 518-22.
- Bearman, Peter S. 1991. "Desertion as Localism: Army Unit Solidarity and Group Norms in the US Civil War." *Social Forces* 70 (2): 321-42.
- Becker, Jo. 2009. "Child Recruitment in Burma, Sri Lanka, and Nepal." In *Child Soldiers in the Age of Fractured States*, edited by Scott Gates and Simon Reich, 108-20. Pittsburgh, PA: University of Pittsburgh Press.
- Bradburn, Norman M., Lance J. Rips, and Steven K. Shevell. 1987. "Answering Autobiographical Questions: The Impact of Memory and Inference on Surveys." *Science* 236 (4798): 157-61.
- Carey, Sabine C., Michael Colaresi, and Neil Mitchell. 2015. "Governments, Informal Links to Militias and Accountability." *Journal of Conflict Resolution* 59 (5): 850-876.
- Christia, Fotini. 2012. *Alliance Formation in Civil Wars*. Cambridge, UK: Cambridge University Press.
- Clapham, Christopher S. 1998. *African Guerrillas*. Bloomington: Indiana University Press.
- CNMH (Centro Nacional de Memoria Histórica). 2013. *iBasta Ya! Colombia: Memorias de Guerra y Dignidad*. Technical report. Bogotá, Colombia: Centro Nacional de Memoria Histórica.
- Cohen, Dara Kay, and Ragnhild Nordås. 2015. "Why Do Militias Abuse Civilians? Evidence from Recent Armed Conflicts (1989-2009)." *Journal of Conflict Resolution* 59 (5): 877-898.

- Collier, Paul, Lani Elliot, Håvard Hegre, Anke Hoeffler, Marta Reynal-Querol, and Nicholas Sambanis. 2003. *Breaking the Conflict Trap. Civil War and Development Policy*. Oxford, UK: Oxford University Press.
- Collier, Paul, and Anke Hoeffler. 2004. "Greed and Grievance in Civil War." *Oxford Economic Papers* 56 (4): 563-95.
- Colombia: *The Justice and Peace Law*. 2012. Technical report. Center for Justice and Accountability. Accessed July 31, 2014. <http://www.cja.org/article.php?id=863>.
- Costa, Dora L., and Matthew E. Kahn. 2003. "Cowards and Heroes: Group Loyalty in the American Civil War." *The Quarterly Journal of Economics* 118 (2): 519-48.
- Daly, Sarah Zukerman. 2011. "Bankruptcy, Guns or Campaigns: Explaining Armed Organizations' Post-war Trajectories." PhD thesis, Massachusetts Institute of Technology, Cambridge.
- Daly, Sarah Zukerman. 2012. "Organizational Legacies of Violence: Conditions Favoring Insurgency Onset in Colombia, 1964-1984." *Journal of Peace Research* 49 (3): 473-91.
- Daly, Sarah Zukerman, and Abbey Steele. 2011. "Armed Group Defection in Civil Wars." Presented at 2011 Annual APSA Conference, Toronto.
- De Mesquita, Ethan Bueno. 2005. "The Quality of Terror." *American Journal of Political Science* 49 (3): 515-30.
- Eck, Kristine. 2010. "Recruiting Rebels: Indoctrination and Political Education in Nepal." In *The Maoist Insurgency in Nepal: Revolution in the Twenty-first Century*, edited by Mahendra Lawoti and A. K. Pahari, 33-51. London, UK: Routledge.
- Eck, Kristine. 2015. "Repression by Proxy: How Military Purges and Insurgency Impact the Delegation of Coercion." *Journal of Conflict Resolution* 59 (5): 924-946.
- Eck, Kristine, Joakim Kreutz, and Ralph Sundberg. 2010. *Introducing the UCDP Non-state Conflict Dataset*. Uppsala, Sweden: Uppsala University.
- Echandía Castilla, Camilo. 1999. *El Conflicto Armado y las Manifestaciones de Violencia en las Regiones de Colombia*. Presidencia de la Republica de Colombia, Oficina del Alto Comisionado para la Paz, Observatorio de Violencia.
- Fearon, James D. 1999. "Electoral Democracy and the Control of Politicians: Selecting Good Types Versus Sanctioning Poor Performance." In *Democracy, Accountability, and Representation*, edited by Adam Przeworski, Susan C. Stokes, and Bernard Manin, chapter 2, 55-97. Cambridge, UK: Cambridge University Press.
- Forney, Jonathan. 2015. "Who Can We Trust with a Gun? Information Networks and Adverse Selection in Militia Recruitment." *Journal of Conflict Resolution* 59 (5): 824-849.
- Gill, Paul, and John Horgan. 2013. "Who Were the Volunteers? The Shifting Sociological and Operational Profile of 1240 Provisional Irish Republican Army Members." *Terrorism and Political Violence* 25 (3): 435-56.
- Gurr, Ted Robert. 1970. *Why Men Rebel*. Princeton, NJ: Princeton University Press.
- Gutiérrez Sanín, Francisco. 2004. "Criminal Rebels? A Discussion of Civil War and Criminality from the Colombian Experience." *Politics and Society* 32 (2): 257-85.
- Gutiérrez Sanín, Francisco. 2008. "Telling the Difference: Guerrillas and Paramilitaries in the Colombian War." *Politics and Society* 36 (1): 3-34.
- Gutiérrez Sanín, Francisco, and Elisabeth Jean Wood. 2014. "Ideology in Civil War: Instrumental Adoption and Beyond." *Journal of Peace Research* 51 (2): 213-26.

- Henderson, Darryl. 1979. *Why the Vietcong Fought: A Study of Motivation and Control in a Modern Army in Combat*. Westport, CT: Greenwood Press.
- Hoover Green, Amelia. 2011. "Repertoires of Violence against Noncombatants: The Role of Armed Group Institutions and Ideologies." PhD thesis, Yale University, New Haven, CT.
- HRW (Human Rights Watch). 2003. "You'll Learn Not to Cry: Child Combatants in Colombia." Technical report. Human Rights Watch. Accessed July 31, 2014. <http://hrw.org/reports/2003/colombia0903/>.
- Humphreys, Macarthan, and Jeremy M. Weinstein. 2008. "Who Fights? The Determinants of Participation in Civil War." *American Journal of Political Science* 52 (2): 436-55.
- Jablonski, Ryan S., and Steven Oliver. 2013. "The Political Economy of Plunder: Economic Opportunity and Modern Piracy." *Journal of Conflict Resolution* 57 (4): 682-708.
- Jenkins, Brian Michael. 2002. *Countering al Qaeda: An Appreciation of the Situation and Suggestions for Strategy*. Santa Monica, CA: RAND corporation.
- Jentsch, Corinna. 2012. "People Tired of War: Militias and the Dynamics of War in Mozambique, 1982-92." Paper presented at the Paramilitaries, Civil Defense Forces and Militias in Civil Wars Conference, Yale University, New Haven, CT, October 19-20.
- Jentsch, Corinna, Stathis N. Kalyvas, and Livia Isabella Schubiger. 2015. "Militias in Civil Wars: An Emerging Research Agenda—Introduction." *Journal of Conflict Resolution* 59 (5): 755-769.
- Kaldor, Mary. 1999. *New and Old Wars: Organised Violence in a Global Era*. Cambridge, UK: Polity.
- Kalyvas, Stathis N. 2003. "The Ontology of "Political Violence": Action and Identity in Civil Wars." *Perspective on Politics* 1 (3): 475-94.
- Kalyvas, Stathis N. 2004. "The Urban Bias in Research on Civil Wars." *Security Studies* 13 (3): 160-90.
- Kalyvas, Stathis N. 2008. "Ethnic Defection in Civil War." *Comparative Political Studies* 41 (8): 1043-68.
- Kalyvas, Stathis N., and Laia Balcells. 2010a. "Did Marxism Make a Difference? Marxist Rebellions and National Liberation Movements." APSA 2010 Annual Meeting Paper. Available at SSRN. Accessed July 31, 2014 [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1642509](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1642509).
- Kalyvas, Stathis N., and Laia Balcells. 2010b. "International System and Technologies of Rebellion: How the End of the Cold War Shaped Internal Conflict." *American Political Science Review* 104:415-29.
- Kalyvas, Stathis N., and Matthew A. Kocher. 2007. "How 'Free' Is Free Riding in Civil Wars? Violence, Insurgency, and the Collective Action Problem." *World Politics* 59 (2): 177-216.
- Karl, Robert. 2009. "State Formation, Violence, and Cold War in Colombia, 1957-1966." PhD thesis, Harvard University, Cambridge, MA.
- Kenny, Paul D. 2010. "Structural Integrity and Cohesion in Insurgent Organizations: Evidence from Protracted Conflicts in Ireland and Burma." *International Studies Review* 12:533-55.
- Kropko, Jonathan. 2008. "Choosing between Multinomial Logit and Multinomial Probit Models for Analysis of Unordered Choice Data." PhD thesis, University of North Carolina, Chapel Hill.

- Laub, John H., and Robert J. Sampson. 2001. "Understanding Desistance from Crime." *Crime and Justice* 28:1-69.
- Lidow, Nicholai Hart. 2011. "Violent Order: Rebel Organization and Liberia's Civil War." PhD thesis, Stanford University, Stanford, CA.
- Maddala, G. S. 1983. *Limited Dependent and Qualitative Variables in Econometrics*. Cambridge, MA: MIT Press.
- McLaughlin, Theodore. 2011. "Can You Home Again? Desertion and Control of Hometowns in Civil Wars." IBEI Working Papers 34, McGill University, Montreal, Quebec, Canada.
- Mueller, John. 2000. "The Banality of Ethnic War." *International Security* 25 (1): 42-70.
- Nussio, Enzo. 2011. "How Ex-combatants Talk about Personal Security: Narratives of Former Paramilitaries in Colombia." *Conflict, Security & Development* 11 (5): 579-606.
- Nussio, Enzo. 2012. "Emotional Legacies of War among Former Colombian Paramilitaries." *Peace and Conflict: Journal of Peace Psychology* 18 (4): 369.
- Nussio, Enzo, and Juan Esteban Ugarriza. 2013. "Are Insurgents Any Different from Counter-insurgents? A Systematic Integration and Validation of Motivational Studies from Colombia." Presented at 2013 APSA Annual Meeting, Chicago, IL.
- Oppenheim, Ben. 2012. "Community and Counterinsurgency." *Humanity: An International Journal of Human Rights, Humanitarianism, and Development* 3 (2): 249-65.
- Oppenheim, Ben, and Michael Weintraub. 2015. "Learning How Not to Fire a Gun: The Impact of Combatant Training on Civilian Killings." Working paper available at SSRN. Accessed March 6, 2015. <http://ssrn.com/abstract=1962400>.
- Pachico, Elyssa, and Jeremy McDermott. 2011. "InSide: Can the FARC Still Train Their Soldiers?" Accessed July 31, 2014. <http://insightcrime.org/insight-latest-news/item/707-inside-can-the-farc-still-train-their-soldiers>.
- Paige, Jeffrey M. 1978. *Agrarian Revolution*. New York: Simon and Schuster.
- Peterson, Roger. 2001. *Resistance and Rebellion: Lessons from Eastern Europe*. Cambridge, UK: Cambridge University Press.
- Rambo, Lewis R. 1993. *Understanding Religious Conversion*. New Haven, CT: Yale University Press.
- Romero, Mauricio. 2003. "Reform and Reaction: Paramilitary Groups in Contemporary Colombia." In *Irregular Armed Forces and Their Role in Politics and State Formation*, edited by Diane E. Davis and Anthony W. Pereira, 178-208. Cambridge, UK: Cambridge University Press.
- Rosenau, William, Ralph Espach, Román D. Ortiz, and Natalia Herrera. 2014. "Why They Join, Why They Fight, and Why They Leave: Learning from Colombia's Database of Demobilized Militants." *Terrorism and Political Violence* 26 (2): 277-85.
- Schubiger, Livia Isabella. 2012. "Dynamics of Resistance: Civil War Violence and Counter-insurgent Mobilization in Peru." Paper presented at the Paramilitaries, Civil Defense Forces and Militias in Civil Wars Conference, Yale University, New Haven, CT, October 19-20.
- Schulhofer-Wohl, Jonah. 2014. "Armed Group Repertoires and Recollection in Survey Research." Households in Conflict Network Working Paper 171. Accessed July 31, 2014 <http://www.hicn.org/wordpress/wp-content/uploads/2012/06/HiCN-WP-1712.pdf>.

- Scott, James C. 1976. *The Moral Economy of the Peasant*. New Haven, CT: Yale University Press.
- Seliger, Martin. 1976. *Politics and Ideology*. London, UK: Allen & Unwin.
- Staniland, Paul. 2012a. "Between a Rock and a Hard Place Insurgent Fratricide, Ethnic Defection, and the Rise of Pro-state Paramilitaries." *Journal of Conflict Resolution* 56 (1): 16-40.
- Staniland, Paul. 2012b. "Organizing Insurgency: Networks, Resources, and Rebellion in South Asia." *International Security* 37 (1): 142-77.
- Staniland, Paul. 2012c. "States, Insurgents, and Wartime Political Orders." *Perspectives on Politics* 10 (2): 243-64.
- Staniland, Paul. 2014. *Networks of Rebellion: Explaining Insurgent Cohesion and Collapse*. Ithaca, NY: Cornell University Press.
- Staniland, Paul. 2015. "The State and the Monopoly of Violence." *Journal of Conflict Resolution* 59 (5): 770-793.
- Stanton, Jessica. 2015. "Regulating Militias: Governments, Paramilitaries, and Civilian Targeting in Civil War." *Journal of Conflict Resolution* 59 (5): 899-923.
- Thaler, Kai M. 2012. "Ideology and Violence in Civil Wars: Theory and Evidence from Mozambique and Angola." *Civil Wars* 14 (4): 546-67.
- Ugarriza, Juan E. 2009. "Ideologies and Conflict in the Post-cold War." *International Journal of Conflict Management* 20 (1): 82-104.
- Ugarriza, Juan E., and Matthew J. Craig. 2013. "The Relevance of Ideology to Contemporary Armed Conflicts a Quantitative Analysis of Former Combatants in Colombia." *Journal of Conflict Resolution* 57 (3): 445-77.
- Ugarriza, Juan E., and Michael Weintraub. 2015. "The Effects of Ideology on Insurgent Targeting Decisions: Explaining Colombian Guerrillas' Tactical Choices." Paper presented at the 2015 International Studies Association Annual Conference, New Orleans, LA.
- von Clausewitz, Carl. 1908. *On War*, vol. 1. Book 1. London, UK: K. Paul, Trench, Trübner & Company.
- Weinstein, Jeremy. 2007. *Inside Rebellion: The Politics of Insurgent Violence*. Cambridge, UK: Cambridge University Press.
- Wickham-Crowley, Timothy P. 1990. *Exploring Revolution: Essays on Latin American Insurgency and Revolutionary Theory*. Armonk, NY: M. E. Sharpe.
- Wolf, Eric R. 1969. *Peasant Wars of the Twentieth Century*. Norman: University of Oklahoma Press.
- World Bank. 2009. *Colombia—The Cartagena Contribution to Disarmament, Demobilization and Reintegration*. Washington, DC: World Bank. Accessed July 31, 2014. <http://documents.worldbank.org/curated/en/2009/06/16343773/columbia-cartagena-contribution-disarmament-demobilization-reintegration>.
- Young, Thomas. 1997. "A Victim of Modernity? Explaining the War in Mozambique." In *The Counter-insurgent State: Guerrilla Warfare and State Building in the Twentieth Century*, edited by Paul B. Rich and Richard Stubbs, 120-52. New York: St Martins Press.
- Zhang, Jun, and F. Yu Kai. 1998. "What's the Relative Risk?" *JAMA: the Journal of the American Medical Association* 280 (19): 1690-91.