Chapter 1

Introduction

During the night of June 19, 1945, aircraft from the Eighth Air Force of the United States conducted an incendiary bombing raid on the city of Fukuoka, Japan. The bombing destroyed 22% of the buildings in the city of 323,000.

At noon on August 15, 1945, Emperor Hirohito of Japan broadcast to his nation that Japan would surrender to the combined forces of the Allied Powers. After listening to the broadcast, a group of Japanese officers at Fukuoka led by Colonel Yoshinao Sato, Chief of the Intelligence and Air Defense Sections of the Western Army headquarters, took seventeen captured U.S. airmen to Aburayama outside of the city. There they executed the airmen by beheading them with samurai swords. First Lieutenant Hiroji Nakayama, who was accompanied by a young lady from the Intelligence Section, made certain that he and the other Japanese did not decapitate their victims as such was considered insulting to the victims in Japanese tradition. They acted under the provisions of Japan's Enemy Airmen Act of 1942, which classified air raids on Japan itself as violations of international law punishable by the death penalty or prison terms of at least ten years. This Act sought “to prevent further [air] raids [on Japan] by giving stern disposition to enemy airmen, thereby inculcating fear in American mothers and possibly resulting in an anti-war movement in the United States (Francis, 1997 #822, 480).”

On December 29, 1948, Colonel Sato and 24 other Japanese officers were found guilty of the murder of these prisoners of war and others; seven other defendants were acquitted. Sato and eight other officers were sentenced to death by the Commission. Upon review, General Douglas
MacArthur commuted the death sentences on July 9, 1950, instead sentencing Sato to “hard labor for the term of his natural life.”

Atrocity breeds outrage, charges of war crimes, and revenge. How can outrage at wartime atrocities be directed into a system of law that controls such actions? During the twentieth century, states developed international humanitarian law to regulate conduct during wartime. The record of success of such treaties is mixed. The chemical weapons treaties have generally been followed, limitations on targeting civilians have often failed, and regulations for the handling of prisoners of war has worked in some cases but not others. Why have some of the laws of war succeeded and others failed?

This question leads directly to the more general question of how international law operates. States have created a large body of international law to regulate their interactions. This legalization of international affairs is a distinctive property of the international system beginning in the twentieth century. As this body of law expands, understanding how it operates is critical for understanding international politics in the contemporary world. That understanding should also explain this growth of legalization.

These questions of international law also address one of the great questions of international relations: does the normative structure of the international system matter? Principles of right and wrong have always been applied to international politics. The existence of such standards, however, does not mean that they have any real impact on behavior. Scholars of international relations have debated this question throughout the twentieth century, with implications for the international politics of their times. The realists and idealists faced off during the interwar period ([Carr, 1946 #454]); the British School (e.g [Bull, 1977 #428])
challenged the dominance of American realism (e.g. [Morgenthau, 1978 #429]) after the Second World War; now the constructivists (e.g. [Wendt, 1999 #430]) oppose the neorealists (e.g. [Waltz, 1979 #432]). The proliferation of “isms” in international relations theory demonstrates the lack of consensus on the role and effect of normative standards. If these norms matter, the world can be changed through moral force; if not, the law of the jungle rules.

In the broadest scope, I also address a profound question about politics. International law works only to the extent that the parties can enforce its provisions and procedures on themselves. Political institutions, including international law, must be self-enforcing. Actors follow the rules and principles of a political system because they believe it is in their interest to do so. Successful political institutions are “machines that run on their own.” If effective political institutions are necessary to protect the values we hold most dear, how can such institutions be sustained over time?

This is an ambitious list of questions, and I do not purport to give final answers to any of them. I do hope that this book will help the reader understand better why the laws of war have restrained violence during war in some situations but not others, how international law works, what the role of norms in international politics is, and how political institutions are self-enforcing. I begin answering this sequence of questions with the most general—how self-enforcing political institutions work—and then draw out the implications of that argument for the more specific questions.

Self-Enforcing Institutions and International Law
Political institutions serve as the "rules of the game" for political actors ([North, 1990 #455]). They embody the collection of considerations beyond the control of an individual–norms, organizations, and formal processes and rules for instance–that impinge on his or her choice of action. Political action depends both on what an actor wants to accomplish and the institutional setting that he or she faces. Institutions describe rules that actors are to follow, the roles that the actors fill, and prescribe the consequences if an actor fails to follow the rules. Although this view of institutions has primarily been applied to domestic politics, it also holds for international institutions.

Political institutions are designed to make political life and economic exchange regular and predictable ([North, 1990 #455]). Actors may wish that one another will act in a particular way when they create an institution, but they will act in accord with the incentives that the institution produces. Because the actors themselves fill the roles in the institution, only they can make the institution work. The first question of institutions is what is in each actor's best interest, given the incentives that the institution creates and the actions of the other actors, and what stable collections of behavior do those incentives produce? Successful institutions induce stable behavior and incentives that support that behavior. Unsuccessful institutions fail to provide the incentives needed to check defections from the prescribed order.

The value of institutions lies in their persistence. However, actors are free to change institutions at any time. Because institutions affect outcomes, some actors may always wish to change institutions. A successful institution must ward off these demands for change. Actors opposed to a change must have the ability to defend existing institutions for those institutions to persist. The second question of institutions is why institutions persist given demands to change
Drawing on game theory, we can think about political institutions as equilibria of some game ([Schotter, 1981 #433], [Calvert, 1995 #451; Calvert, 1994 #452; Shepsle, 1986 #450], {Greif, 2006 #514}). An equilibrium in game theory is a configuration of behavior where no actor wishes to change his or her behavior given the actions of the other actors. Equilibria are patterns of behavior that can persist, making the concept of equilibrium a useful way to think about how political institutions persist and operate. Institutionalized behavior must be an equilibrium of the game underlying the social situation.

I elaborate this view by defining an institution to be *a constellation of equilibria that address related strategic problems* rather than an individual equilibrium. The different but related strategic problems must all be addressed to create a stable institution. Each equilibrium depends on the others because each problem in isolation assumes an answer to the other problems. Different sets of actors play in each of these different but related games and so must take those other equilibria as given in the strategic settings they face. For example, an effective trial system of criminal law requires addressing at a minimum the related problems of conducting a trial as a contest between the prosecuting and defense attorneys, a political issue of disciplining prosecutors so they pursue only appropriate cases, the relationship between the defendant and his attorney to ensure proper representation, and the issue of providing judges with incentives and training to act on behalf of the law as opposed to other interests. Because each actor plays in only some of these games, she takes the equilibrium behavior in the others for granted. All the equilibria depend upon one another; in some systems, trying to bribe the judge is the best defense strategy while in others it would only hurt the interests of the defendant.
An equilibrium in game theory requires two things. First, the actors’ behaviors are *mutual best replies*. No actor believes he can improve his position by changing his plan of action. Second, the actors share a *common conjecture* that one another will play according to the equilibrium. The shared understanding of a common conjecture is necessary for the players to understand that their equilibrium strategies are indeed the best actions for themselves. Because the outcomes of social situations depend on the possible choices of more than one actor, each needs some stable expectations about each other’s actions to understand how to act in her own interest. Political institutions require a shared understanding to allow the actors to anticipate one another’s actions and then act within that institution. Without such an understanding, there is no reason to believe that the behavior will persist.

Abstract principles knit together the common conjectures of the equilibria within an institution. These principles explain why the actors should hold these common conjectures. They, like the common conjectures, must also be shared across all actors. These principles also aid the players in modifying the institution as conditions change.

International law codifies the common conjecture underlying certain institutionalized behaviors in world politics. Common conjectures need to be shared across all the players to support equilibrium behavior. Although such a shared understanding can arise simply through a history of interactions, public negotiation of and agreement on the principles of that shared understanding could help confirm both what the understanding is and who holds it. International law embodied in multilateral treaties negotiated as public documents and formally ratified by states helps to establish a common conjecture. Treaty law aids states by helping them anticipate one another’s behavior more fully.
A shared understanding alone is insufficient to ensure that the parties will comply with the principles embodied in that understanding. Actors still have to be willing to act in accord with those principles. Here mutual best replies reenter the picture. Those shared understandings that do not produce a self-enforcing pattern of behavior will fail in practice. Not only do we need to know the legal specifics of international law, we also need to understand the motivations and incentives of the parties under that law. Law could fail under two conditions: one, when a party explicitly rejects that law, signaling that it does not share the common conjecture embodied in the law; or two, when the law fails to induce the parties to comply with its provisions. Legal principles must be married to practical politics for international law to succeed.

The laws of war are the most dramatic example of this argument about political institutions and equilibrium. Because the parties are already at war, they have no recourse to a higher sanction to enforce legal obligations on one another. Laws of war can be effective in limiting violence during wartime when the warring states understand what the limits are and act to live within those limits. Further, the laws of war create obligations and rights for individual soldiers as well as states because these laws address the related strategic problems of violence on the battlefield, strategic competition between states at war, and how states control their soldiers as their agents. As we will see, when states comply is a complicated question. Although the ideas of mutual best replies and common conjecture may seem simple, the combination of shared understanding and restraint through self-interest can fail in many ways. This book seeks to illuminate those difficulties by examining the strategic logic of the laws of war and the historical record of their successes and failures in the wars of the twentieth century.
As mentioned earlier, scholars of international relations have long argued whether standards of right and wrong play a role in world politics. The current version of this long-running debate matches the neorealists and the constructivists. Both camps agree that international politics is an anarchy; actors cannot appeal to a higher authority to enforce agreements and resolve their conflicts. Neorealists argue that anarchy forces states to distrust one another and rely on their own capabilities to defend their interests. Calculations of power and interest trump principles of right and wrong. Constructivists contend that shared understandings shape international politics and allow states to transcend the effects of anarchy. In the memorable epigram of Alexander Wendt ([Wendt, 1992 #453]), “anarchy is what states make of it.”

Neorealists believe that the necessities of international competition compel states to act the way they do. The anarchic system means that a state's power alone is the ultimate guarantor of its continued existence. In some cases, threatened states may be aided by others who benefit by providing that aid, most commonly through defeating the power that threatens them as well. The balance of power does not work automatically, however, and states cannot assume that others will come to their aid when they are threatened by an aggressor. Consequently, some states seek to increase their power, even through war if necessary, creating a threat to the security of other states. In all these decisions, states choose on the basis of a calculation of power and interest. Neorealists place no value on normative commitments to defend others, as in a system of collective security. If one state fights to save another, it does so because it is in its
interest to do so. To quote John Mearsheimer, “Realists...believe that institutions [defined by
Mearsheimer as “a set of rules that stipulate the ways in which states should cooperate and
compete with each other” [Mearsheimer, 1995 #436], 8] cannot get states to stop behaving as
short-term power maximizers ([Mearsheimer, 1995 #435], 82).”

Constructivists believe that norms and identities shape international politics to the extent
that they constitute power and determine interests. They link the two concepts of norm and
identity; norms are “collective expectations for the proper behavior for a given identity
([Jepperson, 1996 #437], 54),” while identities are “images of individuality and distinctiveness
held and projected by an actor and formed through relations with 'significant others.' ([Jepperson,
1996 #437], 59)” I focus here on identity as social role because that concept of identity naturally
links to norms and it is more widely used by constructivists in international relations. Social
roles prescribe norms of conduct for the given role, and actors share an understanding of what
role each holds in a given situation. The shared understanding of which role is active in a given
situation is essential because actors have multiple identities. A simple illustration may help. I
hold several identities; one is the father of my children, another is a university professor who
teaches undergraduate students. Both of these social roles prescribes norms of acceptable and
unacceptable behavior, and I and others know which role I am supposed to fill and so what
conduct is appropriate and what inappropriate by the current social setting. Acts that are
appropriate for one identity, say, inviting my children to sit in my lap while we talk, are
completely inappropriate for the other. Returning to international relations, constructivists
describe how the identities of states and the norms attached to them have changed over time.
Wendt ([Wendt, 1999 #430]) criticizes the realists as assuming that the role of states as
suspicious competitors cannot be changed; he argues that states under anarchy could hold identities as enemies, rivals, or friends, all of which entail different norms of international relations. These identities trump the nature of anarchy to determine what they expect from one another and how they behave to one another.

Scholars of international law separate along parallel lines on whether legal obligation to that law restrains states. Realists, like Jack Goldsmith and Eric Posner ([Goldsmith, 2005 #528]), argue that international law and compliance with that law by states is a product of their interests; “It [international law] is not a check on state self-interest; it is a product of state self-interest. ([Goldsmith, 2005 #528], 13)” Their position is not that international law is ineffectual, rather the beneficial effects of international law lie in clarifying state positions and aiding states in reaching mutually beneficial agreements. Law exists because states see it as a way to advance their interests, and so it exerts no independent “pull” toward compliance. Most scholars of international law believe, however, that international law creates obligations which bind state action, the parallel of the constructivist position that norms appropriate for an actor’s identity help to constitute that actor’s interests. Thomas Franck ([Franck, 1990 #529]) argues that international law gains legitimacy and so the power to obligate states to comply with them through four mechanisms: one, determinacy—a clearly understood rule aids transparency in judging what obligations are and when they have been met; two, symbolic validation by states reinforces their acceptance of a legal standard and the values it codifies; three, coherence—a rule which is applied consistently in accord with the principles motivating it both reflects existing legitimacy of the rule among states and reinforces it; and four, adherence—the extent to which law is both supported by secondary rules that explain how to apply it and embedded within a
larger structure of law to which it adheres. Franck does not argue that the compliance pull of international law is absolute, only that it is exists and strengthens with the legitimacy of that law as measured by his four mechanisms. States comply both because they believe the norms encased in legitimate law are proper and because they wish to affirm their identity as a lawful state with the privileges and obligations that come with that status.

The intersubjective nature of identities and the norms they entail is essential for them to operate as social structure. Actors cannot choose their identity freely for a given situation because if they could, identities and norms would not shape their choices. I have a large collection of baseball caps from the days when I attended games in many different cities, where the caps allowed me to assume the identity of a fan of the home team regardless of my true loyalties. If identities were like baseball caps, actors could change them freely at their convenience, and identities would not constrain actors in the same way that I could avoid any unpleasant consequences that might follow from being a fan of the visiting team in the midst of hometown fans who had been drinking simply by wearing a cap of the home team.6 Because identities are social phenomena—other actors recognize an actor's identity for a given situation and expect that actor to live up to the obligations of that role, an actor is not free to choose whatever identity suits its purposes of the moment. This is not to say that identities do not change; indeed, the central thrust of constructivism explores how identities and the norms associated with them are socially constructed over time. Rather, the intersubjective nature of identities and norms does not allow an actor to change them freely, and so they shape and limit what it can do. Furthermore, understanding identities and norms becomes critical for understanding how international politics works because these institutions shape everything about
The Game-Theoretic Critique of Realism and Constructivism

If institutions both create institutional equilibrium—that is, behavior given the institution—and equilibrium institutions—the existing institutions are not changed because no set of actors both wants to change them and can do so, then political institutions depend on the two elements of equilibrium in game theory. First, the behavior under the institution forms a collection of mutual best replies, calculations of self-interest where no actor wishes to change his or her strategy given the strategies of the other players. Second, the players share a common conjecture that they are playing that equilibrium of the game. The common conjecture is critical when a game has multiple equilibria because the players' best replies—the moves that are best for him or her—depend on which equilibrium the players understand that they are playing. The shared understanding of the common conjecture allows all players to understand which actions are in their interest. Institutions marry self-interest and a shared understanding where both are essential and neither piece provides a complete picture on its own.

Both realism and constructivism are incomplete; each presents one side of the coin of political institutions. Realists correctly point to the importance of calculations of self-interest, while constructivists give pride of place to shared understandings. But neither of these essential factors of political institutions can operate without the other. They are fused together in the logic of political institutions.

The game-theoretic critique of realism concerns the range of possible worlds under anarchy. The realists' claim that shared understandings as institutions cannot lead actors to
overcome the problems of anarchy can be interpreted as a claim that all equilibria of any game that satisfies their assumptions must be “competitive” in nature; equilibria with cooperative behavior cannot exist. This is a strong claim. It requires showing not that the worlds that have occurred have been competitive but that no game consistent with their assumptions has equilibria that vary in their level of competition or cooperation. Otherwise, how states act—whether they could cooperate for mutual gain—would depend on which equilibrium the players were actually playing. The common conjecture as an institution could allow them to mitigate the effects of anarchy by directing them to limit competition. Games with multiple equilibria mean the actors have different ways to compete or cooperate and their common conjecture about which equilibrium they are playing is essential to determining how they act, even though all continue to pursue their self-interest as they understand it within that equilibrium.

The game-theoretic critique of constructivism concerns the range of behavior that norms and identities can induce. Can norms and identities induce any pattern of behavior, or put another way, if you socially construct it, will they come? Constructivists do not address this point directly, although the precedence they give to norms and identities over interests suggests that any pattern of behavior could be supported by the proper set of norms and identities. A game-theoretic view of norms and identities limits the set of behaviors that could occur; even if a game has multiple equilibria, most combinations of strategies are not equilibria of that game (except for highly unusual games). Self-interest limits the possibilities of what norms and identities can induce actors to do. States may be able to play out the consequences of anarchy in different ways with important consequences for international politics, but they cannot make whatever they wish out of it.
A game-theoretic approach may also help us deal with two issues in determining how
norms operate. Constructivists commonly analyze the nature of norms and identities, explaining
how they constitute international politics and why the system is different under different norms.
Demonstrating that norms change behavior faces two related problems of empirical judgment.
_Circularity_ arises when norms and identities are inferred from observed behavior and then used
to explain that behavior. Because norms and identities cannot be observed directly, we do not
have evidence of them beyond how actors behave, including their public justifications as actions.
Constructivists rely on justifications of actions to reveal identity, norms, and when actors
consider them legitimate (cf. [Kratochwil, 1989 #448]). I do not deny that justifications can be
useful, but they must be considered as strategic acts to be interpreted properly. Game theory can
help us think through the complexities of how principles of proper behavior could be used by
actors in their public justifications and so reveal how such acts reflect whether such principles
are held.

_Circularity_ would be less of an issue if actors always complied with the norms for the
relevant identity. _Inappropriate behavior_ poses the problem of judging whether norms influence
behavior. Realists commonly critique constructivist arguments by pointing out cases where the
actors do not follow the prescripts of the putative norms (cf. [Krasner, 1999 #457]’s critique of
sovereignty). Exceptions exist to sovereignty, and one still hears occasionally of male professors
inviting their female students to sit on their laps. As constructivists point out, the existence of
some violations of norms does not mean that norms have no effect. However, disentangling the
puzzle posed by inappropriate behavior forces us to spell out when actors will see such
violations as being in their interest. A central goal of this book is to explain when the laws of
war have been violated and when they have been observed. That explanation requires both the
shared understanding of the norms of such conduct and the calculations of state interest in the
light of those norms.

Game theory does not solve either problem; it gives us a tool to model norms and
identities formally and then derive how actors should behave if they held them. The precision of
the analytic tools of game theory can help us cut through these problems to arrive at clear tests of
when actors should observe norms and when not. These tools also allow us to ask what would
happen under alternate sets of norms by examining the full set of equilibria of the game in
question. In the words of Robert Powell ([Powell, 1999 #449], 29), “formal models provide a
kind of accounting mechanism that enables us to think through some issues more carefully than
ordinary-language models can.” By thinking about norms and identities as being reflected in the
common conjecture of the game in question, we have a way to model how actors would act if
they held a particular set of norms and identities, addressing the circularity problem, and then
derive how they should act, addressing when inappropriate behavior occurs.

The game theoretic approach also undercuts the distinctive character of international
politics as anarchic. Neorealists and constructivists agree that international politics is anarchic
while domestic politics has a legitimate central authority, even though they disagree about the
consequences of anarchy. Contrary to received wisdom, the game theoretic view sees no
difference in fundamental character between domestic and international institutions; domestic
politics is also anarchy.7 Legitimate domestic authority exists in domestic politics only to the
extent that the actors accept and enforce domestic institutions on one another; they cannot appeal
to some outside power to enforce defections from the accepted order. All political institutions
are tenuous, and their permanence is always something that must be explained. If institutions persist and succeed in enforcing their principles and rules, it is because the actors can enforce them on one another. The depth, breadth, and acceptance of domestic institutions is greater than international institutions, but this is a difference in degree not character. International relations theory can learn much about international institutions from the study of domestic institutions.

Further, multiple institutional arrangements are always possible. The questions that drive men and women to form political order do not have single solutions. The games that underlie these problems have multiple equilibria. Alternative political institutions are always possible, and such changes make some actors better off and others worse off. Further, the exact consequences of new institutional arrangements is unclear. Perhaps change is for the better and perhaps not.

This last point is the necessary consequence of multiple equilibria in games. Multiple institutions are possible in most social settings, with resulting different behaviors. This point should be obvious if we think of domestic institutions. There are many different forms of government. Some work better than others, and some people are better off in one than another. This point is more difficult to see in international institutions because they do not vary cross-sectionally as governments do. But they do vary over time, demonstrating that a variety of international institutions is possible.

Realism, Idealism and International Law

The opposition between the realist focus on power and interest and the idealist focus on
ideas extends to whether and how international law shapes what states do. From Louis Henkin’s famous declaration that “almost all nations observe almost all principles of international law and almost all of their obligations almost all of the time (Henkin, 1979, 47),” some believe that international law suffuses and structures international politics to the point where compliance verges on automatic. The managerial school (cf. Chayes, 1993) argues that when states fail to comply with their obligations in international law, they do not so out of calculations of immediate self-interest. Instead, there are three causes of noncompliance. First, the language of the agreement might be imprecise, leading a party to commit acts that other parties see as a violation even though the first party had no intent to breach the agreement. Second, a party might lack the capability to carry out its obligations and so finds itself in violation even though it cannot follow through on those obligations. Third, conditions may change, leading a party that fully intended to comply to now wish to end the agreement or at least hold it in abeyance until conditions change once more. These three causes of noncompliance suggest that absolute standards should not be applied when judging whether states live up to their legal agreements; instead, there are acceptable levels of noncompliance for each agreement. The agreement is breached only when violations exceed this level, with violations below it ignored. With the qualification for acceptable noncompliance, states in this view do live up to their legal obligations.

Others (e.g. Downs, 1996) see the same pattern of widespread compliance with law and draw the opposite conclusion; law does not shape what states do because they choose to enter into legal obligations only when they see complying with those obligations as unproblematic. Cooperation through law is shallow; it does not address difficult issues where
there is a common benefit to be realized but a substantial risk of failure through noncompliance. There is widespread compliance with international legal obligations because states legalize only the issues where compliance is easy. At the extreme, international law and, more generally, international institutions are epiphenomenal; they are a shadow, following the consequences of power and interests, instead of the form moving international politics (Mearsheimer, 1995 #436).

As is the case with realism and idealism generally, both of these views hold an incomplete portion of the truth. States have created international law to help them realize benefits from cooperation, but law helps to address some of the issues that make that cooperation difficult. Cooperative agreements face a host of problems including but not limited to opportunistic defection, any one of which could cause an agreement to fail. Legal agreements are designed to help the actors create social mechanisms to address those problems. Without those agreements and the mechanism, cooperation is likely to founder. The realists correctly see that states select into legal agreements because they believe they will benefit from then, but fail to see that the resulting cooperation may require the mechanisms induced by those agreements. The idealists see that legal agreements structure international relations, but they fail to see the myriad problems that can impede cooperation, particularly when the mechanisms induced by legal agreements defuse those problems.

Limiting violence through the laws of war faces a number of these problems. States disagree about the appropriate standards of behavior during war. Some believe they gain from restraint, others from unrestrained combat. Even those who agree on the former may disagree about the exact nature of restraint. Those opposed to restraint may wish to portray themselves as
favoring it and conceal their true views until wartime. How can those who prefer restraint identify one another, so they can anticipate when both will observe restraint and when they must protect themselves against an opponent who denies restraint? Even when both sides would prefer restraints on conduct during war, do they agree on what the limits are, what acts are allowable, and which fall outside the bounds of restraint? A vague agreement to cooperate on restraint might founder if one side took actions that it thought were acceptable but the other did not; the latter might retaliate out of a fear that the first was seeking to exploit its restraint. A preference for restraint, even one shared openly by both sides, may not be sufficient for them to realize those shared preferences.

Law can aid states in creating a restrained battlefield by clarifying what restraint means, who wishes to live within those limits, and how to respond to those who do not. Universal treaties define what proper conduct is, thereby reducing disagreement about the limits. Treaty ratification of that public standard screens out states that do not want restraint. By opting out, those states indicate that they will not live within the bounds of restraint. Others are then forewarned of the intention of a state to violate the standard, and so can prepare themselves for that including possible responses in kind. This may lead to the unrestrained battlefield sought by the state that does not accept the standard. When both sides ratify a universal treaty, they create shared expectations that both sides will comply with that treaty standard to the best of their ability. When such a party fails, it should expect its opponent to respond in kind. This threat of retaliation could enforce their agreement to live up to the treaty standard both accepted before the war. Treaty law could help the parties realize their shared preference for restraint in the face of the problem created by differences in the willingness of the parties to be restrained.
This example is only one facet of how international law might help states at war cooperate on restraint. This restraint is neither epiphenomenal as the realists declaim nor automatic as the idealists believe. It results from the design of the institutions of international law, principles which shapes how states at war will act towards one another. Further, compliance with the laws of war is problematic, with many warring parties violating those laws, including those who have accepted them. The problematic record of compliance contradicts both the realist and idealist views; cooperation on this issue is difficult to accomplish, yet states have created these laws and taken on the burden of complying with them, even given those difficulties. Law aids cooperation by creating shared understanding of proper conduct married to incentives created during war to follow that law when possible.

Law as an Institutional Equilibrium

This book examines the laws of war an international institution in light of the general argument about political institutions just presented. International law can be thought of as the codification of the common conjecture underlying the equilibrium that international actors are playing. It shapes the actors' expectations of how they will play the game and allows them to anticipate one another's actions and reactions. Law goes beyond norms of conduct by adding precision to the terms, a sense of legal obligation to the provisions, and the possibility of enforcement through domestic legal and political process. The treaties that embody the laws of war then strengthen and refine the norms of proper conduct during wartime that precede them. These treaties have been negotiated and then ratified by states that wish to make that law binding
on themselves. Finally, such treaties are resistant to change, and so operate as equilibrium institutions; common conjectures of which equilibrium will be played are also resistant to change because as shared understandings no actor can change them acting alone.

Law adds precision to norms as the common conjecture requires precision about behavior in all possible cases. An equilibrium specifies what each actor will do in all possible situations, including those that should not occur under that equilibrium. The common conjecture then requires that the players share that understanding of how they will act even when some actor does not follow the prescribed behavior. General normative principles, such as the protection of soldiers who have surrendered, lacks the precision of the Geneva Conventions concerning exactly how prisoners of war must be treated. Law in general moves beyond norms by adding precision; the law on homicide moves beyond the general norm of “Thou shall not kill” to explain the set of crimes which homicides may fall into, how to judge which of those crimes a particular killing is, including the possibility of justifiable homicide, and how those crimes should be punished.

Law also creates obligation even when the parties do not fulfill their obligations. In international law, such obligations are formally binding when states ratify the relevant treaties. Common conjectures shape how an actor acts even if it does not agree with it. Because others will act in accord with the common conjecture, an actor is not free to disregard the consequences of its behavior which are spelled out in the common conjecture. In this sense, common conjectures create obligations for players even though they, like people under a system of law, are free to violate those obligations subject to the consequences that follow from such violations. Many students of international law argue that customary international law binds states even
when they have not formally ratified it or even when it has not been negotiated into the form of a treaty. Customary international law can be seen as the common conjecture behind stable patterns of behavior that states have converged to over time without a formal treaty. Again, such law would have binding power on international actors to the extent that the system of behavior identified with that custom forms an equilibrium.

I focus, however, on formal treaties over customary law in this project. The dual process of formal negotiation followed by ratification means that the standards of the treaty and its acceptance by states are clearer than those in customary international law. The single public treaty produced through negotiation means that all states know what the standard is even if they do not accept it; ratification is public evidence that the ratifying state has accepted that standard. Formal treaties help to address the problem of circularity facing explanations based on norms that I discussed earlier. We have a text that explains the standard independent of the acts of the states in question, and we have a clear public signal of which states have accepted the obligations of that standard through ratification. I can then match behavior against the standards of a treaty to determine when states have followed their standards in the laws of war.

Of course, behavior may differ from the standard because the parties do not wish to comply on their own and that standard does not produce sufficient incentives for the parties to comply. The formal model of the laws of war that I present in Chapter 3 provides a logical structure for thinking about incentives to comply. I use the ideas in that model with a general discussion of reciprocity to discuss the practical issues in compliance, leading to testable hypotheses about when states should comply and how bad their behavior is when they do not comply.
The formal model of the laws of war is likely to have many equilibria, and so the common conjecture is critical to how the players will play the game. The common conjecture details which strategies are unacceptable, meaning the players are free to use any other strategy as they fight the war. Either side has the option of using a banned strategy, with the consequence that all banned strategies will become available after such a violation of the underlying agreement. The common conjecture then specifies acceptable and unacceptable actions and the consequences of unacceptable acts. The model allows me to derive when sides are willing to break the convention, leading to hypotheses about when violations are more likely to occur. Compliance is more likely to occur when states do not believe they can gain by breaking the prewar convention. The success of the laws of war then depends on the strategic incentives warring parties have to honor them during wartime. As the reader will see, the full range of incentives both to honor and violate these laws is wide, and simple generalizations do not follow about compliance, violations, and atrocities.

Law then is more than just a collection of normative rules; it embodies a strategic logic of action. All law creates incentives for actors, shaping their actions. Successful law, particularly at the international level, requires a marriage of moral principles with strategic logic if actors are to follow those principles. An example from domestic law may help clarify this point. The legal systems of the United States and Great Britain draw on a shared common-law tradition, but differences in their specific laws produce different behavior both in the legal system and within its shadow. For example, it is more difficult to prove libel in the United States than Britain, as British defendants need to prove that they had good reason to believe their statements were true, while American defendants need merely prove that they did not know their statements were
false. This difference changes not only what libel cases are pursued through the courts, it also changes how news organizations collect, document, and justify their stories as they are prime targets for libel suits. British courts, unlike American ones, also allow successful defendants to recover their legal costs from the plaintiff but do not allow the plaintiff’s lawyers to collect contingency fees as payments for their services. These changes reduce the ability to bring suits for legal damages that involve novel legal theories, such as litigation against the tobacco industry in the United States was at one time, which is not likely to succeed on its first attempt.

Law induces strategic dynamics of its own. Actors are pursuing their self-interest as they understand it in the shadow of the law, and the law shapes what they perceive as their self-interest and so how they act. Self-interest and shared understandings of appropriate actions are not separable in such a system as they are necessarily knitted together.

This view of law also explains why different areas of international law differ from one another. Different issues pose different collections of strategic problems that law can address and aid the parties in overcoming. These differences explain why international law differs. Human rights law is aspiration to an ultimate standard and is unilaterally binding; trade law seeks to create a uniform multilateral free trade zone that is enforced through bilateral sanctions. Human rights strike at the fundamental relationship between the state and citizen, and so could compliance cannot be enforced by international retaliation. All states commit some human rights abuses, in part because they cannot control their agents, such as the police. The standard is aspirational—a goal to work toward—rather than absolute. Trade advances the ideal of free trade; an ideal that seeks to remove barriers to the movement of thousands of goods and services that trade across borders. Bilateral enforcement puts the detection and response to violations on
the parties who are harmed by a barrier to trade. Because the strategic problems poses by different issues vary, so does law across these issues. Yet they share the common logic of creating common knowledge about what the law is, even though the content and procedures of it vary from issue to issue.

The law can be written many ways with different consequences for how actors will act. The common conjecture, that shared understanding about how one is supposed to act, is how the actors know which equilibria they are playing. Common conjectures act as structure constraining individual choice because they are shared understandings, requiring assent across actors to be changed. At the same time, the common conjecture also acts like what constructivists call constitutive norms—norms that describe what entities are actors and what actions they are allowed. As we will see in the next chapter, a common conjecture can differentiate actors who are identical in the description of the game; it can make some actions acceptable for some actors but not others. Again, such roles operate as social structure because an actor cannot change these roles by itself. The players would be able to change these structures if they all agreed to shift to another equilibrium of the game. Rarely will all actors be willing to do so. Game theory then provides a way to think about shared understandings of norms and identities as social structure.

The Essential Social Nature of Game Theory

This argument relies on a view of game theory different from that commonly held and taught. Game theorists have focused on the calculation of mutual best replies and the
identification of equilibria because we have mathematical tools to do so. The logic of the enterprise is straightforward; write down a game that one believes represents the social situation of interest, find at least one equilibrium of that game, and then interpret the behavior in that equilibrium to explain behavior in the situation under examination. If there is a fit between the equilibrium and observed behavior, we then implicitly assume that the players/actors hold the common conjecture underlying that equilibrium. Although we do look for multiple equilibria sometimes, only rarely are multiple equilibria treated empirically either by looking for regularities in behavior that hold across all equilibria or considering conditional hypotheses of multiple patterns in the data. The latter would occur when the players play different equilibria across the cases and we cannot distinguish when the different equilibria are being played except by observing what the actors did in a given case. In all of these analyses, calculation of mutual best replies takes precedence over determining what is the common conjecture. It is this approach to analysis which has led many constructivists to assert that game theory is incapable of dealing with norms and identities because they believe that games must assume identities and interests as given.9

Thomas Schelling first proposed an alternate view of game theory's ability to explain social issues that gives precedence to common conjectures over best replies ([Schelling, 1960 #376], Ch. 6), although he did not use those words. Schelling addressed bargaining, arguing that simple bargaining games had a continuum of equilibrium, so knowing which equilibrium was being played was far more important than understanding the logic of mutual best replies within that equilibrium. He argued that cultural features that made a particular equilibrium stand out from the others in the minds of the players would prove to be the real keys to predicting how
players would play a game. Schelling's argument, like mine, gives pride of place to the common conjecture; it also, unlike my argument, makes the common conjecture more important than the strategic dynamics of mutual best replies. Schelling chose situations such as bargaining or simple coordination where the strategic dynamics were trivial and gave rise to an infinite number of equilibria. Once we turn to a situation, like the restraint of violence during wartime, where the strategic dynamics are more complicated, those strategic dynamics restrict the set of equilibria and therefore the common conjectures which could act as institutions.

Like Schelling, I give common conjectures a central place in game theory. In this sense then, many have failed to grasp the social nature of game theory. It is truly a theory of interdependent decision; what the actors think about what one another will do is as central to their own calculations as their preferences over outcomes. Equilibrium in game theory is a social theory constructed around individual actors. Action by individuals isolated from the context of their interaction with the other players only makes sense in trivial games or those where the player has a dominant strategy. Equilibrium concerns stable shared expectations based in calculations of self-interest. The shared expectations then shape how the players understand their interests and how they can advance those interests. In that way, shared understandings can operate as institutions. The burden of this book is to demonstrate that this argument can be used profitably to understand an important, real phenomena—the laws of war.

The Plan of the Book

Several years ago, a satire on the field of international relations, entitled “A Medieval
Sociology of International Relations” circulated widely through email. The elite scholars at the Ivy League universities were the nobles whose only skill was the ability to engage one another in paradigmatic combat; the mass of scholars doing quantitative work were the peasants working hard to assemble their data and publish their results in the slight hope that they might survive the rigors and whims of academia, and the formal theorists were the clergy with their arcane language and impenetrable theories. Although I am one of the high officials of the church of formal theory in international relations, I hope that this book will talk to all three classes in the medieval world of the study of international relations. For the nobles, I offer them sweeping arguments about the role of norms in the international system that might end their eternal paradigmatic wars. For the peasants, I too have toiled in the fields of data collection as I test the conclusions of my arguments against a data set of compliance with the laws of war during the 20th century. For the clergy, I hope I offer them enough formal theory that they will not declare me a heretic for my deviations from the Holy Theory.

This introductory chapter has laid out the broad argument. Chapter 2 discusses common conjectures in game theory and how they can be used to represent norms and identities as those concepts are understood in international relations. I discuss the theory behind common conjectures in the abstract, but the chapter concentrates on a variety of different equilibria of iterated Prisoners' Dilemma to show what the common conjecture does in each of those equilibria and how the shared understanding in that common conjecture works like norms and identities. Iterated Prisoners' Dilemma is particularly useful for this discussion because it has wide ranges of types of equilibria with very different behavior; it is also useful as a model of reciprocity. My discussion of the types of equilibria possible in iterated Prisoners' Dilemma then
allows me to show the range of possible forms of reciprocity and how they vary. Reciprocity under noise—the inability to fully ascertain what the other side has done—is important for understanding the laws of war in practice.

Chapter 3 offers a model of the laws of war based on a strategic model of war. The laws of war are represented as a prewar agreement not to use certain strategies during wartime. The sides enforce their deal through the threat to remove these restrictions on strategies if either violates their agreement. In general, there is a wide range of prewar agreements that could be enforced, so the common conjecture about which agreement is in force is critical to any restriction of violence during wartime. I discuss the laws of war generally and the strategic problems underlying them. Noise introduced by violations by individuals is critical to the practical implementation of the laws of war. I pull together the discussion of the laws of war both in the abstract and in practice to arrive at a set of hypotheses about how and when they are violated. Chapter 3 appears in dual form; the first Chapter 3 presents the argument in words with little mathematics to spare those readers who do not wish to delve into the technical detail, while Chapter 3’ immediately afterward provides the formal details of the model for those who do.

Chapter 4 tests these hypotheses against a data set of compliance with the laws of war during the 20th century. I examine the effects of legal obligation through ratification of the relevant treaties, the political system of the country in question, and the relative power of the warring sides among the variables tested. The results support reciprocity generally and specifically the key role of variations in noise across issues in determining compliance. Legal obligations have little effect on their own; instead, law enters the picture by restraining states that would be unrestrained if they were not obligated and by clarifying what acts are violations,
making reciprocity more effective as a tool of enforcement. I also examine the question of the
timing of violations during a war and test for audience costs for first violations. As with Chapter
3, Chapter 4 appears in dual form, the first presenting the results of the statistical analyses in
graphical form to make them accessible to all readers, the second presenting the details of the
analyses common presented in quantitative international relations.

Chapter 5 tests the hypotheses about compliance by examining the issue of prisoners of
war in detail. During the World Wars, there was substantial variation in how states treated
prisoners. Reciprocity emerges as important and reinforced by legal commitments, and
reciprocity on the battlefield becomes an important source of enforcement. Ratification of the
relevant treaties operates as a signal of intent during wartime, particularly in the face of differing
views on how prisoners should be treated. I also consider cultural explanations for treatment of
prisoners of war and explain why I reject them in favor of reciprocity. The case material in this
chapter complements and deepens the statistical tests in Chapter 4.

Chapter 6 briefly discussions four issues in the laws of war that have received more
attention in the international relations literature: aerial bombing, chemical weapons, conduct on
the high seas, and treatment of civilians. I do not analyze these issues in as great detail as I do
prisoners of war, mainly seeking case support for the results of the statistical analysis and
countering explanations for compliance that others have proposed.

These chapters explain how the laws of war work once in place; they seek to explain how
they operate and how we can know that such norms have actual effects of behavior. Chapter 7
turns to the question of how norms change over time, again using the laws of war as the subject.
I draw on theories of the sources of common conjectures to analyze how norms and identities
change. I use results from evolutionary game theory to outline a theory of the rational evolution of institutions, applying that theory to the development of law concerning prisoners of war.

Chapter 8 concludes the book by examining some current issues in the laws of war. I discuss whether the results of the historical cases apply to recent wars. The push to universalism—the idea that all states must ratify the laws of war—poses dangers as well as the promise of the acceptance of humanitarianism as a central value in world politics. Terrorism poses particular problems for the dual legal systems of the laws of war and criminal law, suggesting that the evolution toward a third body of law on violence is appropriate. Finally, the book ends with some broad conclusions about how normative standard matter in world politics; how and when ideals bring order to anarchy.
Endnotes to Chapter 1

1. {Francis, 1997 #822} discusses this case and related executions in detail. I have also drawn on the trial summaries available at the U.S. Archives.

2. These two questions are those of institutional equilibrium and equilibrium institutions ([Shepsle, 1986 #450]).

3. {Tsebelis, 1990 #855} considers the similar idea of nested games, but his emphasis is on how the linked games change the payoffs of the players across them, leading them to make strategic choices that seem surprising within the context of any one game in isolation.

4. Realists do not agree completely on the corrosive effects of anarchy. {Mearsheimer, 2001 #438} argues for offensive realism where all states must pursue power in the short term, while {Glaser, 2010 #853} contends that states may be able to resolve some of the insecurity of anarchy under the right conditions. Even for Glaser, structural factors, such as the offense-defense balance, rather than ideational factors, such as a shared commitment to defend the peace and sovereignty of other states, is the key to overcoming anarchy.

5. I do not consider intrinsic identities of individual actors if they are not recognized to entail norms of behavior. I also collapse Wendt's four types of identities–personal or corporate, type, role, and collective ([Wendt, 1999 #430], 224-233)–into one because they all share the two key elements I discuss: norms linked to each identity and a shared understanding of which actor has what identity in what situation.

6. Having attended Dodger-Giant games in Candlestick Park in the past, I have seen the threat of violence present in the fans of the bucolic sport of baseball.

7. {Goldsmith, 2009 #854} makes the parallel between international law and constitutional law that matches my point here that international and domestic institutions face the same problems.
8. In the interest of a clean presentation, I do not discuss varieties of equilibria where the players can hold discordant beliefs about what would happen off the equilibrium path.

9. An example of such arguments can be found in Jepperson et al. ([Jepperson, 1996 #437], pp. 41, 43, 59) although they do qualify their criticism in important ways.

10. A player has a dominant strategy if its payoff is always higher than that produced by its other strategies against all strategy combinations of the other players.

11. It can be found at http://www.gotterdammerung.org/humor/medieval-ir.html, accessed July 12, 2011. I thank Randy Siverson for directing me to this site.
Chapter 4

Patterns of Compliance with the Laws of War during the 20th Century

If it were possible or meaningful to conduct a quantitative study of obedience to the rules of international law, it might be expected to show that most states obey most agreed rules of international law most of the time.

Hedley Bull, *The Anarchical Society*, p. 131

([Bull, 1977 #428])

This chapter begins the task of evaluating the evidence on how the laws of war work in practice. These treaties, I have argued, matter because their ratification by states creates a common conjecture that both sides will follow them if war should break out. The threat of reciprocity enforces this common conjecture of moral restraint. The possibility of strategic advantages from violations and the reality of noise produced by individual violations mean that these commitments will be broken by some parties in some wars. In response, the other side should respond in kind to these violations.

The key questions addressed in this chapter are

- What factors lead states to violate the laws of war regardless of the behavior of its opponent?

- When are states more likely to respond to such noncompliance with violations of their own?
- Does treaty ratification induce restraint on its own and reinforce reciprocity when restraint fails?

- Do opportunistic defections from treaty standards come early or late in wars?

The first question concerns which factors lead states to violate existing norms of proper conduct during wartime. Among the candidates are whether the state has accepted the legal standard publicly, the nature of its domestic system, and whether the specific issue-area gives more or less scope for violations by individual soldiers. The second question concerns the conditions of reciprocity between warring states and among soldiers on the battlefield. Here the candidate explanations include the clarity of the violations in question, the nature of the state’s domestic system, and whether the sides are equal or not on the battlefield. The third question addresses the effects of legal commitments on state behavior. The final question arises from the formal model in the previous chapter; states that break agreements that they have publicly accepted to gain a strategic advantage should do so early in the war rather than late.

The analysis in this chapter is statistical and seeks to uncover general patterns in compliance and violations. The individual case or observation is a warring directed dyad for a particular issue-area of the laws of war. For instance, how France treated German prisoners of war during the First World War is one case. Because of the large number of cases covered—all interstate wars according to the Correlates of War project from the Boxer Rebellion in 1990 to the Gulf War in 1991, compliance is assessed in general terms across the entire war as opposed to listing specific atrocities. Further, I cannot conduct a detailed legal examination of each possible violation to determine its exact legal status. The next chapter examines the issue of
prisoners of war during the World Wars in detail; as such it complements the results of this chapter. This chapter provides a broad analysis of the patterns of compliance; the next chapter discusses the detail of one particular set of cases. The combination of the two chapters then provide us with a range of tests of the argument that should give us confidence that the results have both external validity—that we can be confident that the argument will hold for cases beyond those examined—and internal validity—that we can be confident that the results do reflect what happened in the cases that we examined.

I have divided this chapter, like the previous one, into two parts; one written for a general audience and another aimed at the academic political science audience. This chapter presents the central results of the statistical analysis using graphics to show the estimated effects and tables to show patterns in the data. It covers all the main results of the statistical analysis presented in detail in the companion Chapter 4', which provides a complete description of the statistical estimations and tests of the theory. This chapter allows those readers who do not wish to review the full statistical analysis to understand the patterns and their importance uncovered by those techniques. I have striven to use graphics that should make those effects and the conclusions that follow from them clear even to the reader lacking in technical training. This chapter also provides the central discussion of the significance of these results and their implications for the theory presented in the preceding chapters.

I begin by describing the data set on compliance with the laws of war. I then discussing the factors that could influence compliance and reciprocity that will be examined in statistical work. This discussion expands on the hypotheses deduced from the model in the previous chapter to consider elements that lie outside the model. I present descriptive statistics of the data set to show the basic patterns of compliance. I follow this with the graphical presentation of the
main multivariate statistical analysis of compliance presented fully in the companion chapter that follows. I examine discordant and outlying cases to see whether they are consistent with the expectations of the model. I turn to presenting the results of when first violations occur and the timing of responses to those first violations. I conclude this chapter by summarizing the results.

General Description of the Data Collection

I have collected data on compliance with the laws of war. The time period covered is the 20th Century because the formal body of international law of war begins with the Hague Convention of 1899 and grows with the Geneva Conventions and other treaties regulating conduct between warring parties. The basic unit is the directed warring dyad-issue area; that is, what did each warring party do to each of its enemies on each particular issue in the laws of war. The question is what leads to compliance, with reciprocity as one mechanism leading to compliance.¹ A fuller discussion of the coding can be found in {Morrow, 2006 #466}.

This coding effort relied on many research assistants, whom I acknowledge in the preface. My primary assistant in this effort, Hyeran Jo, worked closely with me during the coding of the cases to ensure consistency across them to the point of being an equal participant in the process. In recognition of her work on the data collection, I discuss our procedures using “we” than “I” here and in the companion chapter.

First, we take all Correlates of War interstate wars from the Boxer Rebellion to the Gulf War (1991, not the sequel). Each multilateral war is broken into all warring dyads by pairing off each member of each side with every member of the other side. Additional research determined whether military action occurred between the members of each of the possible warring dyads.
When neither state in the dyad engaged in military action against the other, the dyad is dropped as it is not a warring dyad. For example, World War I expands to a full set of 44 dyads matching each of the 11 states that were members of the Allies with the 4 states of the Central Powers. From this set, dyads such as United States-Bulgaria are dropped because they did not actually fight one another.

The set of dyads is reduced further by consolidating states that fight under unified command into one actor. States that fight under united command have a single leader or leadership group that has the power to order subordinate units to comply. In this sense, states that fight under unified command do not have separate policies, and this process eliminates overcounting of observations that are not independent of one another. Additional research determined when such unified command existed. For example, all dyads in World War I between Portugal and the various Central Powers are absorbed into the corresponding dyads with Great Britain because Portuguese forces fought under British command. This consolidation also eliminates some cases where it may be difficult to determine if the two states in question actually fought, such as United States-Hungary during the Second World War, as one of them fights under the command of another state which clearly fought the other member of the directed dyad.

The period of fighting for a particular warring dyads may differ from the general dates of the war, and so each is dated from the beginning of military action until fighting ends by agreement. For example, the Netherlands and Germany fight one another from May 10, 1940 to May 14, 1940 in the Second World War. States that reentered World War II are dropped (e.g. Vichy France in 1940 and the Free French in 1942); consolidation under unified command leads to the acts of these forces being included in the command under which they served. Each warring dyad then leads to two directed dyads. For instance, Germany and France fought against
one another in the First World War, giving rise to the directed dyads of Germany ⇒ France and France ⇒ Germany.

For each warring directed dyad, we code behavior of the first member toward the second member on nine different issue areas in the law of war. The issue-areas are as follows:

- Aerial bombardment
- Armistice/Ceasefire
- Chemical and biological weapons
- Treatment of civilians
- Protection of cultural property
- Conduct on the high seas
- Prisoners of war
- Declaration of war
- Treatment of wounded

Each of these issue-areas is defined by the set of treaties, including draft treaties, in the issue-area. We used the text of treaties found at the website of the International Committee of the Red Cross. These treaties were grouped into the nine issue-areas above. Issue-areas such as neutrality law were dropped because they do not address the conduct of one warring party toward another. Genocide was also dropped as acts that could be considered genocide during wartime were subsumed under the treatment of civilians. This selection of issue-areas encompasses both areas with well-developed treaty law as well as those which lack any formal treaty law, such as aerial bombardment. This design allows me to test whether the existence of a formal treaty aids compliance with the norms of proper conduct in an issue-area.

The relevant treaties in each issue-area were read to identify major and minor violations.
Table 4.1 gives examples of major and minor violations for each issue-area and the corresponding treaty. These coding rules structured the collection of information on violations and compliance for each directed warring dyad. Historical works and contemporary journalistic sources were searched for examples of violations and general judgments on degree of compliance by each warring party toward the other member of a directed dyad. We coded the following dimensions of compliance:

- **Magnitude**: how bad were the violations?
  
  A four-point scale from none to many major violations such that compliance does not matter.

- **Frequency**: how frequent were violations?
  
  A four-point scale from none to massive violations to the point where the standard is ignored.

- **Centralization**: what was the role of central military and political authorities concerning violations?
  
  A five-point scale from no violations to central authorities punishing individual violators to positive identification of state intent to violate.

- **Clarity**: did the actions clearly violate the treaties?
  
  A four-point scale from no violations to definite legal violation.
When a state commits violations, we also attempt to determine the date of first violation. This breakdown of compliance into four dimensions is designed to make the coding more reliable than a single scale of compliance. Each dimension can generally be coded when we have available evidence on the acts.

Table 4.1 about here

This design does not allow us to test reciprocity of actions directly because the codings are judgments about compliance across the entire period of fighting. Ideally, one would like to have a complete list of all instances of violations where one could trace the patterns of reciprocal responses directly. Although such sequences can be found in some cases, it is impossible to find them for even a notable set of cases. Understandably, those who commit atrocities often attempt to conceal their own participation in them, meaning there is never any record of many violations. Charges that the other side has committed atrocities are also common; sorting out what actually happened can be difficult. We prefer secondary historical sources, particularly academic works written decades after events, because the authors of such sources have often done the difficult work of separating truth from unfounded accusation. They also often make judgments about the nature and extent of violations from an examination of many incidents.

Only violations that occurred during the conflict period were coded. Since we are strictly interested in compliance with *jus in bello*, events before and after the war are eliminated. For this reason, we do not consider POW repatriation or postwar civilian treatment of occupiers.

We benchmark the most recent treaties in coding violations. We do not follow the principle of intertemporal law but rather ask how warring parties in the twentieth century wars fought by the contemporary standard of the laws of war. In practice, this decision does not have a great impact on what acts constitute violations. The general principles underlying the laws of
war have been largely consistent throughout the 20th Century. We do use the principle of intertemporal law in judging legal clarity. The law of war has developed over time to clarify acts as violations that have been found to be ambiguous, meaning that these acts are violations whose legal clarity was in doubt at the time of the violation.

We sort out violations of different magnitude and frequency by the following priorities: 1) most prevalent, 2) highest magnitude, and 3) highest quality of evidence. These priorities were used when a warring party committed many minor violations and a few major violations. An example is how French policy in the use of chemical weapons evolved during the First World War. The use of CBW by the French was decentralized with a few minor violations at first, but became centralized with more intense and clearly illegal use of chemical weapons beginning with the Battle of Verdun in 1916. Our coding is based on French conduct after Verdun under these priorities.

Coding decisions were based only on available information in the sources we collected. The notes section of the data set explains when our coding is based on an inference from the information in the sources. The laws of war are currently an active area of historical research, and we anticipate that the data may be updated in the future as new evidence emerges.

Quality and coverage of the data are key questions facing any analysis on this topic for two reasons. Violations are not possible for some issue-areas in some wars. For example, conduct on the high seas was not an issue in the Hungarian-Allies war of 1919 because all fighting took place on land. Missing data is an immense problem for any comprehensive study of compliance with the laws of war. Atrocities are often not reported. Some of these wars are obscure, meaning little or no information is available. Because the amount of information available to use in coding varies greatly from observation to observation, each directed-dyad-
issue area is also coded the quality of the data used in the coding. A fifth variable was then collected for each observation that was coded:

- Quality of the data: do we have confidence in the coding because it is based on substantial and reliable information?

A four-point scale from sketchy evidence (1) to excellent documentation providing strong confidence in coding.

The quality scores reflect my preference for secondary historical sources over primary and journalistic sources. Historians have often done the hard work of verifying or rebutting rumors of atrocities and revealing those not reported in contemporary sources. If multiple sources substantiate each other with concrete evidence, the case received the highest score of 4 for quality of information. Journalistic sources with unsupported allegations or sketchy evidence receive quality score of 1. In extreme cases, some codings are based on a single sentence in a source or a judgment from a simple statistic. For instance, a report that a very small number of prisoners were exchanged at the end of a war with significant fighting suggests that the side which took the prisoners did not comply with the Geneva Convention because otherwise they would have taken more prisoners and those prisoners would have survived the war. We use the score for the quality of the data in some analyses to place greater weight on the cases where we have confidence in the coding.

Given the amount of directed-dyad issue-areas where we had no evidence on which to base a judgment, we employed standardized codings for the following issue-areas: treatment of civilians, cultural protection, conduct on the high seas, prisoners of war, and treatment of the
wounded. These standardized codings reflect my view that even the best disciplined armies commit some violations. The codes suggest that civilians, soldiers surrendering, and wounded enemy are killed during combat, and that such actions are against state policy and may be punished. The coding for the conduct on the high seas assumes that naval forces conduct themselves properly when naval combat occurred during the war. The standard coding for cultural property protection assumes that a few protected sites come under fire during combat. These standardized codings are superceded if any information is available. In the analysis, we drop a warring-dyad-issue-area if both sides have a standardized coding on that issue. These standardized codings allow me to use warring dyads where we have information only about what one member of the dyad did. The standardized codings are given data quality 0, which matters when we weight analyses by the quality of the data.

Table 4.2 about here

A standardized coding is also used for the issue of chemical and biological weapons when we had no reports of use by a side. Accusations of the use of such weapons have been extensively investigated by others (e.g. [Stockholm International Peace Research, 1971 #87; Harris, 2002 #165]), allowing me to conclude that a side did not use such weapons if the sources that focus on chemical and biological warfare do not mention that it used such weapons in that war. For the issue of chemical and biological warfare, the data set coded a warring party as having no violations if there are no reports in these sources. Data quality is rated as a 2 for such cases.

Violations are not possible for some issues in some cases because the sides either lacked the capability to carry out such violations or no fighting of the type in question occurred during the war. All the fighting in the Hungarian-Allies War of 1919 was on land, making violations of
conduct on the high seas impossible. Similarly, sides that had no air force, like the Chinese during the Boxer Rebellion, could not commit violations of aerial bombing. These cases receive missing values codes of -9 for all five measures of compliance. We took care to document when parties did not have capabilities and so should be coded as missing data as opposed to those where they had capabilities or the ability to create them, where the absence of violations is compliance, not missing data. For the issue of CBW, we assumed that parties could create such capabilities even if they did not possess them.

We collected the first date of violation by a warring party on a given issue whenever possible to test hypotheses about timing of first violations. When a side commits both major and minor violations, the date for the first major violation is coded. When the date of first violation is unclear in the sources, we tracked down the closest date of the associated battle or event. In the Second Balkan War of 1913 for example, the date of the first Turkish violation against Bulgarian POWs was determined by the date of Turkish occupation of Adrianople because that was the first documented time when the Turks took Bulgarian soldiers prisoners. Dates were coded conservatively the cases when a precise date could not found. When we could narrow a violation down to a month but not a date, we used the last day in the month. In some cases, the first date is set at the last date of war because date of event could not be established (e.g. violations against Chinese wounded by the Relief Expedition forces during the Boxer Rebellion).

Finally, I would like to make clear what the data set is not. As mentioned above, it is not a comprehensive listing of all violations for a given warring directed dyad-issue-area. Such a comprehensive listing would be wonderful for testing the dynamics of reciprocity, but it is impossible to collect for even a small set of the cases. Second, the data is not based on a precise legal analysis of whether particular acts constitute violations of the treaty in question. The legal
status of some acts are contested, particularly when questions of military necessity and proportionality arise. Instead, the codings capture whether the broad pattern of acts by a warring party are consistent with the standards of the relevant treaty. When such acts are not agreed to be clear legal violations, the score for the legal clarity of the violations reflects that uncertainty. At the level of aggregation of the data, precise legal analysis of all acts is not necessary to make broad distinctions between behavior that is compliance and that which is not. These limitations are important to remind us what we can learn from this data and what we cannot. The data can help us see broad patterns in how the laws of war have worked during wartime. Because they cannot show the full dynamics of those laws in practice, I complement this chapter with the two following chapters of case studies.

Measuring Compliance

The variables in the data set are defined for the ease and clarity of collection and coding from the historical sources used. Compliance with the laws of war is the central variable I analyze here. A simple measure of compliance multiplies the scores for magnitude of violations and frequency of violations. This score ranges from 1, no violations, to 16, frequent and multiple major violations. However, equal intervals in this score do not necessarily indicate equal changes in the level of compliance. We can say clearly that some cases show lower levels of compliance than others without asserting that equal differences between scores represent equal differences in compliance. Further, the differences in compliance across some different scores may be small and so such scores should be collapsed into one level of compliance. Ideally, the categories of compliance should have large differences across levels compared to the variance in
compliance within levels.

Table 4.3 presents the crosstabulations of magnitude and frequency of violations in the data set, the first with the standardized codings included and the second excluding them. These tables are helpful in grouping the scores into distinct levels. A score of 1 for either frequency or magnitude means the other must also score 1 as both reflect no violations by the state in question on that issue. By construction of the measure then, the top row and leftmost column of these tables have 0 for every cell except the top leftmost cell. Looking across the rows, it is obvious that minor violations are almost always infrequent (216 out of 221 if standardized codings are included, 35 out of 40 if not) and even major violations are likely to be infrequent from the third row of the table (534 out of 688 or 240 out of 394 cases). This pattern suggests that frequent major violations differ from these less frequent and severe violations. Similarly, massive major violations constitute almost one-half of the cases with many major violations across the fourth row (61 out of 128 cases in both tables). These patterns suggest the following ordinal scale of compliance with four levels given by different shadings in Table 4.3:

- Full compliance, where no violations are reported,
- High compliance, where only minor violations are reported or infrequent major violations,
- Low compliance, where major violations occur frequently but the standard is not ignored,
- Noncompliance, where violations are both major and frequent.

This ordinal scale of compliance is robust in its separation and order of categories even if we cannot say that the differences in compliance between the levels are comparable.8
I exclude declaration of war from the analysis of compliance because it is only judged at the outbreak of war and reciprocity is not possible. That issue is included only in the summary statistics reported in this chapter. I do analyze violations of declaration of war separately in the companion chapter that follows.

Summary Statistics of Compliance

I begin the analysis of compliance by presenting summary statistics to give the reader a broad picture of the data. The frequency of each level of compliance can be found easily from Table 4.3. Of the 947 cases with coding based on evidence (not standardized codings except for CBW), 41% (385 cases) have full compliance, 32% (306) high compliance, 21% (195) low compliance, and 6% (61) noncompliance. As I noted at the beginning of the book, the record of compliance overall is mixed. While full compliance is common, low or noncompliance is not rare. If I include the standardized codings, the record of compliance looks better because cases with those codings fall into the full or high compliance categories.

Figure 4.1 depicts the spread of compliance scores as a histogram for each issue separately, both including and excluding the standardized codings. The variation across issues is substantial. Treatment of civilians is the issue with the lowest level of compliance; chemical and biological weapons the issue with the best record of compliance. In between these extremes, prisoners of war and protection of cultural property have worse records of compliance while aerial bombing, armistice/cease fire, and conduct on the high seas better than other issues. Obviously, the issue at hand has an important impact on compliance, a result we will see again in the multivariate analysis.
Simple evidence for reciprocity can be seen in Table 4.4 which matches the compliance of both sides of each warring dyad, excluding cases where we have only standardized codings for both sides and declaration of war. The standardized codings are equal by definition and including those cases would inflate the effect of reciprocity in the table. I refer to the side in an observation as the violator and the other side as the victim. Table 4.4 includes each dyad for which we have data twice, once for each direction of the dyad. Hence the table is symmetric about the main diagonal by construction. I have shaded the cells in the main diagonal in Table 4.4 to aid the reader.

The pattern in Table 4.4 supports reciprocity in the data, although it is not exact. The $\chi^2$ test shows that the compliance of the two sides is not independent of one another, and the tau-b statistic shows the positive relationship in the table. Of the 1066 cases in Table 4.4, more than one-half, 580 of them, fall on the main diagonal of the table. Only 76 of the cases fall more than one cell off the diagonal. In over 90% of the cases then, the compliance of the warring sides does not differ by more than one level.

Table 4.5 shows compliance based on the ratification status of the both sides. The left-hand side of the table breaks down the violator’s compliance based on whether it had ratified the most recent treaty in the issue-area, while the right-hand side shows the violator’s compliance based on whether both sides had ratified the most recent treaty, which I refer to as joint ratification. The model argued that joint ratification should be crucial because it provides public acceptance that both sides have agreed to live by the standard. There is little difference in the violator’s behavior based on ratification status, whether its own or joint ratification, alone.
columns are hardly different. However, reciprocity could cloud this picture; if joint ratification strengthens reciprocal responses to violations, then such responses could account for the cases with low levels of compliance. Ratification status also varies with the issue; no state has ratified a treaty that address aerial bombing. These multiple effects complicate the picture and could account for the lack of a clear relationship in Table 4.5. Multivariate analysis is the way to address these multiple effects to see the separate effect of each possible cause of compliance on its own. Before describing that analysis and presenting its results graphically, I discuss the variables that could affect compliance.

Table 4.5 about here

Factors that Might Affect Compliance and Reciprocity

The model presented in the previous chapter explains the strategic logic of compliance at the state level. States live up to their legal obligations during wartime when the military benefits of abandoning those commitments are less than the audience costs incurred by breaking the commitment. But states see those advantages and audience costs in different ways. The effect of most of the state-level variables in a statistical analysis is difficult to predict; there are often arguments that point in opposite directions. Violations by individuals can produce noise, which can lead to retaliatory spirals and the collapse of compliance. Here again, the effect of state-level variables is typically unclear and could go either way. This section lays out the arguments for the different effects that the candidate explanatory variables could have on both compliance and reciprocity. The precise measures used for these concepts are presented in the companion chapter.
Regime Type

International relations scholars conventionally recognize a distinction between democracies and autocracies, with the well-known democratic peace—the observation that democracies are much less likely to fight one another even though they fight roughly as often as nondemocracies—being the center result from that distinction. Why the democratic peace occurs has been a central issue of debate in the literature for well over a decade as I write. Some believe that democracies are better at generating audience costs and so can signal their resolve more clearly ([Fearon, 1994 #471], [Schultz, 2001 #472]), while others think the pattern is a spurious result of common interests among democracies during the Cold War ([Farber, 1995 #473]), and many more such arguments have been advanced to account for the pattern described above. These arguments matter for my questions because the various arguments imply different patterns among regime types. The model is agnostic about these argument, and so will I in this section.9

First, democracies may be more likely to comply with their legal obligations. Many different arguments about how democracies conduct foreign policy lead to this conclusion. If democracies externalize their norms of limited competition ([Maoz, 1993 #477]), then they would be more willing to limit how their military forces conduct combat. Arguments about democracies being law-bound states—those that respect international law and commitments because they are governments where law presides over men—also predict that democracies would be more likely to comply with international humanitarian law during wartime ([Simmons, 2002 #480; Slaughter, 1995 #478] [Hathaway, 2002 #481; Hathaway, 2005 #482]). Perhaps these two arguments differ in that the former seems to imply that democracies would be willing to comply with such norms even if they had not ratified the current treaties, while acceptance of
law through ratification would be critical for a law-bound state.

Second, autocracies may be less likely to comply because they hold human life in lower regard. This is the reverse of the normative argument of constrained competition in democracies. Autocracies are more likely to engage in mass killings of their own civilians ({Harff, 2003 #483}). Further, because autocracies see law as a tool the leader uses to retain his hold on power, and not as a system of principles that limit the leader’s power, autocracies will not take their international legal commitments seriously. They will feel free to ignore those obligations as suits their purposes of the moment.

Third, audience cost arguments suggest that democracies are more likely to live up to legal obligations that they have accepted before the war began. It is commonly argued that democratic leaders face greater audience costs for escalating a crisis and then backing down ({Fearon, 1994 #471; Schultz, 2001 #472}) because the domestic audiences can remove them from office more easily than those audiences in other systems. Similarly, others argue that democracies are more likely to honor their alliance commitments to defend their allies because of such costs. In both cases, the clear public act of accepting the obligation combined with the public act of subsequently failing to live up to it signal to the domestic audience that the leader should be removed.10 In the model described in the previous chapter, higher audience costs increased the chance that the state in question would comply with the prewar convention limiting battle strategies, assuming that the convention was publicly known to be accepted by both side before the war.

All three of the arguments above suggest that democracies are more likely to honor the laws of war than autocracies are, although each casts a different light why. Whether democracies will retaliate when they suffer violations against their troops does not follow as
clearly from these arguments. If democracies are unwilling to engage in unlawful acts, then they may not unwilling to respond to atrocity in kind. Of course, they could find other forms of response than direct reciprocity; recently, the threat of war crimes trials after the war have been threatened to deter autocratic leaders from committing atrocities. Whether such threats work is not a point the current analysis can address as the use of such threats of postwar trials is a recent phenomenon. Law-bound states might be quite willing and capable of responding to violations in kind, particularly when the treaty in question provides for reprisals in the original meaning of the term—a violation that retaliates against other violations in order to induce future compliance. In some areas of the law of war, such reciprocal responses lift the protections of the law when the other side abuses that protection for a military advantage. Whether democracies are able to carry out reciprocal responses to violations is not clear cut.

Finally, I turn to another way to think about how domestic regimes might influence a state’s willingness to comply with the laws of war. All political leaders answer to a set of supporters, their winning coalition. To stay in power, a leader must keep his or her supporters from defecting to a challenger. Leaders can use public policy to reward their supporters with combinations of public goods—policies that benefit all in society—or private benefits—policies that reward specific individuals directly or indirectly. A central insight into politics is that public policy shifts away from the provision of private benefits and towards the provision of public goods as the size of the winning coalition that the leader requires to hold power increases (Bueno de Mesquita, 2003 #463). Leaders of modern mass democracies require a large winning coalition, roughly half of the electorate of their states. Autocratic leaders, on the other hand, rely on a much smaller set of supporters to retain power, and so are less likely to provide public goods to all in society. In this view then, democracies are law-bound states because the
rule of law is a public good, and leaders of democracies have created institutions to enforce law in order to provide that public good.

This view of domestic politics has similar implications for compliance with the laws of war as more general views of democracies versus autocracies. First, no leader in any system draws support from enemy soldiers or civilians; their willingness to limit violence against the enemy arises from the benefits such limits produce for their own supporters in terms of shortening the war or reducing the costs of fighting. This suggests that democratic leaders may care more about both sides complying than autocratic leaders because it is more likely that their own people suffering from violations will be supporters of the current leader. Because the supporters of the leader are more likely to suffer the consequences of atrocity when the winning coalition is large, leaders who answer to a large winning coalition should be more likely to comply, but also more likely to retaliate. It may also be the case that leaders who answer to a large winning coalition are less likely to commit the first violation of an agreement during war, as they would like to uphold those standards, but are more likely to retaliate against a violation. Put another way, autocrats are less predictable than democratic leaders; they have more latitude to do as they wish because they answer to fewer supporters.

Relative Power

The relative power between the warring parties could also affect their willingness to comply. Here the arguments present effects in both directions. If the sides are roughly equal, then both possess the ability to retaliate in some form, enhancing reciprocal deterrence of violations. On the other hand, the consequences of any military advantage gained from breaking a convention for which side wins the war might be more significant when the sides are equal.
Similarly, when one side is much stronger than the other, it might be restrained because it knows it is likely to win without violating any conventions. On the other hand, a much stronger side might violate conventions to raise the cost of fighting, and so shock the weaker side into conceding quickly, as explained in the last chapter. As with democracy, I am agnostic on which of these effects dominates. It may prove to be the case that although each of these arguments appears to hold in some cases, that in general, they cancel one another out and there is no systematic pattern.

There is one exception to my agnosticism here because the model does have a clear prediction concerning which side is responsible when the first violation comes late in the war. Assuming audience costs are constant across the war, a side close to victory can benefit from raising the costs of war by breaking a convention. Because this observation opposes the common wisdom that losing states break conventions in an attempt to stave off defeat, I will test it separately. It might be the case that the leader of a state near defeat would violate a convention because the chance that he will survive to face any audience, foreign or domestic, is slight.

Legal Obligation

The central puzzle of this book is whether international law shapes state behavior, and if so, when and how. If law matters, states' conduct during wartime should depend on their legal obligations. There are two different views of international law as legal obligation. One view assumes that legal obligations matter only when states agree to be bound by the standards in a treaty. This view puts the acts of treaty ratification and reservations as signs that a state has accepted the legal standards of the treaty. The second view asserts that legal obligations affect
states as norms that shape their behavior even when states have not publicly accepted those
standards.

The mechanisms of legal obligation or constraint through shared norms are audience
costs and internalization of standards. Both views above see both mechanisms as working and
effective in shaping state behavior, although they disagree about how each operates. As such,
the evidence presented in this chapter cannot separate the details of these mechanisms. The
analysis can allow us to see if acceptance of legal obligations is necessary to limit state behavior
by including cases where states have not accepted the current treaty in an issue-area. The
analysis also includes an issue-area, aerial bombing, where no formal treaty has ever entered into
force and so no legal obligations exist, even if norms against the indiscriminate bombing of
civilians have and do exist.

The status of legal obligation can be specific to a state or dyadic if a state is committed to
observe a treaty obligation only when the other side has also ratified the treaty in question. In
the analysis, I test for both unilateral ratification and joint ratification of the relevant treaty.

Legal obligations could also depend on the political system of a state as described above;
democracies could care about and honor their legal obligations while autocracies do not
({Hathaway, 2002 #481; Hathaway, 2005 #482}). It also could be that states are willing to
overlook their legal obligations depending upon the course of the war. As argued in Chapter 3, a
common view is that losing states may ignore their legal obligations in an effort to stave off
defeat. I argued the contrary view that violations are likely to come early in the war if there is a
military advantage to be gained by breaking a standard of conduct, and that when initial
violations come late in a war, the victors are more likely to break the standard in an effort to
compel their opponent to settle. Additionally, the side winning on the battlefield can insulate
itself from possible retaliation by the losing side, making an initial violation more attractive.

Different Issue-Areas

State compliance with the laws of war should vary with the issue-area. In Chapter 3, I argued that violations by individuals produce noise, making reciprocal enforcement more difficult. Because different issue-areas provide varying levels of opportunities for individuals to commit violations, overall levels of compliance should vary across issue-areas. Some issues, like prisoners of war and treatment of civilians, provide individual soldiers with frequent opportunities to commit violations on their own initiative. Other areas, such as chemical and biological warfare, have little scope for such individual violations because soldiers can only commit violations if the command authority gives them the means to do so. Other areas, such as conduct on the high seas, are less prone to violations by individuals because the ability to commit individual violations lies in the hands of officers higher up the chain of command than the common soldier. Consequently, I expect to find substantial differences in compliance across issue-areas independent of the legal status of those areas, and I expect that average compliance should decline as the role of noise from individual violations rises by issue.

Analysis of Compliance with the Laws of War during the 20th Century

The multivariate analyses predict which cases fall into the four levels of compliance I described above—full, high, low, and noncompliance. The analyses include a large number of variables to test for how the strength of reciprocity varies and for other sources of compliant behavior. I refer to the side in question as the violator and the other side as the victim. The four-
level scale of compliance and the estimation of reciprocity pose two different threats to inference. The scale of compliance is ordinal; the categories are ranked from highest to lowest compliance, but there is no guarantee that the separation of the categories is equal. We cannot say that the rise in violations in moving from full to high compliance is of the same magnitude as moving from low compliance to noncompliance. The appropriate statistical technique for this issue is ordinal probit. The estimation of reciprocal effects raises the issue of simultaneity bias. I estimate the effect of reciprocal responses by seeing how the violator’s compliance varies with the victim’s compliance. Because the victim’s compliance is caused by the violator’s compliance if reciprocity exists, the inclusion of the victim’s compliance can bias upwards our estimates of the reciprocal effects. The appropriate statistical response is to create an instrumental variable for the victim’s compliance, which eliminate the correlation between it and the violator’s compliance and allows an unbiased estimate. The companion chapter presents the full results of these analyses and a lengthier discussion of these methodological issues.

The other issue the statistical analysis confronts is the quality of the data. As mentioned in the description of the data collection, the quality of the data varies across observations. In some cases, I employ standardized codings for one side when I lack any information on its acts during the war in question. To see if the results vary with the quality of the data, I have run each analysis three different ways, treating all observations the same, weighting by the quality of the data for both sides, and dropping all observations where I have a standardized coding for either side. The companion chapter presents all of these results.

The results I present in the graphics that follow are robust in the face of all of these issues. The graphics are based on the ordinal probit results weighting cases by the quality of the data for each observation. Still, the patterns I report appear in all the analyses, and so this
particular analysis is representative of the patterns found in all of these analyses. Although the specific coefficients vary from analysis to analysis, the patterns and estimated effects are similar across all of them. Consequently, the results reported are not simply the effect of simultaneity bias or the erratic quality of the data.

Multivariate analysis allow us to estimate the effect of each variable on compliance while controlling for the others. It allows us to address the issue posed by the tables I presented earlier; does the variation in compliance across issue-areas explain why there is no relationship between ratification and compliance? The ordinal probit results that I report in the following figures predict the probability of each level of the violator’s compliance as a result of the victim’s compliance. The effects of the different variables can be seen by calculating predictions of each level of compliance for combinations of those variables. Each of the figures shows how the probabilities of each level of compliance varies with one of these variables. Figure 4.2 gives two sample figures that illustrate how reciprocity appears in the figures. Because reciprocity is central to the results, I vary the compliance of the other side along the horizontal axis of each figure. The vertical axis gives the cumulative probability of each level of compliance. For each of the four levels of compliance of the other side, the color of the figure shows the probability of each level of compliance for the side in question; green is full compliance, yellow high compliance, orange low compliance, and red noncompliance. Overall levels of compliance can be seen by the amount of each color in each figure. Less green and more red means a greater chance of more and worse violations. The slope of the lines between the colored regions shows the degree of reciprocity. The picture on the left-side of Figure 4.2 shows no reciprocity whatsoever; the chance of each level of compliance is the same no matter what the compliance of the other side is. The lines between the colored regions are all horizontal as the chance of the
violator’s compliance does not vary with the victim’s compliance. (I have also made the probability of each level of compliance equal in this picture, but the key element is the horizontal divisions between the colored regions.) The right-hard side picture shows perfect reciprocity; the compliance of the side in question always matches that of the other side. The lines between the colored regions all slant downward diagonally from left to right, and the color at each level of the victim’s compliance corresponds to that level of compliance. For instance, tracing directly up from High Compliance for the victim, the picture is entirely yellow, meaning that the violator always also has High Compliance. The two key points to remember when looking at the figures depicting the estimated effects is that the amount of the colors shows the overall average compliance, with more green and yellow and less orange and red meaning better compliance, and the degree of diagonal slant between regions giving the strength of reciprocity, with a higher slant meaning stronger reciprocity. These pictures allow the reader to see quickly how reciprocity changes in the slopes of the lines between regions and the overall level of compliance in the color scheme.

Figure 4.2 about here

Ratification Status and Regime Type

I begin with the effects of ratification status and regime type. I considered their effects together because there are important interactions between them. Figure 4.3 shows the interactive effects of regime type and legal obligation through joint ratification. The six separate diagrams are arrayed with the rows showing whether the state is question is a democracy or not and the columns specifying whether neither, just the violator, or both parties had ratified the most recent treaty on the issue in question. Legal obligation through ratification has two important effects.
First, joint ratification strengthens reciprocity. The borders between the regions are steeper, particularly when the victim is less compliant, in the two pictures in the right column than in the other four. When both sides are obligated through joint ratification, both respond to substantial violations in kind. All the pictures have relatively steep drops when the victim’s compliance moves from full to high compliance. Reciprocity matters more when the other side commits substantial violations. This stronger reciprocity under joint ratification does not depend on whether the violator is a democracy; the two pictures on the right reflect comparable strengths of reciprocity. Reciprocity still works to some extent even when at least one side has not ratified the most recent treaty, but it is weaker in those cases. Reciprocal responses under joint ratification are 28 to 162% stronger than the other cases, with cases where only the initiator has ratified have the weakest reciprocal responses.11

Figure 4.3 about here

The stronger reciprocal responses under joint ratification also produce more compliance through effective deterrence. The green areas in both of the pictures in the right column are larger than in the other four pictures, showing that full compliance is more likely. The deterrent effect of joint ratification is not strong as the differences in the green area is not large, but it is noticeable.

Ratification and restraint go together for democracies but not for other systems. Of the six pictures in Figure 4.3, a democracy which has not ratified the relevant treaty, the bottom picture in the left column, has the worst record of compliance as can be seen in the small amount of green and large amount of red in that picture. In contrast, the other two pictures for when the violator is a democracy show more green and less red, and hence have better records of compliance. We do not see the same pattern looking across the top row corresponding to a
nondemocracy. Ratification makes little difference on the behavior of a nondemocracy beyond the added deterrence under joint ratification.

The tendency of democracies to comply less when they are not legally bound through ratification of the most recent treaty is partially a consequence of the issue of aerial bombing. The companion chapter reports results that exclude that issue, which reduces the increase in violations for democracies that have not ratified by about one-third. There has never been a formal treaty signed, much less ratified, to address aerial bombing. The major aerial bombing campaigns of the 20th century were generally carried out by democracies; the United States, for one, has conducted extensive aerial bombing campaigns in every war it fought beginning with World War II. I return to discuss aerial bombing in detail in Chapter 6.
The effect of reservations on compliance shows the logic of ratification as a signal of intent to comply with an agreement. The effects are small, so I do not depict them in a figure or report their results in the tables of the companion chapter. Nondemocracies that have lodged a reservation to the most recent treaty commit more violations than those that have not, and the effect is statistically significant although not large. Reservations by democracies, however, do not lead to lower compliance. Reservations slightly improve compliance by democracies but the effect is not statistically significant. This pattern suggests that reservations are a signal by nondemocracies that they will not fully comply with the treaty. For democracies, on the other hand, reservations signal that they take the treaty seriously and lodge their reservation only to clarify portions of the treaty with which they have a specific problem.

Figure 4.4 shows the effects of state violations—those that are a consequence of a decision by state authorities—as opposed to individual violations—cases where the violations are committed by individual soldiers without government approval. As can be seen in the two diagrams, there are no significant differences in compliance or reciprocity based on whether the violations are the result of state policy or individual acts. If anything, violations by individuals may produce stronger responses. This could be the result of conscious reciprocal enforcement. Retaliation may not change the behavior of a government which has already decided its forces will commit violations as a matter of policy, but it might convince a government to institute disciplinary measures to stop violations committed by their soldiers in violation of state policy. Government often do not discipline their soldiers for such violations when an effective system of training and military justice could reduce these acts.12

There is another important difference between state and individual violations; state
violations are worse on average. Table 4.6 breaks down the level of compliance by whether the violations were committed by individual or as a matter of state policy. When the violations are committed by individuals, the state still is in high compliance about two-thirds of the time. When the violations are a result of state policy, those violations rise to the level of low or noncompliance close to three-fifths of the time. Although reciprocal responses to individual violations may match those violations more closely, the worst violations are generally the result of state policy.

Table 4.6 about here

A surprising result is that legal clarity has little real effect on reciprocity; the strength of a reciprocal response is about the same whether the victim’s violations are clear violations of the law or in legal dispute. To be precise, legal clarity strengthens reciprocal responses when the parties are not legally obligated through joint ratification, but it has no effect when they are so obligated. I do not produce a figure to show this lack of an effect to avoid taxing the reader with too many of these figures. This surprising result may arise because few cases fall into the category of legal doubt. When joint ratification exists, most violations are at the level of definite legal violations. There are only 10 cases of violations in clear legal dispute under joint ratification, and both sides have high or full compliance in these cases.

Differences across Issues

Figure 4.5 depicts the variation in compliance across issues in the laws of war. I have placed the pictures of the issues in the order of the degree of compliance. Chemical and biological warfare (CBW) has the best record of compliance and is at the top left. Average compliance declines moving across the top row of the figure, and then across the bottom row.
Treatment of civilians has the worst record of compliance and is at the bottom right of the eight pictures in Figure 4.5. These differences can be seen easily in the amounts of green and red in each picture. The difference in average compliance between CBW and treatment of civilians is large. Ranking all eight issues from the highest average compliance to the lowest, they are CBW, armistice/cease fire, conduct on the high seas, aerial bombing, protection of cultural property, treatment of the wounded, prisoners of war, and treatment of civilians.

This order corresponds to the scope for violations by individuals across issues. Individual soldiers cannot use chemical weapons unless their commanders give them the weapons to use, while every soldier on the battlefield has the ability to kill civilians and enemy soldiers attempting to surrender. The intermediate issues often provide opportunities for lower-level commanders to commit violations. Ship captains can violate the rules for conduct on the high seas by refusing to take on enemy sailors whose ships they have sunk. Individual violations make it difficult to tell whether the other side is trying to comply with an existing standard, which can lead to escalation in violations through tit-for-tat feuds on the battlefield. The pattern of compliance across issues suggests that such noise and the resultant difficulties it poses for reciprocal enforcement is key to how the laws of war can regulate combat.

Relative Power

The effects of relative power on compliance are reduced by legal obligation through joint ratification. The first two rows of Figure 4.6 give six compliance pictures that vary the power ratio of the two sides up and down by one standard deviation and whether both sides have ratified the relevant treaty. Looking across the second row when the violator has not ratified the
relevant treaty, compliance goes down some as the violator becomes stronger. There is no visible difference across the first row. Legal obligation through joint ratification effectively eliminates the tendency of stronger states to commit more violations. The last row of Figure 4.6 shows compliance when the violator loses the war. Here the effect of power is the opposite of what one might expect; violations rise as the losing violator becomes weaker. Compared to the other variables considered so far, relative power has no substantial effect on compliance.

Finally, Figure 4.7 shows the effect of changing the intensity of the war as measured by battle deaths per 1000 prewar population. Intensity has a noticeable effect on compliance as more intense wars have worse records of compliance. This effect is comparable to that of a democracy that has not ratified the relevant treaty.

Comparisons across Variables

How important are these different effects? What factors play the largest role in compliance? Such comparisons are more easily done directly from the estimated coefficients in Tables 4’.3. Nevertheless, we can still see the relative importance of these effects by comparing across figures to see how much the different levels of compliance change for changes in the variables. The issue has the largest impact; the difference in average compliance between CBW and treatment of civilians is larger than any of the other differences considered here. Next and comparable in magnitude to issue is reciprocity when both parties are legally obligated through joint ratification. The effects of issue and reciprocity under joint ratification are roughly one level of compliance; changing the issue from chemical and biological warfare to treatment of
civilians reduces compliance one level, such as from high to low, and shifting the victim’s compliance from full to none has about the same effect. After these two, the unilateral restraint of a democracy which has ratified the relevant treaty has the next biggest effect. Losing the war at hand and increasing the intensity of the war produce similar and lesser reductions in compliance. The strength of reciprocal responses does not vary appreciably with either legal clarity or whether the violations are state policy or the result of individual acts nor does relative power have much effect on compliance.

Explaining the Patterns

What do these results tell us about the hypotheses of the model from Chapter 3? First of all, reciprocity enforces the laws of war. Violations are met with violations, providing one motivation to comply with existing treaties. However, reciprocity often fails, and the sides both commit many major violations. We cannot tell from the data how often reciprocity succeeds in enforcing a standard because such cases are those where both sides comply which could also be the result of self-restraint. Reciprocal responses generally do not match the violations that trigger them; the fit between the estimated equations and the data is not strong. In Table 4.6, it is more likely that the compliance of one side does not match that of the other, even though they move together. Reciprocity on the laws of war is not a tit-for-tat process.

The presence of noise introduced by violations shapes how reciprocity works in practice. The degree of compliance across issues matches the scope for individual violations in those issues. The issue with the most compliance–chemical and biological weapons–is the issue where individual soldiers have the least ability to commit violations acting on their own. They can only
use such weapons if the command structure distributes them. At the other end of the spectrum of compliance is treatment of civilians, an issue where every armed soldier has the ability and opportunity to kill and plunder civilians. Further, civilians, unlike enemy soldiers, often lack the ability to retaliate against armies that commit violations against them, undermining any sense of immediate retaliation that might deter violations. In between these extremes, the issues which have higher levels of compliance—aerial bombing, armistice/cease fire, and conduct on the high seas—allow greater scope for individual violations than CBW but still place that opportunity at the level of officers—pilots, local commanders, and ship captains, respectively—than the other issues where the individual soldier has the ability to commit violations even against orders. These other issues—protection of cultural property, prisoners of war, and treatment of the wounded—often break down on the battlefield because of individual violations, as we will see in the next chapter on prisoners of war. The effects of centralization on reciprocity are consistent with the role of noise; strong responses are more likely when the violations are committed by individuals than when they are state policy. As theories of reciprocity under noise predict, more noise increases the chance that reciprocal enforcement will break down into violations and noncompliance.

Effective reciprocity in the face of noise requires bright lines of conduct to help the sides separate deliberate violations that require a response from the inadvertent ones that do not. The laws of war attempt to establish clear rules of conduct that will help warring parties understand which actions are unacceptable. The statistical evidence shows that warring parties respond more strongly to clear legal violations of the treaties, supporting this argument. States do respond to violations that are legally ambiguous, but they respond more strongly to clear legal violations of the treaties.
The pattern of evidence does not support the argument that states live up to their legal obligations out of a sense of moral restraint. Legal obligation through joint ratification has no effect on its own. Democracies do comply somewhat more when they are legally obligated to do so; however, they commit more violations when they are not. This pattern contradicts the argument that the norms of appropriate conduct are more important than their legal implementation. As mentioned above, democracies are less likely to comply than other types of states when they do not have a legal obligation to do so. Aerial bombing accounts for much but not all of this pattern. I take up the specifics of aerial bombing and how democracies have viewed it in Chapter 6. For now, I point out that democracies should be more likely than other systems to follow general normative principles, yet the wartime behavior of democracies depends on their legal obligation. The pattern of evidence is consistent with both an audience cost argument and an argument that democracies are more likely to comply with legal obligations because they are more likely to be law-bound states. Both arguments predict that legal obligation is the trigger for compliance by democracies. Legal obligation signals democratic audiences about which commitments their leaders are supposed to follow; law-bound states will try to live up to their legal obligations. Both arguments need to the assumption that violations by the other side free a democratic state from its legal obligation to account for the pattern of reciprocity found here.

The effects of power provide some support for an argument about moral restraint. More powerful states are more likely to commit violations, presumably they have greater opportunity to commit them than their weaker opponents. The laws of war often seek to protect vulnerable targets, both military and civilian. Stronger states are more likely to win on the battlefield, providing them with access to enemy targets while protecting their own. Legal obligation and
winning on the battlefield reduce but do not eliminate the effect of greater power on violations. This combination suggests that moral restraint may play a role. However, audience costs could also explain the pattern as the leaders of winning states have to worry about the reaction of their domestic audiences to how they fight in a way that losing leaders do not have to. This evidence is not sufficient to allow us to judge between these arguments.

Analysis of Outlying and Discordant Cases

One set of evidence that could be helpful in separating these arguments are the outlying cases where the statistical model does not fit well. I focus on dyads where either the model does not explain either side's compliance well—the outlying cases—or those where reciprocity is not present—the discordant cases. My purpose is to see if the logic of reciprocity could explain why these cases either do not fit the statistical model or account for why one side refuses to respond to extensive violations of the other side. I use the instrumental variable analysis using the interaction of clarity with the victim’s compliance with weighted data (second cell in the middle column of Table 4’.4) to judge outlying cases. I begin by looking for all the directed dyad-issue areas where the residual from this model exceeds two standard deviations of all those residuals. Out of these 51 cases, I then look for pairs of these cases which represent the two sides of a dyad for a given issue-area. These pairs of cases are those dyads where the compliance of both sides deviates substantially from the prediction of the model.

There are four dyad-issue areas identified by this procedure. The use of chemical weapons between Germany and Great Britain during the First World War is a case where the conduct of both sides was much worse than the model predicted. This is the greatest use of chemical weapons, when the use of such weapons became commonplace on the Western Front.
Any use of chemical weapons is unusual, and such use tends to be one-sided when they are used as we will see in Chapter 6. The other three cases occur when one side's conduct is much better than expected and the other's is much worse. These cases are the failure of the former side to make a reciprocal response to the atrocities of the latter. Listed in the order of the side with the much better conduct followed by the side with the much worse conduct, they are: treatment of civilians by Russia and Turkey during the First World War, conduct on the high seas between Italy and the Western Allies during the Second World War, and aerial bombing between North Korea and the UN during the Korean War. The first is Turkish atrocities during the First World War against Armenian civilians where Russia saw any interest in retaliating. The Russians sought to protect Armenians and recruited troops from them. In the second, Italy was the victim of submarine attacks on its merchant shipping and had no real chance to retaliate.\textsuperscript{16} North Korea in the third case lacked any real capability to retaliate for extensive aerial bombing of its cities. The paucity of these cases where one side does not retaliate against atrocities of its opponent suggests that unilateral moral restraint occurs very rarely.

The discordant cases are defined using the ordinal measures of compliance. I look for cases where one side fully complied with the standard or had high compliance while the other engaged in violations at the level of noncompliance. As a reminder to the reader, a side is coded as being noncompliant when it commits major violations frequently. These cases are listed in Table 4.7. The cases fall into two rough groups. First, there are cases where the compliant side had little capability to retaliate. The aerial bombing cases in Table 4.7 are cases where the compliant side did not use what little air capability it had to engage in aerial bombing outside of the battlefield.\textsuperscript{17} The compliant side in the cases of conduct on the high seas did not deploy its naval forces where they could attack merchant shipping, greatly reducing the opportunity for
violations. The second group concern treatment of the wounded where the compliant side commits itself to humane treatment despite the violations of the other side. In the first group, the compliant side has little ability to respond; in the second group, it has made a conscious decision not to respond. Only seven cases fall into this second group, again implying that unilateral restraint in the face of frequent major violations is rare.18

Table 4.7 about here

Reciprocity and Total Compliance

To investigate how reciprocity varies, I analyze how reciprocity varies across pairs of warring sides. The dependent variable is the difference between the compliance of the two sides; low scores mean that both sides had similar levels of compliance and higher scores that their compliance was different and hence reciprocity was weak in that dyad. The companion chapter presents a multivariate analysis of reciprocity, whose results I summarize at the end of this section. Here I present the main results about how reciprocity varies across dyads through a series of tables on ratification status, regime type, and issue. I also examine how reciprocity influences the total compliance in the dyad—the sum of the compliance scores of both sides—to see whether reciprocity actually enforces higher levels of compliance. Low scores for total compliance indicate better records of compliance, and higher scores worse records.

Table 4.8 shows how reciprocity and total compliance vary with the ratification status of both sides, broken into whether both, one, or neither ratified the relevant treaty. The three separate tables here vary the cases included to show reciprocity and enforcement fully to see if reciprocity works when violations are committed as well as when both sides fully comply.19
Table 4.8a includes all cases; Table 4.8b includes only cases where at least one side committed some violations—dropping cases where both sides fully complied, and Table 4.8c includes only cases where both sides committed violations. The pattern in all three tables is the same. Reciprocity is weakest (higher scores) and total compliance worse (again higher scores) when only one side has ratified the relevant treaty. These differences are all statistically significant at the .01 level or higher. Reciprocity has similar strength when both or neither have ratified the relevant treaty, although joint ratification has a slightly better record of total compliance when both sides commit violations. None of these differences is statistically significant, however.

Table 4.8 about here

Table 4.9 examines the effect of regime type in the cases where only one side has ratified the relevant treaty. The analysis of compliance showed that ratification induced unilateral restraint only for democracies. This result implies that unilateral ratification by a democracy should undermine reciprocity because it is unwilling to retaliate. Again there are three tables for all cases, cases where at least one side commits violations, and cases where both sides commit violations. Reciprocity is weaker (bigger differences between the compliance of both sides) and total compliance is worse (again higher scores) when the democracy is the sole ratifying party. The number of cases is small, so the only difference that is statistically significant is the difference in total compliance when both sides commit violations (Table 4.9c).

Table 4.9 about here

Table 4.8 suggested that reciprocity is roughly the same when both have ratified the relevant treaty and when neither has. Table 4.10 examines reciprocity and total compliance by regime type for these two types of ratification status to see whether a democracy in the war changes the effects of ratification status. The tables show that democracies are capable of
retaliating in both situations. Joint ratification improves total compliance the most between nondemocracies when both commit violations; these are clear cases of reciprocal enforcement. None of these differences are statistically significant, however, at any commonly accepted level of significance.

Table 4.10 about here

Table 4.11 examines the differences in reciprocity and total compliance between neither ratified and both ratified controlling for the greatest legal clarity of violations by either side. Legal clarity is supposed to reinforce reciprocity by creating bright lines between acceptable and unacceptable conduct, although I have little evidence for that argument so far. Controlling for legal clarity, reciprocity is stronger and total compliance better under joint ratification than when neither has ratified the relevant treaty in almost all situations. Further, the tables show why reciprocity and total compliance are comparable between these two statuses of ratification. Lower levels of legal clarity also have better records of compliance, largely because low levels of compliance are violations that are clear legal violations of existing standards. Then cases where the legal status of violations are in question are less likely to be major violations nor are they likely to be frequent, which means these cases show higher reciprocity and compliance. These cases predominantly occur when neither side has ratified the relevant treaty; if violations occur under joint ratification, they are clear legal violations in 84% (164 of 195) of the cases, whereas less than 50% (60 of 121) of the cases of violations when neither side has ratified the relevant treaty are clear legal violations. The better record of compliance under joint ratification is statistically significant at the .06 level for Tables 4.11b and c.

Table 4.11 about here

I now turn to differences in reciprocity and total compliance across issues. Table 4.12
breaks down reciprocity and total compliance by issue. The earlier analysis of compliance broke the issues into two groups based that reflect the scope for individual violations and so average compliance. The issues with the least scope for individual violations—Chemical and Biological Warfare, Armistice/Cease Fire, Aerial Bombing, and Conduct on the High Seas—exhibit greater reciprocity than those with a larger scope for individual violations—Treatment of Civilians, Prisoners of War, Treatment of Wounded, and Protection of Cultural Property. The difference is statistically significant at the .01 level if all cases are included, but the difference reverses if at least one side commits violations and disappears if both sides commit violations. The low-noise issues have average reciprocity of .45 when all cases are included, .84 when at least one side commits violations, and .48 when both sides commit violations; the parallel values for the high-noise issues are .61, .64, and .53 respectively.

Table 4.12 about here

The effects of noise across issues also depends on ratification status and regime type. Table 4.13 presents reciprocity and total compliance comparing high and low noise issues broken down for ratification status—neither or both ratified. Although joint ratification does not generally produce stronger reciprocity than neither ratifying, it does generally produce better total compliance. Four of the six differences in total compliance comparing across ratification status are statistically significant at the .02 level or higher. The two exceptions are on the low-noise issues when violations occur (the left-hand side of Tables b and c). Joint ratification then has the greatest deterrent and restraining effect on the high-noise issues. On the low-noise issues, joint ratification leads to full compliance by both sides in 57% of the cases (59 out of 104), whereas only 37% (44 out of 119) of the low-noise cases whether neither side has ratified have full compliance by both sides. When violations occur on a low-noise issue, joint
ratification does not strengthen reciprocity or improve compliance. Instead, it discourages any violations to begin with.

Table 4.13 about here

I end this section with a brief summary of the multivariate results on reciprocity and total compliance that the companion chapter presents in full. The results support the patterns reported here, but they also allow me to include continuous variables, such as the difference in power of the two sides. Reciprocity induces better total compliance. Power reduces reciprocity some while raising total compliance. This pattern may occur because a side that is much stronger than the other can limit the latter’s ability to inflict violations on it. More intense wars have worse records of total compliance, even though reciprocity does not vary with intensity.

Searching for Firewalls

In Chapter 3, I argued that the laws of war separate issues to channels when and how reciprocity occurs. Reciprocal responses occur on the issue-area where the violation occurs. Actors, whether they be states or individual soldiers, do not retaliate to a violation by committing violations on a different issue-area. These firewalls between the issue-areas prevent the spread of violations from one issue-area to another, so that some standards of conduct are still honored even if others are not. Thus the laws of war continue to limit violence during wartime even when some of those restraints fail.

I test this claim against the patterns of conduct captured in the data. If actors respond across issues, then compliance on a given issue-area should be affected positively by compliance of the other side on other issue-areas above and beyond that predicted by the compliance of the
other side on that issue. If firewalls exist between the issue-areas, then we should find that the compliance of the other side on other issue-areas is not correlated with compliance on the given issue once we control for the other side's compliance on that issue. I look for cross-issue correlations in the residuals of the instrumental variable analysis. If states often retaliate against violations by the other against their soldiers held prisoner by attacking the civilians of the latter, then the residuals of compliance on prisoners of war should be positively correlated with those of compliance with treatment of civilians. When the compliance of one side on one issue is much higher or lower than we expect from the model, then the compliance of the other side on the other issue should be also. This test is conservative in the sense that it would miss cross-issue retaliation if the variance from such is correlated with one of the exogenous variables in the instrumental variable analysis used to calculate the residuals. I am conservative in interpreting the correlations. Furthermore, a negative result means only that there is no evidence of cross-issue retaliation occurring regularly; a negative result would not exclude individual cases of cross-issue retaliation. Firewalls, if they exist, merely try to separate issues so that retaliation operates only within them and not across them.

The observation in this test is the directed warring dyad, not the warring directed dyad-issue as it is in the analysis of compliance. I take the residuals of the best instrumental variable analysis and collapse the data set so that I have the residuals on all issues for both sides for each directed dyad. Figure 4.8 shows the pattern of correlations among the residuals of different issues between warring parties. I plot statistically significant correlations, using a dashed line to indicate statistical significance at the .1 level and a solid line for the .001 level. A black line indicates a positive correlation, a red line a negative correlations. Of the 28 correlations across warring sides and issues, only five are statistically significant at the .1 level and only one at the
The largest correlation, that of protection of cultural property and conduct on the high seas, is negative, contradicting cross-issue retaliation as an unusually high level of violations by one side on one issue is linked to the other side have an unusually high level of compliance on the other. Two of the five statistically significant correlations are negative. There is no systematic grouping of issues and few of the correlations are significant at even the .1 level. There is little evidence here consistent with cross-issue retaliation generally, and so we have some evidence, albeit weak, that firewalls do exist between different issues in the laws of war.

To check that the lack of significant results here is not just a property of the randomness of residuals, I also calculate the cross-issue correlations for each warring side on its own. Do sides that tend to commit high levels of violations on a given issue consistently commit more violations on another? Figure 4.9 shows the patterns of correlations in the same way as Figure 4.8 does. Here the evidence is much stronger than compliance by warring states is correlated across issues. Of the 28 correlations, 15 are positive and statistically significant at the .1 level, and nine of those are statistically significant at the .001 level. There are no statistically significant negative correlations. In general then, those states that comply a higher level than they should on one issue tend to do so for more issues. Further, the issues fall into two groups which state compliance is highly intercorrelated among all the issues. The first set–aerial bombing, chemical and biological weapons, and conduct on the high seas–are all issues with low levels of noise. The second set–treatment of civilians, prisoners of war, and treatment of the wounded–are all high noise issues. Noise could explain this grouping of issues; once a side decides it is going to violate on the low noise issues, its violations are clearly the act of the cental
government and so it might as well violate on the other low-noise issues as well. The correlation on the high noise issues would be the result of a collapse of these standards generally whether a deliberate act of policy or inadvertent escalation induced by noise on the battlefield. Another possible explanation lies in the willingness of states to impose discipline on their own soldiers. Large scale violations on the second set of issues—civilians, POWs, and enemy wounded—are often the result of a breakdown or of discipline in an army or the lack of any discipline to begin with. The first set of issues would be the result of a government simply ignoring the standards generally.

Figure 4.9 about here

We have some evidence then that firewalls do exist in the laws of war. States do exhibit patterns in their own compliance or the lack of it across issues, but I found little evidence that such patterns exists across issues between states. Again, this test looks for systematic patterns of cross-issue retaliation but does not find any. It could still be the case that warring parties do retaliate in particular cases across issues, but there is no evidence that such retaliation occurs regularly. The laws of war in practice have been upheld on some issues even while they were failing on others.

Timing of First Violations

The model in Chapter 3 predicted that if a state violates a treaty standard, it would do so early in wars in order to gain the strategic advantage of that violation as soon as possible. When violations come late in a war, the side winning on the battlefield, not the loser, should be more likely to break the standard. The winning side could use such violations to raise the cost of
continuing the war to its opponent, pushing the latter to agree to terms to end the war. These hypotheses contradict the view that the first violations come from states desperate to stave off defeat. This section presents the results of a survival analysis on dates of first violations to test these hypotheses.

I collected dates of first violations in the data set for this analysis. These dates give the first violation of the standard when we could find such dates. The best evidence for such dates are single acts that are violations tied to a specific report with the date of the act. Chronologies of the World Wars (e.g. [Gray, 1990 #135]) are particularly helpful in tracking down these dates as are detailed military histories. Dates were coded conservatively with the last date of the month used for violations where I had only the month in which the violation occurred. First dates could not be found. All the cases of standardized codings of violations are dropped from this analysis because such codings were used only when I had no information on specific violations and so could not place a date.  

These dates of first use have the important caveat that the first violation was coded even if it was minor compared to major violations by the same side later in the war. For example, Germany's first use of chemical weapons on the Western Front of World War I is the chlorine gas attack on April 24, 1915 in the Second Battle of Ypres. The Germans claimed that this attack did not violate the Hague Regulations against the use of projectiles that spread asphyxiating gases because the gas was discharged from cylinders. Like the Western Allies, Germany later used gas shells, a clear legal violation of the standard for the coding of legal clarity. The first use of gas then was not the same as the acts underlying Germany's coding on the issue across the entire war.

Survival analysis, also known as event history analysis, is the statistical analysis of
durations before an event occurs that originate in epidemiology (see [Box-Steffensmeier, 2004 #461] for an introduction to survival analysis as used in political science). It is called survival analysis because it was developed for data on how long medical patients lived. The basic unit of observation in this analysis is the warring party for a particular issue, and the dependent variable is time in days from the start of the war until a side commits its first violation on that issue. Those cases where the side in question fully complies throughout the war are right-censored; the observation is simply that no violation had occurred by the time the war ended. The statistical techniques of survival analysis allow us to use this information in addition to all the cases which did result in a violation. I focus on hazard rates, the chance that a case ends–here has its first violation–at a given time. Hazard rates can be expressed as a function of time, which tells us how the chance of a first violation changes as a war progresses. If the hazard rate is increasing with time, then first violations become more likely as the war goes on. If it is decreasing, then first violations are more likely early in the war. If the hazard rate is flat, then the chance of a first violation per time period does not change during the course of the war. We can also see how the hazard rate across cases varies with the variables we have examined earlier in this chapter. Here the analysis tells us whether the chance of a first violation increases (or decreases) with a given variable. Typically, such analysis assumes that an independent variable has the same effect on the hazard rate across time, simply multiplying it by the same amount at every time; this assumption is known as proportional hazards. Variables may have effects on the hazard rate that are not proportionate, and I test for those exceptions.

In most applications of survival analysis to political science, how the hazard rate varies with the variables is the primary question of interest. For instance, we might want to know how characteristics of a coalition government affect its duration in office. Here my main interest is
the shape of the hazard function, not how it varies across cases. The model in Chapter 3 led to the conclusion that the hazard rate of first violations should decline as a war progressed. A side that saw a strategic advantage in violating the laws of war should do so as soon as possible in the war. I test this hypothesis by estimating duration models that allow for the possibility of the hazard rate increasing and decreasing over time. The estimates that give the shape of the hazard function allow a statistical test of whether it consistently rises or falls over time. The companion chapter presents the full details of this analysis; here I present those results graphically.

Figure 4.10 depicts the estimated hazard rate for first violations by length of the war in days. The quick drop in the hazard rate can be easily seen in the graph of the estimated hazard rate. I have plotted the passage of time on a logarithmic scale to spread out the quick decrease in the hazard rate in the first days of the war to make the magnitude of the change easier to see if far less dramatic graphically.25 The hazard rate drops quickly from its original high on the first day of the war. It drops by more than one-third in the first ten days of the war and is less than one-half of its initial value within one month of fighting (the line at 30 days in Figure 4.10). Within two months, the hazard rate has almost dropped to one-quarter of its initial level, and within a year, it has dropped to one-eighth of its initial high value.

Figure 4.10 about here

The hazard rate is the daily risk of a first violations, and although it is highest early in the war, there is still a significant chance of first violations later in the war. Figure 4.11 gives the chance that a side will not have committed any violations as a function of time passed during the war. The scale of the time axis is linear rather than the logarithmic scale used in Figure 4.10. There is about a 15% chance of violation within the first month of the war; the risk of a violation rises to over 30% within the first six months of the war. After a year, the risk of the standard
being violated is over 40%, which rises above one-half after two years. (These points in time correspond to the vertical lines in Figure 4.11.) Figure 4.11 overstates the chance that violations will occur at some time during a war because it does not account for the fact that most wars are shorter than the period of time depicted in the figure. The median duration of a war in the data set is 237 days. About 45% of the wars last one year, and less than one-third last two years or longer (32.9% to be exact). The picture remains the same; warring parties are much more likely to violate the laws of war early rather than late in the course of their war.

I can also test for reciprocity using survival analysis. I separate first violations into whether they were the initial violation in the warring dyad or a response to an initial violation by the other side. Cases where both sides committed first violations on the same day were not considered as reciprocal responses to one another. Including a variable for whether the other side has already committed a first violation allows me to see how quickly states respond to first violations by the other side. The more quickly the response comes, the more immediate the reciprocity.

Reciprocal responses are swift. Figure 4.12 shows the estimated hazard rates for first violations and reciprocal responses after a first violation by the other side. The estimated chance of responding to a first violation during the day immediately after is over 40%. The chance of a reciprocal response falls off very quickly so that two months after the initial violation, it is not greatly higher than the chance of a first violation. Figure 4.13 shows the chance that a side will not have committed a violation as a function of time since either the war began or the other side has committed its first violation. I have shortened the time period shown in Figure 4.13 compared to Figure 4.11 to show how rapid reciprocal responses are. There is almost five-sixths
chance that a side will respond to a first violation within five days. There is a 95% chance of a response violation with one month of the initial first violation. Of course, this analysis does not tell us about the size of the reciprocal response nor does it demonstrate that the responses were adopted as retaliatory responses. But it does show that first violations are often met quickly by violations.

Figures 4.12 and 4.13 about here

Cases of First Use Late in a War

As the survival analysis shows, first violations tend to come early in wars, not late, as the model in Chapter 3 predicted. A side might choose to violate an agreement that had held throughout the war in a last effort to effect the outcome of war that was almost decided. While some argue that losers in such situations should be those who break a standard that has held in order to stave off defeat, victors might do so in the model in order to force their opponent to surrender and end the war. To test these two possibilities, Table 4.14 lists all the cases where one side committed a first violation by either side on the given issue after the war has gone on for at least one year and where that side's compliance was low at best.26 I exclude cases where the violator committed only isolated violations because such violations could not be part of a campaign to influence the outcome of the war. This measure excludes cases of accidental sinking of hospital ships for instance. I have classified these cases of late first use based on the military position of the violator in the war at the time of the first violation; were they clearly winning or losing or were the two sides relatively even in the results of battle? Table 4.14 uses five levels to describe the military situation at the time of the first violation—whether the violator was clearly winning, was favored on the battlefield, neither winning nor losing, unfavored, or
clearly losing. There are no cases of the first violator clearly winning, and five of the nine cases are even on the battlefield.

Of these nine cases, only Serbia's violations against Austro-Hungarian prisoners was a clear decision reached on the battlefield before the first violation. Serbia was overrun quickly by after Bulgaria joined the Central Powers by a combination of German, Austrian, and Bulgarian troops. The violations in this case occurred when the Serbians forced around 40,000 Austrian POWs to march with their retreating forces across the mountains into Albania ([Fryer, 1997 #274]). Given the difficult conditions of a forced march across the Albanian mountain as winter approached, many of both sides died. The two cases where the violator was favored, Turkish treatment of British POWs after the surrender of Kut in Iraq and German treatment of Italian POWs after the Battle of Caporetto, are also the first occasions when these violator took large numbers of prisoners from the forces of the victim. The case that most closely fits the picture of a losing side violating a standard to prevent defeat is Iraq's use of chemical weapons against Iran. Although the Iranians were gaining ground when Iraq used mustard gas in 1983, the fighting was still along their border, meaning Iraq was not close to defeat. Most of the cases occur in situations where the battle results do not clearly favor either side. The conservative coding used for dates of first violation also mean that some of these cases may have had earlier violations for which I was unable to pin down an explicit date. I would be surprised, for example, if the first atrocity by North Vietnamese forces against civilians during the Vietnam War happened in 1967. However, that is the date of the first verified atrocity that I could document. The cases of late first use do not support this conclusion of the model nor its alternative. First violations come early, not late in war.
Cases of Early First Use

The model in Chapter 3 argued that a side would be willing to violate a standard if it saw a clear strategic advantage in doing so. One way to test this conclusion is to examine the cases where a side committed a first violation when the survival analysis predicted it should not. To find these cases, I examine the deviance residuals of the survival analysis including reciprocity. Table 4.15 lists the cases where the deviance residual exceeded 2, the side in question committed the first violation, and its violations rose to the level of low compliance or noncompliance (magnitude and frequency greater than or equal to 3). These are the cases where a side was the first to commit frequent major violations early in a war when the survival analysis predicts that they were unlikely to commit violations at all. The model suggests that there should be many cases where the strategic effect of breaking the standard favored this side.

Table 4.15 about here

Of the seventeen cases in Table 4.15, I judge that at least eleven were cases where the effect of breaking the standard favored the violator over the victim even if the victim retaliated. France placed strong restrictions on German and Austrian civilians at the outbreak of World War I out of fear of espionage and sabotage, interning 45,000 enemy aliens in concentration camps. The number of French citizens in Germany and Austro-Hungary at the outbreak of war was much smaller, and Germany did not intern French citizens in camps until after the German public became aware of France's policy of internment of German citizens ([Garner, 1920 #259], 74-80). Although France gave German merchant ships a grace period of seven days before they were subject to seizure in French ports and by French warships on the high seas, the seizure of merchant shipping violated the Hague Convention and greatly favored France over Germany because the German fleet was contained in harbor by the British while the French fleet had free
access to the high seas ([Garner, 1920 #259], 149-56). Germany lost almost two-thirds of its merchant shipping to seizures and internment in neutral ports within one month of the outbreak of war ([Herwig, 1996 #33], 288). Ethiopia lacked sufficient airplanes to retaliate against Italian bombing of civilians ([Sbacchi, 1997 #160], 71), and China lacked chemical weapons to match Japan's extensive use of poison gas against them beginning in 1937 ([Harris, 2002 #165], 50-51). The adoption of unrestricted submarine warfare favored Germany over Britain in the Second World War. The destruction of much of the Soviet Air Force on the first days of Operation Barbarossa met that the Soviets lacked the capability to retaliate against German air attacks on their cities in the first years of the war known to the Soviets as the Great Patriotic War. The three cases of armistice violations in Table 4.15 are all cases where the violator used a local superiority to gain territory by breaking or refusing to enforce a cease-fire ([Oren, 2002 #355], 244, 291-92 for the Six Day War, [Polyviou, 1980 #356], 157-59 for the Turco-Cypriot War). Israel shot down 29 Syrian aircraft with no losses early in their 1982 war in Lebanon; after that, the Syrian air force ceased operations in Lebanese air space, giving Israel freedom to conduct aerial attacks without fear of retribution in kind. Of the other six cases, the two POWs cases involving Japan and Germany have violators who clearly decided that humane treatment of POWs were not in their interest, as we will see in the next chapter. Perhaps the most interesting case here is the adoption of unrestricted submarine warfare by the United States against Japan shortly after Pearl Harbor. The United States was quite vulnerable to retaliation in kind against its own merchant shipping needed to transport troops and supplies in the Pacific, but the Japanese did not use their submarines to attack Allied shipping, providing the U.S. with a huge strategic advantage from its own submarine war against Japanese shipping, as we will see in Chapter 6. Similarly, Great Britain and its allies gained a small strategic advantage from
adopting unrestricted submarine warfare against Italy because Italy did not commit its submarine fleet to the Battle of the Atlantic in response. At least eleven, and perhaps as many as fifteen, of the nineteen cases in Table 4.15 have asymmetric strategic effects, supporting the argument of the model from Chapter 3.

Conclusion

This chapter has been awash in the results of statistical analyses, and I realize I have tested the patience of the reader with them. What is the big picture of these results?

First, there is clear evidence of reciprocity in the laws of war. Warring parties do respond to violations on an issue with violations of their own, and they respond to first violations very quickly. Reciprocity produces better compliance.

Second, joint ratification strengthens reciprocity and produces higher levels of compliance. Ratification is a signal that a state will comply with the treaty standard if the other side will as well. Joint ratification creates the expectation of reciprocal enforcement and hence better compliance.

Third, noise introduced by violation by individuals is essential to the dynamics of reciprocity. The issues with the greatest scope for individual violations have lower levels of reciprocity and the worst record of compliance.

Fourth, treaty law matters indirectly by clarifying what acts are violations and by inducing restraint in actors that would do so otherwise. Legal clarity helps the sides understand when they need to respond to the acts of the other side. They respond more strongly to violations by individuals than those of state policy.
Fifth, unilateral legal obligation does matter for democracies, but democracies do not feel a moral obligation to follow general norms of conduct in the absence of legal obligation. Legal obligations also restrain the tendency of the powerful to use their power to coerce their weaker opponents through atrocities. Situations where only one side has ratified the relevant treaty have the worst records of reciprocity and compliance, implying that unilateral restraint is not a good thing.

Sixth, there is no evidence that sides retaliate across issues. Firewalls do seem to exist between different issues in the laws of war.

Seventh, first violations come early in wars if they happen at all. If a side sees an advantage in violating a treaty standard, it grabs that advantage quickly.

Eighth, first violations trigger responses by the other side quickly. Vengeance is swift in the laws of war.

These results are consistent with the view of the laws of war as formalized conventions of allowable conduct during wartime. Actors, whether they be states or soldiers, comply with such standards when doing so is in their interest considering the consequences of any response from the enemy. The laws of war, and international law more generally, relies on both shared understandings of right and wrong and self-interest, a marriage between power and principle.

These results broadly support the view of reciprocity under noise in Chapter 2 and the model of the laws of war in Chapter 3. Having shown that the broad pattern of wartime acts fits these views, I now turn to a detailed examination of some cases of a few issues to show how well the details of these cases fit these views. The next chapter addresses treatment of prisoners of war, and Chapter 6 briefly discusses chemical weapons, conduct on the high seas, and aerial bombing. Both chapters focus on the World Wars because there is plenty of evidence for a
detailed analysis of these issues for those wars.

I end this chapter by reminding the reader of some brief qualifications on the data analysis. The data covers a period of history and therefore describes how states and their militaries operated in this period. In the concluding chapter, I discuss current issues in the laws of war where I consider how these current issues differ from those during the period of time covered by the data. Simple-minded extrapolation does not account for how current situations differ from those covered by the data. Second, the data aggregates many events both within each war and across many wars to look for the general patterns reported in this chapter. The data used here was difficult to collect and required compromises on what one would like to be able to collect to test fully the theories presented so far. The compliance scores are aggregates of many actions in most cases, and the dates of first violations are just that. Ideally, one would like detailed time series of all violations to test reciprocity. That cannot be collected from the historical record, and so the data and its analysis is a compromise between what one would like to be able to do and what one can do. I have strived to be careful about the strength of conclusions I have drawn from this data and remind the reader of the limits of this data analysis. Now I turn to some case material to complement and buttress the arguments I have made here.
Table 4.1

Examples of Major and Minor Violations in Each of the Issue Areas

<table>
<thead>
<tr>
<th>Issue Area</th>
<th>Example of Violations</th>
<th>Treaty Referenced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerial Bombardment</td>
<td>Major: Bombing civilians, civilian installations</td>
<td>Amsterdam Draft Convention for the Protection of Civilian Populations Against New Engines of War, 1938 (never signed)</td>
</tr>
<tr>
<td></td>
<td>Minor: Deceptive or improper use of safety zones</td>
<td>Amsterdam Draft Convention for the Protection of Civilian Populations Against New Engines of War, 1938 (never signed)</td>
</tr>
<tr>
<td>Armistice/Flag of Truce</td>
<td>Major: Attacks on individuals under a flag of truce</td>
<td>Hague Convention (II) with Respect to the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land, 1899</td>
</tr>
<tr>
<td></td>
<td>Minor: Use of flag of truce as ruse</td>
<td>Hague Convention (II) with Respect to the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land, 1899</td>
</tr>
<tr>
<td>Chemical and Biological Weapons</td>
<td>Major: Use of projectiles the sole object of which is the diffusion of asphyxiating or deleterious gases</td>
<td>Hague Declaration (IV,2) concerning Asphyxiating Gases, 1899</td>
</tr>
<tr>
<td>Treatment of Civilians</td>
<td>Major: Torture or inhumane treatment of civilians</td>
<td>Geneva Convention (IV) relative to the Protection of Civilian Persons in Time of War, 1949</td>
</tr>
<tr>
<td></td>
<td>Minor: Detention of enemy civilians at the outbreak of war, except for military personnel and security risks</td>
<td>Tokyo 1934 Draft International Convention on the Condition and Protection of Civilians of enemy nationality who are on territory belonging to or occupied by a belligerent, 1934 (never entered into force)</td>
</tr>
<tr>
<td>Cultural Property</td>
<td>Major: Failure to take care to avoid destruction of cultural property</td>
<td>Hague Convention (II) with Respect to the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land, 1899</td>
</tr>
<tr>
<td>Conduct on the High Seas</td>
<td>Minor: Use of cultural property for military purposes when so marked</td>
<td>Hague Convention (II) with Respect to the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land, 1899</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Major: Detention of enemy merchant ships at the outbreak of war</td>
<td>Hague Convention (VI) relating to the Status of Enemy Merchant Ships at the Outbreak of Hostilities, 1907</td>
</tr>
<tr>
<td></td>
<td>Minor: Destruction of any submarine cable</td>
<td>Oxford Manual of the Laws of Naval War, 1913 (not a treaty, does reflect treaty interpretation)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prisoners of War</th>
<th>Major: Summary execution on the battlefield, no quarter</th>
<th>Hague Convention (II) with Respect to the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land, 1899</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minor: Failure to separate races or nationalities</td>
<td>Geneva Convention relative to the Treatment of Prisoners of War, 1929</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Declaration of War</th>
<th>Major: Sneak attack without declaration of war</th>
<th>Hague Convention (III) relative to the Opening of Hostilities, 1907</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Treatment of Wounded</th>
<th>Major: Reprisals against the wounded</th>
<th>Geneva Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field, 1949</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minor: Use of medical signs as military ruse</td>
<td>Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armies in the Field, 1906</td>
</tr>
</tbody>
</table>
Table 4.2

Standardized Codings Used For Cases Lacking Evidence

<table>
<thead>
<tr>
<th>Issue Area</th>
<th>Frequency</th>
<th>Magnitude</th>
<th>Centralization</th>
<th>Clarity</th>
<th>Data Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilians</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>POWs</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Wounded</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>High Seas</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>CBW</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Cultural</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 4.3

Crosstabulations of Magnitude and Frequency of Violations

All Observations including Standardized Codings

<table>
<thead>
<tr>
<th>Frequency</th>
<th>1: None</th>
<th>2: Infrequent</th>
<th>3: Common</th>
<th>4: Massive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: None</td>
<td>438</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2: Minor Violations</td>
<td>0</td>
<td>216</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>3: Some Major Violations</td>
<td>0</td>
<td>534</td>
<td>145</td>
<td>9</td>
</tr>
<tr>
<td>4: Many Major Violations</td>
<td>0</td>
<td>216</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

All Observations excluding Standardized Codings

<table>
<thead>
<tr>
<th>Frequency</th>
<th>1: None</th>
<th>2: Infrequent</th>
<th>3: Common</th>
<th>4: Massive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: None</td>
<td>385</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2: Minor Violations</td>
<td>0</td>
<td>35</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>3: Some Major Violations</td>
<td>0</td>
<td>240</td>
<td>145</td>
<td>9</td>
</tr>
<tr>
<td>4: Many Major Violations</td>
<td>0</td>
<td>26</td>
<td>41</td>
<td>61</td>
</tr>
</tbody>
</table>

Declaration of war is excluded from the tables.

Legend:
- Full Compliance
- High Compliance
- Low Compliance
- Noncompliance
Table 4.4
Crosstabulation of the Compliance of Both Warring Parties in a Directed Dyad

<table>
<thead>
<tr>
<th>Compliance of Victim</th>
<th>Full Compliance</th>
<th>High Compliance</th>
<th>Low Compliance</th>
<th>Noncompliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Compliance</td>
<td>270</td>
<td>105</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>High Compliance</td>
<td>105</td>
<td>218</td>
<td>76</td>
<td>22</td>
</tr>
<tr>
<td>Low Compliance</td>
<td>14</td>
<td>76</td>
<td>80</td>
<td>24</td>
</tr>
<tr>
<td>Noncompliance</td>
<td>2</td>
<td>22</td>
<td>24</td>
<td>12</td>
</tr>
</tbody>
</table>

$\chi^2 = 397.8$ w/9 d.f.s    Significance probability $< .0001$

tau-b = .517        Significance probability = .020
Table 4.5

Treaty Ratification and Compliance

<table>
<thead>
<tr>
<th>Violator’s Compliance</th>
<th>Violator Ratified? Yes</th>
<th>No</th>
<th>Both Sides Ratified? Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full</td>
<td>221 (41%)</td>
<td>164 (40%)</td>
<td>188 (42%)</td>
<td>197 (39%)</td>
</tr>
<tr>
<td>High</td>
<td>175 (32%)</td>
<td>131 (32%)</td>
<td>153 (34%)</td>
<td>153 (30%)</td>
</tr>
<tr>
<td>Low</td>
<td>106 (20%)</td>
<td>89 (22%)</td>
<td>75 (17%)</td>
<td>120 (24%)</td>
</tr>
<tr>
<td>None</td>
<td>39 (7%)</td>
<td>22 (5%)</td>
<td>29 (7%)</td>
<td>32 (6%)</td>
</tr>
</tbody>
</table>

Each cell reports the number of cases in that cell and the percentage of the column total it represents.
Table 4.6

Compliance by Centralization of Violations

<table>
<thead>
<tr>
<th></th>
<th>High Compliance</th>
<th>Low Compliance</th>
<th>Noncompliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Violations</td>
<td>187 (67%)</td>
<td>90 (32%)</td>
<td>4 (1%)</td>
</tr>
<tr>
<td>State Violations</td>
<td>119 (42%)</td>
<td>105 (37%)</td>
<td>57 (20%)</td>
</tr>
</tbody>
</table>

χ² = 62.3 with 2 d.f.s  Significance Probability < .0001

The table does not include cases with a standardized coding. Individual violations are scored as 2 (individual violations punished by state authorities) or 3 (individual violations against state policy but not punished by state authorities). State violations are scored 4 (probable state decision to violate) and 5 (state decision to violate with clear evidence of the decision).
Table 4.7

List of Cases where One Side Complies Fully while the Other is Noncompliant or Has Low Compliance

<table>
<thead>
<tr>
<th>War</th>
<th>Issue-Area</th>
<th>Compliant Side</th>
<th>Noncompliant Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>World War I</td>
<td>Chemical Warfare</td>
<td>Belgium</td>
<td>Germany</td>
</tr>
<tr>
<td>World War I</td>
<td>Conduct on High Seas</td>
<td>Italy</td>
<td>Germany</td>
</tr>
<tr>
<td>World War I</td>
<td>Conduct on High Seas</td>
<td>Italy</td>
<td>Austria-Hungary</td>
</tr>
<tr>
<td>World War I</td>
<td>Conduct on High Seas</td>
<td>Greece</td>
<td>Germany</td>
</tr>
<tr>
<td>World War I</td>
<td>Treatment of Wounded</td>
<td>France</td>
<td>Germany</td>
</tr>
<tr>
<td>Italo-Ethiopian</td>
<td>Aerial Bombing</td>
<td>Ethiopia</td>
<td>Italy</td>
</tr>
<tr>
<td>World War II</td>
<td>Aerial Bombing</td>
<td>Italy</td>
<td>Western Allies</td>
</tr>
<tr>
<td>World War II</td>
<td>Conduct on High Seas</td>
<td>Italy</td>
<td>Western Allies</td>
</tr>
<tr>
<td>Korean War</td>
<td>Aerial Bombing</td>
<td>North Korea</td>
<td>United Nations</td>
</tr>
<tr>
<td>Korean War</td>
<td>Treatment of Wounded</td>
<td>United Nations</td>
<td>North Korea</td>
</tr>
<tr>
<td>Korean War</td>
<td>Treatment of Wounded</td>
<td>United Nations</td>
<td>China</td>
</tr>
<tr>
<td>Vietnam War</td>
<td>Aerial Bombing</td>
<td>North Vietnam</td>
<td>United States and Allies</td>
</tr>
<tr>
<td>Vietnam War</td>
<td>Treatment of Wounded</td>
<td>United States and Allies</td>
<td>North Vietnam</td>
</tr>
<tr>
<td>Yom Kippur</td>
<td>Treatment of Wounded</td>
<td>Israel</td>
<td>Egypt and Allies</td>
</tr>
<tr>
<td>Israel-Syria (Lebanon 1982)</td>
<td>Aerial Bombing</td>
<td>Syria</td>
<td>Israel</td>
</tr>
<tr>
<td>Israel-Syria (Lebanon 1982)</td>
<td>Treatment of Civilians</td>
<td>Syria</td>
<td>Israel</td>
</tr>
</tbody>
</table>
Table 4.8  
Tables Showing Reciprocity and Total Compliance by Ratification Status

Table 4.8a: All Cases

<table>
<thead>
<tr>
<th>Ratified</th>
<th>Neither Side Ratified</th>
<th>Only One Side</th>
<th>Both Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Reciprocity</td>
<td>.50</td>
<td>.66</td>
<td>.50</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>3.74</td>
<td>4.23</td>
<td>3.78</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>166</td>
<td>106</td>
<td>261</td>
</tr>
</tbody>
</table>

Table 4.8b: Cases where At Least One Side Committed Violations

<table>
<thead>
<tr>
<th>Ratified</th>
<th>Neither Side Ratified</th>
<th>Only One Side</th>
<th>Both Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Reciprocity</td>
<td>.69</td>
<td>.88</td>
<td>.66</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>4.39</td>
<td>4.95</td>
<td>4.36</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>121</td>
<td>80</td>
<td>197</td>
</tr>
</tbody>
</table>

Table 4.8c: Cases where Both Sides Committed Violations

<table>
<thead>
<tr>
<th>Ratified</th>
<th>Neither Side Ratified</th>
<th>Only One Side</th>
<th>Both Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Reciprocity</td>
<td>.42</td>
<td>.75</td>
<td>.47</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>5.09</td>
<td>5.34</td>
<td>4.93</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>77</td>
<td>64</td>
<td>136</td>
</tr>
</tbody>
</table>
Table 4.9

Tables Showing Reciprocity and Total Compliance for Unilateral Ratification by Regime Type

Table 4.9a: All Cases

<table>
<thead>
<tr>
<th></th>
<th>Democracy Ratified</th>
<th>Nondemocracy Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Reciprocity</td>
<td>.79</td>
<td>.64</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>4.64</td>
<td>4.16</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>92</td>
<td>14</td>
</tr>
</tbody>
</table>

Table 4.9b: Cases where At Least One Side Committed Violations

<table>
<thead>
<tr>
<th></th>
<th>Democracy Ratified</th>
<th>Nondemocracy Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Reciprocity</td>
<td>1.00</td>
<td>.86</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>5.36</td>
<td>4.88</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>69</td>
<td>11</td>
</tr>
</tbody>
</table>

Table 4.9c: Cases where Both Sides Committed Violations

<table>
<thead>
<tr>
<th></th>
<th>Democracy Ratified</th>
<th>Nondemocracy Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Reciprocity</td>
<td>.75</td>
<td>.75</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>6.00</td>
<td>5.25</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>56</td>
<td>8</td>
</tr>
</tbody>
</table>
Table 4.10

Tables Showing Reciprocity and Total Compliance for Neither Ratified and Both Ratified by Regime Type

Table 4.10a: All Cases

<table>
<thead>
<tr>
<th></th>
<th>Neither Side Ratified</th>
<th>Both Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Democracy in Dyad</td>
<td>No Democracy in Dyad</td>
</tr>
<tr>
<td>Average Reciprocity</td>
<td>.48</td>
<td>.53</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>3.64</td>
<td>3.85</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>86</td>
<td>80</td>
</tr>
</tbody>
</table>

Table 4.10b: Cases where At Least One Side Committed Violations

<table>
<thead>
<tr>
<th></th>
<th>Neither Side Ratified</th>
<th>Both Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Democracy in Dyad</td>
<td>No Democracy in Dyad</td>
</tr>
<tr>
<td>Average Reciprocity</td>
<td>.67</td>
<td>.70</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>4.31</td>
<td>4.47</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>61</td>
<td>60</td>
</tr>
</tbody>
</table>
Table 4.10c: All Cases where Both Sides Committed Violations

<table>
<thead>
<tr>
<th></th>
<th>Neither Side Ratified</th>
<th>Both Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Democracy in Dyad</td>
<td>No Democracy in Dyad</td>
</tr>
<tr>
<td>Average Reciprocity</td>
<td>.30</td>
<td>.53</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>5.00</td>
<td>5.18</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>37</td>
<td>40</td>
</tr>
</tbody>
</table>
Table 4.11
Tables Comparing Reciprocity and Total Compliance by Ratification Status Controlling for Greatest Legal Clarity of Violations

Table 4.11a: Violations were in Legal Dispute

<table>
<thead>
<tr>
<th></th>
<th>Neither Side Ratified</th>
<th>Both Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Reciprocity</td>
<td>0.78</td>
<td>0.60</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>3.52</td>
<td>3.40</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>27</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 4.11b: Violations were Probable Legal Violations

<table>
<thead>
<tr>
<th></th>
<th>Neither Side Ratified</th>
<th>Both Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Reciprocity</td>
<td>0.76</td>
<td>0.57</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>4.06</td>
<td>3.71</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>34</td>
<td>28</td>
</tr>
</tbody>
</table>

Table 4.11c: Violations were Definite Legal Violations

<table>
<thead>
<tr>
<th></th>
<th>Neither Side Ratified</th>
<th>Both Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Reciprocity</td>
<td>0.60</td>
<td>0.68</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>4.97</td>
<td>4.49</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>60</td>
<td>164</td>
</tr>
</tbody>
</table>
### Table 4.12

Reciprocity and Total Compliance by Issue

#### Table 4.12a: All Cases

<table>
<thead>
<tr>
<th></th>
<th>Aerial Bombing</th>
<th>Armistice</th>
<th>CBW</th>
<th>Civilians</th>
<th>Cultural Property</th>
<th>High Seas</th>
<th>POWs</th>
<th>Wounded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Reciprocity</strong></td>
<td>.61</td>
<td>.29</td>
<td>.24</td>
<td>.69</td>
<td>.36</td>
<td>.72</td>
<td>.64</td>
<td>.61</td>
</tr>
<tr>
<td><strong>Avg. Total Compliance</strong></td>
<td>3.39</td>
<td>3.29</td>
<td>2.49</td>
<td>5.09</td>
<td>4.18</td>
<td>3.56</td>
<td>4.64</td>
<td>4.24</td>
</tr>
<tr>
<td><strong>Number of Cases</strong></td>
<td>80</td>
<td>34</td>
<td>102</td>
<td>90</td>
<td>33</td>
<td>50</td>
<td>85</td>
<td>59</td>
</tr>
</tbody>
</table>

#### Table 4.12b: Cases where At Least One Side Committed Violations

<table>
<thead>
<tr>
<th></th>
<th>Aerial Bombing</th>
<th>Armistice</th>
<th>CBW</th>
<th>Civilians</th>
<th>Cultural Property</th>
<th>High Seas</th>
<th>POWs</th>
<th>Wounded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Reciprocity</strong></td>
<td>.82</td>
<td>.48</td>
<td>1.04</td>
<td>.70</td>
<td>.38</td>
<td>.95</td>
<td>.68</td>
<td>.63</td>
</tr>
<tr>
<td><strong>Avg. Total Compliance</strong></td>
<td>3.85</td>
<td>4.10</td>
<td>4.17</td>
<td>5.16</td>
<td>4.25</td>
<td>4.05</td>
<td>4.84</td>
<td>4.32</td>
</tr>
<tr>
<td><strong>Number of Cases</strong></td>
<td>60</td>
<td>21</td>
<td>23</td>
<td>88</td>
<td>32</td>
<td>38</td>
<td>79</td>
<td>57</td>
</tr>
</tbody>
</table>

#### Table 4.12c: Cases where Both Sides Committed Violations

<table>
<thead>
<tr>
<th></th>
<th>Aerial Bombing</th>
<th>Armistice</th>
<th>CBW</th>
<th>Civilians</th>
<th>Cultural Property</th>
<th>High Seas</th>
<th>POWs</th>
<th>Wounded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Reciprocity</strong></td>
<td>.41</td>
<td>.27</td>
<td>1.00</td>
<td>.66</td>
<td>.31</td>
<td>.50</td>
<td>.68</td>
<td>.63</td>
</tr>
<tr>
<td><strong>Avg. Total Compliance</strong></td>
<td>4.70</td>
<td>4.53</td>
<td>5.89</td>
<td>5.39</td>
<td>4.38</td>
<td>5.13</td>
<td>5.34</td>
<td>4.74</td>
</tr>
<tr>
<td><strong>Number of Cases</strong></td>
<td>27</td>
<td>15</td>
<td>9</td>
<td>79</td>
<td>29</td>
<td>16</td>
<td>62</td>
<td>40</td>
</tr>
</tbody>
</table>
### Table 4.13

**Tables Showing Reciprocity and Total Compliance for Low and High Noise Issues by Ratification Status**

**Table 4.13a: All Cases**

<table>
<thead>
<tr>
<th></th>
<th>Low Noise Issue</th>
<th>High Noise Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Neither Side Ratified</td>
<td>Both Ratified</td>
</tr>
<tr>
<td>Average Reciprocity</td>
<td>.50</td>
<td>.32</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>3.21</td>
<td>2.84</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>119</td>
<td>104</td>
</tr>
</tbody>
</table>

**Table 4.13b: Cases where At Least One Side Committed Violations**

<table>
<thead>
<tr>
<th></th>
<th>Low Noise Issue</th>
<th>High Noise Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Neither Side Ratified</td>
<td>Both Ratified</td>
</tr>
<tr>
<td>Average Reciprocity</td>
<td>.80</td>
<td>.73</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>3.92</td>
<td>3.93</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>75</td>
<td>45</td>
</tr>
</tbody>
</table>
Table 4.13c: All Cases where Both Sides Committed Violations

<table>
<thead>
<tr>
<th></th>
<th>Low Noise Issue</th>
<th></th>
<th>High Noise Issue</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Neither Side Ratified</td>
<td>Both Ratified</td>
<td>Neither Side Ratified</td>
<td>Both Ratified</td>
</tr>
<tr>
<td>Average Reciprocity</td>
<td>.39</td>
<td>.38</td>
<td>.44</td>
<td>.49</td>
</tr>
<tr>
<td>Average Total Compliance</td>
<td>4.72</td>
<td>4.95</td>
<td>5.41</td>
<td>4.92</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>36</td>
<td>21</td>
<td>41</td>
<td>115</td>
</tr>
</tbody>
</table>
Table 4.14
Cases of Late First Use Classified by Status of Fighting at the Time of the First Violation

<table>
<thead>
<tr>
<th>War</th>
<th>Side Committing First Violation</th>
<th>Other Side</th>
<th>Issue-Area</th>
<th>Date of First Violation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violator Favored</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>World War I</td>
<td>Turkey</td>
<td>United Kingdom</td>
<td>POWs</td>
<td>November 10, 1915</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td>Italy</td>
<td>POWs</td>
<td>October 24, 1917</td>
</tr>
<tr>
<td>Violator Unfavored</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iraq-Iran</td>
<td>Iraq</td>
<td>Iran</td>
<td>CBW</td>
<td>October 21, 1983</td>
</tr>
<tr>
<td>Violator Clearly Losing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>World War I</td>
<td>Serbia</td>
<td>Austria-Hungary</td>
<td>POWs</td>
<td>November 18, 1915</td>
</tr>
<tr>
<td>Violator Neither Losing nor Winning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>World War I</td>
<td>Italy</td>
<td>Austria-Hungary</td>
<td>POWs</td>
<td>June 29, 1916</td>
</tr>
<tr>
<td>World War I</td>
<td>France</td>
<td>Turkey</td>
<td>POWs</td>
<td>September 1, 1916</td>
</tr>
<tr>
<td>Vietnam</td>
<td>North Vietnamese</td>
<td>United States, South Vietnam and Allies</td>
<td>Civilians</td>
<td>December 5, 1967</td>
</tr>
<tr>
<td>Vietnamese-Cambodian</td>
<td>Cambodia</td>
<td>Vietnam</td>
<td>Civilians</td>
<td>April 30, 1977</td>
</tr>
<tr>
<td>Iraq-Iran</td>
<td>Iran</td>
<td>Iraq</td>
<td>POWs</td>
<td>March 15, 1983</td>
</tr>
<tr>
<td>War</td>
<td>Side Committing First Violation</td>
<td>Other Side</td>
<td>Issue-Area</td>
<td>Date of First Violation</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------</td>
<td>----------------</td>
<td>------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Second Balkan</td>
<td>Bulgaria</td>
<td>Serbia</td>
<td>POWs</td>
<td>June 30, 1913</td>
</tr>
<tr>
<td>Second Balkan</td>
<td>Bulgaria</td>
<td>Serbia</td>
<td>Wounded</td>
<td>June 30, 1913</td>
</tr>
<tr>
<td>World War I</td>
<td>France</td>
<td>Germany</td>
<td>Civilians</td>
<td>August 3, 1914</td>
</tr>
<tr>
<td>World War I</td>
<td>France</td>
<td>Austria-Hungary</td>
<td>Civilians</td>
<td>August 3, 1914</td>
</tr>
<tr>
<td>World War I</td>
<td>France</td>
<td>Germany</td>
<td>High Seas</td>
<td>August 15, 1914</td>
</tr>
<tr>
<td>Italo-Ethiopian</td>
<td>Italy</td>
<td>Ethiopia</td>
<td>Aerial Bombing</td>
<td>October 3, 1935</td>
</tr>
<tr>
<td>Sino-Japanese</td>
<td>Japan</td>
<td>China</td>
<td>CBW</td>
<td>July 18, 1937</td>
</tr>
<tr>
<td>Changkufeng</td>
<td>Japan</td>
<td>Soviet Union</td>
<td>POWs</td>
<td>July 29, 1938</td>
</tr>
<tr>
<td>World War II</td>
<td>Germany</td>
<td>Western Allies</td>
<td>High Seas</td>
<td>September 3, 1939</td>
</tr>
<tr>
<td>World War II</td>
<td>Western Allies</td>
<td>Italy</td>
<td>High Seas</td>
<td>June 10, 1940</td>
</tr>
<tr>
<td>World War II</td>
<td>Germany</td>
<td>Soviet Union</td>
<td>POWs</td>
<td>June 22, 1941</td>
</tr>
<tr>
<td>World War II</td>
<td>Germany</td>
<td>Soviet Union</td>
<td>Aerial Bombing</td>
<td>June 24, 1941</td>
</tr>
<tr>
<td>World War II</td>
<td>United States</td>
<td>Japan</td>
<td>High Seas</td>
<td>December 10, 1941</td>
</tr>
<tr>
<td>Six Day</td>
<td>Israel</td>
<td>Jordan</td>
<td>Armistice</td>
<td>June 7, 1967</td>
</tr>
<tr>
<td>Six Day</td>
<td>Israel</td>
<td>Syria</td>
<td>Armistice</td>
<td>June 9, 1967</td>
</tr>
<tr>
<td>Turco-Cypriot</td>
<td>Turkey</td>
<td>Cyprus</td>
<td>Armistice</td>
<td>July 21, 1974</td>
</tr>
<tr>
<td>Conflict</td>
<td>Actor 1</td>
<td>Actor 2</td>
<td>Type</td>
<td>Date</td>
</tr>
<tr>
<td>-------------</td>
<td>---------</td>
<td>---------</td>
<td>-------------</td>
<td>------------</td>
</tr>
<tr>
<td>Israel-Syria (Lebanon 1982)</td>
<td>Israel</td>
<td>Syria</td>
<td>Aerial Bombing</td>
<td>June 4, 1982</td>
</tr>
</tbody>
</table>
Figure 4.1

Compliance by Issue-Area

Including Standardized

<table>
<thead>
<tr>
<th>Codings</th>
<th>Aerial</th>
<th>Armistice</th>
<th>CBW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilians</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Seas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POWs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>War Declaration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wounded</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Excluding Standardized

<table>
<thead>
<tr>
<th>Codings</th>
<th>Aerial</th>
<th>Armistice</th>
<th>CBW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilians</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Seas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POWs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>War Declaration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wounded</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Violation's Compliance
Figure 4.2
Depiction of Reciprocity in Figures

No Reciprocity

Perfect Reciprocity

Legend: ■ - Full Compliance  ■ - High Compliance
■ - Low Compliance  ■ - Noncompliance
Estimated Effects of Democracy and Ratification on Compliance

Probabilities calculated from estimates of Table 4.3 weighted for the quality of the data (the second column of that table). They assume Clarity of Victim’s Violations are Definite Legal Violations (= 4), Victim's Violations were State Policy (= 1), Power Ratio and Battle Deaths per 1000 Population set to their means (.5 and 10.63 respectively), Violator is Not an Initiator (= 0) nor a Loser (= 0), and the Issue-area is Treatment of the Wounded.
Figure 4.4

Effect of State Versus Individual Violations on Compliance

State Violations               Individual Violations

Legend: ■ - Full Compliance   □ - High Compliance
        □ - Low Compliance   ■ - Noncompliance

Probabilities calculated from estimates of Table 4.3 weighted for the quality of the data (the second column of that table). They assume Clarity of Victim’s Violations are Definite Legal Violations (= 4), Violator is Not a Democracy, Joint Ratification, Power Ratio and Battle Deaths per 1000 Population set to their means (.5 and 10.63 respectively), Violator is Not an Initiator (= 0) nor a Loser (= 0), and the Issue-area is Treatment of the Wounded.

Note: The estimated probabilities if the victim’s compliance is full are the same for both pictures because then the victim cannot have either state or individual level violations.
Figure 4.5

Effects of Issues on Compliance

CBW

Armistice/ Ceasefire

Conduct on High Seas

Aerial Bombing

Protection of Cultural Property

Treatment of Wounded

POWs

Treatment of Civilians
Probabilities calculated from estimates of Table 4'. weighted for the quality of the data (the second column of that table). They assume Clarity of Victim’s Violations are Definite Legal Violations (= 4), Victim's Violations were State Policy (= 1), Violator is Not a Democracy, Joint Ratification, Power Ratio and Battle Deaths per 1000 Population set to their means (.5 and 10.63 respectively), and Violator is Not an Initiator (= 0) nor a Loser (= 0).
Figure 4.6
Effects of Relative Power on Compliance depending on Legal Obligation

Legend: ■ - Full Compliance  □ - High Compliance
       □ - Low Compliance  ■ - Noncompliance

Probabilities calculated from estimates of Table 4.3 weighted for the quality of the data (the
second column of that table). They assume Violator is not a Democracy, Clarity of Victim’s Violations are Definite Legal Violations (= 4), Victim's Violations were State Policy (= 1), Battle Deaths per 1000 Population set to their means (.5 and 10.63 respectively), Violator is Not an Initiator (= 0), and the Issue-area is Treatment of the Wounded. Violator Weaker and Stronger are one standard deviation of Power Ratio (= .273) lower and higher than its mean (= .5). The first two rows assume that the Violator was not a Loser. The third row assumes that Joint Ratification exists.
Figure 4.7

Effect of Intensity of War on Compliance

Probabilities calculated from estimates of Table 4', weighted for the quality of the data (the second column of that table). They assume Joint Ratification, the Violator is not a Democracy, Clarity of Victim’s Violations are Definite Legal Violations (= 4), Victim’s Violations were State Policy (= 1), Power Ratio is set to its mean (.5), Violator is Not an Initiator (= 0) nor a Loser (= 0), and the Issue-area is Treatment of the Wounded. Average Intensity is the mean of Battle Deaths per 1000 Prewar Population (10.63). More intense war is one standard deviation higher (+14.25), and less intense war sets intensity to 0 because you cannot have negative battle deaths.
A red line indicates a negative correlation, a black line a positive one. Solid lines indicate correlations significant at the .001 level or higher, and dashed lines correlations significant at the .1 level.
A red line indicates a negative correlation, a black line a positive one. Solid lines indicate correlations significant at the .001 level or higher, and dashed lines correlations significant at the .1 level.
Figure 4.10

Estimated Hazard Rate for First Violations

This figure is calculated from the Lognormal Model with Correction for Nonproportional Hazards in Table 4’.10. All independent variables are set to their mean values.
This figure is calculated from the Lognormal Model with Correction for Nonproportional Hazards in Table 4’.10. All independent variables are set to their mean values.
This figure is calculated from Table 4.11. All independent variables are set to their mean values.
Figure 4.13

Probability of No Violation over Time for First Violations versus Retaliations

This figure is calculated from Table 4.11. All independent variables are set to their mean values.
Endnotes for Chapter 4

1. The data set and full details of its construction of the data set including coding rules are available at [insert website].

2. Although it might be more accurate to say the Portuguese ran under British command...

3. This is typically the surrender of one party to the other, but we also end fighting when one side is no longer capable of resisting the other even if there is no formal surrender document.


5. The only exception to this rule is declaration of war where skirmishes prior to the starting date help to determine the magnitude and frequency of violations at the start date of the war.

6. Intertemporal law is the legal rule that the validity of a state's action is determined by the accepted rule of international law at the time the action was taken and not by a rule of law adopted later.

7. Out of 222 cases of high seas cases, 80 cases do not involve any naval engagement and thus are not applicable.

8. I have also run the analyses using scales with 3 levels (combining low compliance and noncompliance into one level) and 5 levels (dividing high compliance into a level with only minor violations and another with only infrequent major violations). The results of such analysis are generally similar to those I report and can be found at the website with the data and replication information.

9. As readers may know, I have strong views about why the democratic peace occurs ({Bueno de Mesquita, 1999 #398}, {Morrow, 2002 #475}). For now, I am putting aside my own view about how democratic politics affects foreign policy.

10. For a possible explanation why domestic audiences might remove leaders who break public
commitments, see {Smith, 1998 #484}.

11. The reciprocal responses is calculated as the difference in the average compliance when the victim has high compliance and noncompliance. The percentages are calculated by comparing the increases in these average compliance rates. Responses under joint ratification are stronger than if neither has ratified by 26% for a democracy and 43% stronger for an autocracy. The reciprocal response of a democracy is 162% under joint ratification than if only the violator has ratified and 117% stronger for an autocracy under those conditions.

12. I am indebted to Ryan Goodman of the Harvard Law School for this argument.

13. There is a slight decline in compliance as the violator becomes stronger relative to the victim, but here the interocular test is superior to any statistical test.

14. I chose this instrumental variable analysis because it has the largest R^2.

15. The France-Germany dyad for CBW during World War I almost makes this set as well, with the residual for Germany being slightly smaller than two standard deviations.

16. The Western Allies, that is, Great Britain, the United States and the members of the British Commonwealth, are coded as not complying with the standard of conduct on the high seas through their unrestricted submarine attacks in the Mediterranean and use of Q-ships.

17. A side that lacks any capability or the ability to produce any capability to commit violations is coded as missing for that issue-area. In all of these cases, the compliant side possessed some airplanes.

18. These cases in Table 4.7 are nonuse of CBW by Belgium against Germany in World War I, treatment of the wounded by France versus Germany in World War I, UN forces versus both North Korea and China in the Korean War, US-led forces versus North Vietnam in the Vietnam War, Israel versus Egypt and allied forces in the Yom Kippur War. Treatment of civilians by
Syria versus Israel during 1982 Invasion of Lebanon may count, although fighting between Syrian and Israeli forces was limited geographically compared to combat by Israeli forces against Palestinian combatants.

19. As with the analysis of compliance, I do not include the war declaration cases nor any cases where both sides have standardized codings. I do not weight by data quality in these tables.

20. Because of the well-known democratic peace, almost all democracies in the data set are at war with a nondemocracy. The only exception is the Turco-Cypriot War of 1973.

21. I omit the cases where greatest legal clarity of violations is none because neither side committed any violations in such cases, making both reciprocity and compliance perfect.

22. I exclude declaration of war from the analysis as I do in the analysis of compliance.

23. If the residuals were simply random numbers, we would expect about 3 of the 28 correlations to be statistically significant at the .1 level and 1 of those at the .05 level.

24. The exception here is chemical and biological weapons where the standardized coding is full compliance based on the lack of any report of the use of those weapons. These cases are kept in the analysis as cases without a violation.

25. The nonlinearity of the log-normal distribution shows up in the first day of the war as the hazard rate rises from the first to the second day of the war. A violation on the first day of the war occurs at time 0 in the model.

26. In the data set, the first violation by North Vietnam against civilians in South Vietnam produces two cases, one against the US and allies and one against South Vietnam because the South Vietnamese did not fight under US command. I have grouped these two cases as one because they are coded off the same incident.