

**WAR BY OTHER MEANS:
MASS KILLING AND CIVILIAN CASUALTIES IN INTERSTATE WARS**

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ABSTRACT

This paper supplements and extends existing studies of civilian victimization and mass killing in war by analyzing new data on numbers of civilian fatalities in interstate wars from 1900-2003. My findings strongly support arguments linking wars of attrition and wars to annex territory with the infliction of mass killing and civilian fatalities. 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 findings on regime type are more nuanced: as opposed to some of the existing literature, this analysis produces little evidence that democracies kill fewer noncombatants than autocracies in interstate wars. In fact, the evidence indicates that democracies are more likely than non-democracies to engage in mass killing and kill greater numbers of civilians, particularly in wars of attrition.

If—as Carl von Clausewitz 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 (Clausewitz 1976, 87). Historically, civilians have comprised half of all war deaths, the result of being targeted intentionally by belligerents, killed by the side-effects of weapons aimed at military targets, victimized by famine stemming from the destruction or confiscation of crops and food by marauding soldiers, or sickened by the inevitable outbreaks of disease that follow the marches of large armies.

Recent empirical studies have found that much of this carnage is no accident: belligerents frequently turn their guns on noncombatants with malice aforethought. One study of asymmetric conflict, for example, found that states used strategies of barbarism—systematic violations of the laws of armed conflict—in about 20 percent of such wars (Arreguín-Toft 2001, 2005).

Similarly, an examination of all wars since 1945 showed that states killed in excess of 50,000 civilians 21 percent of the time (Valentino, Huth, and Balch-Lindsay 2004), while a third study found that states used military strategies that targeted enemy civilians in roughly one-third of the cases in which they possessed the capability to do so (Downes 2006).

In each of these studies, however, the indicator used to measure civilian suffering—barbarism, mass killing, and civilian victimization—is rather crude: a dummy variable signifying the use of a strategy that targeted civilians or the surpassing of a threshold of civilian deaths. This paper uses new data on civilian fatalities in interstate wars since 1900 in an attempt to improve on existing studies and see if previous findings hold up with finer-grained data on the dependent variable. Admittedly, it represents a partial improvement over current studies rather than a quantum leap. First, my data covers only interstate wars of the past 100 years, and does not include civil wars or so-called “extrasystemic” conflicts (imperial/colonial wars). Second,

interstate wars are mainly conventional wars, so it is not possible to test theories relating guerrilla warfare to civilian victimization. Third, the unit of analysis for the data is the war as a whole rather than the war-month or war-year, precluding the use of time-series analysis. Fourth, the data is incomplete (and will probably always remain so) and somewhat skewed by a few very large observations.

These qualifications aside, however, the data employed in this paper nonetheless yield suggestive results regarding the correlates of civilian casualties, especially in combination with some of the indicators already in existence. I supplement existing studies of civilian victimization and mass killing with analyses of civilian fatalities inflicted during wars in which civilians are intentionally targeted, and civilian deaths in all interstate wars. To the extent that these results are consistent with previous analyses of civilian victimization and mass killing, we gain greater confidence that the results are not a product of particular idiosyncrasies in the data for these dependent variables.

The findings of this paper strongly support 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 findings on regime type are more ambivalent: democracies are not consistently more likely than autocracies to kill larger numbers of civilians in general, but do generate greater numbers of noncombatant fatalities than non-democracies in wars of attrition. It is an open question, however, whether this is an effect of democratic institutions or the product of the insular location of some prominent democracies, the secure position of which leads to the development of liberal states with small standing armies that are more sensitive to costs.

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

CIVILIAN FATALITIES IN WAR: THE STATE OF THE LITERATURE

In the past several years, a promising new research program has emerged 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 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.

DEMOCRACY

One set of studies argues that regime type is a key factor explaining civilian fatalities. Several works, for example, find that democracies tend to be less likely to target civilians or kill large numbers of noncombatants in war (Rummel 1995; Engelhardt 1992; Merom 2003; Valentino,

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 studies utilizing the comparative case study approach, see Melson 1992; Valentino 2004; and Mann 2005.

Huth, and Balch-Lindsay 2004). The exact mechanism that inhibits violence against civilians by democracies, however, is disputed and under-theorized. Rummel, for example, attributes democratic restraint to institutions, which place restraints on the autonomy of the executive and create multiple centers of power that can check and balance each other. In authoritarian regimes, by contrast, executive power is unhindered, leaving leaders free to use extreme brutality against their opponents (Rummel 1994, 1995). Rummel’s argument is akin to first-generation institutional arguments for democratic peace that attributed this phenomenon to the checks and balances inherent in democratic regimes that slowed mobilization for war (e.g., Maoz and Russett 1993; Russett 1993). Most regime type arguments for restraint, however, focus on norms, particularly liberal norms proscribing the use of violence against innocent civilians, people who have not forfeited their right to protection from violence by themselves taking up arms (Doyle 1997, 287; Merom 2003). Still others invoke democracies’ values of “tolerance” and “nonviolence” and their respect for the rule of law (Valentino, Huth, and Balch-Lindsay 2004, 382). These arguments are similar to normative explanations for democratic peace in that they focus on how beliefs about appropriate behavior guide democratic foreign policy (Russett 1993; Dixon 1994; Owen 1994).

Other regime type scholars dispute the view that democracies are more dovish toward enemy civilians in war. Their argument—based in second-generation institutional explanations for democratic peace and democratic victory in war (e.g., Bueno de Mesquita et al., 1999; 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 in order to prevail and avoid losing their jobs. President George 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).² Fighting “hard”—although couched by proponents of this argument primarily in terms of the material resources dedicated to the conflict—could comprise targeting noncombatants.

ORGANIZATIONAL CULTURE AND PAROCHIAL ORGANIZATIONAL INTERESTS

Proponents of organizational culture argue that the prevailing culture inside a military organization determines whether it advocates a strategy that targets civilians, and thus whether the state will attack noncombatants in a conflict. The culture of an organization refers to the beliefs, ways of doing business, and standard operating procedures that develop over time inside an organization based on its members’ perception of the organization’s mission and goals. In a military organization, “each service develops a culture to guide war fighting. These paradigms either advocate or ignore specific means of warfare. Those means compatible with the dominant war-fighting culture will be adopted and advocated by the military, those means not compatible will suffer benign neglect” (Legro 1995, 28). Importantly, militaries tend to prefer escalation in those areas that fit with their cultures: “An organizational-culture perspective posits that state preferences on restraint originate in the fit between a particular means of warfare and the collective beliefs of the military services that deploy the means in question ... *States will prefer mutual restraint in a particular mode of force if it is antithetical to the war-fighting culture of*

² 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.

their military bureaucracy. States will favor escalation when the organizational cultures of their military bureaucracies are compatible with use” (Legro 1995, 28-29; italics in original).

This hypothesis, while formulated as a general proposition regarding militaries’ willingness to escalate, can be recast more narrowly in terms of noncombatant immunity: states will target enemy civilians if the cultures of their militaries embrace strategies predicated on defeating an adversary by punishing its civilian population. States will observe noncombatant immunity and kill relatively few civilians when they have military cultures that favor counterforce targeting. Legro, for example, argues that the culture of land power in the German armed forces explains why the Luftwaffe generally refrained from bombing civilians early in World War II. Britain, on the other hand, ultimately adopted punishment bombing of German noncombatants owing to the culture of urban area bombing that developed in the RAF during the interwar period (Legro 1995, 115, 142).

Arguments based in parochial organizational interests, by contrast, argue that all organizations tend to want the same kinds of things—autonomy from outside oversight, control over their own affairs, greater levels of prestige and resources—and thus similar organizations across different countries or different issue areas should behave similarly. Organization theorists of military doctrine, for example, contend that all militaries exhibit a bias toward the offensive since attacking tends to require greater resources and expertise than defending (Snyder 1984). This perspective on civilian victimization implies that should a military organization—or key individuals within the organization—perceive that targeting civilians might advance the organization’s parochial interests—or enhance their own job security—the organization will be more likely to lobby for—and the state more likely to adopt—a strategy of civilian victimization.

PERCEPTIONS OF THE ADVERSARY’S IDENTITY

A third hypothesis 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).³ 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 other 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” (quoted in Lindqvist 2000, 19). Another historian, explaining the methods Spain used to tame 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’”

³ For evidence to the contrary, see Fearon 2004.

(Balfour 2002, 123). 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.

INSURGENCY

A growing number of scholars have linked guerrilla warfare with the victimization of civilians. Scholars in this school argue that guerrilla wars are particularly likely to produce killing of noncombatants because violence is a useful means for incumbents and insurgents to persuade uncommitted civilians to support their cause, or dissuade the population from helping the enemy (Marks 1992, 31-44). One approach, for example, maintains that violence is a means to induce compliance among civilian populations. This view argues that effective territorial control, and hence a monopoly of coercion, produces compliance—willing or unwilling—from an area’s inhabitants. Little or no violence against civilians occurs in such areas. When control of territory is contested, however, such as when the incumbent’s army controls a village by day and the rebels rule by night, civilian victimization becomes much more likely. Since exit is often not a viable option, “most civilians will tend to defect to the new rulers and withdraw from the old ones despite high levels of uncertainty. The reason is that incumbent threats will be more credible than insurgents’ because the former are now present in the village whereas the latter have fled ... It is to react against this dynamic that rebels target defectors” (Kalyvas 1999, 266-67; see also Kalyvas 2004, 2006).

Another view maintains that governments are more likely to kill large numbers of civilians the greater the threat they perceive from the insurgency. The severity of the threat is primarily a function of two variables: the number of guerrilla fighters, and the depth of support the insurgency enjoys among the population. Governments facing large guerrilla movements with widespread popular support are likely to respond with high levels of violence against

civilians to terrorize them to stop aiding the insurgents or simply make it impossible for the guerrillas to obtain anything from the population because it is either dead or gone (Valentino, Huth, and Balch-Lindsay 2004).

COSTS OF FIGHTING AND THE NEED TO WIN

A fifth perspective on civilian victimization contends that two forms of desperation are to blame: desperation to achieve victory, and desperation to save the lives of one’s own troops (Downes 2006). 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 counter-military 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,

quoted in Terraine 1989, 47). Wars of attrition, therefore, induce desperation to win and to save lives, which in turn lead to civilian victimization.

TERRITORY AND CLEANSING

A final 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 them as a threat to their ability to control the land as well as a potential fifth column in immediate combat operations. As long as such people are present, 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 2006).

DATA, VARIABLES, AND METHOD

This section discusses the dataset used to test hypotheses regarding the correlates of civilian casualties, defines the variables to be used in the ensuing analysis and discusses the specific measures employed, and briefly outlines the statistical procedures and why they were chosen.

DATASET

The dataset used in this paper includes all states coded by COW as having participated in an interstate war between 1816 and 1997, which I updated through the interstate phase (March 18-

May 1) of the 2003 Iraq War. This produces a list of 323 states and 100 wars.⁴ There is, however, one complication that needs to be explained about inclusion in the dataset before proceeding. Observations taking the value of zero on the dependent variable—when a belligerent did not inflict mass killing or kill any civilians—can be produced by two very different processes. On the one hand, it may be that a belligerent possessed the opportunity to kill enemy noncombatants, but—for a variety of reasons—chose not to. It could also be the case, however, that a combatant killed no civilians because it simply did not have the opportunity or ability to do so. These processes are distinct, and it would be misleading to treat observations where states had no opportunity to target civilians the same as those in which belligerents could have killed noncombatants but decided against it. Mahoney and Goertz (2004), for example, argue that observations where the outcome did not occur—but could not possibly have occurred—are irrelevant for hypothesis testing and can bias the results.

Excluding cases like these, however, might introduce a selection bias: states that are potentially interested in fighting a war by targeting civilians are more likely to acquire the capabilities to do so than states that are not so interested. To address this issue, I performed the analysis using two versions of the dependent variables: (1) all states regardless of capability to harm enemy civilians; and (2) only those belligerents that had the opportunity to kill enemy noncombatants. For brevity’s sake, in this paper I report the results using all states, but the results for the truncated sample do not differ substantively from those shown below.⁵

⁴ The complete dataset will be made available online.

⁵ Additional tables containing these results will be made available on the author’s website. A participant in an interstate war was coded as having the opportunity/capability to target enemy civilians if it met any of the following three criteria: (1) the belligerent’s ground forces invaded the territory of the enemy state; (2) the belligerent had air, missile, or naval forces to bombard or

DEPENDENT VARIABLES

In this paper, 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) and Downes (2006) is that they not tell us anything about the severity of the victimization. This could be a potential source of bias: what if democracies, for example, were just as likely to target civilians, but when they did, democracies did not kill as many noncombatants as autocracies? 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 50,000 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 50,000 civilian fatalities during an interstate war. In interstate wars between 1816 and 2003, there were 18 cases of mass killing according to this definition (see Appendix).⁶

blockade the enemy homeland; (3) the state was not a subordinate alliance partner, meaning that it had independent decision-making ability on military strategy.

⁶ Cases of civilian targeting are taken from Downes (2006, 195). I made one correction to his data, involving Turkish participation in World War I. COW 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—began inside Turkey in 1915—outside its pre-war borders (Walker 1980, 247-63). Under Downes’s coding rules—the killing of enemy civilians in an interstate war—the domestic genocide of the Armenians is not included, but the killing of 75,000 Armenians in the Caucasus later on does

Number of Civilian Fatalities

It is possible, however, to do better than simply observe whether or not civilian fatalities exceeded the 50,000-casualty threshold. As is shown in the Appendix, I was able to obtain figures on noncombatant fatalities for each of the 53 cases of civilian targeting (although some figures are author’s estimates, based on primary and secondary source accounts). My third dependent variable, therefore, consists of the total number of enemy civilians each belligerent killed in the course of a campaign of civilian targeting.

Finally, I gathered data on the total number of noncombatants killed per belligerent, either intentionally or unintentionally, in the midst of a coordinated campaign of civilian targeting or as a result of collateral damage from weapons.⁷ The reason to examine this data is to understand whether attrition, annexation, or cultural differences cause higher civilian fatalities in general, not just in cases of civilian victimization. Moreover, democracy might emerge as a restraining factor once all wars are considered. Owing to limits on the availability and reliability of data in the nineteenth century, analysis using this particular measure is limited to cases

qualify for inclusion, and is a case of mass killing. In the analysis of number of civilian fatalities, I do include civilians killed by a state inside its own borders (in the “high” category), so the one million or so victims of the genocide inside Turkey show up there. See the section on civilian fatalities for further explanation.

⁷ Civilian fatalities that result from the simple fact that a war occurred at all rather than from military action by the enemy, however, are excluded. Deaths owing to inevitable outbreaks of disease spread by the marching of armies to and fro—which were terribly common until recent times—are one example. Similarly, the eventual deaths of civilians who flee of their own accord from a war zone are excluded because no one targeted or otherwise used force against them. Diseases spread by a belligerent on purpose, of course, would constitute civilian targeting, and these deaths would count.

occurring from 1900 to 2003. I obtained data for 80 percent of the cases occurring on or after 1900 (191 out of 239).⁸

For many cases, I found more than one estimate of civilian fatalities in the literature. In cases with multiple estimates, I recorded low, medium, and high figures, and ran the analysis on each as a separate dependent variable. In the high category, I included deaths inflicted by a state within its own borders during an interstate war, such as the mass killing of Armenians inside Turkey during World War I. The results reported below were obtained using the mid-range figures. Results using the low and high estimates do not differ substantively from what is reported below unless noted.

INDEPENDENT VARIABLES

Because my data is limited to interstate warfare, very few of which were guerrilla wars, it is not possible to test hypotheses regarding the effect of insurgency on civilian targeting or casualties.

I fold guerrilla warfare into the war of attrition variable defined below since it shares many qualities with these conflicts, although excluding it has no substantive consequences.⁹

Furthermore, organizational culture is difficult to test in a large-N format because hardly any militaries develop cultures in peacetime predicated on killing civilians in wartime. The cultural hypothesis is best studied by performing detailed case studies comparing the few instances of “punishment” cultures that exist with the conduct of militaries that lacked such cultures (e.g., Legro 1995, 94-143; Author 2006).

⁸ Of these, at least 137 belligerents had the capability to kill enemy civilians. The results remain consistent no matter which sample is used.

⁹ These two wars are Vietnam (1965-73) and Yugoslavia (1999).

Regime Type

To code countries’ regime types, I use the Polity 4 data set, which focuses strictly 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 zero (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 (21 percent of the countries in the dataset), although varying the cut-off point does not affect the results.¹⁰

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

¹⁰ I use Michael Doyle’s list of liberal democracies as a second indicator of regime type (Doyle 1997, 261-64). Doyle employs four criteria to judge whether or not 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. Twenty-five percent of the states in the dataset are coded as liberal.

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.¹¹

Still, 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 religious differences—are associated with an increased propensity to target and kill enemy civilians.

Desperation

I use four indicators to capture the desperation logic.

- War of Attrition. Wars of attrition are conflicts in which the defense has the advantage and thus tend to be enormously costly and protracted. Attrition warfare is essentially siege warfare: wars generally lacking in maneuver or movement, which are instead dominated by static, linear, or trench operations. 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

¹¹ I also coded religious difference without separating the Eastern and Western versions of Christianity, as well as racial differences.

lives were required to conquer a few hundred yards of territory. Other conflicts have taken a similar form, such as the Crimean, Russo-Japanese, Chaco, Korean, Iran-Iraq, and Ethiopian-Eritrean Wars. Attempting to invade another state’s homeland from the sea—as contemplated by Germany in 1940 and the U.S. in the Pacific in 1944-45—raises the prospect of very high casualties and is also coded as attrition. Finally, guerrilla warfare is coded as a type of attrition war, as it is designed to wear out the enemy rather than inflict a decisive defeat.

- Battle Deaths. The most direct indicator of the human costs of war is the number of fatalities a state’s forces suffer in battle, available in the Correlates of War (COW) data set, 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.
- 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.
- 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.

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. This variable is coded by examining how leaders describe their goals before the war starts.

Control Variables

A number of control variables are also included in the analysis.

1. Material Capability. States that are more powerful should have a greater capability to target enemy civilians. I use the log of each combatant’s combined score on the COW capabilities index as a proxy for material capability. The components of this index are population, urban population, iron and steel production, energy consumption, military expenditure, and military personnel.
2. Balance of Power. When one side is much more powerful than its opponent, this crushing material superiority should result in a quick and decisive victory with little cause to kill noncombatants. By contrast, when two combatants are evenly matched, a conflict is more likely to bog down into a war of attrition because it will be harder for one to overpower the other. My indicator of the balance of military capabilities is calculated from the COW capabilities index and is designed to take a higher value for each party when the balance is highly skewed (since neither should target civilians in a short war) and lower values for both when the balance is even.¹² Increases in this variable should correlate with fewer civilian casualties.

¹² The specific procedure involves three steps: determine the percentage of total capabilities in the war held by each belligerent; subtract 0.5 from that number; and take the absolute value of the result. The resulting variable, therefore, ranges between 0 and 0.5, with lower values indicating a relatively even balance of power and higher values indicating a skewed balance. Thus, a conflict in which one side has 90 percent of the total capabilities and the other has 10 percent yields a score of 0.4 for each, whereas a 60-40 split gives a score of 0.1.

3. Deterrence. 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.
4. Retaliation. If one belligerent initiates counter-civilian strikes, however, the target state may reply 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 as a 1 on this dummy variable.
5. Insular States. Insular states are countries that do not share land borders with neighbors that could potentially invade them. Hintze (1975) argues that such states, protected from invasion by large bodies of water, have less of a need for large standing armies and thus may be more likely to develop liberal regimes. 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. Countries coded as insular in the dataset include Britain, the U.S. (after the Mexican-American War), Japan, Australia, and New Zealand.

6. Post-1945. 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 wars. In short, there should be fewer civilian casualties and targeting of civilians in the post-1945 period, and each of these should decrease the closer we come to the present day. 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. I thus code a dummy variable taking the value of 1 for conflicts that occurred after 1970.
7. Enemy Population. Finally, when numbers of civilian fatalities are the dependent variable, it is necessary to control for the size of the enemy’s population, since greater numbers of casualties could simply be a function of a larger population. I use the log of the target state’s population.

METHOD

Because mass killing is a dichotomous variable, I analyze it using logit regression, which estimates whether the independent variables increase or decrease the probability that civilian

targeting or mass killing occur. Casualties, on the other hand, are a count variable. Count variables 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). An estimator from the Poisson family, therefore, is the appropriate choice. The Poisson model, however, assumes that the variance of the dependent variable equals the mean, but for each of the civilian fatality variables in this paper, the variance of the data greatly exceeds the mean (the minimum observation is zero and the maximum is ten million). The negative binomial estimator, which allows the variance to be larger than the mean, is thus the proper choice to analyze this data. A second problem, however, characterizes the data on total civilian casualties: in addition to having a large variance, slightly more than half of the observations are zeros. The zero-inflated version of the negative binomial model will probably render better estimates for this variable.

When using the data on counts of civilian fatalities, one must bear in mind that the negative binomial model estimates the mean of the distribution. Owing to a handful of very high casualty cases and the small overall number of cases, this figure is large for both variables: for all civilian deaths after 1900, the mean is roughly 133,000 even though 50 percent of the observations are zeros and many others are less than 1,000 or 5,000; for noncombatant fatalities in campaigns of civilian victimization, the figure is nearly 350,000. One way to compensate for this high degree of dispersion is to transform the raw data into categories and use an ordinal logit estimator to supplement the negative binomial analysis. The major assumption of this approach is that the numbers themselves are not 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 themselves. I discuss the particular categorizations employed below.¹³

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 in campaigns of civilian targeting and in general.

MASS KILLING

Table 1 shows the results of six logit regressions using mass killing—whether or not a belligerent in an interstate war killed at least 50,000 enemy noncombatants—as the dependent variable. Comparing models 1 and 2, it becomes immediately apparent that the decision to include all belligerents rather than only those deemed capable of targeting civilians has no impact on the results, as there is very little difference in the coefficients for almost all of the variables. Nor does restricting the time period to the 20th century (model 5) affect the results.

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: war of attrition is significant at the 1 percent level in all six models, whereas territorial annexation is significant at lower levels in each model. The coefficients on these variables are almost twice as large as those reported by Downes (2006, 175) for civilian targeting, and the explanatory power of the model (as demonstrated by the pseudo-R² statistic) is

¹³ Summary statistics for all variables will be available on the author’s website.

larger as well, indicating that these variables have great substantive importance for mass killing. 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 (the first at < 0.01 , the other two at < 0.05). Overall, therefore, Table 1 offers strong support for desperation and appetite for conquest as determinants of massive killing of civilians.

[Table 1 about here]

The results for democracy and mass killing, by contrast, diverge strikingly from those reported by earlier studies of mass killing in wars after 1945 (Valentino, Huth, and Balch-Lindsay 2004) and civilian victimization in interstate wars (Downes 2006): democracy is positive, substantively large, and highly significant in models 1 and 2.¹⁴ Model 3, however, indicates that—as expected—insularity is also an important factor. When democracy and insularity are included in the same regression, as in model 4, only democracy remains significant, although at an attenuated level. It is unclear what this means, however, since multicollinearity may be affecting the results (the two variables are fairly correlated with each other at 0.49).¹⁵ Moreover, insularity is theoretically prior to democracy because the high level of security enjoyed by insular states makes them more likely to develop democratic regimes, so including the two variables in the same regression is hard to justify. It is thus not possible to disentangle the independent effects of the two variables. The relationship between democracy

¹⁴ This result is not sensitive to changes in coding. Doyle’s version of liberal democracy, for example, yields a positive result significant at < 0.05 . France and the U.S. in World War I, furthermore, are coded as committing mass killing via their participation in the British-led blockade of the Central Powers. Reversing this coding decision reduces the coefficient to 1.78, but the variable is still significant at < 0.01 .

¹⁵ Insularity also improves the significance of the model above the models that include democracy.

and mass killing, however, ceases to be significant after 1945: the interaction term in model 6 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. The same goes for insularity after 1945, although the interaction term in this case is positive ($B = 2.00$, $p = 0.30$).

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.¹⁶ This finding 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 democracies are more likely than autocracies to inflict mass killing in wars of attrition, thus corroborating the similar finding for civilian victimization (Downes 2006). Unfortunately, introducing an interaction term into the regression for democracies in wars of attrition is not possible because there is no instance of a democracy committing mass killing outside of an attrition war. Thus democracy and the interaction term are perfectly collinear. Cross-tabulations, however, show that democracies engage in mass killing 57 percent of the time in wars of attrition, compared to only 20 percent for non-democracies ($p < 0.01$).¹⁷

Proponents of institutional accountability arguments for democratic peace and military effectiveness might contend that democracies—because they are better at choosing wars they are

¹⁶ The actual figures are 44 percent vs. 29 percent ($p = 0.25$). The relationship using Doyle’s coding of liberal democracy is slightly stronger: 53 vs. 26 percent ($p = 0.06$). It is strongest, however, for insularity: 73 vs. 24 percent ($p < 0.01$).

¹⁷ Substituting insularity for democracy produces similar results: 53 percent of insular states kill massive numbers of civilian in wars of attrition, compared to 20 percent of non-insular states ($p < 0.02$).

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. I tested this argument by coding a variable for war initiation, generating an interaction term for democratic war initiators, and inserting these variables into model 1.¹⁸

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 ($B = -2.51$, $p = 0.25$). Democratic targets, on the other hand, are significantly more likely to engage in mass killing ($B = 3.42$, $p < 0.05$). 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.

Some might argue that differentiating among regime types based exclusively on the risk of removal from office is misleading; at least as important is the risk of punishment beyond removal. This perspective identifies “semi-repressive, moderately exclusionary regimes” (also known as mixed regimes or oligarchies) as the type of government most likely to engage in civilian victimization because leaders in these states are most vulnerable to being arrested, exiled, or killed if they lose a war moderately or disastrously. This fact gives oligarchs an

¹⁸ Data on war initiation is taken from COW except for those conflicts that are in my dataset 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. COW codes as the initiator the first state to use force in a dispute. I followed this definition even though it yields some odd results, such as coding the great powers that intervened in China during the Boxer Rebellion as initiators, whereas most historical accounts agree that the Boxers started the conflict by besieging the foreign legations in Beijing (Rosato 2003). The reason to code the case this way, however, is that the great powers were the first state actors to use force, whereas the Boxers were a non-state actor.

incentive to gamble for resurrection and employ high variance strategies—such as civilian victimization—to avoid defeat (Goemans 2000).

To test this argument I created a dummy variable for mixed regimes, governments that scored between -6 and +6 on the Polity index. Plugging this variable into model 1 yields a surprising result: oligarchies are significantly less likely than democracies or dictatorships to target civilians ($B = -2.60$, $p < 0.01$). This is a puzzling result for scholars who argue that the institutional structures of mixed regimes drive leaders to avoid defeat at all costs. Further tests indicate that the relationship between regime type and mass killing is curvilinear. Democracies have committed mass killing in 18 percent of their wars, compared to 11 percent for dictatorships and 3 percent for mixed regimes. Regression results support this: the sign on democracy is negative ($B = -0.39$) whereas the sign on the squared value of democracy is positive ($B = 0.02$). Both are significant.¹⁹

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. Membership in different civilizations actually correlates 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.²⁰

¹⁹ I have found the same U-shaped relationship using civilian targeting as the dependent variable. I do not as of yet have an explanation for it.

²⁰ This result is not sensitive to alternative ways of coding cultural differences. Substituting difference in religion, for example, yields a worse outcome for the identity hypothesis ($B = -1.13$, $p = 0.28$).

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 power, while not significant, are suggestive. On the one hand, as the variable for material power is consistently positive, states that have greater levels of material power appear to be more able to inflict mass killing. Similarly, the coefficient for the balance of power is positive, indicating that the more skewed the balance among the belligerents in a conflict, the greater the likelihood that one of them will resort to mass killing. States that kill very large numbers of civilians, therefore, tend to be powerful in general and the most (or least) powerful state in the particular conflict. Of course, these findings are not significant, so they must be taken with a grain of salt. None of the other controls—including being the victim of civilian targeting, or the war occurring after 1945—is statistically significant.²¹

CIVILIAN FATALITIES

Next we turn to actual numbers of civilian war deaths. I present this analysis in two steps. First, I use a negative binomial estimator to gauge the effect of the independent variables on the number of civilians killed in the 53 campaigns of civilian victimization. I check the robustness of these results by transforming the raw civilian casualty counts into categories based on their severity, and employ an ordered logit model to derive estimates. Second, I open up the analysis to look at all noncombatant fatalities regardless of how they were inflicted using zero-inflated

²¹ There have been no instances of mass killing in interstate wars after 1970, making this variable impossible to test. Country-specific effects do not appear to affect the results: dummy variables for Germany, Nazi Germany, and the United States are each insignificant.

negative binomial regression, and again check for robustness by taking a second look with ordered logit.

Civilian Deaths When Noncombatants are Targeted

Models 7 and 8 in Table 2 show negative binomial estimates of the mid-range estimate of the number of civilian deaths that occur when a state prosecutes a strategy of civilian targeting. In model 7, which replicates model 1, attrition warfare and annexationist aims are each positive and significant at $p < 0.01$.²² Cultural differences, however, are negative and significant, indicating that—controlling for other factors—differences in civilization correlate with fewer noncombatant fatalities in wars where civilians are being targeted. Democracies in general (model 7) do not kill significantly more noncombatants than autocracies. In wars of attrition (model 8), however, democracies do kill larger numbers of civilians than autocracies, as shown by the significance of the interaction term for democracy and attrition, and the insignificance of attrition by itself.²³

[Table 2 about here]

Among the control variables in models 7 and 8, only material power and the size of the enemy population exert a significant (positive) effect on the number of noncombatants killed

²² Attrition is also positive and significant (<0.05) using the low and high values of civilian fatalities. However, war duration and battle deaths are each significant at < 0.01 for all three categories of civilian fatalities. The variable for total or expanding war aims is significant at < 0.05 for the medium and high categories, but not significant in the low category.

²³ In wars to annex territory, by contrast, democracies appear to kill fewer civilians than non-democracies (interaction term $B = -3.32$, $p < 0.01$). Substituting insularity for democracy in model 7 produces stronger results ($B = 1.23$, $p < 0.05$). When both variables are included in the same regression, insularity remains significant but democracy does not. There is no evidence of a curvilinear relationship between regime type and civilian casualties like that found earlier for civilian victimization and mass killing.

during campaigns of civilian victimization. No other variables approach statistical significance, including the variable for wars occurring after 1945, which is weakly positive.²⁴

The results using the categorical transformation of civilians killed during campaigns of civilian targeting shown in models 9 and 10 are somewhat weaker owing to the truncated variation of this dependent variable but not much different than the negative binomial results. The dependent variable for this analysis is ordinal, based on the following categories of noncombatant deaths: 1-500; 501-5,000; 5,001-50,000; 50,001-500,000; 500,000-5 million; and over 5 million.²⁵ In model 9, the war of attrition variable itself is significant at the 10 percent level; war duration and battle deaths, two of the other proxies for desperation, are each significant at < 0.01 , while expansive wars aims is significant at < 0.10 . Annexation and material capabilities are also both positive and highly significant. The variable for cultural differences is negative whereas democracy is positive, but neither merits significance.²⁶ The experience of suffering attacks on one’s own noncombatant population remains negative using the ordinal dependent variable. The size of the enemy’s population stays positive but loses its significance. The sign on wars after 1945 switches to negative and becomes significant, indicating it is associated with fewer civilian deaths (the same is true for post-1970 wars).

²⁴ A dummy variable for the post-1970 period is negative but insignificant, as is an interaction term for democracies after 1970. Democratic war initiators kill significantly fewer civilians ($B = -2.17$, $p < 0.05$), and democracies that are targets kill significantly more civilians ($B = 1.27$, $p < 0.10$).

²⁵ An alternative categorization—1-1,000; 1,001-10,000; 10,001-50,000; 50,001-100,000; 100,001-1 million; and greater than 1 million—yielded substantively similar results.

²⁶ Democratic war initiators kill significantly fewer civilians ($B = -2.45$, $p < 0.10$), and democracies that are targets kill significantly more civilians ($B = 1.87$, $p < 0.10$). Insularity, when substituted for democracy, is significant ($B = 1.96$, $p < 0.05$), and remains so ($p < 0.10$) when the two are included in the same model.

Finally, when an interaction term is introduced for democracies in wars of attrition (model 10), it is positive but insignificant.²⁷

Civilian Fatalities in All Wars

Models 11-12 in Table 3 display the results of zero-inflated negative binomial (ZINB) regressions using the mid-range estimate of civilian fatalities in all wars—not just those resulting when civilians are targeted intentionally—starting in or after 1900 as the 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 3, the negative binomial coefficient is listed in the first column of each model (11a and 12a) while the logit estimate follows in the second column (11b and 12b).

[Table 3 about here]

The results of the ZINB analysis shown in models 11 and 12 are remarkably similar to—but stronger than—the negative binomial results from models 11 and 12. Protracted wars of attrition and the intention to annex enemy territory, for instance, are again 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 (at better than the 1 percent

²⁷ An interaction term for democracies in wars of territorial annexation is negative but insignificant.

level) when substituted into the model. The clash of cultures argument is again turned on its head, as civilizational differences between the belligerents significantly reduce the number of civilian fatalities in interstate wars.

The story of democracy in Table 3 is also similar to that told in Table 2. Democracies kill roughly the same number of civilians as non-democracies (column 11a), and at the same time are less likely to kill zero civilians (as shown by the negative coefficient in column 11b). Once again, when an interaction term for democracies in wars of attrition is introduced in model 12a, it is positive, significant, and substantively larger than attrition alone (signifying autocracies in wars of attrition). Model 12a also shows that democracies kill fewer civilians than non-democracies when a conflict is not a war of attrition.²⁸

Among the control variables, a few points are worth mentioning. As expected, increases in material capabilities and the size of the enemy population result in larger numbers of civilian fatalities. Contrary to expectations, however, larger power disparities between belligerents also increase the number of civilians killed. Having noncombatants on one’s own side killed, moreover, brings about a reduction in numbers, a finding that defies easy explanation.²⁹ Interestingly, belligerents have killed fewer civilians in wars after 1945, but conflicts in this

²⁸ Insularity, when substituted for democracy, is also weakly and insignificantly positive. Democratic war initiators kill significantly fewer civilians ($B = -3.01$, $p < 0.01$); the sign for democratic targets is positive but not significant. Democracies appear to kill fewer noncombatants in the post-World War II era, but not in the post-1970 era. There is again no evidence to support a curvilinear relationship between regime type and civilian casualties. Finally, democracies in wars to annex territory are not significantly different from non-democracies in the numbers of civilians they kill.

²⁹ The significance of the variable disappears in the ordered logit analysis (models 13-14), but the fact that it is negative at all is puzzling.

period are also less likely to have zero civilians killed. This may be the result of a reporting bias, as the quality of the data improves for more recent conflicts.

As with the analysis of noncombatant fatalities in campaigns of civilian targeting, I checked the stability of the results using ordinal logit based on the same categorization used above.³⁰ The results for the major independent variables—as can be seen from an examination of models 13 and 14—are the same as the ZINB estimates in most details. Measures of wars of attrition (including war duration, battle deaths, and expanding or total war aims), territorial annexation, and material capabilities, for example, are positive and highly significant. Cultural differences, on the other hand, are negative but insignificant. Democracy is positive and significant, but that significance disappears when an interaction term for democracies in wars of attrition is included. No control variable other than material capability has a major effect on this dependent variable.³¹

CONCLUSION

This statistical analyses performed in this paper lend strong support to my hypotheses regarding the causes of civilian victimization in warfare. Desperation in protracted wars of attrition and the intention to conquer and annex enemy territory significantly increase the chances of civilian

³⁰ Again, results are not sensitive to differences in classification.

³¹ Insularity is also positive and significant (< 0.10), and insular states in wars of attrition kill significantly larger numbers of noncombatants. When insularity and democracy are included in the same model, democracy remains significant while the coefficient on insularity drops toward zero. Democratic war initiators do not kill significantly fewer civilians, but democratic targets do. Nor do democracies kill significantly fewer civilians in wars after 1945 or 1970. Dummy variables for Nazi Germany and the U.S. attain weak significance (< 0.10), but do not affect the significance of other variables. The sign for democracies in wars of territorial annexation is negative, but does not approach significance.

victimization in interstate wars between 1816 and 2003, and correlate with higher totals of civilian fatalities in general and in campaigns of civilian targeting.

By contrast, the statistical evidence failed to lend support to the argument that civilian victimization is more likely when wars are fought between states that are from different races, religions, or cultures. Cultural differences even appear to lower the number of noncombatant fatalities, exactly the opposite of the predicted relationship. One possible interpretation of these results is that while dehumanization probably plays a role in the harming of enemy civilians, even culturally similar people can be demonized as “barbaric” when the need arises. As this is most likely to occur in wars of attrition or wars to annex territory, when these factors are controlled for, the effect of cultural differences disappears or even becomes negative.

The findings for regime type arguments were more mixed. Democracies, for example, do not typically externalize their liberal beliefs about humane treatment of individuals to enemy civilians during wartime. This finding holds whether the dependent variable is mass killing or the number of civilian fatalities inflicted. There is also no clear evidence that democracies are killing fewer civilians in more recent wars. In fact, democracies appear to be particularly vindictive in costly wars, where they kill larger numbers of civilians than non-democracies. These findings lend partial support to the institutional argument, which contends that because leaders in democracies are vulnerable to public recall, they will fight tenaciously to secure victory and their political future. Other predictions of the institutional theory, however—such as the argument that democracies select easy wars that can be won quickly and decisively without civilian victimization—are not uniformly upheld. The effect of democratic institutions, therefore, is a question that needs further research.

Moreover, the statistical evidence could not resolve the question of whether these effects are the result of democracy alone or whether insularity is the underlying cause of both democracy and the targeting of civilians. Countries like Britain and the U.S., which face few external threats, tend to have small armies and rarely have to mobilize huge numbers of men to fight, which makes them more sensitive to costs than large land powers. This benign threat environment also produces liberal political regimes, but this is a result of the state’s insularity, which causes both liberal democracy and cost sensitivity. These states are then more likely to invest in navies and air forces to fight their wars and are thus better positioned to use and sustain coercive strategies like strategic bombing and naval blockade.

The findings of this paper clash with some of those found in the existing literature—such as the finding that democracies are less likely to kill over 50,000 noncombatants in wars after 1945 (Valentino, Huth, and Balch-Lindsay 2004). Although democratic states have fought few costly wars since World War II, in *all* of the costly conflicts—Korea, France-Madagascar, France-Indochina, France-Algeria, Vietnam, and Israel-Lebanon—democracies not only victimized civilians, they inflicted mass killing (in all but the Israeli case) as well. At least in international wars, therefore, it appears that if anything, democracies may kill more enemy civilians than autocracies.

	1 All States	2 Capable States	3 All	4 All	5 All 1900-2003	6 All
Democracy (Polity)	2.33*** (0.84)	2.22*** (0.84)	-	1.88* (0.99)	2.27*** (0.82)	2.51*** (0.87)
Democracy * Post-1945	-	-	-	-	-	-0.76 (2.01)
Insular State	-	-	1.98*** (0.50)	0.86 (0.78)	-	-
Cultural Difference	-0.77 (0.88)	-0.72 (0.85)	-1.10 (1.09)	-0.89 (0.92)	-0.80 (0.87)	-0.61 (0.78)
War of Attrition	4.33*** (1.29)	4.19*** (1.31)	4.04*** (1.38)	4.25*** (1.23)	4.01*** (1.28)	4.40*** (1.31)
Territorial Annexation	5.66** (2.71)	5.31* (2.73)	5.36** (2.15)	5.66** (2.52)	4.96* (2.68)	5.70** (2.66)
Military Balance	1.47 (4.63)	1.54 (4.75)	0.62 (4.85)	1.06 (4.84)	2.19 (4.32)	1.07 (4.70)
Material Capabilities	1.70 (1.18)	1.62 (1.19)	1.55 (1.01)	1.56 (1.22)	1.50 (1.09)	1.75 (1.12)
Enemy Population	1.59*** (0.56)	1.56*** (0.59)	1.29** (0.51)	1.48** (0.60)	1.54*** (0.54)	1.58*** (0.55)
Deterrence	0.02 (0.53)	-0.28 (0.60)	0.71 (0.67)	0.14 (0.60)	0.44 (0.67)	-0.04 (0.49)
State’s Own Civilians Targeted	-0.29 (1.01)	-0.17 (1.07)	-0.62 (1.04)	-0.36 (1.04)	-0.18 (1.00)	-0.38 (0.93)
Post-1945	-1.88 (2.37)	-1.77 (2.29)	-1.43 (2.06)	-1.69 (2.45)	-1.75 (2.32)	-1.44 (2.96)
Constant	-24.84** (9.68)	-23.75** (10.10)	-22.03*** (7.66)	-23.49** (9.87)	-23.52*** (8.14)	-25.15*** (9.29)
N	297	169	299	297	223	297
Log Likelihood	-22.41	-21.92	-23.53	-22.16	-21.46	-22.35
Wald Chi ²	23.42***	16.59*	34.31***	44.82***	27.94***	24.76***
Pseudo-R ²	0.67	0.62	0.65	0.67	0.63	0.67

NOTE: Huber-White robust standard errors (clustered on each war) appear in parentheses. * = <0.10; ** = <0.05; *** = <0.01

	7 Negative Binomial	8 Negative Binomial	9 Ordered Logit	10 Ordered Logit
Democracy (Polity)	0.71 (0.54)	-0.64 (0.70)	0.84 (0.69)	0.27 (1.12)
Cultural Difference	-1.81*** (0.68)	-1.31** (0.62)	-1.02 (0.69)	-1.00 (0.69)
War of Attrition	2.08*** (0.64)	1.15 (0.71)	1.63* (0.87)	1.36 (0.96)
Democracy * Attrition	- (1.01)	2.37** (1.01)	-	0.92 (1.43)
Territorial Annexation	4.03*** (0.66)	4.42*** (0.58)	3.97*** (1.06)	4.12*** (1.09)
Military Balance	2.37 (1.61)	1.38 (1.58)	-2.01 (2.38)	-2.31 (2.44)
Material Capabilities	1.20*** (0.21)	1.14*** (0.20)	1.45*** (0.43)	1.46*** (0.43)
Enemy Population	1.20*** (0.41)	1.25*** (0.40)	0.57 (0.53)	0.49 (0.54)
Deterrence	-0.59 (0.65)	-0.41 (0.60)	-0.03 (0.91)	-0.03 (0.91)
State's Own Civilians Targeted	-0.47 (0.43)	-0.39 (0.45)	-0.88 (0.66)	-0.89 (0.66)
Post-1945	0.15 (0.54)	0.21 (0.50)	-1.36* (0.81)	-1.36* (0.81)
Constant	-4.12* (2.22)	-4.02* (2.16)	-	-
N	52	52	52	52
Log Likelihood	-606.76	-604.47	-52.16	-51.95
LR Chi ²	75.80***	80.38***	37.30***	37.71***

Standard errors in parentheses; * = <0.10; ** = <0.05; *** = <0.01

	Zero-Inflated Negative Binomial Estimates (1900-2003)				Ordered Logit Estimates	
	11a	11b	12a†	12b†	13	14
	NB	Logit	NB	Logit	Ordered Logit	Ordered Logit
Democracy (Polity)	0.25 (0.37)	-0.86 (0.53)	-1.23** (0.55)	-0.65 (0.57)	0.92** (0.39)	0.32 (0.46)
Cultural Difference	-2.20*** (0.56)	-0.54 (0.56)	-1.73*** (0.51)	-0.70 (0.56)	-0.18 (0.39)	-0.16 (0.38)
War of Attrition	2.68*** (0.43)	-3.03*** (0.67)	1.24** (0.52)	-2.73*** (0.71)	3.08*** (0.47)	2.56*** (0.50)
Democracy * Attrition	-	-	2.69*** (0.84)	-0.37 (1.36)	-	2.06** (0.83)
Territorial Annexation	3.81*** (0.49)	-29.80 (233513.4)	3.99*** (0.48)	-24.65 (17545.96)	3.91*** (0.62)	4.30*** (0.66)
Military Balance	4.54*** (1.32)	0.13 (1.93)	2.55** (1.30)	0.13 (1.89)	1.17 (1.32)	0.93 (1.33)
Material Capabilities	0.70*** (0.21)	-0.69*** (0.27)	0.84*** (0.20)	-0.71*** (0.26)	0.80*** (0.18)	0.84*** (0.18)
Enemy Population	1.17*** (0.26)	0.07 (0.36)	0.90*** (0.28)	0.13 (0.36)	0.17 (0.27)	0.03 (0.27)
Deterrence	0.06 (0.56)	-1.08* (0.54)	-0.39 (0.56)	-0.94 (0.54)	0.80* (0.42)	0.68 (0.42)
State Had Civilians Killed	-1.19*** (0.40)	-0.57 (0.56)	-0.29 (0.46)	-0.73 (0.55)	-0.15 (0.40)	-0.10 (0.39)
Post-1945	-0.86* (0.50)	-0.74 (0.64)	-0.34 (0.53)	-0.82 (0.64)	-0.51 (0.45)	-0.40 (0.45)
Constant	-1.26 (1.34)	6.91*** (2.07)	-0.73 (1.35)	6.79*** (2.10)	-	-
N	180		180		180	180
Log Likelihood	-883.18		-834.30		-164.07	-160.84
LR Chi ²	125.97***		121.06***		151.58***	158.02***
Vuong Stat.	7.54***		7.55***		-	-

Standard errors in parentheses; * = <0.10; ** = <0.05; *** = <0.01

† Model 12 was run with the low estimates of civilian deaths because the medium estimates failed to produce coefficients.

The Vuong Statistic determines whether ZINB significantly improves the fit of the model over a normal negative binomial regression. The significance level indicates that it does.

APPENDIX: CASES OF CIVILIAN TARGETING AND MASS KILLING
IN INTERSTATE WARS, 1816-2003, WITH ESTIMATES OF CIVILIAN FATALITIES

War	State	Years	Mass Killing†	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	<i>5,000</i>	<i>5,000</i>	<i>5,000</i>
Boxer Rebellion*	UK	1900	0	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>
Boxer Rebellion*	USA	1900	0	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>
Boxer Rebellion*	France	1900	0	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>
First Balkan	Serbia	1912-13	0	453	<i>11,000</i>	<i>11,000</i>
First Balkan	Bulgaria	1912-13	0	1,345	<i>15,000</i>	<i>15,000</i>
First Balkan	Greece	1912-13	0	210	<i>1,000</i>	<i>1,000</i>
Second Balkan	Serbia	1913	0	9,453	<i>15,000</i>	<i>15,000</i>
Second Balkan	Greece	1913	0	1,180	<i>10,000</i>	<i>10,000</i>
Second Balkan	Bulgaria	1913	0	671	<i>1,000</i>	<i>1,000</i>
Second Balkan	Turkey	1913	0	2,648	<i>7,500</i>	<i>7,500</i>
WWI West	Germany	1914-18	0	11,369	11,446	11,446
WWI West	France	1914-18	1	374	367,040	410,374
WWI West	UK	1914-18	1	424,374	367,040	410,374
WWI West	USA	1917-18	1	0	366,666	410,000
WWI East	Turkey	1914-18	1	50,000	75,000	1,075,000
Hungarian*	Romania	1919	0	126	<i>1,000</i>	<i>1,000</i>
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*	France	1919-21	0	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>
Franco-Turkish*	Turkey	1919-21	0	20,000	27,600	30,000
Sino-Soviet*	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*	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*	Iraq	1991	0	14	14	14
Armenia-Azerbaijan	Armenia	1992-94	0	<i>7,500</i>	<i>7,500</i>	<i>7,500</i>
Armenia-Azerbaijan	Azerbaijan	1992-94	0	<i>7,500</i>	<i>7,500</i>	<i>7,500</i>

* Borderline Cases; † Coding based on mid-range estimate of civilian fatalities; Italics = author's estimates

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