Does one-sided violence create a negative cascading effect on the success of peace agreement implementation? If violence influences peace accord implementation negatively, how can such violence be contained to safeguard the implementation process? While post-conflict one-sided violence can be viewed as residual, the use of such violence can significantly influence peacebuilding outcomes. Implementing the agreement is a contentious process as both sides expect to maximize their benefits and minimize their losses from intended reforms negotiated in the agreement. Implementation success is achieved by minimizing the difference in policy reforms through mutual trust, reciprocity, and sequential policy moves. In such a contentious implementation setting, the use of one-sided violence by any actor undermines trust and reciprocity between signatories and subsequently forestalls implementation success. Empirical analyses of a global sample of comprehensive peace agreements since 1989 show a significant and negative relationship between the use of one-sided violence and the peace agreement implementation rate. Rebel one-sided violence has a larger negative effect on implementation compared to state and other non-state one-sided violence.

Introduction
When the rebels and the government negotiate a peace agreement after a civil war, a prolonged implementation process begins that often lasts for more than a decade. In most cases, more direct forms of armed confrontation end when the accord’s implementation begins, but some war-era activities can persist (Darby 2001; Joshi, Quinn, and Regan 2015). One such activity is one-sided violence — the use of armed force by any organized armed group against civilians (Eck and Hultman 2007). Perpetrators of one-sided violence in the post-agreement period may include the government, the rebels, and other armed actors such as paramilitary groups. The use of one-sided violence by any armed actor — state and non-state — poses a significant threat to peace implementation. However, most studies of post-accord violence, or spoiler violence, have a limited view of who can act as spoilers. Stedman (1997), for example, focuses almost exclusively on rebel organizations that were part of the agreement. Reiter (2016) provides the
most comprehensive explanation of group fragmentation, division, and use of violence in the peace process as a strategy of groups seeking renegotiation of aspects of the peace agreement. Rudloff and Findley (2016) suggest rebel group fragmentation increases spoiler violence and decreases the durability of post-civil-war peace. Part of the reason could be related to the effects of spoiler violence on the implementation of a peace agreement, as prior research also suggests the durability of peace depends on peace agreement implementation success (Joshi and Quinn 2017). As such, the focus in prior studies has not been on one-sided violence against civilians and whether such violence affects the peace agreement implementation success. Among 34 Comprehensive Peace Agreements (CPAs) negotiated since 1989, there are instances of the use of one-sided violence by all types of actors at various times during the ten-year implementation period.

The presence of one-sided violence during peace implementation periods raises questions related to the impact of such violence on peace accord implementation: Does one-sided violence create a negative cascading effect on peace agreement implementation success? If violence influences the peace accord implementation negatively, how can such violence be contained to safeguard the implementation process? This research addresses these two questions and examines the impact of one-sided violence by various actors on the level of the agreement’s implementation. I argue that a collaborative working relationship among the peace agreement signatories, established through mutual trust and reciprocity, is critical to implementation success. The continued presence of one-sided violence in the post-agreement phase damages the collaborative working relationship by creating mistrust, which consequently impacts the overall implementation process. I explore the relationship between one-sided violence and peace agreement implementation by analyzing the one-sided violence data from the Uppsala Conflict Data Program (UCDP) (Eck and Hultman 2007; Melander, Pettersson, and Themnér 2016) and peace agreement implementation data from the Peace Accords Matrix (PAM) project (Joshi, Quinn, and Regan 2015). In the empirical analyses performed, I find preliminary evidence that the use of one-sided violence by any actor (government, rebels, and other non-state armed actors) lowers accords’ implementation success rates.

While this research focuses on the relationship between one-sided violence and peace agreement implementation, it also addresses broader topics of general interest, such as contentious politics, peace, and governance. One-sided violence might not terminate the agreement, but it could pose a threat to peace (Reiter 2015, 2016). The signed agreement could be maintained — signatories would not return to conflict — but the implementation would face significant challenges. The risk of peace failure increases significantly when implementation success is not achieved at a higher rate (Joshi and Quinn 2017). Further, postwar states where comprehensive peace agreements were implemented at a higher rate were successful in significantly reducing infant mortality rates compared to cases where the CPA implementation rate was low (Joshi 2015). Furthermore, implementation success provides the basis for institutional reforms and better human rights practices because many provisions in peace accords directly relate to institutional and governance reforms. Failure to pursue such reforms is likely to cause cycles of armed conflict (Quinn, Joshi, and Melander 2019; Hegre and Nygård 2015; Hegre et al. 2013; Sambanis 2004).

This study also advances our understanding of peace agreement implementation. Prior studies on peace agreement implementation and armed conflict recurrence focus on whether the signatories will return to armed conflict instead of on the agreement’s implementation (Hoddie and Hartzell 2003; Jarstad and Nilsson 2008; Joshi and Quinn 2017). Joshi, Lee, and Mac Ginty’s (2017) study is the first to examine overall implementation of CPAs, but it focuses on the accords’ built-in safeguard mechanisms. A study by Maekawa, Ari, and Gizelis (2019)
examines the impact of the size of UN peacekeeping deployment on implementation success rate. These first two studies, however, do not consider how one-sided violence affects the agreement’s implementation success rate. By analyzing one-sided violence, this article advances the research in a new direction and broadens the general understanding of the interplay between one-sided violence and peace agreement implementation. This study also informs peace agreement signatories and negotiators, as well as local, national, and international peace process stakeholders on how to secure peace agreement implementation for two reasons. The first reason is that more and more armed conflicts are terminated via a negotiated settlement (Kreutz 2010). The second reason is that current conflicts in Myanmar, Syria, Libya, Yemen, the Philippines, and many other places involve multiple armed groups using one-sided violence. Knowing the adverse effects of one-sided violence in advance will help negotiators design and choose the best instruments within the peace agreement and find policy options for neutralizing the negative cascading effects of one-sided violence on implementation success.

Following this introduction, the next section examines studies related to peace processes and one-sided violence. The third section discusses expectations related to one-sided violence and peace accord implementation and derives testable hypotheses. The fourth section explains the research design; it outlines methods, identifies variables for testing hypotheses, and names data sources. Following the presentation of empirical analysis in the fifth section, the conclusion discusses the implications of the findings for research and practice.

**Previous Research on Post-Accord Violence**

The post-agreement period is marked by uncertainties. Will rank-and-file rebels be able to maintain group cohesion in the implementation phase? Will the signatories be able to deliver the reforms negotiated in the peace agreement? Amid these uncertainties, war-era violence persists. In some cases, the state and rebels keep using violence even after signing a peace agreement. In other cases, the rebel group splinters into moderates and hardliners, and the hardliners continue their violent actions. In still other cases, new armed groups emerge and enact violence. In all these cases, the reforms negotiated in the accord and their subsequent implementation may fuel further violence in the post-agreement period.

Post-accord violence is understood as a ‘spoiler problem’ in the peace process (Stedman 1997; Darby 2001; Nilsson 2008). It has been suggested that armed actors engage in post-accord violence primarily to sabotage the implementation of a negotiated peace agreement. Yet earlier studies do not view all armed actors as potential perpetrators of violence. According to Stedman (1997), spoilers mostly comprise members of rebel organizations who were part of the peace agreement, and these rebels are the primary perpetrators of post-accord violence. According to Darby (2001; also see Reiter 2016), however, spoilers may exist within the government, other rebel organizations, paramilitaries, or communities, and they enact violence because they are hostile to the peace process and peace implementation. All actors, those that signed the agreement and those that did not, including groups that are not recognized as legitimate armed actors, could perpetrate violence to derail the peace process.

Peace accord negotiations take place amid uncertainty about the signatories’ commitment to abide by the terms of the agreement. For this reason, the initiation and the success of an accord’s implementation mostly depend on mutual trust and reciprocity between signatories. In some instances, the promise of a robust third-party presence reinforces signatories’ commitment to a peace agreement (Walter 2002; Fortna 2004). Such a promise does not always deliver implementation success, however, as South Sudan’s 2015 peace agreement demonstrates. In most instances, implementation only proceeds when signatories remain committed to the process and engage in activities that promote mutual
trust and confidence (Joshi, Lee, and Mac Ginty 2017). Post-accord violence by either side undermines efforts to build the mutual trust and confidence necessary to the implementation phase. When mutual mistrust is high, neither side can proceed with implementing the accord.

Non-signatory groups can also use violence to exacerbate mistrust between signatories and derail implementation. For example, Kydd and Walter (2002) argue that the negotiation of the Oslo Accord between the Israeli government and the Palestinian Liberation Organization (PLO) took place under conditions of mutual mistrust. Neither side was certain that the other would fulfill its commitments. But the non-signatory group, Hamas, substantially contributed to the Oslo Accord’s failure by enacting violence that exacerbated mistrust between the signatories. According to Kydd and Walter (2002), Hamas was successful in derailing the Oslo peace process because of the mutual mistrust that existed between the Israeli government and the PLO. This derailing was a calculated act. Hamas was not involved in negotiating the accord, and the accord’s success would have interfered with Hamas’s goals, so Hamas used violence to undermine its implementation.

In other instances, rebel groups engage in violent activities in the post-agreement period when faced with uncertainty related to post-accord elections (Höglund 2009; Joshi 2014). The Maoist rebels in Nepal, for example, enacted violence in the post-agreement period to maintain their control and their support bases, which would aid them in post-conflict elections (Joshi 2014). In Nepal, many non-state armed groups other than rebels emerged and started to use one-sided violence because they felt excluded by the unfolding implementation of the 2006 CPA. Hardliners within the government may also perpetrate post-accord violence if they find a settlement negotiated by the moderate faction too lenient towards the rebel group, as was the case in Cambodia.

The broader scholarly debate about post-accord violence revolves around two different but interrelated questions. The first question is who perpetrates post-accord violence. Prior studies recognize that the state, rebel groups, and other non-state actors may all engage in direct violence (Darby 2001; Kydd and Walter 2002; Stedman 1997; Höglund 2009; Newman and Richmond 2006). The second question is what effects violence has on a peace process. Scholars broadly agree that violence has potential adverse consequences for peace accords’ implementation. When signatories perpetrate violence against each other early in the implementation period, the level of implementation tends to be low (see Joshi, Quinn, and Regan 2015). Signatories’ violence signals weak commitment to peace implementation. Yet, surprisingly, violence from non-signatories has the most potential to derail the peace process (Nilsson 2008; Kydd and Walter 2002). According to Nilsson (2008), post-accord violence from a non-signatory rebel group has a more negative consequence on durable peace.

The state, rebel groups, and other armed actors are equally likely to engage in one-sided violence, but the effect of one-sided violence on peace processes remains unexplored in the existing literature. When perpetrating one-sided violence, armed actors do not confront one another directly; instead, they target civilians. Because some civilian supporters voluntarily provide material support (e.g., shelter, food, etc.) to armed actors, including the state’s armed forces, the use of one-sided violence suggests the perpetrator’s intention to sabotage peace. The use of one-sided violence also indicates the perpetrator’s uncertain commitment to peace, insofar as such violence hinders the implementation process by creating new reasons for disagreement and mistrust. Empirical studies on the peace process do not clearly show whether the use of one-sided violence damages or derails peace agreement implementation. Nor do they show whether the identity of the perpetrators — the state, the rebels, or other non-state actors — changes the effects of one-sided violence on implementation. In the next section, I develop a theoretical argument about armed actors’
use of one-sided violence and accord implementation by focusing on reciprocal learning and reputation building amid post-accord challenges.

**Theory and Hypotheses**

The bargaining theory of civil war provides a useful framework for understanding the difficulties inherent in negotiations for peace, during which armed actors face commitment problems and information uncertainty (Walter 1997, 2002; Wagner 2000). By addressing these, civil war actors can reach a negotiated settlement. While the bargaining theory explains why civil war adversaries are or are not able to negotiate a peace agreement, the commitment problem and information uncertainty are not as acute during the implementation period as they are during armed conflict or the peace negotiations phase. The signing of a peace accord indicates that armed actors were, to some extent, able to resolve their commitment problems and information uncertainty but not all agreements are signed in the same stage of conflict and not all armed actors are equally committed to implementation. The implementation process itself could address some of the remaining commitments and information-related issues because implementation fulfills commitments and fills information gaps. At the same time, the implementation also shifts the balance of power between former armed rivals. Third-party peacekeepers are deployed in some cases to protect this balance of power but they leave within a few years once the elections are held (Reilly 2004). Therefore, the commitment problem persists to a degree during the peace implementation period as well. Nevertheless, the focus of armed actors shifts to measurable deliverables and cooperation; both sides are expected to coordinate and cooperate in delivering the terms negotiated in the peace accord. Further, the implementation process is open and many new stakeholders (i.e., bureaucratic agencies, civil society actors, etc.) often join with their own interests.

Therefore, armed actors inside and outside the process closely monitor implementation as it unfolds. The process provides valuable information about rival actors’ capacity, commitment to implementation, and behavioral changes resulting from implementation (Crescenzi 2007). Armed actors can use this information to develop strategies for interacting with their rivals. Peace accord implementation also involves restructuring the state, which causes broader social, political, and economic changes that often empower marginalized segments of a given society. After all, most peace agreements provide institutional mechanisms for transforming a rebel group into a legitimate political party and reforming the electoral system so that the rebel party can contest political power democratically. Often, implementation also involves delivering goods and services to segments of the population neglected during the state’s previous distribution of social, political, and economic goods. These outcomes, however, come at the expense of powerful elites controlling state power and resources. Therefore, as the implementation process unfolds, winners and losers emerge, providing incentives for political and societal actors (including armed actors) to sabotage implementation. Amid such a change, as Reiter (2016) suggests, a new type of spoiler emerges. This spoiler attempts to influence the accord’s implementation in different ways based on its objectives and capabilities. The use of violence is one of many strategies used to influence peace agreement implementation.

Peace agreement implementation requires reciprocity and cooperation among the actors who negotiated the accord and the bureaucratic agencies that need to help and coordinate with one another to carry out implementation programs. Implementing reforms negotiated in the accord involves activities at both the national and the local level. As such, those who do not benefit from reform have multiple opportunities to sabotage implementation at various levels. In other words, political and societal leaders can influence implementation outcomes positively or negatively if they wish to do so. Not all actors would use one-sided violence to
influence the implementation outcome, but opposition to implementation starts when outcomes do not meet the expectations of actors involved in the process. Achieving a higher implementation level is possible when all sides find outcomes sufficiently beneficial to convince their rank-and-file members to support the process; beneficial outcomes early in the process help to secure the reciprocity and cooperation necessary for further implementation. Most peace accords outline reforms directly related to the expectations of signatories and their constituencies (Joshi, Lee, and Mac Ginty 2017). Having gained beneficial outcomes in different policy areas, all armed actors can use a given implementation outcome to demonstrate their achievements in the process to their rank-and-file members. For example, for the state actor trying to monopolize coercive capacity, it is a considerable achievement when rebel combatants regroup in specific zones for future demobilization. For such a regrouping to succeed, state and (in some instances) international actors must provide physical security for the cantonment sites and promise amnesty from future persecution to rebel combatants. Current and future physical safety are critical for the armed groups to convince their combatants to leave the cantonment site for social reintegration (Walter 2002; Fortna 2004). There are many reforms (electoral, citizenship, major economic, etc.) in the peace agreement that both sides can claim as significant achievements in different implementation stages. Yet when rank-and-file members on either side perceive implementation outcomes as unfavorable to their side, they may engage in one-sided violence to influence implementation.

At any time during the implementation process, the state, rebels, or other non-state armed actors may use one-sided violence as a strategy to influence outcomes in their favor. The state’s governing coalition may use one-sided violence to thwart outcomes perceived to benefit rebel groups and their support bases. After all, peace agreement implementation brings changes to the social, economic, and political status quo; it even gives new political forces the opportunity to seek political power (Joshi and Quinn 2017). These new political actors, with their defined support bases, may challenge hardliners in different parts of the state. The fear of losing political power and influence gives hardliners a strong incentive to use one-sided violence to sabotage implementation and marginalize new political forces. When the state uses one-sided violence, therefore, it suggests the influence of hardline political elites in limiting implementation outcomes.

The rebels involved in the peace process may have their own hardliners who see the accord’s implementation as insufficient and the state as failing to deliver outcomes mandated in the peace agreement (Stedman 1997). For rebel hardliners, one-sided violence may become a necessary means of pressuring the state to cooperate in delivering implementation outcomes promised by the accord. In sum, the state and the rebels both believe they can use one-sided violence to coerce the other side, but the use of violence reinforces mutual mistrust and suspicion. As the implementation of the accord proceeds, the state and the rebels need to cooperate with each other in delivering outcomes that will create and sustain implementation momentum. By using one-sided violence, each side questions the other’s commitment to building trust and reciprocity. The use of violence, therefore, does not create the conditions necessary for implementation success (Darby 2001; Nilsson 2008).

One illustrative case is the implementation process that followed the Lusaka Protocol, negotiated in November 1994 between the National Union for the Total Independence of Angola (UNITA) and the Angolan government. During the Lusaka Protocol’s implementation, first the rebels and then the state used one-sided violence as a strategy to influence the implementation outcome. As a result, the process of demobilizing UNITA combatants lasted much longer than it would have otherwise. It took more than two years after signing the Lusaka Protocol for 45,406 UNITA soldiers to regroup in 15 quarters (UN Security Council 1997).
While UNITA troops moved to concentration quarters, the Angolan government — the People's Movement for the Liberation of Angola (MPLA), led by José Eduardo dos Santos — did not make substantive progress in implementing parts of the accord related to amnesty and power-sharing (Joshi and Quinn 2017). In response to the government's failure, UNITA perpetrated acts of one-sided violence while demanding that the government draft a new amnesty bill and appoint UNITA leaders in transitional government. The state at first refrained from perpetrating one-sided violence during UNITA's demobilization process, but then began to commit violence in 1997 and 1998 when UNITA began openly demanding that the government deliver implementation on critical issues. In November 1997, the United Nations Observer Mission in Angola (MONUA) issued a statement suggesting the Angolan government 'renounce any idea of unleashing a military offensive against the UNITA' (Agence France Press 1997). As of March 1998, UNITA maintained that it had fully complied with the demobilization. The MPLA government suggested that UNITA had kept its core fighting units and weapons (Africa Policy Information Centre 1998). The use of one-sided violence and mutual allegations limited options for both sides to overcome the impasse and build the mutual trust necessary to bring the peace process back on track. By August of 1998, Angola had relapsed into full-scale civil war (Africa News 1998).

While the rebels involved in the peace process could use one-sided violence to secure a higher implementation rate, implementation success actually threatens the viability of rebel actors outside the process. A higher implementation rate often redresses civilian grievances and thus weakens the control of groups outside the process over their civilian support bases (Joshi and Quinn 2016). Similarly, when implementation achieves a higher success rate, the rebel group inside the process has every incentive to share intelligence with the government about the groups outside the process and overpower the government military offenses against the non-signatory rebel groups. Therefore, if the accord's implementation remains depressed, then rebel groups outside the process would find it easier to maintain their civilian support bases and manage security threats. An obvious strategy for depressing implementation is the use of one-sided violence. The Moro Islamic Liberation Front's one-sided violence in the Philippines surged after the Mindanao Final Agreement in September 1996. In India's Bodoland, the Bodo Security Forces (BSF) demanded greater autonomy and started to target Bangladeshi Muslim settlements and villages following the 1993 Bodo Accord (Reiter 2016: 119). Hundreds of civilians were killed, and many thousands were displaced. The targeted violence halted the process of establishing the Bodo Autonomous Council as the election that was scheduled for 20 November 1993 never occurred.

Like rebel groups outside the peace process, other non-state actors face an existential threat if accords are successfully implemented and, therefore, are likely to perpetrate violence during implementation in order to undermine it. Neither the state nor the rebel groups involved in the peace process are directly responsible for violence perpetrated by other non-state actors during the post-accord period. Nevertheless, such violence has the potential to weaken agreement implementation by creating mistrust and fear among signatories, much like the paramilitary and other armed group violence in the Colombian countryside (United Nations Verification Mission in Colombia 2019). In response to the violence, political leaders often decide to divert critical resources away from implementation and towards addressing security threats. Post-accord violence threatens rebel groups within the process even more pronouncedly because their combatants are in the process of demobilizing, disarming, and returning to civilian life. Instead of reintegrating peacefully into their communities, former rebel combatants fear for their own, and their families', physical safety. Violence by other non-state actors directly affects former rebel
groups’ participation in post-conflict elections as well. While the state can beef up security for rebel rank-and-file members, the perceived threat of other non-state actor violence alone can slow down cooperative activities and thus depress the accord’s implementation.

In conclusion, the state, rebel groups, and other non-state actors can all use one-sided violence in the post-accord period to influence implementation outcomes. The use of one-sided violence not only exposes security vulnerabilities but also creates mistrust and uncertainty regarding each side’s commitment to achieving sustainable peace. Therefore, I hypothesize that one-sided violence negatively influences peace accords’ implementation success.

**Research Design**

I approach the puzzle of one-sided violence and peace accord implementation by merging two different datasets from two different research programs. For data on other non-state actor violence, one-sided rebel violence, and one-sided government violence, I use the UCDP’s One-Sided Violence and Non-State Actors Violence datasets (Eck and Hultman 2016). The most recent version of this data covers a period between 1989 and 2018 (Melander, Pettersson, and Themnér 2016). For data on peace agreement implementation, I use the PAM — Implementation Data (Joshi, Quinn, and Regan 2015). The PAM project provides implementation data for 34 CPA cases negotiated between 1989 and 2012. This implementation data identifies 51 different provisions or policy reforms negotiated in the CPA and gives annualized implementation data for these provisions for up to ten years. The unit of analysis is one post-CPA year.

**Dependent and independent variables**

The dependent variable is the annualized CPA implementation rate. In calculating the dependent variable, the implementation of seven provisions related to external actors are not included, because domestic political actors have little to no influence on those provisions’ implementation. The implementation of dispute resolution mechanisms, as well as power-sharing provisions, are also not included because they are regarded as safeguard mechanisms (Joshi, Lee, and Mac Ginty 2017). As shown in Figure 1, an accord’s implementation continues for an extended period after the signing of the agreement; therefore, the signatories need to foster a cooperative relationship to channel the political will and resources needed to implement reforms negotiated in the accord beyond the first few years after the accord is signed.

The main explanatory variables are one-sided violence by the state, one-sided violence by the rebel groups, and one-sided violence by other non-state actors. These datasets are taken from the UCDP and annualized at the country level (Eck and Hultman 2007; Melander, Pettersson and Themnér 2016). For the 34 CPA cases for which annualized implementation data is available from the PAM, I matched the deaths from targeted violence in the UCDP dataset to state perpetrators, rebel perpetrators, or other non-state actors. For example, I find one-sided violence committed by the state and rebels in Nepal in November 2006 — the month that the CPA was negotiated. Following the signing of the CPA, various armed groups emerged and started to perpetrate violence that influenced the CPA’s implementation. The data records violence perpetrated by other non-state actors in 2007. Since 2008, there has been no recorded one-sided state, rebel, or other non-state actor violence in Nepal.

After the negotiation of the 1991 Paris Agreement, the Khmer Rouge, one of the accord’s signatories, continued to use violence in Cambodia until 1998, when the group was finally defeated. The state perpetrated one-sided violence in 1993, the year when the post-conflict election was held. Figure 2 summarizes the frequency of one-sided violence in post-CPA cases for each year for up to ten years after the CPA was signed. It shows the frequency of cases with one-sided violence aggregated for all actors and disaggregated for each actor: the state, the rebels, or other non-state actors.
Figure 1: Annualized average CPA implementation rate.

Figure 2: One-sided violence in the post-CPA periods.
As shown in Figure 2, in post-CPA states one-sided violence perpetrated by all actors often extends past the immediate aftermath of the accord’s signing. This figure also suggests that any armed actor may engage in one-sided violence at any time during an accord’s implementation process. As can be seen in Figure 2, at least one state has either rebel or other non-state actor violence in the tenth year of the CPA; however, the overall pattern is one of a decline over time.

**Endogeneity issue and empirical strategy**

In this article, I attempt to explain whether negative cascading effects can result from one-sided violence perpetrated by the state, rebel groups, and other non-state actors during the CPA implementation phase. I see the key variable of interest, the accord implementation rate, being influenced by various overlapping processes related to violence and the lagged effect of peace agreement implementation. To be more precise, the implementation rate is influenced by the level of one-sided violence, which is endogenous to one-sided violence by other actors and the implementation process as well. Therefore, the key methodological challenge is to account for the endogenous causal processes affecting both the dependent and independent variables. For example, the current implementation rate could be affected by targeted violence perpetrated by actors who are responding to previous one-sided violence perpetrated by other actors. The rate of peace accord implementation may motivate armed actors to commit one-sided violence. On the other hand, the reforms made possible by accord implementation may dissuade actors from committing one-sided violence, which then encourages implementation success. Further, the state’s capacity and the regime type could affect the decision to enact one-sided violence. To unpack these complex, overlapping issues, I utilize the instrumental variable approach.

A number of instrumental variables are used: one-sided violence by other actors, implementation rate, regime type measured by polity score, and GDP growth rate. These instruments are lagged by a year. A lagged dependent variable is also used as an instrument to account for the lagged effect of past implementation on present violence. The validity of the instruments in these models was tested using the Sargan-Hansen test for overidentification. The p-values for the Sargan-Hansen test suggest that the models do not suffer from overidentification problems. The polity measure of regime type and GDP per capita growth rate data comes from the polity project and the World Bank, respectively (Marshall, Gurr, and Jaggers 2015; World Bank 2015; DeRouen et al. 2010; Joshi, Lee, and Mac Ginty 2017).

To measure the effect of one-sided violence on CPA implementation rate, I estimate Ordinary Least Squares time-series regressions. The fixed effects model specification is used to control for the specific characteristics in a given implementation setting. To allow observations in a specific CPA implementation process to be correlated, the standard errors are clustered at the CPA level. I control for the three built-in safeguards that Joshi, Lee, and Mac Ginty (2017) found important for the implementation of a peace agreement: a dispute resolution mechanism, the establishment of a power-sharing government, and a verification mechanism provided in the agreement using data from PAM (Joshi, Quinn, and Regan 2015). Because peacekeeping is said to promote post-conflict stability and implementation (Fortna 2004; Maekawa, Arı, and Gizelis 2019), the analysis also controls for a peacekeeping provision from PAM data. According to PAM data, there are ten CPA processes where parties returned to at least a minor conflict, but the implementation process continued for most of the cases, except for the 1994 Lusaka Protocol in Angola and the 1996 Abidjan Peace Agreement in Sierra Leone — in both of these cases, the accord was renounced. In other instances, signatories did not renounce the accord. Therefore, I control for post-accord direct violence or battle deaths in the post-accord period with data from the UCDP (Melander, Pettersson, and Themnér
These variables are lagged by a year. Descriptive statistics for the data used in the analysis are presented in Table 1.

Findings and Analysis
The models presented in Table 2 are based on instrumental variable models. In Model 1, the main independent variable is one-sided violence by all actors — a variable generated by combining violence from all actors and instrumented by using the lagged implementation rate, regime type, and GDP growth rate as the instruments. Models 2, 3, and 4 disaggregate the one-sided violence by the state, the rebel groups, and the other non-state actors. Variables disaggregating actor-specific violence are then instrumented using the lagged implementation rate, regime type, and GDP growth rate as the instruments. In the analysis presented in Table 2, the lagged value of one-sided violence enacted by other actors was used as an instrument because violence committed in a prior year by other actors in the same conflict system has the largest impact on perpetrators’ decisions to enact violence, affecting the accord’s implementation. The lagged CPA implementation is used in the models presented in Table 2 as one of the instruments because an accord’s implementation is directly affected by grievances related to conflict onset and because implementation can also boost the efficiency and capacity of the state to curb the use of one-sided violence. Further, the best predictor of implementation in a given year is implementation in the previous year. Table 2 presents four different models focusing on different actors who perpetrate one-sided violence against civilians. As shown in Table 2, findings are in the expected

Table 1: Descriptive statistics.

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<tr>
<th>Variable</th>
<th>Obs.</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
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<td>22.14</td>
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<td>CPA Implementation Rate t–1</td>
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<td>62.60</td>
<td>21.96</td>
<td>2.22</td>
<td>100</td>
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<td>74.73</td>
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<td>3426</td>
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<tr>
<td>All Actor One-Sided violence t–1</td>
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<td>77.91</td>
<td>298.24</td>
<td>0</td>
<td>3426</td>
</tr>
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<td>One-Sided Violence State</td>
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<td>20.96</td>
<td>203.01</td>
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</tr>
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<td>980</td>
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<td>87.05</td>
<td>0</td>
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<td>Post-Accord Direct Violence t–1</td>
<td>288</td>
<td>162.25</td>
<td>436.68</td>
<td>0</td>
<td>3974</td>
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<tr>
<td>Polity2 t–1</td>
<td>296</td>
<td>3.30</td>
<td>4.99</td>
<td>–7</td>
<td>10</td>
</tr>
<tr>
<td>GDP Growth Rate t–1</td>
<td>274</td>
<td>4.95</td>
<td>9.20</td>
<td>–50.25</td>
<td>88.96</td>
</tr>
<tr>
<td>Dispute Resolution Mechanism (0–3) t–1</td>
<td>288</td>
<td>1.36</td>
<td>1.39</td>
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<td>3</td>
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<tr>
<td>Power-sharing Government (0–3) t–1</td>
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<td>1.08</td>
<td>1.30</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Verification Mechanism (0–3) t–1</td>
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<td>1.99</td>
<td>1.30</td>
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<td>3</td>
</tr>
<tr>
<td>Donor Support (0–3) t–1</td>
<td>288</td>
<td>1.26</td>
<td>1.33</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>United Nations Peacekeeping (0–3) t–1</td>
<td>288</td>
<td>0.95</td>
<td>1.37</td>
<td>0</td>
<td>3</td>
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</tbody>
</table>
direction and therefore lend support to the argument that one-sided violence, in general, reduces a peace accord's implementation success. As the coefficient suggests, an increase in one-sided violence lowers the accord's implementation.

While one-sided violence, in general, lowers the implementation success rate, results reported in Models 2, 3, and 4 help to explain the armed-actor-specific effect. In each of Models 2, 3, and 4 — which report results related to one-sided violence perpetrated by

| Table 2: Effect of one-sided violence on CPA implementation. |
|---------------------------------|----------|----------|----------|----------|
|                                | (1)      | (2)      | (3)      | (4)      |
|                                | All actors | Other non-state | Rebel | State | State |
| One-Sided Violence             | −0.106*  | −0.334*  | −0.376*  | −0.158*  |
|                                | (0.038)  | (0.169)  | (0.180)  | (0.078)  |
| Post-Accord Direct Violence t−1 | 0.005    | 0.016    | 0.031*   | −0.011   |
|                                | (0.007)  | (0.010)  | (0.013)  | (0.012)  |
| Dispute Resolution Mechanism (0–3) t−1 | 8.343   | 7.200    | 9.386    | 8.260    |
|                                | (6.743)  | (9.305)  | (5.998)  | (8.651)  |
| Power-sharing Government (0–3) t−1 | 0.215    | −10.082  | −0.637   | 5.309    |
|                                | (4.186)  | (7.680)  | (3.706)  | (5.994)  |
| Verification Mechanism (0–3) t−1 | 12.514*  | 22.771*  | 17.868*  | 5.251    |
| Donor Support (0–3) t−1        | 10.406*  | 10.642*  | 5.815*   | 11.348*  |
|                                | (3.368)  | (4.684)  | (3.126)  | (4.477)  |
| United Nations Peacekeeping (0–3) t−1 | 3.483   | 11.279   | 17.977*  | −5.748   |
|                                | (7.663)  | (11.050) | (9.254)  | (11.107) |
| Constant                       | 19.498   | 3.689    | −2.757   | 34.583   |
| Observations                   | 256      | 256      | 256      | 256      |
| Number of Panels               | 33       | 33       | 33       | 33       |
| Wald chi2                      | 1542.29  | 810.18   | 1970.13  | 936.07   |
| Prob>chi2                      | 0.000    | 0.000    | 0.000    | 0.000    |
| Overall R²                     | 0.254    | 0.117    | 0.219    | 0.142    |
| VIF                            | 2.08     | 2.06     | 2.18     | 2.06     |
| Sargan-Hansen statistic (p-value) | 0.691  | 0.953   | 0.131    | 0.878    |

Two tail tests, * p < .05. One-sided violence is an instrumented variable. Standard errors are in parentheses.
other non-state actors, rebels, and the state, respectively — the estimated coefficient for one-sided violence is negative and statistically significant (p < 0.05). These findings again suggest that one-sided violence by any armed actor lowers the accord’s implementation rate. All violence negatively impacts implementation success, but the magnitude of the impact depends on who perpetrates the violence.

As Figure 2 shows, rebel one-sided violence is more persistent than state one-sided violence. The coefficient related to rebel one-sided violence is negative and significant in Table 2 (Model 3). The coefficient size is larger than that of other non-state and state actors. This finding needs to be elaborated on and explained in terms of provisions negotiated in the accord and actors responsible for implementing the specific provisions. My evaluation of the text of 34 CPAs suggests that rebels are usually responsible for respecting a ceasefire, releasing prisoners held during armed conflict, participating in the truth and reparation processes, demobilizing their combatants, and laying down their weapons. Other provisions, covering a range of issues related to a rebel group’s transformation into a political party and broader political, social, and economic reforms, fall under the state’s mandate. Therefore, rebel one-sided violence has a larger negative effect on implementation because when rebel groups use violence, it strongly signals their lack of commitment to peace, which forestalls the mutual cooperation necessary to implementation.

Figure 3 displays marginal effects of one-sided violence in the context of a CPA’s implementation process. As can be seen in the figure, one-sided violence in general negatively influences CPA implementation success. As any actor-perpetrated violence increases from no violence to 100 deaths, the CPA implementation rate declines by almost 10 per cent (Figure 3a). If the number of deaths from other non-state actor violence reaches 100, an accord’s implementation rate

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**Figure 3**: Marginal effects with 95% confidence interval.
will be 33 per cent lower (Figure 3b). For the same number of deaths from rebel one-sided violence, the implementation rate declines by 37 per cent (Figure 3c). If the number of deaths from state one-sided violence reaches 100, the implementation rate declines by 16 per cent (Figure 3d). These results indicate the importance of managing one-sided violence during any accord’s implementation process, because of the threat such violence poses to the mutual trust and cooperation that are necessary for implementation.

Among the other variables used as controls in the analysis and presented in Table 2, I find that donor support positively influences accord implementation. This finding holds across all models and is statistically significant (p < 0.05). It is consistent with earlier findings on peace agreement safeguards (Joshi, Lee, and Mac Ginty 2017). Consistent with Joshi, Lee, and Mac Ginty (2017), I find that the establishment of a verification mechanism positively influences the overall success of implementation, except for instances when government one-sided violence exists. This finding is intuitive but reflects the reality that a government that intends to utilize one-sided violence is not likely to negotiate a verification mechanism into the accord. However, I did not find the establishment of a dispute resolution mechanism or a power-sharing government to have a statistically significant influence on an accord’s overall implementation. These safeguard mechanisms are rendered ineffective when one-sided violence is present.

Models presented in Table 2 also include controls for the deployment of peacekeeping forces, which is significant only in Model 3. While I expected deploying peacekeepers to influence accord implementation positively, I did not expect this influence to be limited only to situations where rebel violence was present. I explore this unexpected finding by focusing on the purpose of deploying peacekeepers in the context of a CPA implementation process. Signatories in a civil war peace agreement negotiate to deploy peacekeepers when they expect difficulties related to ceasefire maintenance, the Disarmament, Demobilization and Reintegration (DDR) process, and the transition to peace. Further, peacekeeping is negotiated as part of the CPA and peacekeeping troops are deployed when there is a threat of violence against civilians. It appears that UN peacekeepers contribute to peace in cases where the risk of rebel one-sided violence remains high.

In the same model, battle deaths in the post-accord-period have positive and significant impact on the implementation rate. CPA processes that faced direct violence in the post-CPA period, in general, tend to implement peace at a higher rate. This finding seems counterintuitive. A closer examination of ten cases where signatories returned to at least a minor war reveals that either fighting did not stop immediately after the CPA or the signatories returned to a brief period of direct military confrontation within the first couple of years. Of those ten cases, 70 per cent achieved a higher implementation rate. It is possible that such a brief return to armed conflict contributed to sustained implementation efforts. For example, in Tajikistan, some factions within the United Tajik Opposition (UTO) did not stop their military offenses. This forced the UTO and the government to speed up the formation of the Commission on National Reconciliation (CNR) and its work related to implementing other provisions in the accords. However, the overall marginal effect of such violence is less than three per cent when the number of deaths increases to 100.

Overall, the findings reported in Table 2 lend support to the theoretical argument that one-sided violence damages mutual trust and reciprocity among peace accord signatories and consequently depresses the accord’s implementation success. These findings are robust and are not affected by a multicollinearity problem. To rule out the issue of multicollinearity, I performed a variation inflation factor (VIF) test. The VIF scores for all models are presented in Table 1. The mean VIF score is below 2.18, ruling out multicollinearity issues.
Conclusion

Peace processes face significant challenges at every phase, from initiating a negotiation to implementing the negotiated peace agreement. Agreements can lead to quality peace in which all parties can retain their dignity and gradually return to normalcy with the rule of law (Wallensteen 2015). This happens when the implementation succeeds because the peace agreement has mandated social, political, and economic reforms that redistribute state power and resources to benefit those who have been excluded and neglected by mainstream policy priorities. Therefore, peace accord implementation faces powerful resistance from those who benefit from maintaining the status quo policy priorities and outcomes. Because reforms only become possible when implementation succeeds, forces that benefit from the status quo often use one-sided violence, an extreme human rights violation, in an attempt to sabotage implementation. This article examines one-sided violence in the post-accord context and shows that it lowers the accord’s implementation rate.

This study’s findings are relevant to policymakers who want to understand the dynamic processes of peace agreement implementation, which often face resistance in the form of one-sided violence. According to empirical findings, donor support is important to achieving a higher implementation rate when one-sided violence occurs. Regardless of the prevalence of one-sided violence, continuous external financial and technical support from international entities helps to sustain the implementation process. Such support activities are critical to facilitate various peacebuilding programs that otherwise would not be funded because of domestic political resistance to implementation. Further, because these programs are designed to meet funding agencies’ participatory requirements, they include local actors and tend to be rigorously monitored. Findings related to a third-party verification mechanism suggest the importance of robust verification during the peace implementation process. A verification mechanism is composed of domestic and international actors who provide unbiased assessments of issues related to one-sided violence and create a neutral space, which otherwise would not exist, for relevant actors to process important information. Another policy implication of this study, therefore, is that to increase implementation success, peace agreements should include a robust verification mechanism to process and present information without bias. Future research should focus on the effectiveness of such strategies in fostering mutual trust and sustaining cooperation among key implementing actors in an inhospitable implementation environment. Another area for future research would be a two-stage model of this study: with the first-stage modeling the effect of one-sided violence on the rate of implementation, and with the second-stage model examining whether the one-sided violence’s effect on peace duration is direct or through its effect on the CPA implementation rate.

To address the consequences of one-sided violence on peace agreement implementation, policy options and strategies should be discussed before initiating the implementation process. As directly follows from the empirical analysis, designing a peace agreement with provisions for donor support and verification mechanisms would be useful in supporting the implementation process amid one-sided violence. Where the risk of one-sided rebel violence is high, a peace agreement with a peacekeeping provision would be more effective, as prior studies suggest peacekeeping to effectively reduce violence against civilians (see Hultman, Kathman, and Shannon 2013). Among other policy options, an early warning system could be designed and implemented to identify the potential threat of one-sided violence. Such a warning system could also be part of the verification mechanism that is supportive of implementation success. Another policy strategy would be to include civilian protection mechanisms in the peace agreement itself. One such mechanism could be community policing...
with a focus on inclusivity and a bottom-up security approach. A policy of engaging relevant actors at different levels is also desirable as it provides space to voice concerns related to implementation. As multi-layer processes, implementation settings can efficiently offer multiple options for formal and informal engagement for both actors affected by implementation and actors responsible for implementation.

Notes

1. According to PAM data, signatories returned to armed conflict in 29 per cent of cases, but the implementation stopped only in two cases: the 1996 agreement in Sierra Leone and the 1994 agreement in Angola. In both instances, parties renounced the accord they signed. In other instances, both the government and the rebels were able to keep implementing the accord by addressing the mutual mistrust (see Joshi, Quinn, and Regan 2015).

2. Twenty-six out of 34 CPAs included provisions for electoral and political party reform and 25 CPAs provided for a post-conflict election that was intended to bring the armed rebel groups into a democratic process.

3. The seven excluded provisions are the deployment of regional peacekeeping forces, the deployment of UN peacekeeping forces, the establishment of the UN transitional authority, donor support, a commission to address damage and loss, a verification committee, and international arbitration.

4. These two provisions are used in the empirical models presented in Table 2.

5. In the final dataset, there are instances of one-sided violence by rebel groups other than the one that negotiated the agreement. Because this article’s purpose is to examine whether any one-sided or targeted violence influences peace accords’ implementation, these forms of violence are included under the category of unilateral rebel violence as such violence took place in the same conflict.

6. Sargan-Hansen statistics (p-values) are presented in Table 2.

7. I used the binary measure of executed constraints coded ‘1’ from Polity IV data if the XTCONST variable is ‘5’ or above (Marshall, Gurr, and Jaggers 2015), because restrictions on the executive suggest a limitation of the government’s executive decision making that could influence one-sided violence and thus an accord’s implementation. Further, following the peace accord implementation literature (see DeRouen et al. 2010 and Joshi, Lee, and Mac Ginty 2017), the infant mortality rate is used as an instrument of state capacity that could influence one-sided violence and accord implementation.

8. In these two cases, both sides renounced the accord and returned to armed conflicts.

Competing Interests

The author has no competing interests to declare.

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