Journal of Conflict Resolution

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Restraint or Propellant?

Democracy and Civilian Fatalities in Interstate Wars

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This article investigates the effect of regime type on the number of civilian fatalities that states inflicted in interstate wars between 1900 and 2003. As opposed to several previous studies, the author finds little support for normative arguments positing that democracies kill fewer civilians in war. In fact, the author finds that democracies are significantly more likely than nondemocracies to kill more than fifty thousand noncombatants. Democracies also kill more civilians when they are involved in wars of attrition and kill about as many (and perhaps more) noncombatants than autocracies in such wars. These findings provide qualified support for institutional arguments about democratic accountability. Other implications of the institutional view, however, are not upheld, such as the argument that democracies select easy wars that should result in few civilian casualties because they are won quickly and decisively. Finally, democracies do not appear to kill fewer civilians in more recent wars.

Keywords: civilian casualties; civilian victimization; democracy; mass killing

If—as Carl von Clausewitz (1832/1976, 87) famously argued—war is "a continuation of political intercourse, carried on with other means," then the killing of noncombatants in war is often the continuation of war by other means (Valentino, Huth, and Croco 2006, 340). This is one of the key insights of a promising new research program that has emerged in the past several years on the determinants of civilian casualties in wartime. This literature is related to—but distinct from—studies on the causes of human rights violations and genocide, which attempt to illuminate the circumstances under which states repress their citizens or engage in strategies of wholesale murder or extermination of domestic groups.[1] The more recent literature focuses exclusively on war and seeks to explain why states (and

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rebel groups) adhere to or violate the laws of armed conflict, particularly the injunction to discriminate between soldiers and civilians and refrain from targeting the latter. Historically, civilians have constituted half of all war deaths, in large part the result of being targeted intentionally by belligerents in campaigns that include massacre, bombardment, starvation and destruction of the means of life, or forced relocation and expulsion (Eckhardt 1989, 90).[2]

The recent literature has provided some important insights into the reasons why states target and kill civilians in war. Valentino, Huth, and Balch-Lindsay (2004), for example, argue in a survey of warfare after 1945 that guerrilla wars provide strong incentives for states to kill massive numbers of civilians, particularly in those conflicts where the insurgents are numerous and have widespread support among the population. Downes (2006a), in an analysis of interstate wars in the nineteenth and twentieth centuries, finds that costly and protracted wars of attrition cause states to become desperate to win and to conserve the lives of their own soldiers, both of which lead to civilian victimization. Downes also argues that targeting of civilians is likely when states fight wars to seize and annex territory from other states because the conqueror perceives a threat from the enemy population in the area, which could form a fifth column and rebel behind the front lines. Similarly, Valentino, Huth, and Croco (2006) find that indicators of long and costly wars, such as attrition, duration, and total war objectives (like conquest or regime change), are associated with larger numbers of civilian deaths in interstate wars. Overall, these studies appear to be converging on the view that costly attrition warfare is a major factor responsible for civilian targeting, mass killing, and increasing numbers of civilian casualties.

One factor about which there is less unanimity, however, is the effect of democracy on civilian victimization. Valentino, Huth, and Balch Lindsay (2004), for example, as well as several other studies, maintain that democracy lowers the likelihood of mass killing and reduces the number of civilian casualties in war. Many of these studies argue that certain norms characteristic of democracies, particularly their respect for individual rights and the rule of law, explain the relative restraint with which democracies treat enemy noncombatants (Engelhardt 1992; Rummel 1995; Merom 2003; Valentino, Huth, and Balch-Lindsay 2004). Other studies, by contrast, contend that democracies are more likely to target the enemy's population—particularly in protracted wars of attrition—and suggest that democratic institutions may be responsible (Downes 2006a). Because democratic leaders rely on public support to remain in office, they must be concerned about public opinion. Support for war tends to drop as casualties rise and the public perceives the war to be unwinnable. Leaders thus have strong incentives not only to pick easy fights, but also to fight hard once engaged in war to achieve victory (and secure their political future). Fighting hard could be understood to include the killing of enemy civilians. Finally, a third group of studies finds regime type to have no discernible effect on mass killing or numbers of civilian casualties (Valentino 2004; Valentino, Huth, and Croco 2006).

Most of the previous literature, however, relies on fairly insensitive dichotomous indicators of civilian suffering, such as barbarism, civilian victimization, or mass killing. Barbarism, one of the strategies available to states in asymmetric conflicts, is a strategy that inflicts "deliberate and systematic harm on noncombatants (e.g., rape, torture, and murder)" (Arreguín-Toft 2005, 31). Civilian victimization, similarly, is a military strategy that targets and kills civilians intentionally or that does not discriminate between combatants and noncombatants, thereby resulting in large numbers of civilian casualties (Downes 2006a, forthcoming). Mass killing, finally, gauges whether a state killed fifty thousand or more noncombatants within a five-year period (Valentino 2004; Valentino, Huth, and Balch-Lindsay 2004). Studies that use dependent variables like these have provided excellent insights into the causes of violence against civilians in war, but cannot provide much detail about the intensity of that violence. Only Valentino, Huth, and Croco (2006) use numbers of civilian deaths as a dependent variable. It thus remains uncertain whether the factors that cause states to target civilians also explain how many civilians are killed.[3]

This article aims to clarify the relationship between democracy and civilian casualties using new data on civilian deaths in interstate wars between 1900 and 2003. I also investigate the impact of democracy on mass killing for the period from 1816 to 2003, since this variable provides at least a crude measure of severity of violence. My findings provide little support for the view that democracies treat civilians with restraint in interstate wars. Democracies, for example, are significantly more likely than nondemocracies to commit mass killing in these wars. With regard to civilian casualties, it is clear that democracies do not kill fewer noncombatants than autocracies. If anything, the evidence provides some support for the opposite conclusion: depending on the type of model used, democracies may kill larger numbers of civilians in general and in wars of attrition. The statistical evidence also strongly supports existing arguments linking wars of attrition and wars to annex territory with the infliction of civilian fatalities in interstate conflicts. By contrast, the analyses performed here undermine the view that racism or perceptions of the enemy as barbaric cause states to target and kill large numbers of the enemy's civilians.

The article proceeds as follows. The first section reviews the current state of the literature on the effect of democracy and other factors on civilian fatalities in war and deduces testable hypotheses. The second section operationalizes the variables employed in the analysis, describes the data set, and explains the methodological procedures used. The third section presents the results of the empirical analysis. The conclusion summarizes the findings and provides recommendations for future research.

Theories of Civilian Victimization in War

Scholars have developed several theories to explain the occurrence of civilian targeting and mass killing in war. Some argue, for example, that perceptions of the

adversary's identity as barbaric or civilized determines the brutality with which a war is waged. Others contend that the organizational culture of the military is the most important factor for whether civilians will be targeted. A third perspective highlights the unique incentives generated by guerrilla warfare for attacking the civilian population. A fourth and related view is that costly and protracted wars of attrition lead to desperation to prevail and conserve on casualties, both of which create pressure to target civilians. Fifth, some argue that annexing territory provides incentives to strike civilians, namely those who are likely to rebel or pose a threat to the conqueror's control. Finally, regime type is thought to play a role in civilian victimization, with most studies arguing that democracies are less likely to harm noncombatants.

This section sketches these competing theories and develops hypotheses for empirical testing. I place special emphasis on explaining regime type arguments. I omit discussion of organizational and insurgency arguments, however. Organizational culture is difficult to test in a large-N study because few militaries develop cultures in peacetime predicated on killing civilians in wartime. The cultural hypothesis is best studied by performing detailed case studies comparing the rare instances of "punishment" cultures that exist with the conduct of militaries that lacked such cultures (e.g., Legro 1995, 94-143; Downes 2006b). Similarly, hardly any interstate wars after 1900 are guerrilla wars—the only exception is Vietnam—and thus it is not possible to test insurgency arguments with this data.[4]

Democracy and Civilian Victimization

One important debate that has emerged in the new literature concerns how democracy affects the probability that a state will target civilians, commit mass killing, or inflict civilian casualties. Although these arguments are derived from theories originally developed to explain why democracies do not fight one another, the democratic peace is of course a dyadic phenomenon, requiring that both states involved in an interaction share some set of peace-inducing characteristics. For norms of peaceful conflict resolution or nonintervention in the internal affairs of other states to lead to peace between democracies, for example, such norms must be present on both sides. The arguments linking democracy and civilian victimization, by contrast, posit a monadic effect: some facet of regime type causes democracies to behave differently in war no matter who the opponent is. Early studies tended to downplay the existence of a monadic effect of democracy on conflict involvement (the principal exception was Rummel 1983), but some scholars have recently found support for such an effect on crisis initiation (e.g., Rousseau et al. 1996, 525-26; Schultz 2001, 136-39). In his review of the literature, Lipson (2003, 21) cites a "growing consensus" that "democracies are slightly more peaceful toward all states." Moreover, monadic democracy arguments are increasingly used to explain other dependent variables in international relations such as crisis

bargaining outcomes, military effectiveness, and preventive war (Fearon 1994; Schultz 2001; Reiter and Stam 2002; Schweller 1992). Thus, there is a solid basis for hypothesizing about a possible monadic effect on civilian victimization.

In the literature on civilian casualties, several works find that democracies tend to be less likely to target civilians or kill large numbers of noncombatants in war (Engelhardt 1992; Rummel 1995; Merom 2003; Valentino, Huth, and Balch-Lindsay 2004). Most of the arguments employed in these studies for why democracies fight more humanely with regard to civilians rely on liberal or democratic norms.[5] The liberal version contends that restraints on democracies' conduct of war lie in liberal norms that proscribe the use of violence against innocent civilians, people who have not forfeited their right to protection from violence by themselves taking up arms. Michael Doyle (1997), for example, argues that citizens in autocracies "retain basic human rights, such as the rights of noncombatants in war." Actions that kill large numbers of such people, like the "terror bombing of civilians" in World War II, "constitute . . . violations of these rights and of Liberal principles and demonstrate weaknesses of Liberal models in these cases" (p. 287). Similarly, Gil Merom (2003) argues that democracies lose guerrilla wars because a small but influential segment of the population abhors the brutality against civilians that winning such wars entails. The "liberal creed" of these citizens leads them to oppose the war on moral grounds. Combined with the open institutional structure of democracies and the free marketplace of ideas, these liberals are able to turn society against the war.

Other scholars invoke such democratic norms such as "tolerance," "nonviolence," "greater respect for basic civil and human rights," and "limits on the use of lethal force" as reasons why democracies fight with restraint vis-à-vis civilians (Valentino, Huth, and Balch-Lindsay 2004, 382; Valentino, Huth, and Croco 2006, 346). Rummel (1995, 4), for example, notes that violence against civilians by democracies is inhibited by "the development of a democratic culture and norms that emphasizes rational debate, toleration, negotiation of differences, conciliation, and conflict resolution. Moreover, democratic leaders see others, even political opponents, as within the same moral universe, as equally nonviolent, as disposed to negotiate differences peacefully."

This brief survey of the literature demonstrates considerable disagreement regarding the precise reason why democracies are expected to refrain from targeting civilians in war. Clearly norms are important, but the source of these norms is debated. Whether these norms originate in liberalism or the practice of democracy, however, they suggest the same hypothesis:

Hypothesis 1: Democracies are less likely to commit mass killing and will kill fewer civilians in interstate wars than nondemocracies.[6]

A second perspective on the role of regime type disputes the view that democracies are more dovish toward enemy civilians in war. The argument—originally

developed as an institutional explanation for democratic peace (e.g., Bueno de Mesquita et al. 1999) and democratic victory in war (e.g., Reiter and Stam 2002)— stresses leaders' accountability to an electorate as the most important facet of democratic institutions. An easy way to lose office, these scholars contend, is to lose a war. Therefore, leaders in democracies go to great lengths to avoid starting wars they do not think they can win quickly and decisively. If caught in costly conflicts, however, democratic executives fight hard and devote copious resources to the war to prevail and avoid losing their jobs. President George H. W. Bush framed this dilemma sharply before the 1991 Persian Gulf War: "if it drags out, not only will I take the blame, but I will probably have impeachment proceedings filed against me" (Bush and Scowcroft 1998, 428).[7] Fighting "hard"—although couched by proponents of this argument primarily in terms of the material resources dedicated to the conflict—could include targeting noncombatants. As Valentino, Huth, and Croco (2006, 348) put it, "Democratic leaders . . . may view targeting enemy civilians as a means to shift the costs of the war away from their own citizen-soldiers and on to foreign civilians." The incentives to shift these costs will be greater the more costly the war, which implies an interactive effect between democracy and the costs of fighting.

Hypothesis 2: Democracies are more likely to commit mass killing and kill larger numbers of civilians than nondemocracies in costly wars of attrition.

The institutional argument also implies that democracies—because they are better at choosing wars they are likely to win quickly and decisively—should be less likely to commit mass killing in wars they initiate but more likely to do so in wars in which they are the targets. Wars that democracies choose, according to this logic, should not become protracted wars of attrition, and thus democracies would not be put in a position of having to kill large numbers of civilians.

Hypothesis 3: Democracies are less likely to engage in massive killing of civilians in wars they initiate.

Some scholars, however, argue that differentiating among regime types based exclusively on the risk of removal from office is misleading; the pivotal factor instead is the potential cost of removal to the leader. This perspective identifies "semirepressive, moderately exclusionary regimes" (also known as mixed regimes or oligarchies) as the type of government most likely to engage in mass killing because leaders in these states are most vulnerable to being arrested, exiled, or killed if they lose a war moderately or disastrously. This danger gives oligarchs an incentive to gamble for resurrection and employ high variance strategies—such as civilian victimization—to avoid defeat (Goemans 2000).

Hypothesis 4: Mixed regimes are more likely to commit mass killing and kill larger numbers of civilians than either democracies or dictatorships.

Finally, some older scholarship suggests that a state's geographic location ultimately explains both its regime type and its sensitivity to casualties in war, and hence its proclivity toward civilian victimization. Insular states, for example, are countries that do not share land borders with powerful neighbors that could potentially invade them. Hintze (1975) argues that such states, protected from invasion by large bodies of water, are less needful of large standing armies and thus may be more likely to develop liberal regimes sensitive to the costs of war. Insular states would also seem to be more likely to develop military forces capable of projecting force across water, such as navies and airpower, which also happen to be good tools for targeting civilians via blockade and bombing. Land powers, according to this logic, devote more resources to their armies, since strategic bombing and blockade cannot stop an enemy army from overrunning the state's territory. Insular states, therefore, have greater capacity for inflicting civilian fatalities.

Hypothesis 5: Insular states will kill larger numbers of noncombatants in war than land powers.

Unfortunately, it is difficult to test insularity against democracy as an explanation for civilian casualties because they are highly correlated. This has the result of undermining the effect of both variables in the regression. When entered separately in the equations, the two perform quite similarly. Below I report results for democracy only and relegate presentation and discussion of insularity to the Web appendix.

Perceptions of the Adversary's Identity

A different perspective on civilian casualties posits that wars are more brutal when belligerents view each other as "barbaric" or outside the realm of civilization. This argument is akin to the hypothesis often found in the civil wars literature, that is, that civil conflicts last longer and are bloodier when the issues at stake involve ethnic differences rather than just socioeconomic or political grievances (Horowitz 1985; Kaufmann 1996).[8] In this literature, the argument is that ethnoreligious cleavages—because they are questions of identity—are less amenable to compromise, and thus give rise to protracted, ruthless wars. Because all members of ethnic groups are viewed as potential enemies, ethnic wars characterized by substantial intermingling often result in cleansing of civilians from the enemy group (Kaufmann 1996).

In the historical literature, the barbaric/civilized dichotomy is typically used to explain violence against civilians in conflicts between groups from different

religious or racial backgrounds, such as Christianity versus Islam, or Europeans versus native Africans, Americans, and Asians. According to nineteenth-century international jurist Joseph Hornung, for example, "The principle of international law that war is to be waged only between states and armies and not between nationals and civilian societies, this principle we do not apply to conflicts with barbarians," whom he defined as "inferior nations" (as quoted in Lindqvist 2000, 19). Another historian, explaining the methods Spain used to defeat Abd el-Krim's rebellion in the Rif region of Morocco in the 1920s, writes that European powers made "a distinction . . . between the treatment of fellow Europeans and that of colonials who resisted European advance. The standards of warfare that could be applied to the colonial enemy were different because these opponents were not 'fully civilized'" (Balfour 2002, 123). John Dower (1986), finally, has argued that racial hatred between Japan and the United States in World War II contributed to battlefield atrocities and eased the way toward incendiary bombing of Japanese cities. According to this view, therefore, it is the perception of the adversary's identity—barbaric or civilized—that determines the limited versus total scope of the war.

Hypothesis 6: States are more likely to target and kill more enemy civilians when they perceive the adversary as "barbaric" or "uncivilized."

Desperation

Other scholars of civilian victimization contend that two forms of desperation are to blame: desperation to achieve victory, and desperation to save the lives of one's own troops (Downes 2006a). The basic argument is that most states go to war hoping to secure a quick and decisive victory at relatively little cost. The easiest way to do this is to score a knockout over the adversary's military forces, rendering the enemy defenseless and forcing it to concede the issue at stake. Because states prefer quick and decisive victories, they normally eschew strategies of targeting civilians at the war's outset because such strategies take time to have an effect and thus are not good for obtaining swift victories. Often the opponent has the capability to strike at the state's own civilians as well, which serves as a deterrent to casting the first stone.

When countermilitary strategies fail to yield an early decision, however, the gloves tend to come off, and escalation against noncombatants is the likely result. States look for alternatives to a costly war of attrition, and striking enemy civilians is appealing because it serves two important goals. First, it is easier and less costly to attack noncombatants because they do not shoot back. In World War II, for example, losses on area bombing missions—at night or radar-guided in cloudy conditions—were always less than attempts to bomb particular targets in daylight. Second, targeting civilians offers an alternative mechanism to attrition for defeating the enemy: coercion by punishment. As the prospects of victory decline, and

defeat looms ''black and imminent'' on the horizon, states hope that using force against the enemy's noncombatant population will cause it to demand an end to the fighting (Winston Churchill, as quoted in Terraine 1989, 47). Wars of attrition, therefore, induce desperation to win and to save lives, which in turn lead to civilian victimization.

Hypothesis 7: States are more likely to inflict mass killing and larger numbers of civilian casualties when they are engaged in a costly and protracted war of attrition.

Territory Annexation

Another argument links states' desires to annex territory with violence against noncombatants. According to this logic, it is not racial hatred or beliefs in the barbarity of the enemy that produce attacks on civilians; it is merely their shared nationality with the enemy and the accident of their location. In the territorial annexation explanation, states simply want land, usually at another state's expense. When the territory in question is populated by people sharing the nationality of the state to be dispossessed, the aggressor tends to view such people as a threat to their ability to control the land as well as a potential fifth column in immediate combat operations. As long as these individuals are present in substantial numbers, the possibility remains that they could rise up in the rear in conjunction with an enemy attack from the front. Rather than tolerate such a possibility, states bent on controlling territory permanently will target and expel civilians (Downes 2006a).

Hypothesis 8: States will inflict greater numbers of civilian casualties when they invade and seek to annex territory from another state that is inhabited by enemy nationals.

Period Effects

World War II was such a catastrophe for civilian populations that it sparked a renewed effort to codify, legalize, and enforce norms prohibiting the use of force against noncombatants. Ward Thomas (2001), for example, argues that the norm against bombing civilians has recovered and grown gradually stronger since 1945, and the death toll from bombing campaigns has progressively shrunk over time. This norm has been reinforced by improvements in weapons technology that allow one or two bombs to destroy a target that required hundreds of bombs in World War II. The spread of global media, in this view, has also helped limit civilian casualties by increasing public awareness of the plight of civilians in war. In short, there should be fewer civilian casualties and targeting of civilians in the post-1945 period. Some might argue for a later turning point, however, contending that the

heightened media focus on the Vietnam War, and the invention of precision-guided munitions late in that conflict, gave rise to global norms against targeting civilians as well as improved means to avoid inflicting civilian casualties.

Hypothesis 9: Wars occurring after 1945 (or 1970) should have fewer civilian casualties than wars before those dates.

As Valentino, Huth, and Croco (2006) have noted, democracies should be the type of government most likely to comply with international laws or norms proscribing the victimization of noncombatants. Such norms are congruent with the beliefs and practices of democracies internally. Moreover, democracies are highly transparent, and a free press ensures that plentiful information about military operations reaches the citizenry. Finally, leaders in democracies risk incurring audience costs if they renege on commitments. Democratic leaders now and in the past frequently announce their intention to avoid civilian casualties (e.g., Bush 2002; Dower 1986, 38-39). Such public commitments should discourage them from reversing course and targeting civilians.

Hypothesis 10: Democracies will kill fewer civilians in wars after 1945 or 1970.

Coding the Variables

This section defines the variables to be used in the ensuing analysis and discusses the specific measures employed.

Dependent Variables

In this article, I use two different measures of civilian victimization: mass killing and number of civilian fatalities.

Mass Killing

One criticism of the barbarism and civilian targeting dependent variables used by Arreguín-Toft (2001, 2005) and Downes (2006a) is that they convey little information about the severity of the victimization. This could be a potential source of bias: what if democracies, for example, were just as likely to kill civilians, but when they did, democracies did not kill as many noncombatants as autocracies? Similarly, what if cultural differences between belligerents did not necessarily lead to more frequent targeting of an enemy's population, but caused particularly vicious campaigns of murder when such targeting did occur? How do we know that the factors that have been shown to lead to civilian targeting in the first place also influence the number of civilians killed?

The dependent variables employed here are designed to alleviate this problem by measuring in various ways the number of civilians killed by belligerents in wars. One such variable already exists in the literature: mass killing, defined by Benjamin Valentino (2004) as an instance where a belligerent intentionally kills fifty thousand or more noncombatants over a maximum period of five years. Because I am interested in civilian victimization that states inflict on noncombatants outside their borders during armed conflicts, mass killing for the purposes of this analysis consists of cases of intentional targeting of civilians in enemy countries that result in at least fifty thousand civilian fatalities during an interstate war. In interstate wars between 1816 and 2003, there were eighteen cases of mass killing according to this definition (see the appendix).[9]

Number of Civilian Fatalities

The second dependent variable used in the analysis consists of the number of civilian fatalities inflicted by each belligerent in an interstate war from 1900 to 2003. Combatants are defined in the Geneva Conventions as "all organized armed forces, groups and units which are under a command responsible to that Party for the conduct of its subordinates," to which I add individuals involved in the construction of weapons (so-called "munitions workers").[10] Noncombatants, therefore, do not participate in armed conflict by fighting, carrying weapons, serving in the uniformed military or security services, or building weapons. To be counted as a civilian fatality in the data set, individuals not only had to conform to this definition, but they had to be killed by an action taken by a belligerent rather than by diseases that inevitably occur during war or because people fled the theater of battle of their own accord. Excluding these broader war-related deaths leaves two types of civilian fatalities that qualify for inclusion in the data set: (1) deaths that occur when belligerents specifically target and kill civilians via starvation blockade, aerial bombardment, massacre, devastation of the environment, or forced relocation in conditions sure to result in widespread death and (2) deaths that occur when belligerents attempt to destroy a military target but also kill civilians (so-called "collateral damage").

Owing to limits on the availability and reliability of data in the nineteenth century, analysis using this particular measure is limited to cases occurring from 1900 to 2003. Gathering figures from a wide variety of secondary sources, I was able to obtain data for 82 percent of the cases occurring on or after 1900 (196 out of 239).[11] Of these 196 cases, 51 are cases in which belligerents used military strategies that targeted civilians intentionally or used force in an indiscriminate fashion.[12] In 93 of the cases, the number of civilian deaths is not zero, meaning that there are 103 cases in which no civilians were killed. I discuss more properties of this variable below in the Data and Method section.

For many cases, I found more than one estimate of civilian fatalities in the literature. Some analysts in this situation have chosen to use the average of the various

estimates as the dependent variable (Valentino, Huth, and Croco 2006, 360). By contrast, in cases with multiple estimates, I recorded low, medium, and high figures, and ran the analysis on each as a separate dependent variable. The results reported below were obtained using the midrange figures. Results using the low and high estimates do not differ substantively unless noted (see Web appendix).

Independent Variables

Regime Type

To code regime type, I use the Polity 4 data set, which focuses on governmental institutions rather than civil or economic rights and freedoms (Marshall and Jaggers 2001). Polity uses an index to measure a country's democratic and autocratic features based on the competitiveness of political participation, openness and competitiveness of executive recruitment, and constraints on the power of the executive. The indices for democracy and autocracy range from 0 (least democratic or autocratic) to 10 (most). By subtracting the latter from the former, a 21-point scale ranging from −10 to 10 is generated measuring a state's overall level of democracy. I follow convention and code as democracies states that score 7 or above on this scale. Mixed regimes are those governments that score between 6 and −6.

One might argue that Polity is not an adequate measure of norms. Lacking a better alternative, I employ a second indicator to get specifically at the liberal norms argument: Michael Doyle's (1997, 261-64) list of liberal democracies. Doyle employs four criteria to judge whether states are liberal: (1) respect for civil and political rights and freedoms, (2) elected representative government, (3) respect for private property, and (4) a free market economy. In practice, however, there is so little difference between the two measures that I simply report results for Polity.

Finally, insular states are states shielded by water from great powers. Insular states in the data set include Australia, New Zealand, Japan, Britain, and the United States.

Barbaric Images of the Enemy

As a proxy for perceptions of the adversary as barbaric, I code whether belligerents belonged to different civilizations as defined by Samuel Huntington (1996). This may strike some readers as anachronistic because Huntington's categorization is meant to describe the fault lines along which conflict will occur in the future rather than in the past. Of the various indicators available, however, such as religion and race, this is the one that best approximates the real and perceived lines of difference that have existed over the past two hundred years. Civilizational difference, for example, divides Eastern Europe and Russia from Western Europe, European from Islamic countries, Muslim from Jew, Muslim from Hindu, Hindu from Chinese, and Chinese from Japanese. In fact, this coding rule is almost identical to

coding for difference in religion and including Eastern Orthodox as separate from Protestant/Catholic.

This measure leaves much to be desired as a representation of the actual causal mechanism in the identity argument, but is the best that can be done in a quantitative study. A better way to test the argument would be to use in-depth process tracing of how elites and masses in a country perceived the enemy and whether this had any effect on how that state subsequently treated civilians in the war. This task I leave to future research. In the meantime, I test whether ex ante differences in identity—captured here as civilizational differences—are associated with an increased propensity to target and kill enemy civilians.[13]

Desperation

I use four indicators to capture the desperation logic. First, *wars of attrition* are conflicts generally lacking in maneuver or movement, which are instead dominated by static, linear, or trench operations. Attrition warfare is essentially siege warfare: conflicts in which the defense has the advantage and which thus tend to be enormously costly and protracted to prosecute. Actual sieges—such as the siege of Leningrad in World War II or the siege of Paris in the Franco–Prussian War—clearly qualify as attrition, but so, too, do wars that resemble sieges on a larger scale. The dominance of firepower over movement in World War I on the Western Front, for example, quickly transformed that conflict into trench warfare in which thousands of lives were required to conquer a few hundred yards of territory. In another example, the United States was forced to fight its way across the Pacific from 1942 to 1945, assaulting prepared Japanese defenses on island after island. Other conflicts have taken a similar form, such as the Crimean, Russo–Japanese, Chaco, Korean, Iran–Iraq, and Ethiopian–Eritrean Wars.[14] Finally, I code counterinsurgent warfare as a type of attrition war, as it typically "involves using small mobile units to seek out and destroy guerrillas directly" (Valentino, Huth, and Croco 2006, 362).[15]

Importantly, a war is coded as an attrition war not based solely on countries' initial strategies, but rather on the predominant mode of combat during the war. Germany, for example, quickly sliced through Poland's defenses in September 1939 and reached Warsaw, but then bogged down in the face of Polish defenses inside the city and faced a protracted siege (Peszke 1995, 25; Bethell 1972, 169-70). Later, the Germans employed a blitzkrieg to invade the Soviet Union, but after the initial offensive was thwarted, the fighting was dominated by desperate attrition warfare as well as actual sieges (Leningrad) and urban warfare (Stalingrad).[16]

Second, the most direct indicator of the human costs of war is the number of fatalities a state's forces suffer in battle. *Battle deaths* are available in the Correlates of War (COW) data set, and are supplemented by a variety of secondary sources. I have updated these figures through the Iraq War of 2003. Because the spread of these figures is so broad, I use the log of battle deaths in the analysis.

My third indicator of attrition is *war duration*. The longer a war goes on, the more costly it is likely to be. I measure war duration in days (again taken from COW) and use the log of that number in the analysis.

Finally, I code a dummy variable for *expansive or expanding war aims*. Wars in which one or more belligerents demand unconditional surrender from the adversary, or raise their political objectives during the course of the war, are likely to induce greater resistance from the enemy. This in turn causes the first state to employ greater levels of force, and an escalatory spiral ensues leading to civilian victimization. Moreover, it is simply more militarily difficult to conquer whole states and overthrow regimes than it is to achieve more limited war aims, and thus the costs of the war are likely to be higher (Valentino, Huth, and Croco 2006, 355). I coded this variable by examining belligerents' war aims and how they changed in each war. Examples of total war aims include World War II and the 2003 Iraq War. Cases in which war aims expanded after the war began include the Franco–Prussian War, World War I, and Korea.

Annexation of Territory

To gauge the effect that territorial expansion exerts on civilian victimization, I code a dummy variable that takes the value of 1 when a state aims to conquer and permanently annex land from a neighboring state. I again coded this variable by examining how leaders described their goals before the war started and whether those aims included taking and digesting enemy territory. Examples include the Balkan Wars (1912-1913), Greco–Turkish War (1919-1922), World War II Eastern Front (1941-1945), and the Israeli War of Independence (1948-1949).

Control Variables

A number of control variables are also included in the analysis because of their likely impact on civilian casualties. First, states that have higher levels of material capabilities should have a greater capacity to target enemy civilians. For this analysis, I code *relative capabilities* as the percentage of total capabilities of all states in the war controlled by each belligerent. This is more useful than an absolute measure of capability (such as the log of each belligerent's score on the combined COW capabilities index) because it provides a measure of the power of each combatant relative to the other states in the war.

Second, if both sides in a conflict have the ability to attack each other's civilian populations, the possibility of retaliation may deter them from carrying out such attacks or curb the parties from utilizing the full destructive power at their disposal. In such cases—like Britain and Germany with airpower in 1939 and 1940—each country is scored 1 on a dummy variable for *deterrence*. A participant in an interstate war was coded as having the opportunity/capability to target enemy civilians if it was not a subordinate alliance partner, meaning that it had independent

decision-making ability on military strategy, and it met either of the following two criteria: (1) the belligerent's ground forces invaded the territory of the enemy state or (2) the belligerent had air, missile, or naval forces to bombard or blockade the enemy homeland.

Third, if one belligerent initiates counter-civilian strikes, the target state may *retaliate* with attacks of its own. The victim may simply wish to exact revenge for the deaths of civilians on its side, or it may desire to target civilians as a reprisal: to teach the enemy a lesson that killing noncombatants does not pay because it invites retaliation. When a state becomes a target of civilian victimization, therefore, it receives a 1 on this dummy variable. For the analysis of civilian deaths, I substitute a dummy variable signifying if a state suffered deaths among its civilian population from enemy attacks.

Fourth, I coded dummy variables for wars occurring after *1945* and *1970* to test for the presence of period effects.

Fifth, it is necessary to control for the *size of the enemy's population*, since mass killing or greater numbers of civilian casualties could simply be a function of a larger population. I use the log of the target state's population.

Finally, the interactive hypotheses are measured by multiplying certain variables. To gauge the effect of democracy in wars of attrition, these two variables are multiplied. I multiplied democracy and post-1945 and post-1970 to measure the impact of democracy in these time periods. And for democratic war initiators, I coded a variable for war initiation and multiplied it by democracy.[17]

Data and Method

This section elaborates on the data set used to test hypotheses regarding the correlates of civilian casualties and outlines the statistical procedures and why they were chosen.

Data Set

The data set used in this article includes all states listed by COW as having participated in an interstate war between 1816 and 1997, which I updated through the interstate phase (March 18 to May 1) of the 2003 Iraq War. Several long, multiphase, multiparticipant wars—such as World War I and World War II—were broken up into their component conflicts along the lines suggested by Reiter and Stam (2002, 39). For example, World War I was separated into four wars: Western Front, Eastern Front, Central Powers versus Serbia, and Central Powers versus Romania. A similar process for World War II produced nine conflicts. Only states that fought in each particular conflict were included in that war. The United States, for example, is counted as a participant only in World War II Western Front (1941-1945)

and the Pacific War (1941-1945), but not in Germany–Poland (1939), Germany–Norway/Denmark (1940), the Battle of France (1940), Italy–Greece (1940-1941), Germany–Yugoslavia (1941), the Eastern Front (1941-1945), or USSR–Japan (1945). The complete data set includes 323 states and 100 wars. The analysis of mass killing uses the entire data set, whereas the investigation of civilian casualties uses only those 70 wars with 239 belligerents that occurred after 1900. I obtained data on the dependent variable for 196 of these belligerents.[18]

The unit of analysis in the data set is each state in a war. Unlike Valentino, Huth, and Croco (2006, 358), I did not insist on a dyadic arrangement whereby two sides for each war are created either by dividing multiparticipant conflicts into separate dyads or amalgamating several countries on each side into a single coalition and using combined, weighted measurements of the independent variables. Instead, I code the independent variables for each state and control for lack of independence within each war by calculating robust standard errors. Independent variables are coded once, at the beginning of the war to avoid endogeneity, and the total number of civilian fatalities inflicted by each state per war is also recorded. Owing to limits on data availability and the number of cases being considered, it was not possible to construct a time-series with yearly or monthly observations of civilian casualties. A potentially fruitful way to extend the analysis, however, would be to code annual or monthly data on civilian deaths for particular conflicts and examine variation within one war but across time and space (e.g., Kalyvas 2006).

Method

Because mass killing is a dichotomous variable, traditional ordinary least squares (OLS) regression—which assumes a continuous and unlimited dependent variable rather than a binary and limited one—yields biased estimates. What is needed is a statistical technique that estimates whether the independent variables increase or decrease the probability of mass killing. The logit estimator is the one that I employ.

Civilian casualties as a dependent variable present a number of difficulties. Casualties are technically a count. Count variables—such as the number of times per week an individual dines out or the number of traffic tickets one accumulates per year—typically have more zero observations and a greater dispersion than the normal distribution assumed by linear regression, causing OLS to produce biased estimates (Long 1997, 217-50). In the civilian fatality data I have collected, in fact, the variance of the data greatly exceeds the mean because the minimum observation is zero and the maximum is in the millions. Moreover, in addition to having a large variance, roughly half the observations are zeros, meaning the distribution is skewed to the left, bearing little resemblance to the bell-shaped normal distribution. Finally, civilian casualty counts are always either zero or positive, whereas the

normal distribution that underlies OLS assumes that observations may take values less than zero (on these points, see King 1989, 53-54; Winkelmann 2003, 63).

Other scholars, however, have pointed out that civilian fatalities also violate certain assumptions of count models. As Valentino, Huth, and Croco (2006) note, for example, "Count models assume a data-generating process based on a sequence of identical Bernoulli trials in which the outcomes of the trials are binary (for example, success or failure, heads or tails)." They argue that because civilians are often killed in large numbers by single attacks, "Civilian deaths during war are not generated by an identical binary process (1 killed or 0 killed)," and thus count models are inappropriate (p. 364).[19] Count models also assume that each observation is of the same length, but wars vary greatly in duration from a few days to several years.

Because the data does not fully conform to the assumptions of count models or OLS, rather than simply choose one or the other, I employ both and supplement them with a third (ordinal logit, explained below). To the extent that the results are consistent across these different models and ways of measuring the dependent variable, our confidence in the robustness of the findings increases. First, I use a zero-inflated negative binomial (ZINB) model to analyze counts of civilian casualties.[20] The ZINB model assumes that there are two groups of states: belligerents for which killing enemy civilians is an actual possibility, and belligerents that cannot kill enemy noncombatants because they simply do not have the opportunity or ability to do so. Zero counts can occur because a belligerent that could have killed civilians for a variety of reasons did not, or because a belligerent was unable to kill civilians. The ZINB model thus calculates two separate equations: a logit model that estimates the effects of the independent variables on the probability that a state falls in the zero category, and a negative binomial model that calculates the effect of the variables on the number of civilians killed.

Second, I use ordinal logit to analyze a transformation of the raw civilian fatality data. One criticism of count models is that they estimate the mean of the distribution, which in this case—owing to a handful of very high casualty cases and the low overall number of cases—is quite large. For civilian deaths in interstate wars after 1900, for example, the mean exceeds ninety-two thousand even though half of the observations are zeros and many others are less than one thousand or five thousand. Another way to compensate for this high degree of dispersion—besides using OLS on logged values of noncombatant deaths—is to transform the data into categories (0, 1, 2, etc.) corresponding to ranges of fatalities and use ordinal logit. The major assumption of this approach is that the exact numbers are not necessarily of intrinsic importance, but rather what is important are the differences between none versus some, little versus big, and big versus huge. This is a reasonable assumption that is especially well suited to a dependent variable like civilian casualties that is characterized by uncertainty as to the exact number of deaths. Often we know the order of magnitude of civilian fatalities—hardly any, hundreds, thousands, tens of

thousands, hundreds of thousands, or millions—better than the actual numbers them-selves. I discuss the particular categorizations employed below.

Finally, I follow Valentino, Huth, and Croco (2006) and analyze civilian casual-ties using linear regression, correcting for the wide dispersion of the data by taking the log.

Statistical Analysis and Results

Below I present the results of the statistical analysis. I begin with mass killing and then proceed to the number of civilians killed, discussing first the ZINB results, then ordinal logit, and finally OLS.

Mass Killing

Table 1 shows the results of two logit regressions using mass killing—whether a belligerent in an interstate war killed at least fifty thousand enemy noncomba-tants—as the dependent variable. The two models differ only in that the second includes an interaction term signifying democracies in wars after 1945. The third column in the table shows the change in the expected value of mass killing asso-ciated with shifting each independent variable from a low to a high value (0 to 1 for binary variables, 20th to 80th percentile for continuous variables).

Turning to the substantive results, the models displayed in Table 1 indicate that desperation and appetite for territory correlate positively and significantly with decisions to engage in mass killing ($p < .01$).[21] Each of these variables also has a large substantive effect on the probability of mass killing, increasing the likelihood that a state will kill fifty thousand or more civilians about thirty-fold. Other proxies for desperation to win and to save lives—such as war duration, battle deaths, and expansive war aims—also significantly increase the likelihood of mass killing in interstate warfare ($p < .01$ for each) and have large substantive effects (see Web appendix). Overall, therefore, Table 1 offers strong support for desperation and appetite for conquest as determinants of massive killing of civilians.

The results for democracy and mass killing diverge strikingly from those reported by earlier studies: democracy is positive, substantively large, and highly significant in models 1 and 2.[22] Having a democratic regime makes mass killing more than eight times more likely. The surprising positive result for democracy and mass killing highlights an important but heretofore unknown fact about regime type and civilian casualties: campaigns of civilian targeting by democracies in interstate wars are 52 percent more likely to escalate to mass killing than those by autocracies.[23] This find-ing would appear to support the old adage that democracies are slow to anger, but once aroused, their wrath is terrible. Less surprisingly, the data show that democra-cies are more likely than autocracies to inflict mass killing in wars of attrition. A cross-tabulation demonstrates that democracies engage in mass killing 57 percent of

Table 1
Logit Estimates for Determinants of Mass Killing
in Interstate Wars, 1816-2003

	1		2		Percentage Change in Probability of Mass Killing
Democracy (Polity)	2.40***	(0.89)	2.73**	(1.09)	743
Democracy × Post-1945	—		−1.29	(2.08)	72
Cultural difference	−1.83	(1.22)	−1.68	(1.30)	−53
War of attrition	4.33***	(1.42)	4.54***	(1.50)	2,939
Territorial annexation	4.06***	(1.43)	4.13***	(1.46)	2,893
Relative capabilities	4.27	(3.38)	4.64	(3.40)	111
Enemy population	2.37***	(0.87)	2.44***	(0.90)	770
Deterrence	0.48	(1.00)	0.52	(0.94)	33
State's own civilians targeted	−0.34	(1.01)	−0.51	(0.96)	77
Post-1945	−0.90	(1.63)	−0.36	(1.75)	50
Constant	−19.23***	(5.32)	−20.10***	(5.71)	—
N	298		298		—
Log-likelihood	−24.97		−24.79		—
LR chi-square	20.75***		21.54**		—
Psuedo-R^2	.63		.64		—

Note: Huber-White robust standard errors (clustered on each war) in parentheses. Estimates for percentage change in predicted value of mass killing are generated from model 1, except for democracy after 1945, which is from model 2. All variables except the variable of interest are held constant at their mean values. The independent variables are shifted from 0 to 1 in the case of dummy variables, or from 20th to 80th percentile in the case of continuous variables. Percentage change is obtained by dividing the change in probability by the original probability. All calculations were performed using *CLARIFY: Software for Interpreting and Presenting Statistical Results*, Version 2.1, by Gary King, Michael Tomz, and Jason Wittenberg, available from http://gking.harvard.edu/stats.shtml.
** $p < .05$. *** $p < .01$.

the time in wars of attrition, compared to only 15 percent for nondemocracies ($p < .01$). The relationship between democracy and mass killing, however, ceases to be significant after 1945: the interaction term in model 2 signifying democracies in wars after World War II is weakly negative (but not significant) whereas democracy (in this case meaning democracy before 1945) remains positive and significant.

Another implication of the institutional argument is that because democracies are smarter about the wars they choose, conflicts that democracies initiate should not become wars of attrition and thus should not lead to mass killing. The results show that although the effect of democratic war initiator on the probability of mass killing is in the expected negative direction, it is not strong enough to warrant statistical significance ($B = -2.40$, $p = .26$). Democratic targets, on the other hand, are significantly more likely to engage in mass killing ($B = 3.37$, $p < .01$). Thus, there is only partial support for the hypothesis that democracies choose easier wars

that are less likely to become wars of attrition and necessitate the killing of massive numbers of civilians.[24]

Moving on to other explanations, cultural differences fail to exert a discernible effect on the likelihood of mass killing in warfare, but the effect (while insignificant) is consistently in the opposite of the predicted direction. Differences in civilizational membership actually correlate with a lower probability of mass killing. Cultural clashes are thus marginally less likely—controlling for other factors—to result in massive civilian bloodshed than are wars between culturally similar states.[25] One possible reason for this unexpected finding is that wars between countries from different civilizations are also wars of attrition or wars of annexation. Cultural differences are not highly correlated with either of these variables, though (.13 and .11, respectively), and excluding attrition and annexation from the model still leaves cultural differences with a negative coefficient, if smaller in absolute terms. An examination of the data indicates that World Wars I and II on the Western Front account for most of the cases of mass killing among belligerents from the same civilization. Dropping these cases reverses the sign on cultural differences, but it does not become significant.

The only control variable to reach statistical significance is enemy population: the greater the population of the adversary state, the more likely mass killing becomes. This is not surprising, since there are simply more civilians to kill when a population is large. The findings for relative capability, while not significant, are suggestive. The variable for material power is consistently positive, indicating that the more powerful states in particular conflicts are more able to inflict mass killing. None of the other controls—including being the victim of civilian targeting, or the war occurring after 1945—is statistically significant.[26]

Civilian Fatalities

Next we turn to actual numbers of civilian war deaths. I present this analysis in three steps. First, I look at counts of noncombatant fatalities using ZINB regression. Second, I transform the counts into categories and reestimate the model with ordered logit. Finally, I examine logged values of civilian deaths using OLS.

As with the previous analyses of mass killing, desperation and appetite to annex territory stand out as important determinants of civilian casualties in interstate wars. Democracies in wars of attrition kill larger numbers of civilians than democracies not fighting such wars and about the same number of noncombatants as autocracies in wars of attrition. Cultural differences, finally, consistently reduce the number of noncombatant fatalities, contrary to the expectations of the identity perspective.

Counts of Civilian Fatalities

Models 3 and 4 in Table 2 display the results of ZINB regressions using the mid-range estimate of civilian fatalities in interstate wars starting in or after 1900 as the

Table 2
Determinants of Civilian Fatalities in Interstate Wars, 1900-2003

	Zero-Inflated Negative Binomial (ZINB) Estimates (Dependent Variable: Counts of Civilian Fatalities)					Ordered Logit Estimates (Dependent Variable: Categorical Measure of Civilian Fatalities)		Ordinary Least Squares (OLS) Estimates (Dependent Variable: Logged Counts of Civilian Fatalities)	
	3a (Negative Binomial)	3b (Logit)	4a (Negative Binomial)	4b (Logit)	Marginal Effect	5	6	7	8
Democracy (Polity)	0.28	−1.03*	−1.00**	−0.74	37	0.94**	0.43	0.50**	0.18
	(0.38)	(0.56)	(0.46)	(0.64)		(0.44)	(0.49)	(0.23)	(0.23)
Cultural difference	−0.99*	−0.55	−0.86*	−0.63	−112	−0.31	−0.30	−0.10	−0.08
	(0.57)	(0.50)	(0.45)	(0.48)		(0.45)	(0.42)	(0.20)	(0.18)
War of attrition	2.58***	−2.83***	1.61***	−2.51***	644	2.75***	2.31***	1.90***	1.53***
	(0.53)	(0.51)	(0.56)	(0.54)		(0.45)	(0.45)	(0.31)	(0.26)
Democracy × Attrition	—	—	2.58***	−20.83***	1,040	—	1.87	—	1.39**
			(0.73)	(0.85)			(1.20)		(0.67)
Territorial annexation	2.74***	−23.86***	3.14***	−23.63***	1,148	3.39***	3.71***	2.48***	2.62***
	(0.47)	(0.83)	(0.33)	(0.79)		(0.64)	(0.67)	(0.31)	(0.33)
Relative capabilities	1.79**	−3.04***	1.94***	−3.03***	203	2.32***	2.30***	1.38***	1.38***
	(0.76)	(0.91)	(0.57)	(0.84)		(0.53)	(0.54)	(0.31)	(0.31)
Enemy population	1.68***	−0.57	1.50***	−0.51	173	0.83**	0.73**	0.47***	0.41**
	(0.38)	(0.46)	(0.36)	(0.45)		(0.32)	(0.32)	(0.17)	(0.16)
Deterrence	−0.18	−1.36**	−0.08	−1.23**	−7	0.98**	0.84*	0.63**	0.53**
	(0.72)	(0.60)	(0.51)	(0.61)		(0.47)	(0.48)	(0.24)	(0.23)
State's own civilians killed	−0.81	−0.43	−0.39	−0.47	−71	−0.33	−0.29	−0.19	−0.16
	(0.55)	(0.65)	(0.53)	(0.66)		(0.42)	(0.42)	(0.23)	(0.22)
Post-1945	−0.58	−1.23*	−0.21	−1.32**	−47	0.10	0.19	0.17	0.22
	(0.64)	(0.66)	(0.49)	(0.62)		(0.48)	(0.46)	(0.24)	(0.23)
Constant	0.73	6.97***	1.23	6.66***	—	—	—	−2.12**	−1.79**
	(1.67)	(2.53)	(1.60)	(2.40)				(0.81)	(0.77)

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N	190	—	190	—	190	190	190	190
Log-likelihood/F	−937.06	—	−931.03	—	−174.55	−171.89	31.47***	28.76***
LR chi-square/R^2	326.02***	—	453.84***	—	112.76***	121.70***	0.63	0.65
Vuong statistic	7.52***	—	7.64***	—	—	—	—	—

Note: Huber-White robust standard errors (clustered on each war) in parentheses. The F and R^2 statistics apply only to the OLS estimates in models 7 and 8. The Vuong Statistic (models 3 and 4) determines whether ZINB significantly improves the fit of the model over a normal negative binomial regression. The significance level indicates that it does. Marginal effects (all from model 3a, except for democracy in attrition wars, which is from model 4a) were generated using Stata's "mfx compute" command, and represent the effect of a one-unit change in each independent variable on the number of civilian casualties, holding all other variables at their mean values. Note that this procedure understates the effects of the continuous variables. Clarify (used in Table 1) does not support the ZINB model. Thus, I was not able to manipulate the continuous variables from low to high values.

*$p < .10$. **$p < .05$. ***$p < .01$.

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dependent variable. Each ZINB model contains two sets of coefficients: a negative binomial estimate of the influence of each variable on the number of casualties observed and a separate logit estimate that reports the influence of each variable on the probability of an observation taking the value of zero. A positive sign for the negative binomial half of the equation means that the variable in question increases the number of civilians killed. A positive sign for the logit model, by contrast, means that the variable increases the likelihood that the number of civilians killed will be zero. In Table 2, the negative binomial coefficient is listed in the first column of each model (3a and 4a), while the logit estimate follows in the second column (3b and 4b). The marginal effect (percentage increase or decrease) of each variable on the number of casualties is also given.

The results of the ZINB analysis shown in models 3 and 4 offer strong support for the desperation and territorial annexation arguments. Protracted wars of attrition and the intention to annex enemy territory, for instance, are the two most powerful predictors of civilian fatalities. Other indicators of attrition—war duration, battle deaths, and high or expanding war aims—also significantly increase civilian war deaths when substituted into the model ($p < .01$ for the first two, $p < .05$ for the third). Attrition and annexation also exert large substantive effects on the number of civilians killed: states involved in wars of attrition kill seven and a half times as many noncombatants as states that do not fight such wars. States seeking to annex enemy territory kill more than twelve times the number of civilians as states that do not have this war aim. Each of these variables also significantly reduces the probability that a state will kill no civilians, as indicated by the negative signs in column 3b.

As is apparent from its negative coefficient, the clash of cultures argument is again turned on its head, as civilizational differences between the belligerents reduce the number of civilian fatalities states inflict in interstate wars. Again, as with the analysis of mass killing, the western fronts of the two World Wars account for several large counts of civilian deaths in conflicts between states from the same civilizations. Dropping several of these counts halves the size of the cultural differences coefficient, but it remains negative. Eliminating the attrition and annexation variables reverses the sign of cultural differences, but the coefficient is essentially zero. It is thus difficult to avoid the conclusion that cultural differences are not an important determinant of civilian deaths in interstate wars.

The effect of democracy, by contrast, is interestingly nuanced. In model 3, the effect of democracy on the number of civilians killed is weakly positive, and at the same time democracies are less likely to be in the group that kills no civilians (as shown by the negative and significant coefficient in model 3b). Model 4, however, shows that the effect of democracy is conditional on whether the conflict is a war of attrition. Democracies kill larger numbers of civilians than nondemocracies in wars of attrition, but kill fewer civilians than autocracies do when the war is not a war of attrition. Democracies in attrition wars are also highly unlikely to kill zero civilians. Looking at the other interactive hypotheses, democratic war initiators

do not kill fewer civilians ($B = 0.35$, $p = .78$). Finally, democracies do not appear to kill significantly fewer noncombatants than autocracies in interstate wars after 1945 or after 1970.[27]

Among the control variables, a few points are worth mentioning. As expected, increases in relative capabilities and the size of the enemy population result in larger numbers of civilian fatalities. A one-unit increase in each of these variables more or less triples the number of civilian deaths. Greater gaps in relative capabilities also strongly decrease the likelihood of observing zero fatalities. On the other hand, having one's own civilians killed brings about an apparent reduction in the number of civilian casualties a state inflicts. This latter variable remains negative even in the reduced sample of states having the capability to harm enemy civilians, meaning it is not simply an artifact of some states being unable to strike back. The way this variable is measured—as a dummy signifying that a state suffered some nonzero number of civilians killed rather than how many died—may be contributing to this odd result. Finally, wars after 1945 are less likely to have zero civilians killed. This finding may be the result of a reporting bias, as the quality and availability of data is better for more recent conflicts.[28]

Categories of Civilian Fatalities

I now turn to the ordinal logit analysis of civilian casualties shown in models 5 and 6. The dependent variable for this analysis is based on the following seven categories of noncombatant deaths: 0, 1 to 500, 501 to 5,000, 5,001 to 50,000, 50,001 to 500,000, 500,000 to 5 million, and more than 5 million.[29] The results of this analysis again strongly support desperation and annexation as causes of civilian fatalities. Measures of wars of attrition (including war duration, battle deaths, and expanding or total war aims), are positive and significant at the highest level, as is the variable for territorial annexation. Cultural differences, on the other hand, have a small and insignificant negative effect on civilian casualties. Democracy is positive and significant in model 5, a change from the ZINB analysis, but that significance disappears when an interaction term for democracies in wars of attrition is included in model 6. The interaction term just misses significance ($p < .12$), and this time is smaller than war of attrition by itself (meaning autocracies in wars of attrition), although the two are close in value. Democratic war initiators do not kill significantly fewer civilians in the ordinal logit analysis, nor do democracies kill significantly fewer civilians in wars after 1945 or 1970.[30] Finally, as before, increases in relative capabilities and the size of the adversary's population lead to larger numbers of civilian dead.[31]

Log of Civilian Casualties

Finally, models 7 and 8 show results obtained by using OLS on logged values of civilian fatalities. These results are nearly identical—in terms of coefficient signs

and significance levels—to the ordinal logit estimates just discussed. Democracy, attrition (in all its forms), annexation, relative power, size of the enemy population, and deterrence are all positive and significant; democracy in wars of attrition (model 8) this time is significant and about the same size as attrition alone. Democratic war initiators do not kill fewer civilians, nor do democracies kill fewer noncombatants after 1945 or 1970.[32]

Discussion

Many of my findings reinforce those of previous studies of civilian victimization, mass killing, and civilian casualties. The importance of attrition warfare, battle deaths, war duration, and ambitious war aims for generating violence against enemy noncombatants are confirmed. Similarly, I found that possessing greater material capabilities relative to one's adversary, as well as larger enemy populations, increase the number of civilians killed. Finally, my results provide further evidence against the relevance of cultural differences between belligerents for civilian casualties.

That said, my findings on the effect of regime type clash with those of previous literature, especially Valentino, Huth, and Balch-Lindsay (2004) and (less so) with Valentino, Huth, and Croco (2006). What factors could be causing this divergence? Valentino, Huth, and Balch-Lindsay, for example, find that democracy significantly reduces the likelihood of mass killing in all wars after 1945, whereas I find a positive effect for democracy from 1816 to 2003 and a weak negative effect after 1945. These findings may not actually be contradictory, since Valentino, Huth, and Balch-Lindsay only examine the post-1945 period; perhaps democracy was positively associated with mass killing before 1945. Their sample also includes many civil wars, and democracies are supposedly less brutal than autocracies domestically (Davenport and Armstrong 2004; Harff 2003). Looking exclusively at international wars fought by democracies since World War II, however, points to a familiar trend. Although democratic states have fought few costly international wars since 1945, democracies not only targeted civilians in most of them—the Dutch in Indonesia (1945-1949), France–Madagascar (1947-1948), France–Indochina (1945-1954), United States in Korea (1950-1953), France–Algeria (1954-1962), United States in Vietnam (1965-1973), and Israel–Lebanon (1982)—they often committed mass killing (in all but the Dutch and Israeli cases) as well. At least in international wars, therefore, it appears that costly wars of attrition have still tended to induce a resort to civilian victimization by democracies after 1945.[33]

Valentino, Huth, and Croco (2006), by contrast, find no significant effect for regime type on numbers of civilian casualties in interstate wars, whereas I find some evidence of a positive relationship driven primarily by democratic victimization of civilians in wars of attrition. This latter finding is stronger than—but not much different from—their positive and nearly significant interaction term for

regime type and attrition strategy (p. 366). The disparity between the results could be due to a number of factors. One possible explanation is that I include all civilian deaths inflicted by belligerents, whereas Valentino, Huth, and Croco include only intentional fatalities. In additional tests, however, my results remain stable (and in fact become slightly stronger) if I restrict the analysis to intentional deaths (see Web appendix). A second potential explanation is missing data: there are forty-three belligerents in my data set (in twenty wars) for which I was unable to obtain a figure for the number of civilian fatalities inflicted (see the list in note 11), and a handful of other cases are missing data on an independent variable.[34] Third, our data sets include different wars: Valentino, Huth, and Croco include twelve wars of occupation in their data set, whereas my data set is composed exclusively of interstate wars. Fourth, there are some differences in the way we measure certain variables. I measure regime type once for each belligerent at the beginning of each war, for example, whereas they use the average of each state's democracy score for all the years the war was ongoing (p. 361). Moreover, while most of the wars in Valentino, Huth, and Croco's data set consist of one state on each side, in a few cases (it is unclear how many) they combine multiple states fighting on the same side into coalitions. In these cases, "the values of the independent variables are averaged across the members of the coalition and weighted based on the troop contributions of each coalition member" (p. 358).[35] In my data set, states are not combined into coalitions: each state's regime type is measured separately. Finally, I measure attrition as a dummy variable, whereas they measure it as the percentage of the war during which each belligerent fought an attrition strategy.[36]

Conclusion

In this article, I hoped to shed light on the effect of democracy on the infliction of mass killing and civilian casualties by states in interstate wars. What conclusions does the analysis allow us to draw? First, democracies do not kill fewer civilians than nondemocracies. Second, democracies kill significantly more noncombatants when they fight wars of attrition (than democracies in non–wars of attrition), and at least as many civilians as nondemocracies in wars of attrition. Third, when democracies do target noncombatants, they are more likely than autocracies to kill more than fifty thousand. Fourth, the selection effect argument is not supported: democracies do not kill fewer civilians in wars they initiate. Finally, democracies do not kill significantly fewer noncombatants in wars after World War II or Vietnam.

What are the implications of these findings? For one, these results lend more support to institutional theories of democracy than norms-based theories. Yet support for the institutional view is not uniform. The elevated risk of removal from office from losing a war, for example, is not enough to drive democratic leaders to target enemy

civilians immediately. Instead, the pressures of electoral accountability do not seem to kick in until after the war becomes costly and victory is in question. Moreover, the supposed selection effect is not supported, since civilian casualties and mass killing are not significantly less likely in wars initiated by democracies. Last, the evidence does not clearly show that democracies kill larger numbers of civilians in wars of attrition. In the ZINB analysis, the coefficient for the interaction term was larger than for autocracies in wars of attrition, in the ordinal logit and OLS models it was smaller; but in neither case were the differences between the two substantial.

What is clear, however, is that regime type is not by itself the primary determinant of civilian casualties; it can exacerbate an already powerful tendency in wars of attrition to generate massive killing of civilians. Wars to annex territory also play a substantial role. Further research should be directed at examining the role of democracy in particular cases and whether that role remains the same throughout the conflict or changes with the changing fortunes of war. Democracy might act as a restraint on targeting civilians early in a war but become a propellant to civilian victimization later on. Research should also address the question of why mixed regimes seem to be less likely to kill civilians than democracies or dictatorships.

Appendix
Cases of Civilian Targeting and Mass Killing in Interstate Wars, 1816-2003, with Estimates of Civilian Fatalities

War	State	Years	Mass Killing[a]	Civilians Killed		
				Low	Medium	High
Franco–Prussian	Prussia	1870-71	1	6,987	50,000	50,000
Russo–Turkish	Russia	1877-78	1	262,000	262,000	262,000
Boxer Rebellion	China	1900	0	32,284	32,284	32,284
Boxer Rebellion	Russia	1900	0	*5,000*	*5,000*	*5,000*
Boxer Rebellion[b]	UK	1900	0	*1,000*	*1,000*	*1,000*
Boxer Rebellion[b]	USA	1900	0	*1,000*	*1,000*	*1,000*
Boxer Rebellion[b]	France	1900	0	*1,000*	*1,000*	*1,000*
First Balkan	Serbia	1912-13	0	453	*11,000*	*11,000*
First Balkan	Bulgaria	1912-13	0	1,345	*15,000*	*15,000*
First Balkan	Greece	1912-13	0	210	*1,000*	*1,000*
Second Balkan	Serbia	1913	0	9,453	*15,000*	*15,000*
Second Balkan	Greece	1913	0	1,180	*10,000*	*10,000*
Second Balkan	Bulgaria	1913	0	671	*1,000*	*1,000*
Second Balkan	Turkey	1913	0	2,648	*7,500*	*7,500*
World War I West	Germany	1914-18	0	11,369	11,446	11,446
World War I West	France	1914-18	1	374	297,374	410,374

**Appendix
(continued)**

War	State	Years	Mass Killing[a]	Civilians Killed		
				Low	Medium	High
World War I West	UK	1914-18	1	891,374	297,374	410,374
World War I West	USA	1917-18	1	0	297,000	410,000
World War I East	Turkey	1914-18	1	50,000	75,000	75,000
Hungarian[b]	Romania	1919	0	126	*1,000*	*1,000*
Greco–Turkish	Greece	1919-22	0	10,000	15,000	15,000
Greco–Turkish	Turkey	1919-22	0	25,000	25,000	100,000
Franco–Turkish[b]	France	1919-21	0	*1,000*	*1,000*	*1,000*
Franco–Turkish[b]	Turkey	1919-21	0	20,000	27,600	30,000
Sino–Soviet[b]	USSR	1929	0	2,000	2,000	2,000
Sino–Japanese	Japan	1931-33	0	6,080	10,000	16,120
Italo–Ethiopian	Italy	1935-36	1	250,000	250,000	250,000
Sino–Japanese	Japan	1937-45	1	1,578,000	3,949,000	6,325,000
Poland	Germany	1939	0	26,000	41,000	56,000
Russo–Finnish[b]	USSR	1939-40	0	640	650	700
World War II West	Germany	1940-45	1	53,000	53,000	53,000
World War II West	UK	1940-45	1	305,000	305,000	305,000
World War II West	USA	1941-45	1	100,000	100,000	100,000
German-Yugoslav	Germany	1941	0	3,000	17,000	17,000
World War II East	Germany	1941-45	1	6,074,000	10,000,000	14,000,000
World War II East	USSR	1941-45	1	500,000	500,000	500,000
World War II East	Romania	1941-44	1	400,000	400,000	400,000
Pacific War	USA	1941-45	1	268,157	330,000	900,000
Palestine	Israel	1948-49	0	850	1,130	2,000
Korea	N. Korea	1950-53	1	29,000	129,000	129,000
Korea	USA	1950-53	1	100,000	406,000	1,000,000
First Vietnamese	USA	1965-73	1	91,936	313,936	313,936
First Vietnamese	N. Vietnam	1965-73	0	41,294	42,194	44,140
Cyprus	Turkey	1974	0	3,250	3,250	3,250
Cyprus	Cyprus	1974	0	500	500	500
Cambodia–Vietnam	Cambodia	1975-79	0	2,000	2,000	30,000
Uganda–Tanzania	Uganda	1978-79	0	2,000	2,000	2,000
Iran–Iraq	Iran	1980-88	0	1,000	1,000	1,000
Iran–Iraq	Iraq	1980-88	0	11,000	12,420	15,050
Lebanon	Israel	1982	0	5,000	10,000	15,485
Persian Gulf[b]	Iraq	1991	0	14	14	14
Armenia–Azerbaijan	Armenia	1992-94	0	*7,500*	*7,500*	*7,500*
Armenia–Azerbaijan	Azerbaijan	1992-94	0	*7,500*	*7,500*	*7,500*

Note: For information on coding and sources for civilian deaths, see the Web appendix. Italics = author's estimates.
a. Coding based on midrange estimate of civilian fatalities.
b. Borderline cases.

Notes

1. For exemplary works on domestic repression, see Poe and Tate (1994), Davenport (1999), and Davenport and Armstrong (2004). The literature on genocide is too extensive to cite in full. For social scientific approaches to genocide, including the use of statistical analysis, see Harff and Gurr (1988), Krain (1997), and Harff (2003). For recent studies utilizing the comparative case study approach, see Melson (1992), Valentino (2004), and Mann (2005).

2. Countless civilians have also died from war-related famines or from the inevitable outbreaks of disease that accompany the movements of large armies. While these deaths are a tragic result of war, they are not inflicted by military action taken by any belligerent, and thus do not qualify for inclusion in my data.

3. Earlier studies did use civilian deaths as a dependent variable (e.g., Rummel 1995). Recent studies of civil wars have also done so (Eck and Hultman 2007).

4. For theories of violence in civil wars/insurgencies, see Kalyvas (2006) and Weinstein (2007).

5. The lone exception is Rummel (1994, 1995), who attributes democratic restraint to institutions that place restraints on the autonomy of the executive and create multiple centers of power that can check and balance each other.

6. Scholars who suggest this hypothesis assume that liberal or democratic norms are cosmopolitan, that is, they apply to people regardless of whether they live in one's own country or are foreigners. Although many scholars state this assumption explicitly (e.g., Doyle 1997; Owen 1994, 94), other liberal or democratic theorists might argue that norms that apply in the domestic context do not necessarily extend to people in other states because democratic leaders have special obligations to their own people.

7. An impeachment resolution was in fact introduced by Rep. Henry Gonzalez the day the air campaign against Iraq began. The joint Congressional resolutions authorizing the use of force, however, reduced Bush's anxiety on this issue.

8. For evidence to the contrary, see Fearon (2004).

9. Cases of civilian targeting are taken from Downes (2006a, 195). I made one correction to this data, involving Turkish participation in World War I. The Correlates of War (COW) data set codes Turkey's belligerency as ending with the collapse of Russia in 1917, but this is incorrect: as the Russian Army crumbled, Turkey invaded Transcaucasia in 1918 and continued its massacre of Armenians—begun inside Turkey in 1915—outside its prewar borders (Walker 1980, 247-63). Under my coding rules—the killing of enemy civilians in an interstate war—the domestic genocide of the Armenians is not included, but the killing of seventy-five thousand Armenians in the Caucasus later on does qualify for inclusion and is also a case of mass killing.

10. *Protocol Additional (I) to the Geneva Conventions*, Article 43. My reason for classifying munitions workers as combatants is that if they are defined as noncombatants, bombing raids on armaments factories would be considered intentional attacks on civilians, just the same as bombing raids on neighborhoods.

11. There are twenty wars and forty-three belligerents with missing data for civilian casualties inflicted: Russo–Japanese (Russia, Japan), First Balkan (Turkey), Second Balkan (Romania), World War I West (Turkey, Bulgaria, Italy, Greece), World War I East (Germany, Austria, Bulgaria, Russia), World War I Serbian Campaign (Germany, Bulgaria), World War I Romanian Campaign (Germany, Austria, Bulgaria), Russo–Polish (USSR, Poland), Hungarian (Hungary, Czechoslovakia), Saudi–Yemeni (Saudi Arabia, Yemen), Poland 1939 (USSR), World War II West (Italy), Italo–Greek (Italy, Greece, Germany), World War II East (Bulgaria 1941-1944 and 1944-1945, Romania 1944-1945, Hungary, Finland), First Kashmir (India, Pakistan), Korea (China), Second Vietnamese (North and South Vietnam), Vietnamese–Cambodian (Vietnam), Ogaden (Ethiopia, Somalia, Cuba), and First Sino–Vietnamese (China). Data for some of these cases (especially the World War I cases) is available, but it consists of total civilian deaths from all causes, including disease, flight, and malnutrition not clearly caused by the enemy. For that reason, I excluded it.

12. As a robustness check, and to better compare my results to those of Valentino, Huth, and Croco (2006), who include only intentional deaths, I reanalyzed all the models reported below on deaths inflicted only in intentional or indiscriminate campaigns of violence. The results remain substantively consistent (see Web appendix).

13. I also coded other types of identity difference, such as difference in religion. Finally, I used COW's country codes to identify states from different areas of the world: Latin America, Europe (including the United States, Canada, Australia, and New Zealand), Africa, Middle East, and Asia. I thank an anonymous reviewer for this suggestion.

14. Attrition normally involves ground forces, but one could imagine attrition warfare on the seas or in the air. A conflict that was primarily naval and entailed repeated large-scale destructive battles between fleets would qualify as attrition. The costs of such battles could persuade leaders to turn to blockade instead. Similarly, attrition sometimes occurs in aerial warfare. The best example is the Battle of Britain, during which the German Luftwaffe tried to destroy Britain's fighter force in large-scale aerial battles to open the way for a cross-Channel invasion (not as an alternative to an invasion). Fierce English resistance and untenable German aircraft losses led the Luftwaffe to abandon the "dour campaign of attrition" and turn to night bombing of English cities (Overy 2000, 86; on the battle as a war of attrition, see also Murray 1985, 52-53).

15. Valentino, Huth, and Croco (2006) also combine attrition and counterinsurgency in their analysis. The only conflict in the data set in which states employed counterinsurgency is Vietnam (United States, South Vietnam). Excluding these cases from the analysis does not change the substantive results.

16. On the reversion to trench warfare after the failure of blitzkrieg, see Bartov (1992, 12-28). Readers may wonder why I did not make use of existing measures of attrition, such as the one used by Reiter and Stam (2002). This variable, however, does not necessarily measure what I want to measure: the nature of the fighting over the course of the war rather than the initial strategy chosen. Furthermore, attrition strategies are very common in their data: more than 70 percent of the war participants are coded as using attrition strategies, whereas only 24 percent of belligerents in my data are coded as fighting in wars of attrition.

17. Data on war initiation is taken from COW except for those conflicts that are in my data set but not in COW (recent conflicts plus the various components of the two World Wars), for which I relied on secondary historical accounts to code initiation.

18. Creating multiple conflicts within larger wars (e.g., World War II) raises the risk of lack of independent observations across wars. Only a handful of these wars were ongoing at the same time, however, and these conflicts constitute only a small percentage of the overall number of wars in the data set. Thus, I would argue that the greater historical accuracy of this procedure outweighs the risk of cross-war dependence.

19. It is not clear this interpretation is correct, however. Although multiple civilians are often killed per attack—and sometimes hundreds or thousands—each one of them is either killed or not killed. The process generating the data, in other words, is still binary even though we only observe the total numbers of casualties rather than particular deaths. Distributions like the Poisson or negative binomial specifically deal with variables like these, where we observe only the total number of events rather than each individual underlying event.

20. Negative binomial is preferred to Poisson because the variance exceeds the mean, indicating that casualties are positively correlated with each other: the occurrence of one civilian casualty is likely to lead to more.

21. Restricting the analysis to states judged to be capable of targeting civilians, or to wars starting in or after 1900, has no effect on the results.

22. Introducing an interaction term into the regression for democracies in wars of attrition is not possible because democracies only engage in mass killing in attrition wars; this makes the interaction perfectly collinear with democracy by itself. The coefficient for democracy captures the effect of democracies in wars of attrition. The strong result for democracy is not sensitive to changes in coding. Doyle's

version of liberal democracy, for example, yields the same result ($B = 2.12$, $p < .01$). France and the United States in World War I, moreover, are coded as committing mass killing via their participation in the British-led blockade of the Central Powers. One could argue that Britain alone was responsible for this policy and not the other two democracies. Reversing this coding decision reduces the coefficient on democracy to 2.01, but the variable is still significant at $p < .02$.

23. The actual figures are 44 percent versus 29 percent ($p = .25$). The relationship using Doyle's (1997) coding of liberal democracy is stronger: 53 versus 26 percent ($p = .06$).

24. I also tested the argument that mixed regimes should be likely to engage in mass killing because leaders in these regimes face the highest personal costs for losing a war (Goemans 2000). Substituting a dummy variable for mixed regimes (governments that scored between -6 and $+6$ on the Polity index) into model 1 yields a surprising result: oligarchies are significantly less likely than democracies and dictatorships to engage in mass killing ($B = -2.55$, $p < .01$). This is a puzzling result for scholars who argue that the institutional structures of mixed regimes drive leaders to avoid defeat at all costs. Furthermore, this negative result for the middle of the Polity spectrum suggests the possibility of a curvilinear relationship between regime type and mass killing. The evidence supports this idea: democracies committed mass killing in 12 percent of their wars, compared to 6 percent for dictatorships and 2 percent for mixed regimes. Regression results using mass killing and civilian fatalities as dependent variables consistently show evidence—although not always significant evidence—of curvilinearity. For these results, see the Web appendix. Why regimes at the ends of the democracy–autocracy spectrum are more likely to engage in mass killing than those in the middle might be interesting fodder for future research.

25. This result is not sensitive to alternative ways of coding cultural differences, such as the country code scheme mentioned earlier.

26. Country-specific effects do not appear to affect the results: dummy variables for Germany, Nazi Germany, and the United States, for example, are each insignificant.

27. $B = -1.77$ ($p = .14$) for democracy after 1945, and $B = -0.60$ ($p = .54$) for democracy after 1970. Unlike with mass killing, oligarchies do not kill fewer civilians than other regime types ($B = 0.31$, $p = .60$).

28. In terms of country-specific effects, dummy variables for Nazi Germany ($p = .10$) and the United States ($p < .01$) are positive and significant. Including the U.S. dummy causes the sign on democracy to become negative, but not nearly significant. Other variables are unaffected.

29. An alternative categorization—1 to 1,000, 1,001 to 10,000, 10,001 to 50,000, 50,001 to 100,000, 100,001 to 1 million, and greater than 1 million—yielded similar results.

30. The variable for mixed regimes regains a negative sign using ordinal logit (-0.66, $p = .12$).

31. Dummy variables for Germany ($p < .10$) and the U.S. ($p < .01$) are also positive and significant. Including the U.S. dummy makes democracy slip below the significance line ($p = .17$).

32. Oligarchies kill somewhat fewer civilians than other regime types ($B = -0.28$, $p = .26$).

33. This is consistent with the finding that democracies engaged in mass killing in two out of the three cases when insurgents posed a serious threat to the government and had high levels of civilian support (Valentino, Huth, and Balch-Lindsay 2004, 399, n. 49).

34. Five of these six cases are accounted for by the variable that measures whether a state had any of its own civilians killed. The sixth is a missing democracy coding for Ethiopia in World War II.

35. For their exact coding rules on coalitions, see Valentino, Huth, and Croco (2006, 358, n. 58).

36. One other possible reason for the disparity between our results is that Valentino, Huth, and Croco (2006) count munitions workers as civilians whereas I do not. Given the quality of the data, however, I doubt this difference has much of an effect.

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