Information, Agreement Design, and the Durability of Civil War Settlements

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Civil war is usually examined from the perspective of commitment problems. This approach provides considerable insight regarding which civil war agreement provisions reduce the chance of renewed fighting. Yet, additional insight can be gained by examining information asymmetries as a potential cause of civil war recurrence. We argue that significant uncertainty regarding military capabilities may persist after fighting ends and that this uncertainty may lead to the breakdown of peace. However, carefully designed peace agreements can guard against renewed civil war by calling for international monitoring, making the belligerents submit military information to third parties, and providing for verification of this information. Our empirical analysis of 51 civil war settlements between 1945 and 2005 shows that these provisions significantly reduce the risk of new civil war. Encouraging the adoption of these provisions may be a useful policy in the international community's effort to establish peace in civil-war-torn societies.

W hy are some civil war settlements long-lasting, while others are not? Why, for example, has the settlement in 1992 ending the civil war in El Salvador endured, while the settlement ending the Liberian civil war in 1993 collapsed? We believe the answer lies, in part, in the design of peace agreements that terminate the wars. In this article, we argue that peace settlements that contain provisions to reveal information regarding the belligerents' military capabilities increase the likelihood that peace will endure.

Most scholars using the rationalist approach to the study of civil wars suggest that commitment problems lie at the heart of the (re)occurrence of civil wars (e.g., Fearon 1998; Hartzell and Hoddie 2003, 2007; Walter 1997, 2002). Nevertheless, rationalist explanations of war also suggest an alternative mechanism that may provide leverage in understanding civil war recurrence. In addition to commitment problems, the bargaining theory of war points to information asymmetries between the parties as a central explanation for war (Fearon 1995). While the informational story has received significant attention

in the study of interstate war, it has not been applied as readily to the study of civil war.

We argue that not only commitment problems but also information asymmetries may play an important role in the breakdown of peace and that it is important that the belligerents include in their peace agreements provisions that help reduce uncertainty between them. We identify a number of provisions that allow former belligerents to credibly reveal information on their relative capabilities. Our empirical findings suggest that provisions such as requiring belligerents to report their military information to third parties and stipulating that third parties verify the accuracy of such information through the introduction of verification sites or based on their own intelligence gathering significantly reduce the risk of renewed civil war.

This article makes several important contributions to the civil war termination literature. It explores the utility of one of the fundamental mechanisms of the bargaining theory of war, i.e., information asymmetries, in understanding the determinants of the durability of peace after

civil wars. The application of information asymmetries enriches our theoretical understanding of why civil wars recur and provides additional leverage in our assessment of the effects of institutional design on the durability of peace. If information asymmetries are indeed partly responsible for the recurrence of civil wars, one mechanism that the disputants can adopt to increase the durability of peace is to craft settlements that increase the availability of reliable information in the post–civil war environment. Encouraging the adoption of such uncertainty-reducing provisions in civil war settlements may be a useful policy in the international community's effort to establish peace in civil-war-torn societies.

The article proceeds as follows. In the next section, we discuss the bargaining model of war and the insights it has provided regarding civil war recurrence. Our main focus is on commitment problems which have received significant scholarly attention. We also introduce the information explanation of war which has received much less attention by civil war scholars. The third section details why the information story has been less prominent among civil war scholars and argues that information asymmetries should be taken more seriously as an explanation for civil war recurrence. The fourth section suggests that agreements can be designed in a way to reduce uncertainty in the aftermath of civil war, thus reducing the chance of its recurrence. The fifth section outlines our research design and the sixth section presents the results of our empirical tests. We conclude with a brief review of the argument, empirical findings, and policy implications.

The Bargaining Model of War: Commitment Problems *and* Information Asymmetries

The basic premise of the bargaining model of war is that because fighting is costly, and thus ex post inefficient, there are always peaceful settlements that give actors a higher utility than war (e.g., Fearon 1995; Powell 2002; Reiter 2003). Specifically, the parties should be able to agree on an ex ante deal that reflects exactly what they would receive at the end of the war but without actually having to pay the costs of fighting. However, wars—both interstate and civil—are common. This raises the question of why opponents are sometimes unable to arrive at a peaceful deal and stick to it. Bargaining theorists have provided two main explanations for bargaining failure: commitment problems and information asymmetries.[1]

Commitment problems have been found to be particularly important for explaining the (re)occurrence of civil wars. According to scholars such as Fearon (1998), Walter (1997, 2002), and Hartzell and Hoddie (2003, 2007), the basic issue that confronts domestic antagonists is that the government cannot credibly commit itself to stick to the peace deal. Reaching a settlement in a civil war and establishing peace imply that the rebels have to disarm. However, once the rebels disarm, the balance of power shifts in favor of the government and the government may feel tempted to exploit the situation. Because the rebels know about the government's incentive to renege on the deal, they are less likely to be willing to sign and maintain a peace agreement.[2]

Scholars have identified two mechanisms that address the rebels' security concerns: securing guarantees from third parties and adopting institutional safeguards to share or divide power between the domestic groups. The purpose of third-party guarantees is to ensure the rebel group that, even when it has given up its weapons and demobilized, the terms of the agreement will be fulfilled (Walter 1997, 2002). By providing a guarantee of the peace deal, the third party makes a promise that it will intervene should the government behave opportunistically and renege on its past promises. Under these conditions, the rebel group is less reluctant to lay down its arms and conclude the agreement to end fighting.

A second way domestic opponents can address commitment problems is by establishing institutions that reduce the government's ability to take advantage of the rebel group once it has demobilized (Hartzell 1999; Hartzell and Hoddie 2003, 2007). Such institutional guarantees, commonly known as power-sharing institutions, ensure that no group comes to dominate the political arena, has exclusive control over the military or territory, or receives a disproportionate share of economic resources. These provisions are intended to give rebels a sense of security that they will not become victims of opportunism by the government. To the extent that all groups feel safe under the new institutional rules, they are able to arrive at a settlement and stop the bloodshed.

Commitment problems provide a compelling explanation for civil war (re)occurrence, and the empirical evidence supporting this argument is robust: both

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[1]Fearon (1995) discusses issue indivisibility as a third explanation for bargaining failure but argues that issue indivisibility is not as

compelling an explanation because most issues are divisible but made indivisible by leaders for strategic and domestic purposes. Although we do not focus on issue indivisibility, we distinguish civil wars that are over intangible, hence potentially indivisible issues, such as ethnic wars, from those that are over more tangible issues.

[2]Rebels may also confront commitment problems. See Svensson (2007) for an interesting discussion of commitment problems faced by the rebel groups.

third-party guarantees and power-sharing institutions have been shown to play an important role in preventing the breakdown of peace (Hartzell 1999; Hartzell and Hoddie 2003, 2007; Walter 1997, 2002). However, the rationalist explanations of war suggest an alternative mechanism that may further improve our understanding of civil wars.

According to the information explanation, war may occur if the antagonists have asymmetric information regarding their military capabilities and/or resolve. If the antagonists do not know one another's relative strength and determination, they have difficulty correctly estimating each other's reservation points (i.e., the point that makes a party indifferent between accepting and rejecting a peaceful bargain). Under these conditions it becomes difficult to locate a peaceful deal both prefer to fighting.

Unfortunately, the parties also find it difficult to credibly exchange information and avoid war. While the parties prefer not to fight, they also want as good a deal as possible. The desire to obtain a favorable deal creates an incentive to overstate one's military capabilities and resolve in order to convince the other side to give in (Fearon 1995). Due to incentives to misrepresent, declarations concerning military capability and determination are generally not credible. Given the combination of inherent uncertainty about the other side's capabilities and/or resolve and the incentive to misrepresent, information asymmetries are a powerful explanation of war.

In fact, explaining the causes of war from an information perspective has found strong resonance in the interstate war literature. Most rationalist treatments of interstate war use information asymmetries as a theoretical hook to explain the onset, duration, and termination of wars (e.g., Fearon 1995; Morrow 1989; Powell 1999; Slantchev 2003; Wagner 2000). Civil war scholars, on the other hand, have been skeptical about the applicability of the informational story to civil wars, in particular civil war termination. The next section discusses the reasons behind this skepticism. At the same time, we make an argument for why information asymmetries may be a factor in civil war recurrence after all.

Why and When Information Matters

Some research suggests that information asymmetries may play a role in early phases of a civil war (e.g., Cetinyan 2002; Rauchhaus 2006; Walter 2006). Early in the conflict, despite the fact that belligerents live in the same country and often in close proximity to one another, the government and rebels may lack important pieces of informa-

tion about each other. The government might not have a good idea about the rebels' fighting capabilities because it lacks information on the cohesiveness of the rebel organization, whether they are likely to find allies in other domestic groups, and whether they are likely to receive support from diasporas or other external sources.[3] The government may also be unsure about the extent to which the rebel group is willing to use violence and suffer the costs of fighting. Conversely, the rebels may be uncertain about the government's actual military capabilities, the resources the government is able to mobilize in a civil war, and the tactics it will likely employ. Moreover, the rebels are also likely to be uncertain regarding the government's resolve to fight and its willingness to make concessions.[4] This uncertainty might make finding an ex ante deal impossible and civil war may ensue. As Lake and Rothchild put it: "Groups always possess private information and . . . often possess incentives to misrepresent that information. Information failures are thus ubiquitous in ethnic relations" (1998, 12).

At the same time, it is less clear that information asymmetries are also what prevent the settlement of civil war. Fearon (2004) has been doubtful about the applicability of the informational story to civil war duration and termination. He points out that "it strains credulity to imagine that the parties to a war that has been going for many years . . . can hold significant private information about capabilities and resolve. Rather, after a few years of war, fighters on both sides of an insurgency typically develop accurate understandings of the other side's capabilities, tactics, and resolve" (2004, 290).

Fearon's argument assumes that the fighting that goes on during war quickly reveals information about the parties' resolve and military capabilities. This is an assumption frequently made in the interstate war literature (e.g., Filson and Werner 2002; Slantchev 2003; Wagner 2000). While fighting in civil wars should certainly disclose information, it would appear that the kind of tactics used in civil wars are less conducive to information revelation, especially regarding relative capabilities, than the tactics used in interstate wars. In interstate wars, the belligerents

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[3]For example, Russia grossly underestimated the amount of resistance the Chechens showed during the First Chechen War (1994–96). Chechen war efforts were funded by a variety of sources, such as the Chechen diaspora, organized crime activity, and the Islamic community abroad (Andrienko and Shelley 2005, 94).

[4]Walter argues that one of the central factors contributing to "the outbreak of violence is a government's private information about its willingness to negotiate with separatists, and the incentives a government has to misrepresent this information when numerous potential challengers exist" (2006, 106). In such situations, the government has an incentive to overstate its determination to use force in order to deter future challenges.

tend to confront each other full-on in a contest, while many civil wars are fought as insurgencies that are "characterized by small, lightly armed bands practicing guerrilla warfare from rural base areas" (Fearon and Laitin 2003, 79). Because guerilla fighters often hide among civilians, it can be difficult to identify who the rebels actually are and obtain an accurate assessment of their numbers.[5] The tactic of attacking particular targets, without seeking a full confrontation, and then withdrawing until the next attack also makes it difficult to gauge the relative strength of rebels and government. In fact, it is possible that the difficulty of accurately assessing relative strength is one of the reasons civil wars tend to last so long.

There is some anecdotal evidence that suggests that informational problems may still be a concern at later stages in the conflict. For example, in the aftermath of the 1991 Bicesse Agreement, after 16 years of almost continuous fighting, "rumours circulated the UNITA was maintaining its own 'hidden army' of some twenty thousand men" (Ali, Matthews, and Spears 2004, 299). If information about the size of UNITA's forces was available, no such rumors should have been viable.

Furthermore, the work of Regan and Aydin (2006) provides support for the argument that information asymmetries are an obstacle to settling civil wars. Regan and Aydin argue that both sides in a civil war, especially the rebels, possess private information and also have an incentive to misrepresent capabilities and resolve when trying to negotiate an end to fighting. Given concerns that the government will renege on the deal, the rebels are reluctant to reveal information about themselves that can then be used against them later. Essentially, Regan and Aydin claim that the commitment problem present in civil wars leads to an unwillingness to reveal accurate information, which further complicates the conclusion of peace agreements. At the same time, one can argue that the rebels' reluctance to reveal accurate information about capabilities and resolve makes it more likely that the government underestimates the rebels' willingness and ability to go back to war should the government behave opportunistically. In other words, uncertainty also increases the commitment problem because the government might be more likely to renege on the agreement than it would be with more accurate information. Regan and Aydin propose mediation as a solution to this problem: one of the main functions of third-party intermediaries is to help the belligerents disclose information on relative capabilities and resolve. Regan and Aydin's

empirical results show that diplomatic interventions that primarily focus on information exchange indeed shorten the duration of civil war. These results can thus be taken as an indication that information asymmetries persist even after years of fighting—and that it sometimes takes a third party to resolve the informational problem.

Walter's (1999) work also suggests that information asymmetries may still play a role in later stages of civil war. Like Regan and Aydin, she argues that belligerents possess private information on their military capabilities and have incentives to withhold this information during the peace negotiation process. They want to appear powerful and resolved in order to get a better deal. Furthermore, they do not want to reveal information regarding troop size and location of bases to avoid being in a worse position later. Due to information asymmetries and incentives to misrepresent, negotiations to reach an agreement may not succeed. However, according to Walter, information asymmetries cannot explain why, once an agreement is reached, it might fail. The very fact that an agreement was reached and civil war terminated implies that the belligerents' beliefs about the respective costs of fighting and resolve have converged.

Walter's argument is fully in line with the literature on the bargaining model of war and makes sense intuitively: if uncertainty is the cause of civil war, then once uncertainty is removed, the war ends. In order to reach an agreement, the two sides had to agree on their relative capabilities and resolve. However, we should not be too quick to dismiss the possibility that uncertainty persists even if a negotiated agreement is reached. In the aftermath of civil war, there may indeed be less uncertainty about resolve— the parties have already demonstrated that they are willing to pay significant costs to achieve their goals. However, uncertainty about relative capabilities may persist despite the conclusion of an agreement, and this uncertainty may lead to the recurrence of civil war.

Note that it is theoretically possible that the two sides reach an agreement despite the presence of incomplete information regarding relative capabilities. While bargaining failure certainly becomes *possible* with incomplete information, there is always a chance that the two sides are able to correctly guess (or possibly overestimate) the enemy's capabilities despite persistent uncertainty (Fearon 1995; Werner and Yuen 2005). This implies that the conclusion of an agreement does not necessarily mean that all uncertainty regarding military capabilities has been removed.

In fact, there should be a relationship between how a civil war ends and how much information is revealed. By definition, victory by one side leaves little doubt as to which actor has superior military capabilities (Blainey

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[5]Fearon and Laitin point out that distinguishing between rebels and noncombatants "is an extremely difficult political, military, and organizational problem even for well-equipped and well-paid modern militaries" (2003, 80).

1988). On the other hand, if the war ends in a stalemate or compromise, this means that not all information has been revealed. The belligerents did not fight until the end and they might still be somewhat unsure about who would have ultimately prevailed. Given remaining uncertainty, it should be more likely that war breaks out again after a stalemate or compromise than after military victory. Research on interstate war suggests that this is indeed the case (e.g., Fortna 2004a; Maoz 1984). There is also some evidence of this being the case for civil wars. Both Licklider (1995) and Fortna (2004b, 2008) find that civil war recurrence is more likely if the previous war did not end in military victory.[6] In this article, we exclude cases of civil wars that ended in military victory and focus only on civil wars that ended in a negotiated settlement or truce.[7] We expect information asymmetries to be particularly relevant in these cases.

We also expect the availability of information after the war to be related to the progression of the war. Smith and Stam (2003) and Filson and Werner (2002) argue that certain trends in battle outcomes should be associated with uncertainty. The more consistent the battle pattern, the more information about the two sides' relative capabilities is revealed. If A consistently wins each battle, both sides' expectations are more likely to converge on the notion that A will continue to win battles and ultimately win the war. On the other hand, if the battle pattern is inconsistent, with victories alternating between the two sides, it is less clear which side will ultimately prevail. Under these conditions, even if the belligerents are able to agree on a settlement, this settlement is more likely to break down because either or both sides may be optimistic about their prospects in a new war. While to our knowledge nobody has developed a measure of battle pattern consistency in a civil war context, findings by Werner and Yuen (2005) and Lo, Hashimoto, and Reiter (2008) demonstrate that interstate wars that were characterized by a consistent battle pattern are less likely to recur. Civil wars ending in

military victory should be more likely to be the result of a consistent battle pattern than wars ending in a negotiated settlement. Therefore, we have reason to expect that negotiated settlements may signal more inconsistent battle patterns and hence may result in more uncertainty after the war.

All of this suggests that uncertainty frequently persists despite the conclusion of a negotiated settlement. Moreover, even if the end of the civil war corresponds to a convergence of the two sides' beliefs regarding military capabilities and resolve, changes will occur in the post–civil war environment that introduce new uncertainty into the relationship between the belligerents. Postwar changes may affect both military capabilities and resolve. Relative capabilities may shift due to external shocks, such as new outside supporters, the formation of new groups domestically, new alliances between groups, or maybe even due to the civil war agreement itself. Resolve may also change if new leaders come to power within each group. Changes such as these tend to be accompanied by new uncertainty. Even if both sides know that a change has taken place, it might be hard to accurately assess the effect of this change on the other side's capabilities and resolve. Furthermore, in a post–civil war environment, domestic groups' incentives to misrepresent the effect of these changes may be particularly severe (Lake and Rothchild 1998). Normally, government and parliament provide arenas within which information between groups is exchanged and where deals are brokered. However, in states in which the government is weakened and society highly divided, as is the case after civil war, groups will be less willing to share information. Under these conditions, the existing agreement may break down.

Note that settlements reached after military victory should be relatively robust against such postwar changes. If one side defeats the other decisively, there is little remaining uncertainty about relative capabilities and resolve and the settlement is designed to reflect the information revealed by the war outcome (Werner and Yuen 2005). Under these conditions, postwar changes would have to be very significant in order to introduce enough of an incentive and sufficient uncertainty to upset the existing equilibrium. On the other hand, if the war did not end in a decisive victory and there is already a significant degree of uncertainty present, then it is more likely that changes in the postwar environment (even minor changes) lead to a breakdown of peace. As Werner and Yuen put it, "settlements negotiated when considerable uncertainty regarding the consequences of continued fighting remains are more likely to become obsolete than settlements negotiated when the consequences of continuing to fight are more evident" (2005, 267).

[6]Walter (2004) and Doyle and Sambanis (2000) do not find the mode of termination of the previous civil war to be a significant predictor of civil war recurrence.

[7]Note that military victory and negotiated settlements are not necessarily mutually exclusive. The former is a military outcome and the latter is a settlement type, and it frequently happens that even after military victory, a negotiated settlement is concluded (Quackenbusch and Venteicher 2008). Here we only consider negotiated settlements and truces that were reached without a military victory and thus should be associated with significant remaining uncertainty. The number of civil wars concluded by negotiated settlement rather than military victory has increased dramatically over time and constitutes about three-fourths of all civil war terminations in the 1990s (Hartzell 2006). The percentage of negotiated settlements seems to have further increased in the twenty-first century (Mason et al. 2007).

Given that uncertainty may persist despite the conclusion of a civil war agreement and will be further exacerbated by changes that take place after the agreement is concluded, informational problems may play a role in the breakdown of peace. If information asymmetries are indeed a concern, then we should also find that agreements that include provisions that are designed to reduce uncertainty should be particularly successful at guarding against the breakdown of peace. In the next section we will elaborate which kinds of provisions work toward this purpose.

Uncertainty-Reducing Provisions

Both commitment problems and information asymmetries may lead to the breakdown of peace. This implies that in order to ensure a longer-lasting peace, civil war agreements have to address both issues. The mechanisms used to address commitment problems—third-party guarantees and power-sharing institutions—are well understood, while provisions designed to address information asymmetries have not been explored fully. It is for that reason that, in this article, we focus on the latter.

According to the bargaining approach, it is uncertainty about relative capabilities and/or resolve that might lead to bargaining failure. We have argued above that the type of uncertainty most likely to persist after civil war is uncertainty regarding military capabilities. Therefore, we expect settlement provisions that increase the availability of information regarding military capabilities to help increase the durability of peace. In order to be successful, these provisions need to overcome the "incentive to misrepresent" problem and provide reliable information to both sides. The following provisions should have this effect: third-party monitoring, belligerents' submission of their military information to third parties, and the verification of such information by the third parties or possibly the belligerents themselves.

By monitoring whether the disputants comply with the settlement, third parties can reduce uncertainty about the military capabilities and intentions of the parties and hence decrease the chance that war recurs. Generating and providing information by patrolling certain areas and being in contact with the belligerents' leadership is the very task of international monitors (Lindley 2007). Their activities may be supported by requiring the belligerents to report additional military information regarding overall troop strength, weapon holdings, and locations of camps. Aware of their opponent's incentives to misrepresent, the adversaries may be suspicious of the

other side's announcements regarding troop strength and weapon holdings. They might believe each other, but uncertainty is more likely to be reduced if the belligerents can find a more credible way to convey relevant information. We believe that submitting information to third parties should enhance its credibility in that belligerents should be less prone to misrepresent the truth, given the reputation costs associated with misleading the third party and potential consequences for the belligerents' credibility in the future.

Another mechanism that addresses concerns about misrepresentation of information is to allow third parties or the opponent to verify the military information provided. Third parties sometimes are able to use their own intelligence estimates to assess the accuracy of the information provided by the parties.[8] They may also establish verification sites where soldiers are counted and an inventory of weapons is taken. In some circumstances it can also be a joint commission of the belligerents themselves that creates verification sites. Such verification procedures work as a safeguard against the possibility of intentional or unintentional misreporting and hence increase the reliability of the information.

One might argue that because these provisions involve the help of third parties, they deal with commitment rather than information problems. In fact, monitoring has been coded as a form of third-party guarantee (e.g., Walter 2002). However, we believe that monitoring and the other provisions specified above are better viewed as addressing information concerns. The essence of commitment problems is that a group worries about being attacked or taken advantage of by the other. These fears can only be allayed if a third party promises to intervene to protect the group. Because monitors do not have such a mandate and are often unarmed, their deployment should not help with commitment problems. However, they do provide information about the enemy and thus help with asymmetric information. The same is true of providing information to third parties and verification of this information. These are measures that deal with uncertainty regarding military capabilities and not security guarantees. It is important to keep in mind that commitment problems are distinct from information problems (Powell 2006) but are often accompanied by and difficult to distinguish from uncertainty (Gartzke 1999).

In sum, we argue that civil war agreements that call for third-party monitors, that encourage the opponents to provide information regarding troops and weapons to

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[8]For example, the Lancaster agreement that ended the civil war in Zimbabwe states that Britain will check the information provided to it by the Salisbury delegation and Patriotic Front leaders.

a third party, and that call for verification of this information either by the third party or the belligerents themselves (by means of establishing verification sites) should be particularly effective at mitigating problems regarding asymmetric information. We refer to these types of provisions as *uncertainty-reducing provisions* and hypothesize that civil war agreements that include uncertainty-reducing provisions should increase the chance of lasting peace. We expect uncertainty-reducing provisions to be mutually reinforcing: the more uncertainty-reducing measures the agreement provides for, the smaller the chance that peace will fail due to information asymmetries. For example, if there are monitors that also verify any information that they have received, there should be a greater chance of durable peace than where monitors are only present without the mandate to gather additional information. While a single provision may provide important information, the more such provisions are present in a settlement, the more information is revealed, and hence the more likely the parties are to remain at peace.

H1: The greater the number of uncertainty-reducing provisions in a civil war agreement, the less likely is the recurrence of civil war between domestic belligerents.

Research Design

To test our hypothesis we start with the Correlates of War (COW) definition of civil wars to identify a list of cases. According to COW, a conflict is considered a civil war if (1) it produces at least 1,000 battle deaths each year, (2) the central government is one of the principal parties, (3) there is effective resistance by both sides to the conflict, and (4) it occurs within the recognized boundary of a state (Small and Singer 1982).

According to Hartzell and Hoddie (2007), there are four ways in which civil wars may end: military victory, negotiated settlement, negotiated truce, and imposed settlement. Since we are interested in situations in which information asymmetries are likely to persist and we want to assess whether careful agreement design can increase the durability of peace under these conditions, we focus only on civil wars that ended through negotiated settlements or truces.[9] The unit of analysis of this study is a civil war

[9]Negotiated settlements are focused on long-term reconciliation and the organization of the new state, while truces focus on the short-term termination of hostilities. We pool both types of agreements because our theoretical expectations apply to both and the increased number of observations allows us to better assess our theoretical claims. We ran our analysis excluding cease-fires (Azerbai-

resolved through a negotiated agreement between 1945 and 2005.

In order to identify our cases we begin with Hartzell and Hoddie's (2007) list of negotiated agreements. Hartzell and Hoddie identify 49 negotiated civil war settlements and truces between 1945 and 1998. We add five new cases of civil wars (with at least 1,000 fatalities) that ended in a negotiated settlement between 1999 and 2004. For these new cases, we rely on Rothchild and Roeder's (2005) list of settlements in ethnically divided societies and the UCDP/PRIO Armed Conflict Dataset (Gleditsch et al. 2002). The newly added cases are Angola 1998–2001, Liberia 2003, Philippines 2000, Sudan 1983–2002, and Burundi 2000–2002.

The dependent variable in our study is the duration of peace after reaching an agreement. We measure the duration of peace by the number of months in which peace is maintained after a settlement is reached through December 31, 2005. Peace fails if the belligerents become embroiled in another civil war. In order to identify cases of peace failure we rely on the Correlates of War (COW) dataset and the UCDP/PRIO Armed Conflict Dataset. Both datasets specify the parties to a civil war and make it possible to determine whether the new civil war involved the same belligerents.[10] If peace does not fail after an agreement is reached, the case is coded as right-censored at the end of our observation period in 2005.

In order to determine whether a civil war agreement includes provisions that increase the availability of information, establish power-sharing institutions, or arrange for third-party guarantees, we code the agreement texts we gathered from the International Conflict Research Project (INCORE), the Peace Agreements Digital Collections of the United States Institute of Peace (USIP), and secondary literature on individual countries.[11] We were unsuccessful in locating sufficient information on settlements of three

jan 1990–94, Chechnya 1994–96, Croatia 1991–92, Georgia Abkhaz 1992–94, Georgia Ossetia 1989–92, Moldova 1991–92, Republic of Congo 1998–99, Morocco 1976–91, Myanmar 1968–80, and Philippines 2000). The interpretation of results is generally consistent, but guarantees and the duration of the previous war are not any more statistically significant.

[10]We code each instance of civil war between the belligerents as a new case. Thus, the same antagonists can produce multiple cases. Furthermore, some countries experience multiple civil wars involving different belligerents. Because these observations are unlikely to be independent of one another, we estimate robust standard errors clustered on the state.

[11]We would like to thank Johan Brosche and Stina Högbladh of the Uppsala Conflict Data Program (UCDP) for sending us information about several agreements concerning Chad and the Democratic Republic of Congo. We would also like to thank Caroline Hartzell for providing us with information on sources for a number of agreements.

civil wars.[12] This gives us 51 cases of civil wars to evaluate our hypothesis. In one-third of these cases (17 out of 51) peace fails.

We code for the presence of three types of uncertainty-reducing provisions. First, some settlements require third parties to monitor compliance with the negotiated agreement. For example, the 1994 Lusaka Protocol between UNITA and the Angolan government stipulated that the United Nations would set up monitoring and verification mechanisms for the cease-fire. To ensure that monitors were actually deployed, we not only relied on the peace agreements but also used Fortna's (2004b) data on peacekeeping missions. Both observer missions and traditional peacekeeping missions are coded as monitoring missions. While observer missions tend to carry out their tasks unarmed, traditional missions tend to have more personnel and be lightly armed and they might also be deployed to separate the two forces. However, both types of missions' main goal is to monitor the cease-fire and verify compliance of the belligerents (Fortna 2008).[13] In our dataset, around 35% of settlements (18 out of 51) require third parties to monitor compliance of the disputants with the negotiated agreement.

Second, some settlements include provisions that stipulate that the disputants need to provide third parties with information regarding their military capabilities. Third parties are expected to act as a conduit of information provided by the disputants and hence reduce uncertainty in the environment. For example, the settlement ending the civil war in Guatemala in 1996 required the URNG as well as the Guatemalan government to provide the United Nations with detailed information on the number of troops, list of names, inventories of weapons, explosives and mines, and all other necessary equipment, both in their possession and in storage. In our dataset, 33% of settlements (17 out of 51) require disputants to submit to third parties information regarding their military capabilities.

Third, some settlements go beyond requiring the disputants to provide information to third parties and ask the third parties or the belligerents themselves to verify the number and location of troops and weapons. The 1994 Akosombo Cease-fire ending the Liberian Civil War is illustrative. The cease-fire required each of the warring parties to ensure that its combatants report all weapons and war-making materials to ECOMOG, monitored and verified by the Liberian National Transitional Government and the UNOMIL. In our dataset, around 29% of settlements (15 out of 51) require verification of the information provided by the belligerents based on verification sites or information independently gathered by the third parties.

As discussed above, we believe that uncertainty-reducing provisions reinforce one another and we create a count variable of uncertainty-reducing provisions to capture this effect. Our count variable ranges from 0 (no provisions present) to 3 (all uncertainty-reducing provisions present). Approximately 8% of cases have all three information variables present, 22% have two of the information indicators, and 31% have one of the information provisions present.

To account for the effects of measures adopted to deal with commitment problems, we code whether a civil war settlement is accompanied by a third-party guarantee or includes power-sharing provisions. Our operationalization of third-party guarantees is more restrictive than Walter's (1997, 2002). Walter includes both explicit promises to enforce the agreement and promises to monitor and verify the agreement. We believe that promises to monitor and verify the agreement are better understood as attempts to deal with information concerns, and we include measures associated with verification and monitoring in our information variable. However, promises to enforce the agreement are clearly designed to address commitment problems. Thus, we only code a settlement as having a third-party guarantee if an outside state promises to intervene should the parties renege on the agreement or if a peace enforcement mission is deployed. We identify six cases of third-party promises to intervene and 12 cases of peace enforcement missions by international organizations.[14]

Hartzell and Hoddie (2003, 2007) have identified four dimensions of power sharing that should help former

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[12]India 1946–49, Malaysia 1948–56, and Republic of Congo 1993–94.

[13]We do not code multidimensional or enforcement missions as international monitoring. By including these missions we might incorrectly conclude that information gathering reduces the risk of conflict when in fact this result is due to other more invasive activities, such as state building and military enforcement. We choose a more conservative measure of monitoring.

[14]According to Walter (2002), outside states agreed to act as guarantors of settlements in Cambodia 1978–91, Dominican Republic 1965, Sudan 1963–72, Lebanon 1958, and Zimbabwe 1972–79. We also coded Moldova 1991–92 as having a guarantor (i.e., Russia). We used Fortna's (2004b) data to identify whether enforcement missions were deployed. This was the case in Bosnia 1992–95, Croatia 1995, Georgia (Abkhaz) 1992–94, Liberia 1989–93, Tajikistan 1992–97, Sierra Leone 1997–99, and Rwanda 1990–93. We also coded Kosovo 1998–99, Liberia 2003, Democratic Republic of Congo 1997–2001, Burundi 2000–2002, and Indonesia (East Timor) 1975–99, which are outside the time frame of Fortna's study, as having enforcement missions. Note that if one actor provides a guarantee and another sends an observation or traditional peacekeeping mission, the case is coded as having both a guarantee and international monitoring.

belligerents deal with security concerns associated with commitment problems. These dimensions are political, territorial, military, and economic. Following Hartzell and Hoddie, we create an additive index of these four dimensions, ranging from 0 (no power sharing present) to 4 (all power-sharing dimensions present). For the cases that we have in common with Hartzell and Hoddie, we use their data. For the remaining cases, we did our own coding based on Hartzell and Hoddie's coding rules and our reading of the civil war agreements. In our dataset, 16% of cases have all four dimensions, 24% have three of them, 33% contain two, and 22% of cases have only one.[15]

Like Hartzell and Hoddie (2003, 2007), we also control for factors associated with the previous war. First, we include a measure of the duration of the previous war. Civil war scholars have found that civil wars that lasted longer are less likely to recur (e.g., Mason and Fett 1996; Sambanis 2000; Walter 2004). This is in line with an informational story. While fighting in civil wars may not be as conducive to information revelation as fighting in interstate wars, warfare does reveal information and longer fighting should reveal more information, making it more likely that the belligerents' beliefs about relative capabilities have converged at the end of war. Since there is less uncertainty following longer civil wars, we expect the parties to be more willing to comply with the agreement (Hartzell and Hoddie 2007). We measure the duration of the previous war in terms of the logged number of months. For the cases we have in common with Hartzell and Hoddie, we use their data and, for the remaining cases, we use information on the duration of conflict from the UCDP/PRIO Armed Conflict Dataset (Gleditsch et al. 2002).

Second, we control for the issue at stake in the previous civil war. Some scholars suggest that identity issues are more intractable and thus more conflict-prone than other types of issues (e.g., Doyle and Sambanis 2000; Licklider 1995; Kaufmann 1996). We use Fearon and Laitin's (2003) data to identify whether ethnic identity issues were at stake in the previous civil war. We code the issue variable 2 if the civil war was fought over ethnic issues, 1 if the war had some ethnicity component, and 0 if the war was not about ethnic identity.

Third, we control for how costly the preceding civil war was. Scholars have argued that wars in which many people died are associated with greater concerns about personal security in the aftermath of war and greater suspicion toward the former opponent (e.g., Doyle and Sambanis 2000; Fortna 2003; Hartzell and Hoddie 2003). This pervasive sense of insecurity makes it more likely that accidents happen and fighting starts again. We measure the costs of war in terms of the logged number of battle-related deaths. Data come from Hartzell and Hoddie (2007) for some of our cases, and the remainder is coded using the UCDP/PRIO Armed Conflict Dataset (Gleditsch et al. 2002).

Following Hartzell and Hoddie (2003, 2007), we also control for the nature of the postconflict environment. Hartzell and Hoddie argue that previous experience with democratic institutions and the level of economic development at the end of the war should have a positive effect on the durability of peace. Belligerents with democratic experience are more likely to trust the institutions of the new state and seek compromise rather than confrontation. Furthermore, the more developed a country is, the more job opportunities exist for former belligerents and the more successful and quick postwar reconstruction. In such an environment there will be fewer incentives to upset the existing order. To get at the previous level of democracy, Hartzell and Hoddie use the country's average Polity IV (i.e., democracy minus autocracy) score over the five years preceding the civil war (Marshall and Jaggers 2002). Due to the lack of information on GDP for a variety of conflict countries, the level of economic development is measured using life expectancy at birth in the year after the civil war ends. For those cases that we have in common with Hartzell and Hoddie, we use their data. For our newly added cases, we fill in information on previous experience with democracy and economic development using Polity IV data, World Development Indicators, and the U.S. Census International Database. Summary statistics for all independent variables are reported in Table 1.

The nature of our dependent variable requires us to use an event history model. There are a number of parametric and nonparametric duration models that differ in their assumptions about the hazard rate, i.e., the instantaneous rate of failure at time t conditional on survival until time t. Scholars of conflict recurrence have tended

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[15]Readers may be concerned about whether these provisions were implemented. To ensure that guarantees are credible, we only code cases where troops were actually deployed. As for power sharing, Hartzell and Hoddie (2003, 2007) argue that even if these provisions are not fully implemented, the conclusion of a power-sharing agreement constitutes a costly signal that mitigates concerns regarding the parties' commitment to peace. Implementation is likely to be a greater concern regarding uncertainty-reducing provisions which need to be implemented in order to take effect. Note that we do have information about whether monitoring missions were deployed and it seems reasonable to assume that if they were put in place, they also engaged at least in some of the verification procedures that were negotiated in the agreement. Unfortunately, it is exceedingly difficult to verify whether the parties actually released information regarding their military capabilities. However, the public promise to do so certainly put parties under pressure to comply in order to remain credible and retain the goodwill and support of the third party. Our empirical findings seem to confirm this.

TABLE 1   Summary Statistics

	Min	Mean	Max
Uncertainty-Reducing Provisions	0	0.98	3
Power-Sharing Provisions	0	2.22	4
Third-Party Guarantees	0	0.35	1
Life Expectancy	37	55.07	73
Level of Democracy	0	6.42	20
Ethnic Issues	0	1.37	2
Cost of War (ln of total deaths)	6.91	9.84	13.12
Duration of War (ln of months)	0.22	3.70	6.01

to employ the Weibull model, which assumes that the hazard is monotonically increasing or decreasing (Fortna 2003, 2004a; Hartzell and Hoddie 2003, 2007). However, Box-Steffensmeier and Jones (2004) point out that if the restrictive assumptions of a parametric model like the Weibull are not met, this can lead to incorrect inferences regarding coefficients and duration dependence. Therefore, in the absence of strong theoretical expectations regarding the shape of the hazard rate, they recommend that scholars employ the semiparametric Cox proportional hazards model, which leaves the shape of the baseline hazard undefined. The Cox also has the advantage that it can deal with ties, i.e., coterminous events,[16] and it allows scholars to assess whether the assumption of proportional hazards is met. At the same time, Box-Steffensmeier and Jones point out that if the assumptions of a parametric model are met, the parametric model is likely to be more efficient than the semiparametric Cox, especially with a small number of cases. Since we do not have expectations regarding the shape of the hazard and a plot of the hazard shows that the hazard is neither monotonically increasing nor decreasing, we employ the Cox model in our analyses.[17]

Results and Discussion

The results of the Cox proportional hazards model are reported in Table 2.[18] Since coefficients are parameterized

[16] We use the Efron method for ties.

[17] Figure 1 shows the nonmonotonic nature of the hazard rate. We also estimate a Weibull and an Exponential model. The results are robust for all variables.

[18] We estimate a Cox and a Weibull model with gamma distributed frailties to detect possible unit-level heterogeneity. Although the Cox model does not converge, the Weibull model rules out the

TABLE 2   Cox Proportional Hazards Model of Civil War Settlement Stability, 1945–2005

	Coefficients (Standard Error)[#]	Percent Change in Hazard Rate
Uncertainty-Reducing Provisions	**−0.611***** **(0.216)**	**46% decrease**
Power-Sharing Provisions	−0.464* (0.306)	37% decrease
Third-Party Guarantees	−1.282* (0.869)	72% decrease
Life Expectancy	−.083*** (0.024)	81% decrease
Previous Level of Democracy	−0.061 (0.053)	ns
Ethnic Issue	1.155*** (0.417)	218% increase
Costs of Previous War	0.523*** (0.196)	233% increase
Duration of Previous War	−0.497*** (0.204)	55% decrease
N (failures)	51 (17)	
Log Likelihood	−42.986	

*p < 0.10, ***p < 0.01 one-tailed test, ns = not significant.
[#]Robust standard errors are calculated assuming potential non-independence among wars associated with the same country.

in terms of the hazard rate, a positive coefficient indicates that the hazard rate is increasing, i.e., that higher values of the covariate lead to an increased risk of experiencing renewed civil war. Conversely, negative coefficients suggest that the hazard rate is decreasing, i.e., that higher values of the covariate lead to a lower risk of failure (Box-Steffensmeier and Jones 2004).[19]

Table 2 shows that the coefficient estimate of uncertainty-reducing provisions is negative and statistically significant, implying that the inclusion of uncertainty-reducing provisions increases the durability of peace after civil war. The more uncertainty-reducing provisions are included in the civil war agreement, the

existence of unobserved heterogeneity at the level of the state. To check whether the proportional hazards assumption is met, we calculate Grambsch-Therneau and Harrel's rho statistics. Neither statistic indicates nonproportionality.

[19] We present our results in the form of nonexponentiated coefficients rather than hazard ratios. The significance test thus examines whether the covariate is equal to 0, which would mean that the hazard ratio is equal to 1 and the covariate has no effect on the durability of peace. Given the low number of cases and the directional hypotheses, we use one-tailed tests in our analysis.

lower the hazard of renewed warfare. The effect of uncertainty-reducing provisions is not only statistically significant but also substantively important.[20] We find that the hazard of renewed war is 46% lower, at any time given that peace has not failed yet, for agreements that include one uncertainty-reducing provision compared to agreements that contain none. If a civil war agreement contains all three uncertainty-reducing provisions, the hazard of new civil war drops by 84%, at any time given that peace has not failed yet.[21] To get a better idea of the substantive effect of uncertainty-reducing provisions we also model the hazard function when all three uncertainty-reducing provisions are present compared to when none are in effect.[22] Figure 1 demonstrates that the hazard of experiencing a renewed civil war is significantly lower for cases in which all three uncertainty-reducing provisions are in place. This effect is particularly strong for the first 40 months after the negotiated agreement is concluded. This is exactly the time during which peace is most fragile: 9 of the 17 failed civil war agreements fail in the first 40 months. During this time the hazard of renewed civil war rises for cases where no uncertainty-reducing provisions are in place but remains relatively stable and much lower for cases in which the belligerents have agreed to all three uncertainty-reducing provisions. After 40 months the hazard of new civil war
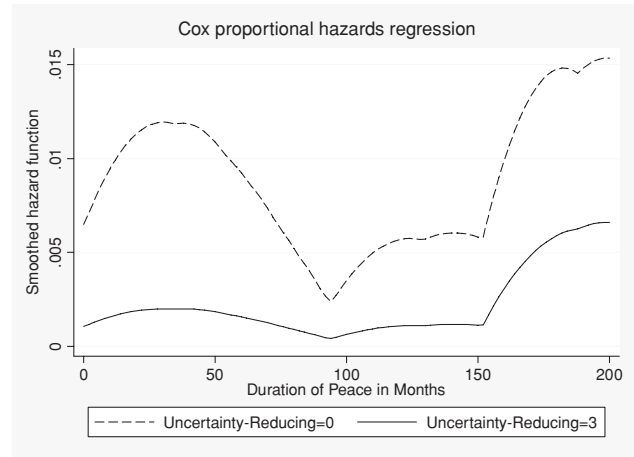
FIGURE 1 Effect of Uncertainty-Reducing Provisions on the Hazard of Renewed Civil War

[20]To assess the impact of the independent variables on the change in the hazard rate, we use the following formula provided by Box-Steffensmeier and Jones (2004, 60):

$$\%\Delta h(t) = \frac{e^{\beta(x_i = X_1)} - e^{\beta(x_i = X_2)}}{e^{\beta(x_i - X_2)}} \times 100$$

[21]While we believe that a count variable is theoretically more appropriate, we also investigate whether any particular provision is more important than others. The high correlation between the provision of information to a third party and verification measures ($r = .64$) raises concerns about multicollinearity if the individual variables are entered into the same model. Thus, we ran three separate models including one measure at a time and two models including monitoring and the provision of information or monitoring and verification measures. We find that monitoring and the provision of information are statistically significant when included separately, but when included jointly, only the provision of information is significant. When monitoring and verification measures are included jointly, only monitoring is significant. Verification measures are also not quite significant if included on their own. This suggests that although some provisions may help reduce the risk of war by themselves, they are more effective if used in conjunction with one another. Results are available from the authors.

[22]Figure 1 shows the effect of uncertainty-reducing provisions in the first 200 months after civil war. While some observations lasted longer than 200 months, only one observation (1958 Lebanese Civil War) fails after this point. Lebanon had one uncertainty-reducing provision, international monitors, in place for a few months in 1958. We hold the control variables at their modes and means. This means that the figure portrays a case in which two types of power-sharing provisions are present but no third-party guarantee.

starts to decrease even for agreements that do not feature uncertainty-reducing provisions, but the hazard of new war consistently remains lower for cases in which all three uncertainty-reducing provisions are in place. Overall, the figure suggests that uncertainty-reducing provisions are particularly effective early on when peace is most fragile but that they retain important pacifying effects in the longer run as well.[23]

Our finding regarding uncertainty-reducing provisions suggests not only that information asymmetries may be a concern after fighting has ended through a negotiated settlement, but also that belligerents can deal with this problem by carefully designing civil war agreements. Agreements that call for the provision of information regarding military capabilities of the belligerents to a third party, verification of this information by the third party or through verification sites, and third-party monitoring appear to be effective at ensuring longer-lasting peace.

In addition to uncertainty-reducing provisions, it also appears that power sharing as well as third-party guarantees are important components of civil war agreement design. Hartzell and Hoddie (2003, 2007) suggest that the creation of power-sharing institutions should reduce the risk of renewed warfare. Our findings lend support to this argument. The hazard of renewed fighting

[23]We also examine the notion that uncertainty-reducing provisions are particularly relevant in the period right after the signature of the agreement by running a Cox model where we censor cases where peace lasts more than five years. At this point 13 agreements have failed. We find that uncertainty-reducing provisions are a strong predictor of peace, while power sharing becomes less statistically significant when only short-term durability of peace is considered.

decreases by 37% in settlements that include one power-sharing provision compared to settlements that do not contain any, given that peace has not yet failed. Inclusion of all four dimensions of power sharing reduces the hazard of civil war by 84%. Similarly, we find support for Walter's (1997, 2002) argument that third-party guarantees result in a lower hazard rate (and thus longer survival time). In those cases where a guarantor volunteers to enforce the agreement, the hazard of renewed fighting decreases by 72%, given that peace has not yet failed, compared to cases where no third party agrees to act as a guarantor.

In terms of the control variables, our results are generally consistent with the existing literature. We find strong support for the notion that identity issues may be more conflict-prone than other kinds of issues. If the disagreement between the groups has an ethnic component, the hazard of new war increases by 218%. Furthermore, it appears that security concerns are greater after costly civil wars and that the lower levels of trust under these conditions increase the chance that peace breaks down. The hazard of new war is about 233% higher, at any given time peace has not yet failed, for wars that result in 10,000 total battle deaths compared to wars with 1,000 battle deaths. The variable for the duration of the previous war is negative and statistically significant. This suggests that the longer the previous civil war lasted, the more durable the peace that follows. The hazard of new war is about 55% lower for conflicts that last five years than those that last one year. This finding also suggests additional support for our informational argument: the longer the first civil war lasted, the more information is revealed and thus the less likely renewed fighting. We also find support for the idea that the level of economic development, measured in terms of life expectancy, reduces the hazard of renewed warfare. Compared to civil war countries with 50 years of life expectancy, countries with 70 years of life expectancy experience a decrease in the hazard of renewed war by 81%, at any given point that peace has not yet failed. On the other hand, previous experience of the disputants with democratic institutions does not have a significant effect on the durability of peace.

One important concern with these finding needs to be addressed: any study of institutions, including peace agreement design, needs to deal with the issue of endogeneity. Is it the agreement that leads to the outcome or is the relationship spurious because the agreement is endogenous to factors that also cause the outcome? Belligerents may be more likely to conclude a peace agreement, and include uncertainty-reducing provisions, when other factors predict peace and these background factors rather than the agreement accounts for the endurance of peace. Scholars have addressed this concern by examin-

ing whether factors that increase the durability of peace also make it more likely that an agreement is signed and whether factors that decrease the durability of peace make it less likely that an agreement is signed (Fortna 2004; Hartzell and Hoddie 2007; Walter 2002). If either is the case then this would be an indication that the agreement is epiphenomenal. Using this logic, we regress uncertainty-reducing provisions on the control variables included in the study: the issue at stake, the duration of the previous war, the costs of the previous war, the previous experience with democratic institutions, and the level of economic development. None of these factors is a significant predictor of uncertainty-reducing provisions.[24] Thus, we have reason to believe that uncertainty-reducing provisions have an independent effect on the likelihood of renewed civil war.

Conclusion

This article explores the utility of one of the fundamental mechanisms of the bargaining theory of war, i.e., information asymmetries, for understanding the determinants of the durability of peace after civil war. Information asymmetries have been neglected in the study of civil war, which has focused on commitment problems as the cause of civil war recurrence. We argue that, in the postsettlement environment, information asymmetries between the former disputants regarding their military capabilities may still persist, especially if the civil war ended in a negotiated settlement rather than a military victory. The existence of such uncertainty regarding military capabilities may lead to a renewed resort to arms. Therefore, we suggest that the inclusion of provisions addressing information asymmetries between the domestic groups may be as important a factor for the durability of peace as including provisions dealing with commitment problems. We identify three types of provisions that are intended to reduce information asymmetries: requiring third-party monitoring, making belligerents submit relevant information to third parties, and providing for verification of this information by putting in place verification sites or having third parties gather information independently. We hypothesize that the more uncertainty-reducing provisions are included in a civil war settlement, the more durable the peace. Our empirical analysis of 51 civil war agreements between 1945 and 2005 shows that the inclusion of more uncertainty-reducing provisions indeed reduces the risk of new civil war.

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[24]The results are available from the authors.

Our findings suggest several important policy prescriptions. First, the international community should recognize the importance of including uncertainty-reducing provisions in agreements ending civil wars, in addition to securing third-party guarantees and adopting power-sharing institutions. Although the presence of commitment-enhancing provisions is certainly important for the durability of peace, the adoption of what we call uncertainty-reducing provisions further strengthens the institutional protections against the breakdown of peace.

Second, this research implies that third parties may still play a central role in maintaining peace after civil wars even if they are unwilling or unable to act as security guarantors. Providing credible security guarantees to domestic groups is a costly and risky business for third parties. Third parties need to have the political will and military capabilities to be able to act as guarantors. In most situations, third parties may not want to commit their resources to undertake such a costly international endeavor (Hartzell and Hoddie 2007). However, our research suggests that third parties may still provide valuable service to domestic groups by collecting information about the military capabilities of the disputants and verifying such information. That is, by committing themselves to less risky and costly activities such as information gathering, third parties may still make a difference in the durability of peace even if they do not act as security guarantors.

References

Ali, Taisier M., Robert O. Matthews, and Ian S. Spears. 2004. "Failures in Peacebuilding: Sudan (1972–1983) and Angola (1991–1998)." In *Durable Peace. Challenges for Peacebuilding in Africa*, ed. Taisier M. Ali and Robert O. Matthews. Toronto: University of Toronto Press, 282–311.

Andrienko, Yuri, and Louise Shelley. 2005. "Crime, Violence, and Political Conflict in Russia." In *Understanding Civil War: Volume 2*, ed. Paul Collier and Nicholas Sambanis. Washington, DC: World Bank, 87–118.

Blainey, Geoffrey. 1988. *The Causes of War*. 3rd ed. New York: The Free Press.

Box-Steffensmeier, Janet, and Bradford Jones. 2004. *Event History Modeling. A Guide for Social Scientists*. Cambridge: Cambridge University Press.

Cetinyan, Rupen. 2002. "Ethnic Bargaining in the Shadow of Third-Party Intervention." *International Organization* 56(3): 645–77.

Doyle, Michael W., and Nicholas Sambanis. 2000. "International Peacebuilding: A Theoretical and Quantitative Analysis." *American Political Science Review* 94(4): 779–802.

Fearon, James D. 1995. "Rationalist Explanations for War." *International Organization* 49(3): 379–414.

Fearon, James D. 1998. "Commitment Problems and the Spread of Ethnic Conflict." In *The International Spread of Ethnic Conflict*, ed. David Lake and Donald Rothchild. Princeton, NJ: Princeton University Press, 107–206.

Fearon, James D. 2004. "Why Do Some Civil Wars Last So Much Longer than Others?" *Journal of Peace Research* 41(3): 275–301.

Fearon, James D., and David Laitin. 2003. "Ethnicity, Insurgency, and Civil War." *American Political Science Review* 97(1): 75–90.

Filson, Darren, and Suzanne Werner. 2002. "A Bargaining Model of War and Peace: Anticipating the Onset, Duration, and Outcome of War." *American Journal of Political Science* 46(4): 819–38.

Fortna, Virginia Page. 2004a. *Peace Time: Cease-fire Agreements and the Durability of Peace*. Princeton, NJ: Princeton University Press.

Fortna, Virginia Page. 2004b. "Does Peacekeeping Keep Peace? International Intervention and the Duration of Peace after Civil War." *International Studies Quarterly* 48(2): 269–92.

Fortna, Virginia Page. 2008. *Does Peacekeeping Work? Shaping Belligerent's Choices after Civil War*. Princeton, NJ: Princeton University Press.

Gartzke, Erik. 1999. "War Is in the Error Term." *International Organization* 53(3): 567–87.

Gleditsch, Nils Petter, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg, and Håvard Strand. 2002. "Armed Conflict 1946-2001: A New Dataset." *Journal of Peace Research* 39(5): 615–37.

Hartzell, Caroline A. 1999. "Explaining the Stability of Negotiated Settlements to Intrastate Wars." *Journal of Conflict Resolution* 43(1): 3–22.

Hartzell, Caroline A. 2006. "Structuring the Peace: Negotiated Settlements and the Construction of Conflict Management Institutions." In *Conflict Prevention and Peacebuilding in Post-War Societies: Sustaining the Peace*, ed. T. David Mason and James D. Meernik. New York: Routledge, 31–53.

Hartzell, Caroline, and Matthew Hoddie. 2003. "Institutionalizing Peace: Power Sharing and Post-Civil War Conflict Management." *American Journal of Political Science* 47(2): 318–32.

Hartzell, Caroline, and Matthew Hoddie. 2007. *Crafting Peace: Power-Sharing Institutions and the Negotiated Settlement of Civil Wars*. University Park: The Pennsylvania State University Press.

Kaufmann, Chaim D. 1996. "Possible and Impossible Solutions to Ethnic Civil War." *International Security* 20(4): 136–75.

Lake, David A., and Donald Rothchild. 1998. "Spreading Fear: The Genesis of Transnational Conflict." In *The International Spread of Ethnic Conflict: Fear, Diffusion, and Escalation*, ed. David A. Lake and Donald Rothchild. Princeton, NJ: Princeton University Press, 3–32.

Licklider, Roy. 1995. "The Consequences of Negotiated Settlements in Civil Wars, 1945–1993." *American Political Science Review* 89(3): 681–87.

Lindley, Dan. 2007. *Promoting Peace with Information: Transparency as a Tool of Security Regimes*. Princeton, NJ: Princeton University Press.

Lo, Nigel, Barry Hashimoto, and Dan Reiter. 2008. "Ensuring Peace: Foreign-Imposed Regime Change and Postwar Peace Duration, 1914–2001." *International Organization* 62(4): 717–37.

Maoz, Zeev. 1984. "Peace by Empire? Conflict Outcomes and International Stability, 1816–1976." *Journal of Peace Research* 21(3): 227–41.

Marshall, Monty G., and Keith Jaggers. 2002. *Polity IV Project: Dataset Users' Manual*. College Park: University of Maryland.

Mason, T. David, Martha Crenshaw, Cynthia McClintock, and Barbara Walter. 2007. "How Political Violence Ends: Paths to Conflict De-escalation and Termination." APSA Task Force on Political Violence and Terrorism, Group 3. Presented at the annual meeting of the American Political Science Association. http://www.apsanet.org/imgtest/PVTFHowPoliticalViolenceEnds.pdf.

Mason, T. David, and Patrick J. Fett. 1996. "How Civil Wars End: A Rational Choice Approach." *Journal of Conflict Resolution* 40(4): 546–68.

Morrow, James D. 1989. "Capabilities, Uncertainty, and Resolve: A Limited Information Model of Crisis Bargaining." *American Journal of Political Science* 33(4): 941–72.

Powell, Robert. 1999. *In the Shadow of Power: States and Strategies in International Politics*. Princeton, NJ: Princeton University Press.

Powell, Robert. 2002. "Bargaining Theory and International Conflict." *Annual Review of Political Science* 5: 1–30.

Powell, Robert. 2006. "War as a Commitment Problem." *American Political Science Review* 60(1): 169–203.

Quackenbusch, Stephen L., and Jerome F. Venteicher. 2008. "Settlements, Outcomes, and the Recurrence of Conflict." *Journal of Peace Research* 45(6): 723–42.

Rauchhaus, Robert W. 2006. "Asymmetric Information, Mediation, and Conflict Management." *World Politics* 58(2): 207–41.

Regan, Patrick M., and Aysegul Aydin. 2006. "Diplomacy and Other Forms of Intervention in Civil Wars." *Journal of Conflict Resolution* 50(5): 736–56.

Reiter, Dan. 2003. "Exploring the Bargaining Model of War." *Perspectives on Politics* 1(1): 27–43.

Rothchild, Donald, and Philip G. Roeder. 2005. "Dilemmas of State-Building in Divided Societies." In *Sustainable Peace: Power and Democracy after Civil Wars*, ed. Philip Roeder and Donald Rothchild. Ithaca, NY: Cornell University Press, 1–26.

Sambanis, Nicholas. 2000. "Partition as a Solution to Ethnic War: An Empirical Critique of the Theoretical Literature." *World Politics* 52(4): 437–83.

Slantchev, Branislav. 2003. "The Principle of Convergence in Wartime Negotiations." *American Political Science Review* 97(4): 621–32.

Small, Melvin, and J. David Singer. 1982. *Resort to Arms: International and Civil Wars, 1816-1980*. Beverly Hills, CA: Sage.

Smith, Alastair, and Allan Stam. 2003. "Mediation and Peacekeeping in a Random Walk Model of Civil and Interstate War." *International Studies Review* 5(4): 115–35.

Svensson, Isak. 2007. "Bargaining, Bias and Peace Brokers: How Rebels Commit to Peace." *Journal of Peace Research* 44(2): 177–94.

Wagner, R. Harrison. 2000. "Bargaining and War." *American Journal of Political Science* 44(3): 469–84.

Walter, Barbara F. 1997. "The Critical Barrier to Civil War Settlement." *International Organization* 51(3): 335–64.

Walter, Barbara F. 1999. "Designing Transitions from Civil War: Demobilization, Democratization, and Commitments to Peace." *International Security* 24(1): 127–55.

Walter, Barbara F. 2002. *Committing to Peace: The Successful Settlement of Civil Wars*. Princeton, NJ: Princeton University Press.

Walter, Barbara F. 2004. "Does Conflict Beget Conflict? Explaining Recurring Civil War." *Journal of Peace Research* 41(3): 371–88.

Walter, Barbara F. 2006. "Information, Uncertainty, and the Decision to Secede." *International Organization* 60(1): 105–35.

Werner, Suzanne, and Amy Yuen. 2005. "Making and Keeping Peace." *International Organization* 59(2): 261–92.