

Martyrs, Morale, and Militarism: The Political Impact of Devastation and Slaughter*

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Abstract

Do wars push the communities that suffer them left or right? We argue that the answer depends on the nature of the loss: communities respond differently to losing people and losing places. We show this using data from Japan's WWII experience, where military deaths, civilian bombing deaths, and urban destruction varied across cities for reasons plausibly unrelated to their politics. Across sixty-three years of elections, cities that lost more soldiers voted disproportionately for Japan's right-wing, pro-rearmament Liberal Democratic Party (LDP), while cities that suffered more physical destruction voted for left-wing, pacifist parties. Civilian bombing deaths move the vote in the same direction as military deaths. This pattern reconciles why WWI battle deaths pushed interwar Italian and German communities toward the right while building destruction in the Blitz pushed British cities toward the left. Survey, testimony, and organizational data indicate that deaths created "martyrs" whose commemoration benefited the right, whereas devastation durably lowered pro-war "morale". Our estimates imply that absent U.S. area bombing, the LDP would have won the two-thirds majority of Japan's House of Representatives that is a necessary first step toward revising Japan's pacifist constitution and rearming.

JEL Codes: D74, N45, H56

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1 Introduction

Do wars push the communities that suffer them to the political left or to the right? The answer matters beyond political history: strategies like “morale bombing” were premised on assumptions about how devastation reshapes an enemy’s politics, and whether it stabilizes the postwar order by pacifying the enemy or sows the seeds of future conflict. A century of evidence suggests that the answer can go either way, and the literature has not resolved why. In Italy, [Acemoglu et al. \(2022\)](#) show that municipalities with high World War I infantry casualty rates swung first to the antiwar Socialists in 1919 and then, within five years, delivered disproportionate support for Mussolini’s Fascists. In Germany, [De Juan et al. \(2024\)](#) find that counties that lost more of their soldiers voted persistently for right-wing nationalist parties, including the Nazis, throughout the interwar period, and [Koenig \(2023\)](#) shows that returning veterans shifted Weimar electorates durably from left to right. Yet wartime suffering does not always feed the right. British cities that endured heavier German bombing shifted toward Labour ([Heldring et al., 2022](#)), civilians on the front lines of Colombia’s civil war were more willing than their countrymen to support peace and concessions ([Tellez, 2019](#)), and a large literature finds that civilian victims of wartime violence become more cooperative and altruistic, not more belligerent ([Bauer et al., 2016](#); [Blattman, 2009](#)).

This paper argues that these seemingly contradictory findings are two sides of the same phenomenon: communities respond in opposite ways to the loss of people and the loss of places. We make use of novel Japanese WWII data covering nearly a century of elections to show that deaths—whether of soldiers on distant battlefields or of civilians in bombed cities—durably shifted electoral constituencies toward Japan’s dominant right-wing party, the Liberal Democratic Party (LDP), while the physical devastation of the urban landscape durably shifted constituencies toward the parties of the left. We call the first force the “martyr effect”: the dead become sacred, and the politics of honoring them belongs to the right. We call the second the “morale effect,” after the “morale bombing” that produced it: living amid ruins durably lowered communities’ identification with the political camp that had led the nation to war. We do not impose these labels on the data: in

over 1,500 wartime testimonies, accounts anchored in a soldier's death disproportionately frame the loss through sacrifice and honor, while accounts anchored in bombing disproportionately describe the war as hopeless and futile. Because both forces operated simultaneously, within a single country, a single conflict, and a single party system, Japan lets us separate them—and lets us test, rather than assume, which dimension of the left–right divide wartime experience actually moved. The result is that a war that ended eighty years ago continues to shape Japan's political geography today—in opposite directions, depending on what each community lost.

Our point of departure from this literature is to unbundle the effects of wartime loss. Each of the studies above uses variation arising from a single dimension of wartime experience, because each setting supplied essentially only one source of variation: in WWI Italy and Germany, communities lost their young men by the hundreds of thousands while their home cities stood untouched, and the survivors ultimately moved right; in WWII Britain, German bombing damaged about two houses in every seven while killing comparatively few civilians (Titmuss, 1950, Ch. XVI), and the survivors moved left. Because deaths and devastation rarely vary independently within a single electorate, existing evidence cannot tell us whether these opposite responses reflect different treatments or different countries, wars, and party systems.

Japan provides the missing experiment because it suffered both forms of loss on an immense scale: Japan had nearly as many military casualties in WWII as Germany and Italy had in World War I *combined* (Hirota, 1992; Acemoglu et al., 2022; De Juan et al., 2024); U.S. air raids over Japan killed over five times as many civilians as German air raids over Britain (Nakamura, ed, 1995; Titmuss, 1950);¹ and U.S. area bombing typically destroyed just over half the buildings in targeted cities (Davis and Weinstein, 2002). Crucially, the two forms of loss struck different places. Japan's hometown-based regiment system caused the draft cohorts of some cities to be decimated while leaving others nearly untouched, and the only land battle on Japanese soil was in Okinawa, which is excluded from our sample. Conditional on being targeted, civilian death rates varied substantially

¹The Japanese government's 1949 war-damage survey counted 323,495 air-raid deaths (Economic Stabilization Board, reprinted in Nakamura, ed 1995); the corresponding British figure is 60,595 deaths from enemy action (Titmuss, 1950, Appendix 8).

based on idiosyncratic targeting factors, the type of ordnance used, and the extent to which the raid was a surprise. As a result, the correlation between deaths and devastation across bombed cities is 0.36. We eliminate biases from factors that jointly affect bombing intensity and postwar politics by using an instrumental-variables strategy based on a city's value as a bombing target, which also corrects for measurement error in destruction. We can therefore estimate the different effects of death and destruction in the same elections under the same party system, and we find within one country exactly the pattern the cross-country evidence hints at: wartime deaths, whether military or civilian, pushed communities toward the right, while devastation pushed them toward the left. The civilian-death effect is less robust than the other two, however, because although there is enormous variation across cities in the death rates for draft-age men, only two cities—Hiroshima and Nagasaki—lost more than 2.5 percent of their residents to bombing. Moreover, greater urban devastation predicts not only less LDP support, but also more support for the Japanese Communist Party, the most stridently pacifist party in the opposition, even when we measure its support as a share of all opposition votes.

Japanese postwar politics also allows us to interpret the left–right divide with unusual clarity. Japan's conservative LDP was explicitly formed to rearm Japan and strengthen security ties with the U.S., and its opposition advocated left-wing, pacifist policies, so the country's dominant political cleavage mapped directly onto the questions the war had posed (Section 3.2). Moreover, the super-majority required to revise the U.S.-imposed constitution banning rearmament kept that cleavage salient for seventy-five years as right-wing politicians tried to win enough votes for revision. While prior work ([Ogasawara and Komura, 2022](#); [Asai and Kambayashi, 2023](#)) has shown that gender ratios at the prefecture level reflect battle casualties, we improve on these measures by showing that this variation can be used to construct estimates of casualty rates at the more disaggregated municipal level. We follow recent work by [Kimura \(2023\)](#) showing that there was substantial variation across cities within prefectures to build a municipal dataset with approximately 65 times as many geographical units as earlier work based on Japan's 47 prefectures, which we aggregate to the 300 largest cities for our regressions—still leaving more than six times as many units. Indeed,

all of our identification uses a full set of prefectural fixed effects, so our identification arises from variation across cities within prefectures. We assume that cities with high female-to-male ratios in the cohorts of prime-age conscripts suffered high levels of military casualties, and we show that this ratio is high in prefectures whose regiments were decimated and low in those whose regiments saw little combat. We also show that the gender ratios of the adjacent, draft-ineligible cohorts cluster near the natural ratio and do not predict LDP voting, so the draft-cohort ratio is not simply picking up local differences in overall gender ratios.

We implement an approach that addresses many potential omitted variable biases. Our baseline specification explains a city's right-wing vote share in a given postwar year by the war's deaths and devastation, conditioning on the same city's right-wing vote share in 1928. A salient political issue in that election was whether Japan should expand its navy. By controlling for votes for the conservative *Seiyukai* party, a forerunner of the LDP that also supported expanding Japan's military, we control for a city's inherent right-wing voting behavior. We augment this strategy by also controlling for a variety of other potential confounding variables.

The political legacies of these wartime losses are also strikingly persistent. Consistent with [Voth \(2021\)](#) and [Ochsner and Roesel \(2024\)](#),² we find that the martyr and morale effects are present in essentially every postwar election and show no attenuation over the entire 1958–1993 period, even though most Japanese with direct experience of the war are no longer alive.³ The legacies even survived the collapse of the postwar political system itself: after 1993, the LDP briefly lost power, the electoral system was overhauled, and the opposition was remade, yet both effects, though attenuated, remain clearly detectable in the new system through 2021.

Nor is this persistence a mystery: the martyr effect is transmitted within families and reinforced through conservative organizations for the war-bereaved, while the morale effect is likely transmitted through families and acquaintances but is also institutionalized in the peace education of children born generations after the fighting stopped. We use extensive data on Japanese attitudes and policies to show the existence of these channels and explain both voting behavior and the persistence of

²See [Althaus et al. \(2012\)](#) for how people react in the first few weeks of learning about military casualties.

³We focus on this period because a major electoral reform in 1994 makes the comparison less clear.

attitudes. People who lost someone they knew in the military were more likely to describe military deaths in a positive light (e.g., as a sacrifice for the nation). Residents of prefectures that suffered more military deaths were more likely to support expanding the military and the U.S. military alliance and to prefer the LDP, even after controlling for their parents' political preferences, and these prefectures have higher membership in politically conservative war-bereaved family associations (*izokukai*). Thus, we find that political preferences are passed from parents to children, and the martyr effect is also transmitted independently through community channels. In contrast, people who lived through air raids were more likely to describe the war as futile, while residents of heavily bombed prefectures were no more or less likely than others to view the American occupation as positive. We also find that more heavily bombed prefectures send a larger share of their school children to Okinawa's peace-education sites, where students are often instructed to make public declarations to "hold a heart of peace" and to "pass it on to later generations."⁴

We also conduct a simple counterfactual exercise to assess the magnitude of our point estimates. We examine a scenario in which the U.S. decided not to use area bombing to destroy civilian targets but instead just targeted the Japanese military. This counterfactual strategy would have reduced the morale effect in Japanese cities by leaving their structures intact and lowered the martyr effect arising from the killing of civilians. We find that the reduced morale effect dominates, and on net the greater LDP support would have been large enough to enable the LDP to obtain more than a two-thirds majority in the Diet's House of Representatives. Since this has been one of the major hurdles in achieving constitutional revision, our estimates suggest that the morale effect is sufficiently large that it could explain why Japan has not revised its constitution to allow a military.

The paper is organized as follows. Section 2 discusses the literature. Section 3 presents a brief discussion of relevant Japanese politics over the last hundred years for readers unfamiliar with Japan. Section 4 describes our data. Section 5 presents our main empirical results, assesses their magnitudes, and summarizes our robustness checks, and Section 6 presents evidence on the mechanisms behind them. Section 7 concludes.

⁴Kumatori Junior High School Third-Year Peace Study: Toward the Okinawa School Trip, Kumatori Town official website, 2024. https://www.town.kumatori.lg.jp/material/files/group/31/R6_3nen_heiwa.pdf.

2 Related Literature

In addition to the works already cited, our paper relates to several important strands in the literature. First, our work is also related to work on how military actions affect guerrilla activities. [Kocher et al. \(2011\)](#) and [Dell and Querubin \(2018\)](#) examine the impact of bombing near civilian populations and find that it increases insurgent recruitment and activity. [Lyll \(2009\)](#) studied counterinsurgency operations in Chechnya, concluding that indiscriminate violence increased local support for insurgents rather than deterring rebellion. Similarly, [Jaeger and Paserman \(2008\)](#) analyze Israeli military actions and find that targeted killings frequently led to retaliatory violence, reinforcing militant group cohesion and increasing future attacks. Finally, [Dell \(2015\)](#) explores the unintended consequences of militarized approaches to drug conflicts in Mexico, demonstrating that government crackdowns on trafficking networks often lead to increased cartel violence.

Second, historians and political scientists disagree about the impact of military actions on enemy morale, defined as the willingness to fight. [Pollack \(2002\)](#) provides evidence that overwhelming military force can lower morale when it leads to the perception of inevitable defeat, as observed in several Arab military conflicts where high casualties and sustained losses weakened combat effectiveness. [Pape \(1996\)](#) and [Dower \(1999\)](#) argue that bombing had small effects on morale. However, scholars such as [Grayling \(2007\)](#), [Lyll \(2009\)](#), and [Jaeger and Paserman \(2008\)](#) emphasize the morale-hardening effects of indiscriminate violence.

Third, a growing body of work on contemporary conflict finds that civilian exposure to lethal violence pushes electorates rightward, echoing our martyr effect. Studying Israel, [Berrebi and Klor \(2008\)](#) show that localities suffering more terror *fatalities* shift toward the right-wing bloc, an effect they attribute to the right's ownership of security policy, and [Gould and Klor \(2010\)](#) likewise find that local terror deaths raise right-wing vote shares. [Getmansky and Zeitzoff \(2014\)](#) find that Israeli towns brought within rocket range vote two to six points more for the right. This literature establishes that civilian victimization can move voters to the right, but it does not separate the political effect of *killing people* from that of *destroying places*: the first two studies measure

only fatalities and contain no destruction channel, while the third bundles death, damage, and fear into a single exposure indicator and concedes that it “is unable to adjudicate on whether the main effect of terrorism on political behavior operates through casualty aversion or through living under threat” (Getmansky and Zeitzoff, 2014). Because our setting varies deaths and physical destruction separately, we can draw exactly this distinction, and we find that the two move voters in opposite directions. These settings also differ from ours in that the adversary remains a live threat: a rightward shift after an attack may there reflect a demand for future deterrence, whereas the effects we document persist for three-quarters of a century after the fighting ended and the wartime enemy became a close ally, so that they cannot be explained by prospective security concerns and instead isolate the commemorative legacy of past violence.

Finally, our paper relates to work on the persistence and intergenerational transmission of political attitudes, and in particular on the role of schooling in reproducing them. Voigtländer and Voth (2015) show that Germans educated under the Nazi regime remained two to three times more anti-Semitic than adjacent cohorts decades later, demonstrating that state schooling can durably instill political beliefs. Consistent with this, Cantoni et al. (2017) find that a curriculum reform in China shifted students’ political attitudes, Clots-Figueras and Masella (2013) find that bilingual schooling raised Catalan national identity and support for nationalist parties, and Fouka (2020) shows that prohibiting German-language instruction in U.S. schools after World War I durably shaped the ethnic identification of affected children; Lott (1999) argues more broadly that governments invest in public schooling partly to instill loyalty and shape political preferences. Our peace-education results (Section 6) document the same channel operating in the opposite ideological direction: schools in more heavily bombed communities transmit an antimilitarist outlook to children born long after the war, helping explain why the morale effect persists across generations.

3 Right-Wing Politics in Japan

In the postwar period, the LDP has been Japan’s right-of-center party, favoring more market-oriented policies than its historical opponents, the Japan Socialist and Communist Parties, as well as their

more recent successors. Less well known outside Japan is that the clearest difference between the LDP and its opposition concerns national defense. In this respect, Japan resembles the interwar settings against which we compare it: in Italy and in Weimar Germany, whatever else divided the parties, the political right was the pro-military pole. This section documents that Japanese politics has been organized the same way for a century, with the conservative LDP and its prewar predecessors on the pro-military side and the opposition on the pacifist side, and that voters have understood it that way. Section 3.1 describes the 1928 baseline our design exploits, and Section 3.2 shows that the postwar LDP was assembled around rearmament and that the constitutional bar to rearmament kept the issue salient throughout our sample period.

3.1 *Militarism and Voting Before World War II*

The first election after the passage of the 1925 Universal Male Suffrage Act, which granted the vote to adult men, centered on national defense issues. Tanaka Giichi, a former army general, became president of the *Rikken Seiyukai* or “Friends of the Constitution Party” in 1925 and espoused pro-military, imperialist attitudes. Tanaka advocated “popularizing national defense” and finding a way for Japan to “break free from its insular position, become a continental state, and confidently extend its national power” (Duus, ed, 1988, pp. 94 and 275). The *Seiyukai* won the 1928 general election on a platform of strong opposition to arms control. Because the 1928 contest centered heavily on whether Japan should pursue military expansion, we use a city’s *Seiyukai* vote share as a prewar benchmark for its inherited pro-military leaning and control throughout our analysis, separating the effect of wartime loss from a community’s inherited politics. We describe the benchmark as pro-military rather than right-wing because the *Seiyukai* and LDP were not always conservative, in the classical sense, on economic policy: both periodically favored expansionary budgets, loose monetary policy, and rural public works (Metzler, 2006, pp. 67–68, 183).⁵

⁵The same could also be said of the economic policies advocated by fascist parties in prewar Italy and Germany.

3.2 *Militarism and the Liberal Democratic Party*

For our purposes, the postwar LDP's clearest distinguishing feature was its goals of rearmament and constitutional revision, while its principal opponents defined themselves by opposition to both. This subsection documents that alignment and its stability over time, because it enables us to use a city's LDP vote share as a measure of its residents' pro-military sentiment.

The lineage runs directly from the prewar party. After Japan's defeat, the *Seiyukai* reorganized itself into a pro-rearmament Liberal Party under Hatoyama Ichiro. From the first general election after the U.S. occupation ended, in October 1952, rearmament and revision of the U.S.-imposed constitution banning Japan's military were conspicuous in every campaign: Hatoyama favored both, the Socialists opposed both, and Prime Minister Yoshida sought a middle ground of gradual self-defense capacity without amendment (Ward, 1956, p. 50).⁶ In 1954, Hatoyama became Prime Minister and formed the LDP the following year by bringing together Diet members who favored rearmament. The party's founding document made its position clear: "the primary focus of the early occupation policy was on weakening our nation . . . We will establish self-defense forces commensurate with national strength and circumstances under a collective security system, preparing for the withdrawal of foreign military forces stationed in Japan" (Liberal Democratic Party, 1955). Six decades later, Japan's longest-serving Prime Minister, Abe Shinzo, described the party's origins the same way: "The Liberals and Democrats who formed the LDP wanted to create our own constitution, and the merger of the two parties was done to achieve the two-thirds majority in both houses that was needed for revision. Revising the constitution was the symbol of our regained independence. It was for this that the Liberal Democratic Party was founded" (Council on Foreign Relations, n.d.).

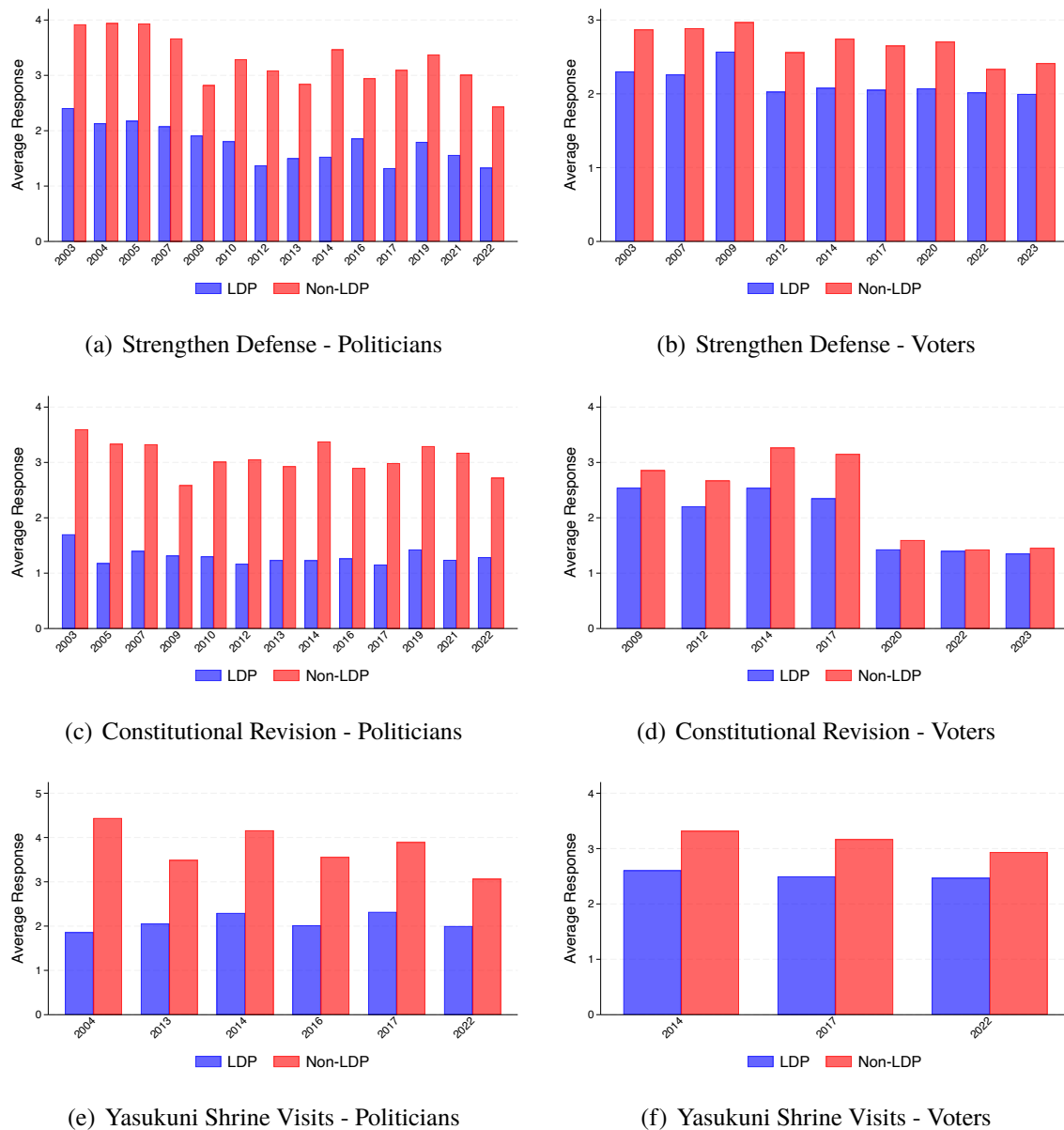
The salience of the LDP's pro-military position probably peaked in 1960, when massive protests

⁶Party labels before 1955 map poorly onto militarist and pacifist categories because of the many splits and mergers in those years; see Appendix A.8.1. The Socialists' position did not soften afterward. A JSP member told the House of Councilors in 1964: "Speaking for the Japan Socialist Party, I oppose the bill to amend the Defense Agency Establishment Act and the Self-Defense Forces Act. Our position has been consistent: ever since the Self-Defense Forces were created, indeed from the very beginning of their predecessors, . . . we have opposed them head-on as measures that violate Japan's Peace Constitution and that amount to rearming Japan" (<https://kokkai.ndl.go.jp/simple/txt/104715254X00719641217/18>).

erupted after (LDP) Prime Minister Kishi Nobusuke signed a revised U.S.-Japan Security Treaty. The new treaty enabled the U.S. *and Japan* to maintain military forces in Japan, which could be used to attack third countries, and contained an article stating that the U.S. and Japan should “maintain and develop, subject to their constitutional provisions, their capacities to resist armed attack” ([Japan and the United States of America, 1960](#), Article III), which many Japanese saw as a violation of the constitution. In the ensuing protests, hundreds of thousands of people took to the streets, forcing President Eisenhower to cancel his trip to Japan. Despite the unrest, the LDP scored its biggest electoral success in the November 1960 general election, winning 296 of the 467 seats in the lower house—over 60 percent—on 57.6 percent of the popular vote, and ushering in what the Japanese call the “1955 System”: the one-party dominance of the LDP, which maintained control of the lower house of the Diet until 1993. However, a constitutional amendment remained out of reach: it required two-thirds of both the lower and upper houses and approval in a national referendum, and left-wing parties denied the LDP the supermajority needed even to begin. This situation made constitutional amendment a salient difference between the LDP and other parties throughout our sample period: a fact that enables us to use the LDP vote share as a measure of voters’ pro-military attitudes.

While constitutional revision is an important difference between the LDP and its opposition, many other issues influence Japanese election outcomes, and voters’ views on revision are not a litmus test for which party they support. Indeed, the existence of other issues helps to motivate the error term in our analysis. The surveys we present here establish only that the LDP occupies the pro-military pole of this cleavage, validating the LDP vote share as our outcome; the separate question of how wartime loss pushed communities toward one pole or the other is taken up in Section 6. LDP politicians are surprisingly unified on the issue of constitutional revision—only 2 percent support leaving the constitution unchanged ([Ogi, 2024](#))—and Figure 1 shows that between 2003 and 2022 they were, on average, far more supportive than other politicians of strengthening the Self-Defense Forces (SDF), amending the constitution, and having the Prime Minister visit Yasukuni Shrine (a shrine to the spirits of the war dead, including convicted war criminals), with

Figure 1: LDP Politicians' and Supporters' Positions on Key Military and Nationalist Issues



Note: This figure shows how LDP and non-LDP politicians (left figures) and supporters (right figures) differ in their positions on issues related to the military. Responses are coded on a 5-point scale where 1 indicates strong agreement and 5 indicates strong objection to: (a, b) strengthening Japan's self-defense forces, (c, d) constitutional revision, and (e, f) prime ministerial visits to Yasukuni Shrine. Source: University of Tokyo-Asahi Survey (https://www.masaki.j.u-tokyo.ac.jp/utas/utasindex_en.html)

no sign of attenuation. The same gap appears among voters. We find it in the earliest representative survey we could find, a 1965 survey of attitudes toward the SDF budget ([Japan Defense Agency, 1965](#)) (see Appendix A.8.2), and in the recent surveys in the right-hand panels of Figure 1, where we see that LDP supporters hold more pro-military views than supporters of opposition parties. Voters also know where the parties stand: 75.4 percent of voters surveyed in 2023 thought the LDP favors strengthening the SDF, against 22.8 and 46.8 percent for the main opposition parties, the Constitutional Democratic Party and the Japan Innovation Party. In short, Japanese voters tend to share the views of the parties they vote for and understand those parties' positions on national defense.

4 Data

We bring several novel datasets to bear on how wartime loss reshaped voting. Our analysis rests on three exposure measures that map onto the paper's central distinction between losing people and losing places: military deaths and civilian bombing deaths—the loss of *people*, which we argue produced the martyr effect—and the destruction of the built environment—the loss of *places*, which produced the morale effect. We relate these to nearly a century of Japanese election results, which let us measure a city's voting before and after its soldiers, citizens, or structures were killed or destroyed. Our death and destruction data are far more disaggregated than any used before, linking wartime loss to electoral outcomes at the city level.⁷ Section 4.3 explains how the 1994 electoral reform changes both the measure of LDP support and the periods over which we report results; Section 4.4 describes how we construct the military-death measure and Section 4.5 the two air-raid measures, which, though they arise from the same raids, may push voting in opposite directions.

4.1 Unit of Observation

Much of our data comes at the municipality level, which divides Japan's land area into around 3,000 geographic units that vary somewhat across years. We aggregate these to the 300 largest

⁷See Appendix A.1.1 for definitions and details.

cities because the data on urban death and destruction, taken from [Davis and Weinstein \(2002\)](#), are reported only for the 300 largest Japanese cities in 1940.⁸ The details of our aggregation procedure and how we build consistent city definitions across time are discussed in Appendix A.1.1.

4.2 The LDP Vote Share

We measure the LDP vote share in each city using data from every election after the party's formation in 1955. We obtain party-city voting data and the number of eligible voters from [Mizusaki and Mori \(2021\)](#). In cities that belong to multiple electoral constituencies or have multiple candidates from the same party, we aggregate party-level vote shares to the city level.⁹ We provide detailed summary statistics on LDP vote shares in Table 1.

Several facts in this table are important for identification. First, regional disparities in LDP support are enormous. Among cities in the top decile of LDP support, more than 67 percent of voters vote for the LDP. Cities in the bottom decile have less than half this level of LDP support.¹⁰ Second, there is substantial variation in building destruction. About one tenth of cities lost one building for every twelve residents, while the median city lost no buildings. We also see enormous variation in the draft-cohort gender ratio. To put these numbers into perspective, one minus the ratio of the gender ratio in the bracketing draft-ineligible cohort (those aged 10–19 and 45–54 in 1950) to the draft-cohort gender ratio estimates the fraction of draft-age men who did not survive the war, under the assumption that the two cohorts had the same gender ratio before it. The median loss is 16.6 percent, with the tenth percentile at 8.2 percent and the ninetieth percentile at 23.1 percent. In contrast, per-capita death rates in cities due to bombing were much lower, with 90 percent of cities losing fewer than 0.5 percent of their population, and only two cities, Hiroshima and Nagasaki, losing more than 2.5 percent.

⁸This encompasses approximately all cities with a population of over 30,000 in 1925 and all those with significant bomb damage. These municipalities account for nearly 60 percent of the Japanese population. We dropped Okinawa because it was not returned to Japan until 1972 and, therefore, lacked voting data for much of our sample.

⁹We aggregate all *ku* (wards) in the cities that have them (i.e., *seirei shitei toshi*) to ensure alignment with other datasets on casualties and demographics.

¹⁰We obtain data on pre-WWII elections from [Kawato and Kawato \(1997\)](#) and build a dataset of municipality-level election outcomes using a correspondence table between electoral constituencies and cities from <https://lab.ndl.go.jp/dl/book/1445520?page=35> (In Japanese, last accessed on December 13, 2024).

Table 1: Summary Statistics

	Mean	SD	p10	p25	p50	p75	p90
LDP Vote Share (1958-1993)	0.514	0.162	0.297	0.409	0.519	0.632	0.723
LDP Vote Share (1996-2021, PRC)	0.341	0.071	0.251	0.294	0.340	0.386	0.430
LDP Vote Share (1958-2021, PRC)	0.443	0.158	0.261	0.327	0.412	0.555	0.676
LDP Vote Share (1996-2021, SMC)	0.479	0.151	0.305	0.396	0.483	0.574	0.665
LDP Vote Share (1958-2021, SMC)	0.500	0.159	0.300	0.404	0.502	0.609	0.705
LDP Vote Share (1996-2021, Weighted)	0.426	0.114	0.291	0.361	0.429	0.498	0.566
LDP Vote Share (1958-2021, Weighted)	0.478	0.151	0.294	0.382	0.472	0.579	0.679
Per-Capita Building Destruction	0.019	0.038	0.000	0.000	0.000	0.011	0.084
Per-Capita Bombing Deaths	0.002	0.013	0.000	0.000	0.000	0.001	0.005
Draft-Cohort Gender Ratio	1.143	0.084	1.040	1.098	1.146	1.199	1.239
Draft-Ineligible-Cohort Gender Ratio	0.957	0.057	0.896	0.925	0.951	0.982	1.016
Seiyukai's Vote Share in 1928	0.521	0.125	0.395	0.461	0.520	0.592	0.660
Per-Capita Earmarked Expenditures	1.511	3.742	0.029	0.042	0.073	0.256	5.952
Contemporaneous Gender Ratio	1.068	0.055	0.997	1.037	1.069	1.104	1.134

Notes: This table presents summary statistics for our key variables. LDP Vote Share variables show the fraction of votes received by the Liberal Democratic Party, with PRC indicating proportional representation elections, SMC indicating single-member constituency elections, and “Weighted” indicating the weighted average of PRC and SMC results, where weights are calculated by the ratio of seats from PRC and SMC. Per-Capita Building Destruction measures the number of buildings destroyed during WWII air raids divided by the 1940 city population. Per-Capita Bombing Deaths measures confirmed civilian deaths and missing persons from air raids divided by the 1940 city population. Draft-Cohort Gender Ratio is the ratio of women to men aged 20–44 in 1950 (i.e., the gender ratio of people the military could have conscripted during WWII). The Draft-Ineligible-Cohort Gender Ratio is the ratio of females to males among those aged 10–19 and 45–54 in 1950. *Seiyukai*’s Vote Share in 1928 is the fraction of votes received by the pro-military *Seiyukai* party in the 1928 election. Per-Capita Earmarked Expenditures are earmarked expenditures in each city. The contemporaneous gender ratio refers to the gender ratio in a specific year. The statistics are calculated using data from the 300 largest Japanese cities as of 1940. p10, p25, p50, p75, and p90 represent the 10th, 25th, 50th (median), 75th, and 90th percentiles respectively.

4.3 The 1993–94 Institutional Break

The collapse of the “1955 System” in 1993–94 allows us to test whether the wartime political legacies persisted after a major institutional change. The LDP had governed continuously since its formation in 1955, with the Japan Socialist Party (JSP) as its principal opposition. The bursting of Japan’s stock and land-price bubbles weakened the LDP and allowed a non-LDP coalition to take office after the 1993 election, and the new government enacted a major electoral reform in 1994.

The reform changed both electoral competition and how we measure party support. Before 1994, House of Representatives members were elected from multi-member districts under a single non-transferable vote, which required candidates from the same party to compete against one another.

The reform replaced this system with a combination of single-member constituencies (SMCs) and proportional representation constituencies (PRCs), so voters now cast one ballot for a constituency candidate and another for a party. We therefore measure post-reform LDP support using the proportional-representation vote, which most directly captures support for the party. PRC elections account for about 38 percent of lower-house Diet members and are the most comparable post-reform electoral counterpart to the party-level vote totals we construct for the pre-reform period.

The break also transformed party competition. The JSP ceased to be the LDP's principal opposition, opposition parties repeatedly reorganized, and the LDP returned to government through new coalition arrangements: first with the JSP and later with the more pacifist Clean Government Party, which moderated the coalition's constitutional-revision agenda (Samuels, 2004). Together, these changes let us ask whether the legacies we document survive a wholesale institutional break, and they are the reason we report results separately for the pre-reform (1958–1993) and post-reform (1996–2021) periods throughout.

4.4 The Causes and Measurement of Military Fatalities

The value of the military-death exposure variable underlying the martyr effect rests on two claims. First, we argue that military logistics, rather than community characteristics, determined which cities experienced high rates of military deaths. Second, we argue that city-level soldier death rates varied sufficiently to allow reliable imputation from the postwar census.

The Imperial Japanese Army (IJA) formed infantry regiments by recruiting men from the city or county where they lived.¹¹ Asai and Kambayashi (2023) argue that the allocation of regiments to battlefields was exogenous, meaning a regiment's survival probability was unrelated to future voting in its hometown. Because the IJA often did not know which islands would be attacked, regiments sent to major battlefields such as Iwo Jima and Okinawa had death rates close to 100 percent, while those stationed in Korea, Taiwan, or the Japanese mainland saw little to no fighting. The IJA deployed regiments based on training, experience, and battle fatigue, whereas American

¹¹A full list of the more than 400 IJA regiments, including details on the city where they were founded and brief histories, can be found at https://en.wikipedia.org/wiki/List_of_Japanese_infantry_divisions.

battle plans depended on the importance of the islands rather than on where soldiers lived before enlisting.

A second, and probably more important, source was the U.S. policy of “unrestricted submarine warfare,” announced on December 7, 1941, and the later “Operation Starvation,” which together sank 81 percent of Japan’s ship tonnage (Davis and Weinstein, 2008). Rather than dislodging Japanese troops through battle, these operations severed their food and military supply lines. Because passengers on torpedoed ships were rarely rescued, entire regiments were often eliminated in transit.¹² Yoshida (2017) finds that 60 percent of all Japanese military deaths were caused by starvation and disease. Such rates are hard to reconcile with expectations about postwar voting, so we treat the variation they generate as exogenous. Which hometowns were affected also depended on decisions unrelated to the soldiers themselves. The 145th Regiment from Kagoshima was sent to Iwo Jima, where only 162 of its 2,727 soldiers survived, while the 24th Regiment from Fukuoka was stationed in Taiwan and, therefore, saw no combat. These cases make it unlikely that any other variable explaining postwar voting is correlated with which municipalities suffered high casualty rates.

Because soldier death rates were never recorded at the city level, we infer them from census data. Asai and Kambayashi (2023) use prefectural variation in gender ratios for draft-aged cohorts as a proxy. However, Kimura (2023, pp. 17–19) shows that Japanese regiments were often organized by finer geographic units, i.e., the city (“*shi*”) or the county (“*gun*”) in which they lived.¹³ We therefore construct city-level gender ratios for the draft cohort using the 1950 Population Census. Japanese men between 17 and 40 could be drafted (Watanabe, 2022), and boys as young as 14 could “volunteer”; service rates by birth cohort imply a lower bound on military service of roughly 15 years of age in 1945 (see Appendix A.8.3).

¹²U.S. submarines accounted for 55 percent of the Japanese shipping America sank, and carrier-based aircraft for another 24 percent (Joint Army-Navy Assessment Committee, 1947). Two cases illustrate the mechanism: the 230th Infantry Regiment from Gifu City was lost when its transports to Guadalcanal were sunk, while the 50th Independent Mixed Brigade reached the Woleai Atoll in the Carolines safely, only for its supply ships to stop two months into Operation Starvation, leaving three-quarters of its 6,426 men to starve (Yoshida, 2017).

¹³For example, he writes, “the rise in the number of divisions led to extremely complex recruitment catchments, and even people from the same prefecture often ended up enlisting in different regiments if they lived in different cities or counties.”

Since there was no 1945 census, we proxy soldier casualty rates with the ratio of women to men in the cohort aged 20 to 44 in 1950, who would have been aged 15 to 39 during the war ([Statistics Bureau of Japan, 1950](#)). With 2.3 million soldiers dead out of a 1940 male cohort aged 10–34 of 16.2 million, the resulting shift in this cohort’s gender ratio is large ([Statistics Bureau of Japan, 1940](#)).¹⁴ Figure 2 maps the ratio by municipality alongside the cohorts just younger and older than the soldier generation, i.e., Japanese aged 10–19 and 45–54 in 1950. These cohorts cluster near 0.95 (the median is 0.951), reflecting the natural phenomenon that 94.3 female babies are born for every 100 male babies ([Hesketh and Xing, 2006](#)), whereas the draft cohort typically exceeds 1.1.

The variation in this ratio across places is more important for our purposes, and much of it persists within prefectures. Prefecture fixed effects absorb only 38 percent of the variance in the draft-cohort gender ratio across the 300 cities in our regression sample; within Yamaguchi’s ten cities, for instance, the ratio ranges from 0.98 in Ube to 1.26 in Hagi. Across the 3,176 municipalities shown in Figure 2, 5.95 percent have more than 125 women for every 100 men, while 1.67 percent have fewer than 90. In addition, there appears to be virtually no geographic pattern in which municipalities suffered high casualty rates.¹⁵

These patterns are broadly consistent with the fates of the regiments discussed above. Kagoshima prefecture, home to many of the 145th Regiment’s draftees, has the highest draft-cohort gender ratio among the 46 prefectures in our sample, while Fukuoka, home to the 24th Regiment that spent the war in Taiwan, ranks forty-second. These patterns give us confidence that our gender-ratio variable captures military deaths.

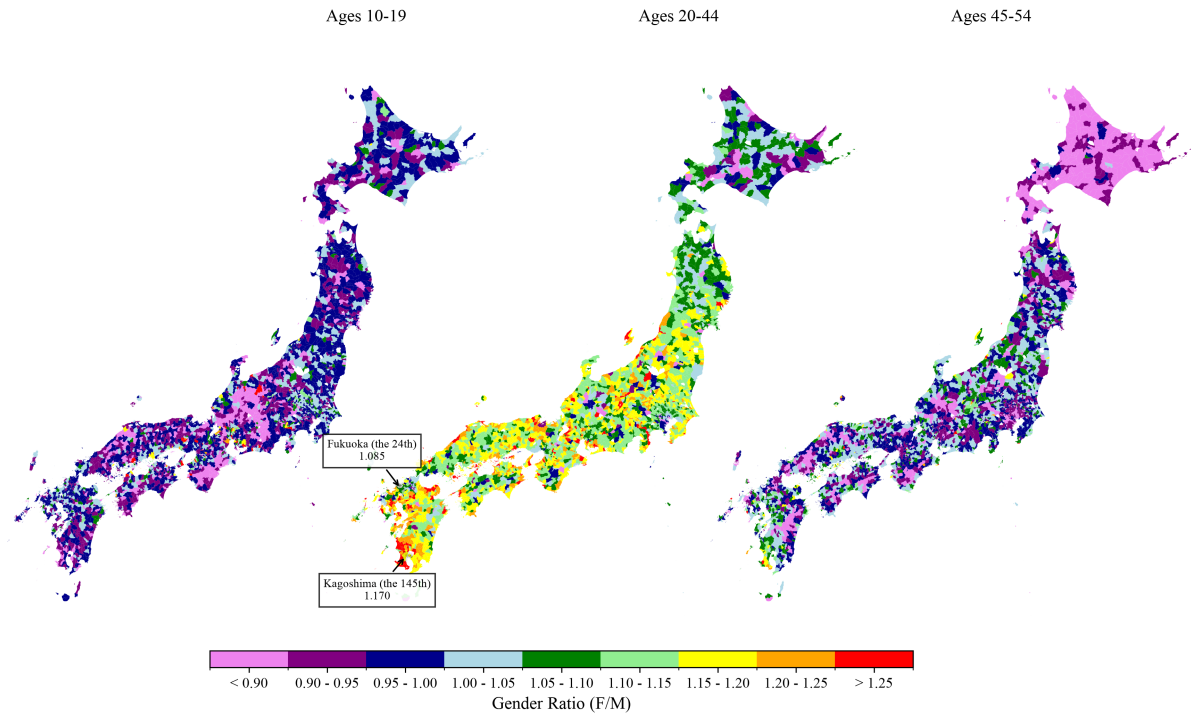
4.5 Air Raid Destruction and Deaths

The air raids produced our remaining two exposure measures, which provide variation that lets us explore the people–places distinction. *Per-Capita Bombing Deaths* are a second measure of the

¹⁴Of the 2.3 million Japanese soldiers who died, approximately 1.9 million died outside of China ([Hirota, 1992](#)).

¹⁵We see lower female-to-male ratios for all ages in northern Japan and Hokkaido. [Kumagaya \(1960\)](#) argues that this pattern arose because a combination of cold climate and harsh agricultural working conditions resulted in higher female death rates. We therefore show in Section 5.6 that our results are robust to controlling for the 1930 gender ratio and for the gender ratios of non-draft cohorts in 1950.

Figure 2: Gender Ratios by Age



Note: Female-to-male gender ratios by age cohort in 1950 for 3,176 municipalities, using 1980 municipal boundaries.
Source: [Statistics Bureau of Japan \(1950\)](#).

martyr effect, under the assumption that survivors view the deaths of people—be they civilians or military—similarly. As we show below, it is the weaker of the two because the variation that identifies it is concentrated in a small number of cities. Our *Per-Capita Building Destruction* forms the “places” measure behind the morale effect. Because the two come from the same raids yet enter the analysis with opposite expected signs, measuring and separating them cleanly is central to what follows.

We obtained our data on air raid deaths and building destruction from [Davis and Weinstein \(2002\)](#), which used Japanese sources to quantify the number of people who died and the fraction of buildings destroyed as a result of U.S. “area bombing” of Japanese cities. We define “Per-Capita Bombing Deaths” as the sum of confirmed civilian deaths following a bombing raid and the number of people who went missing on the day of the raid and were never found, divided by the 1940 population of the city. We include the missing in the death count because firestorms often result in

bodies being burned beyond recognition or vaporized. Additionally, we use “Per-Capita Building Destruction” to measure the impact of destruction on the city’s population.

An important issue concerns the measurement and exogeneity of the devastation caused by bombing. While historical accounts suggest that which regiment was sent to which potential battlefield was exogenous, U.S. targeting decisions may have relied on variables correlated with future LDP support. The U.S. initially targeted Tokyo, Yokohama, Kawasaki, Nagoya, Kobe, and Osaka based on “industrial importance” and radar signal strength (which enabled low-altitude night raids) (Craven and Cate, 1953, pp. 610 and 624). Thereafter, Japan’s smaller cities were targeted based on five criteria: “1) congestion and inflammability; 2) incidence of war industry; 3) incidence of transportation facilities; 4) size and population; and 5) adaptability to radar bombing” (Craven and Cate, 1953, p. 653). War industry was typically defined as the presence of aircraft, shipbuilding, and weapons manufacturing plants, as well as the manufacturing plants that provided inputs. The fact that size and population were important criteria might threaten identification because large cities tend to have more manufacturing firms and might have different support rates for the LDP. In addition, per-capita building destruction is an imperfect measure of the devastation residents experienced—the line between a destroyed building and a damaged one, for example, is not always clear in the underlying counts—and such measurement error attenuates OLS estimates of the morale effect toward zero.

We therefore also use data on the number of munitions factories and the share of manufacturing employment in a city as instruments for per-capita building destruction, addressing both concerns (see Appendix A.1.10 for details). Our identifying assumption is that, conditional on our controls, the historical placement of munitions factories and urban manufacturing employment shares predict bombing intensity but do not independently predict postwar politics. This view is supported by Kotani (2025), which shows that the location of prewar manufacturing plants was heavily influenced by water-power sources, a factor unlikely to matter for postwar politics.¹⁶ Our estimates

¹⁶One might worry about the timing of the manufacturing-share instrument. The 1940 share is measured after Japan’s munitions build-up was well underway, so it could, in principle, proxy for the local industrial politics that accompanied that program rather than the prewar industrial structure that drew the bombers. Replacing it with the city’s 1920 manufacturing share, which predates the build-up almost entirely, leaves both stages essentially unchanged: the

are also robust to additional controls for demographic composition, agricultural employment, and government transfers (Section 5.6 and Appendix Table A.5).

Conditional on being targeted, variation in per-capita death rates is plausibly exogenous. For example, on March 9, 1945, 279 B-29s dropped 1.6 kilotons of incendiaries on Tokyo, killing approximately 84,000 people: the highest number of one-day wartime deaths in the history of the world. However, four days later, 274 B-29s dropped 1.7 kilotons on Japan's second-largest city, Osaka, killing only about 4,700 people despite destroying half as many buildings.¹⁷ The disproportionately large difference in the death toll of the two raids was due to exceptionally strong winds in Tokyo on the day of its raid. The weather also mattered for atomic bomb victims. The skies over Japan's seventh-largest city, Kitakyushu, were cloudy on August 9, 1945, so the second atomic bomb was dropped on Nagasaki, Japan's twelfth-largest city, instead.

Other idiosyncrasies, such as geography and ordnance choice, also mattered. Sapporo and Fukuoka, Japan's fourteenth- and ninth-largest cities, escaped heavy bombing because they lay at or beyond the range of Saipan-based B-29s, while Kyoto, the fifth-largest, was demoted from being the number one atomic bomb target because of its cultural value. Hiroshima was chosen for the following, largely geographic, reasons: "It is an important army depot and port of embarkation in the middle of an urban industrial area. It is a good radar target and it is such a size that a large part of the city could be extensively damaged. There are adjacent hills which are likely to produce a focusing effect which would considerably increase the blast damage. Due to rivers, it is not a good incendiary target" (Derry and Ramsey, 1945). The exogenous nature of destruction extended to mid-sized cities as well: Niigata, the twenty-eighth-largest, was preserved as a possible target for the third atomic bomb, but the war ended before the U.S. could drop it. Since this type of variation cannot be explained by the U.S. Army's expectations about postwar voting behavior, we assume it

first-stage coefficient on the manufacturing share is 0.094 with the 1920 measure, against 0.093 with the 1940 measure, and the second-stage estimates are similar (Appendix Table A.8). That two measures taken twenty years apart yield similar first- and second-stage estimates reassures us that Japan's military build-up is not driving the result. As we show below, the IV estimates of the morale effect are about four times their OLS counterparts; we return to the source of that gap when we present the pooled estimates.

¹⁷Craven and Cate (1953), Vol. V, pp. 617, 620: the official Tokyo toll of 83,793 dead, and the Osaka fire department's 3,988 dead and 678 missing; 15.8 square miles burned out in Tokyo against 8.1 in Osaka.

is exogenous.

As a result of these factors, variation in civilian deaths per capita correlates with building destruction per capita, but the correlation is only 0.36 among bombed cities, indicating substantial independent variation in the two measures.¹⁸ That independent variation is not evenly distributed across the sample. Among bombed cities, the correlation rises to 0.42 if we drop Hiroshima and to 0.80 if we drop Hiroshima and Nagasaki, as these cities account for about ninety-five percent of the variance in per-capita deaths. The two measures are therefore identified separately, largely by the cities where death and destruction diverged most sharply, a point we return to in Section 5.4. Destruction was related to bomb tonnage, the share of incendiaries in that tonnage, and construction density. Death rates were much more sensitive to ordnance choice, wind speed, the time of day of the raid, whether the raid was a surprise, and where people happened to be when the bombs fell.

Table 1 shows substantial skewness in the distributions of building destruction and air-raid deaths. The average city lost only 2 buildings per hundred residents, but the 30 cities in the top decile of destruction lost more than 8.4 buildings per hundred residents. Civilian deaths were even more skewed, with most cities experiencing few casualties relative to their total population, and nine cities having more than one percent of their population killed in air raids. At the upper tail, the atomic bombs dropped on Hiroshima and Nagasaki killed twenty-one and eight-and-a-half percent of their residents, respectively.

5 Main Results

We adopt some semantic conventions to facilitate discussing the issues. First, right-wing Japanese refer to Japan's war dead as "martyrs" (e.g., *showa junnansha*), so we use the term "martyr effect"

¹⁸The ten cities at the top of our per-capita death distribution bear this out: in rank order, Hiroshima, Nagasaki, Ashiya, Tsu, Akashi, Tokyo, Toyama, Iwakuni, Kagoshima, and Hitachi. Civilian casualties were typically higher where residents did not expect a devastating raid, as in the first raid on Tokyo and in Hiroshima and Nagasaki. Elsewhere, the decisive factor was what was dropped and when. Iwakuni recorded the eighth-highest death rate in our sample while losing fewer than two buildings per hundred residents to destruction—a seventh of Toyama's rate—because high-explosive bombs fell on its marshaling yards at midday, just as three trains had arrived simultaneously at the adjacent station. At Tsu, the leafleted night attack burned three times as much of the city as the surprise daylight attack four days earlier and killed about a third as many. None of these circumstances plausibly reflects a city's future politics. Appendix A.7 sets out the decisive raids and the principal documented mechanism for each of these ten cities.

for the tendency of *deaths*—whether of soldiers on distant battlefields or of civilians under the bombs—to raise the LDP vote share.¹⁹ Second, “morale bombing” was a euphemism the Allies used for the area bombing of cities meant to lower civilian morale and make the population crave peace (Gladwell, 2021). We therefore use the term “morale effect” for the tendency of the physical *devastation of places*—the reduction of a city’s buildings to rubble—to lower the LDP vote share. The organizing contrast of this section is thus between the loss of *people* and the loss of *places*, rather than between soldiers and civilians.

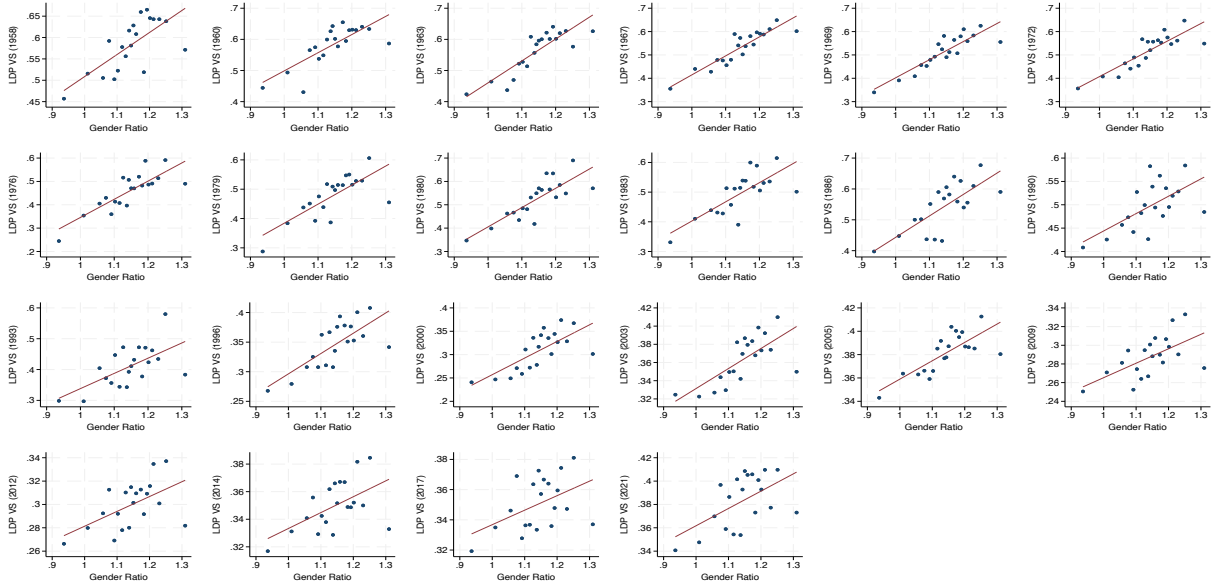
We present the results in a few steps. Section 5.1 previews the data graphically. Section 5.2 introduces our regression specification and identification strategy, Section 5.3 traces the martyr and morale effects election by election, and Section 5.4 reports pooled estimates. Section 5.5 assesses their magnitudes, including what they imply for the 1960 election, when the LDP on its own came closest to the supermajority needed to initiate revision of Article 9, and Section 5.6 summarizes our robustness checks. Section 6 then presents direct survey, testimony, and organizational evidence on the mechanisms behind the two effects.

5.1 Data Preview

The martyr effect. Many of our main results are visible in bin-scatter plots of the data. Figure 3 plots the relationship between the LDP vote share in each year and the draft-cohort female-to-male ratio in 1950, our proxy for military casualties. There is a clear upward-sloping relationship between military deaths and pro-military voting. Although security issues were particularly salient in 1960, we see an upward-sloping pattern in all years. Figure 3 is, therefore, suggestive of the *martyr effect*: cities with high shares of military deaths voted more strongly for the party that sought to legalize Japan’s rearming. However, starting in 1996, the first election in which the LDP formed an alliance with pacifists, the range of the dependent variable shrank, implying that the LDP began to have more difficulty attracting voters in high military casualty constituencies. Nonetheless, the martyr

¹⁹The more common term for the enshrined war dead is “*eirei*” or “hero spirits,” which also connotes the idea that they died for a noble cause. Although *showa junnansha* originally referred to leaders convicted as war criminals, we show in Section 5.4 that per-capita civilian bombing deaths raise the LDP vote share much as military deaths do; we therefore attach the “martyr” label to wartime death in general rather than to military death alone.

Figure 3: LDP Share and Gender Ratio (Draft Cohort as of 1950)

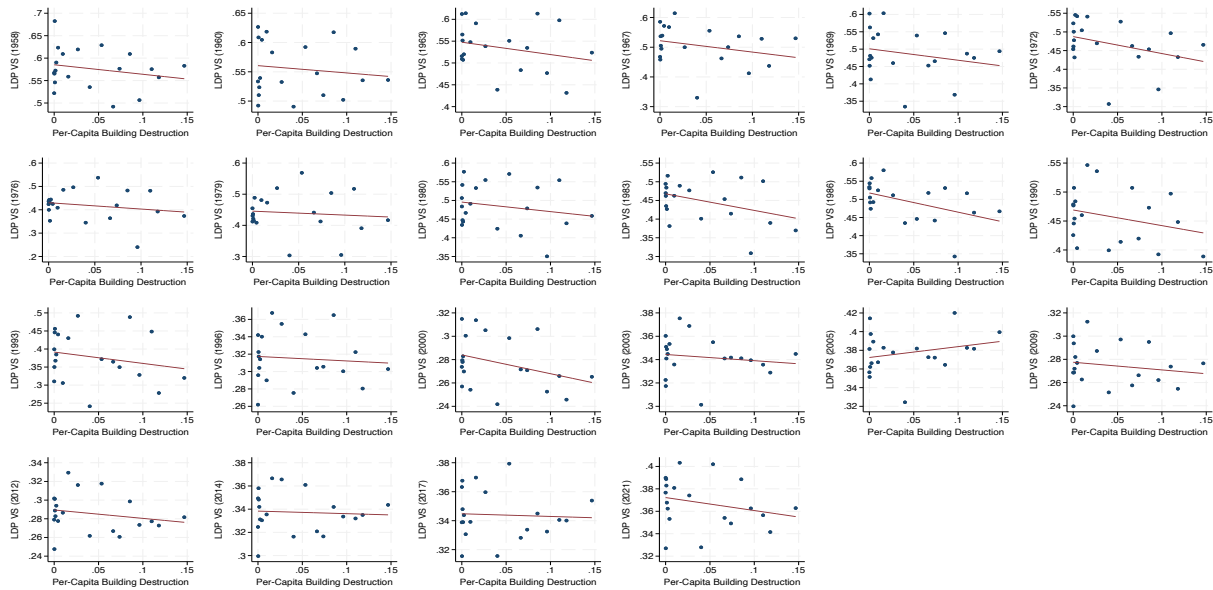


Note: This figure presents a bin-scatter plot of the LDP vote share (vertical axis) against the female-to-male ratio of people in the draft cohort (horizontal axis) for each election year. We use the LDP vote share in the proportional-representation constituencies after the 1994 electoral reform to be consistent with the earlier results. Each dot represents a bin of cities, and we plot the fitted line.

effect is visible even 75 years after the end of WWII.

The morale effect. In contrast to the results focusing on military casualties, we see the opposite relationship between the LDP vote share in 1960 and per-capita building destruction, which captures the devastation of civilian targets. Figure 4 presents bin-scatter plots of the LDP vote share against per-capita building destruction among the 136 cities with some destruction, for every general election between 1958 and 2021. Once again, the 1960 election is not an outlier, indicating that voters in cities that suffered more building destruction consistently supported more *pacifist* parties. We also see some attenuation of the morale effect starting with the 1996 election, though it is far less pronounced than the attenuation of the martyr effect. In other words, after the LDP formed a coalition with the pacifists, it became markedly less appealing to constituencies that had suffered high military casualties, while its unpopularity in constituencies that had suffered greater building destruction receded only modestly. Finally, our results indicate that the experience of wartime urban destruction is still associated with lower LDP support even in 2021.

Figure 4: LDP Share and Per-Capita Building Destruction Excluding Zero Destruction



Note: This figure presents a bin-scatter plot of the LDP vote share (vertical axis) against per-capita building destruction (horizontal axis) for each election year. We use the LDP vote share in the proportional-representation constituencies after the 1994 electoral reform to be consistent with the earlier results. Each dot represents a bin of cities, and we plot the fitted line. The sample excludes the 164 cities with no recorded building destruction.

These two patterns are the visual counterpart of the paper’s central claim: whether wartime suffering pushes a community toward the pro-rearmament right or the pacifist left depends on what the community lost. Where the war killed *people*—here, a city’s young men—voters moved toward the LDP; where it reduced the built environment to *rubble*, they moved away from it. Because both patterns appear across the same cities, the same elections, and the same party system, they cannot be attributed to differences in country, conflict, or political context, as they must be in cross-country comparisons. As we show in Section 5.4, civilian bombing deaths belong with military deaths on the martyr side of this divide, so that the operative contrast is between losing people and losing places rather than between soldiers and civilians. This helps reconcile the apparently conflicting findings of the prior literature: studies concluding that war makes its victims more cooperative, altruistic, and pacifist have examined populations whose losses were dominated by physical devastation, while studies finding that war fuels support for militaristic parties have examined populations whose losses were dominated by death.

5.2 Specification and Identification

While suggestive, these plots may not be compelling because they omit variables that could be correlated with urban destruction and military casualties. Similarly, soldiers in pro-military households might have been more willing to sacrifice themselves for the country.²⁰ It is therefore plausible that in regions where *Seiyukai* support was particularly strong, young men were imbued with “military ideology” and tended to fight to the death and to vote for pro-military parties like the *Seiyukai*.

A different issue with focusing on individual elections is that voters in particular elections are influenced by idiosyncratic factors such as scandals, economic performance, and candidate personalities. This was especially relevant before the 1994 electoral reform, when voters often had to choose among two or more candidates from the same party. In these cases, LDP candidates typically could not distinguish themselves from their opponents based on policy and needed to find other means (e.g., promising earmarked funds or agricultural subsidies) to win over voters. For example, rural counties, which were typically not bombed, are also more likely to benefit from farm subsidies. This idiosyncratic variation may make it difficult to see average patterns in the data, which motivates us to pool our data across elections.

In order to reduce idiosyncratic noise and omitted variable bias and to understand the economic and statistical significance of our findings, we estimate the following equation:

$$\text{Vote}_{it} = \alpha_t + \beta_{Mt}\text{Military}_i + \beta_{Dt}\text{Destruction}_i + \beta_{Bt}\text{Deaths}_i + \mathbf{Z}_i\gamma + \epsilon_{it} \quad (1)$$

where Vote_{it} is the LDP vote share in city i in year t ; Military_i is the female-to-male ratio in the 1950 draft cohort (our proxy for military deaths); Destruction_i is per-capita building destruction; Deaths_i is per-capita civilian bombing deaths; α_t are year fixed effects; $\mathbf{Z}_i$ is a vector of city controls, including prefecture fixed effects; ϵ_{it} is the error term; and Greek letters denote parameters to be estimated. Our coefficients of interest are β_{Mt} , β_{Dt} , and β_{Bt} , which measure how military

²⁰For example, Tanaka Giichi, a pro-military, *Seiyukai* Prime Minister before the war, stated, “I believe that national education must instill military ideology. It is necessary for the military and local communities to maintain constant contact, in order to instill military ideology in local youth, and to adopt methods that align military education with national education as much as possible” (Kouketsu, 2009, p. 76).

deaths, urban destruction, and civilian deaths affect the vote in each election year t . In our pooled specifications, we impose $\beta_{Mt} = \beta_M$, $\beta_{Dt} = \beta_D$, and $\beta_{Bt} = \beta_B$ to capture average effects.

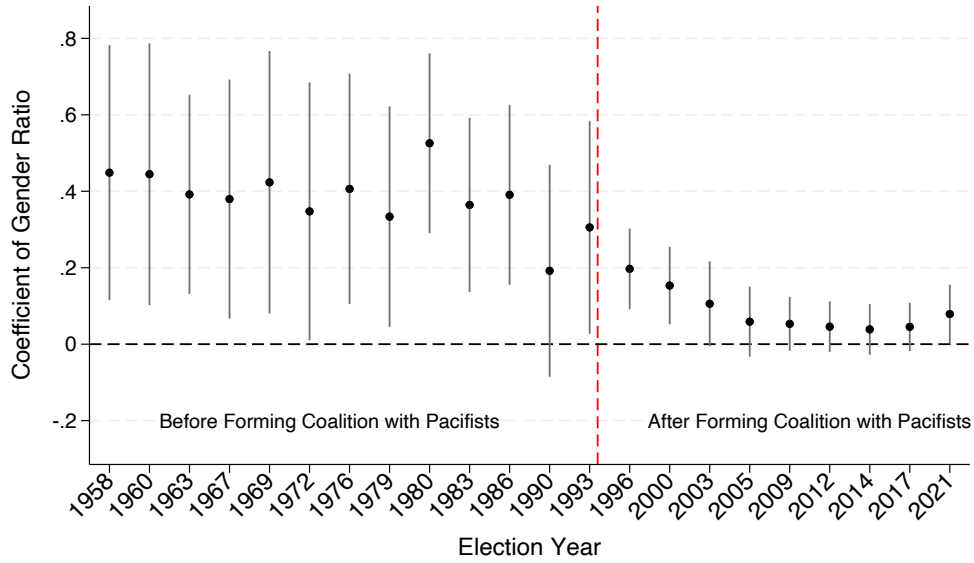
We employ several controls ($\mathbf{Z}_i$) to reduce the likelihood of omitted-variable bias. We include the *Seiyukai* vote share in the 1928 election as a control variable, which captures the city’s pre-existing pro-military voting behavior. We also include prefecture fixed effects and the longitude and latitude of each city to flexibly account for prefecture-specific policies and other spatial autocorrelation in voting behavior (cf. [Conley and Kelly, 2025](#)). Our baseline specification therefore identifies the impact of deaths and devastation on a city’s postwar pro-military vote share, after controlling for the city’s past pro-military vote share, the city’s prefecture, and the city’s longitude and latitude.

Our main specifications go one step further by treating urban devastation as potentially mismeasured and endogenous. As we argued in Section 4.5, the U.S. chose which cities to attack partly on the basis of their industrial importance, which was correlated with their size, and such cities may differ politically from others in ways correlated with the postwar vote. Moreover, per-capita building destruction is measured with error—it rests on municipal counts compiled in 1949, sometimes from records the raids themselves destroyed, and is crosswalked across shifting boundaries—which attenuates OLS estimates toward zero. We therefore instrument per-capita building destruction with two predictors of a city’s value as an industrial target: its 1940 manufacturing employment share and a count of its munitions factories (see Appendix A.1.10 for construction and Appendix A.2 for the first stages). Both instruments strongly predict destruction—the Kleibergen–Paap first-stage F statistic is about 31, well above conventional weak-instrument thresholds—and we do not reject the overidentifying restrictions at the 5 percent level. Military deaths and civilian deaths enter as included, non-instrumented regressors.

5.3 *Persistence Across Elections*

We estimate equation (1) to assess the statistical significance of the martyr and morale effects and to understand their persistence over time. Figures 5 and 6 plot β_{Mt} and β_{Dt} , along with their 95-percent confidence intervals, for each postwar election in Japan. The martyr effect is positive in

Figure 5: Persistence of the Impact of 1950 Draft-Cohort Gender Ratio on the LDP Vote Share

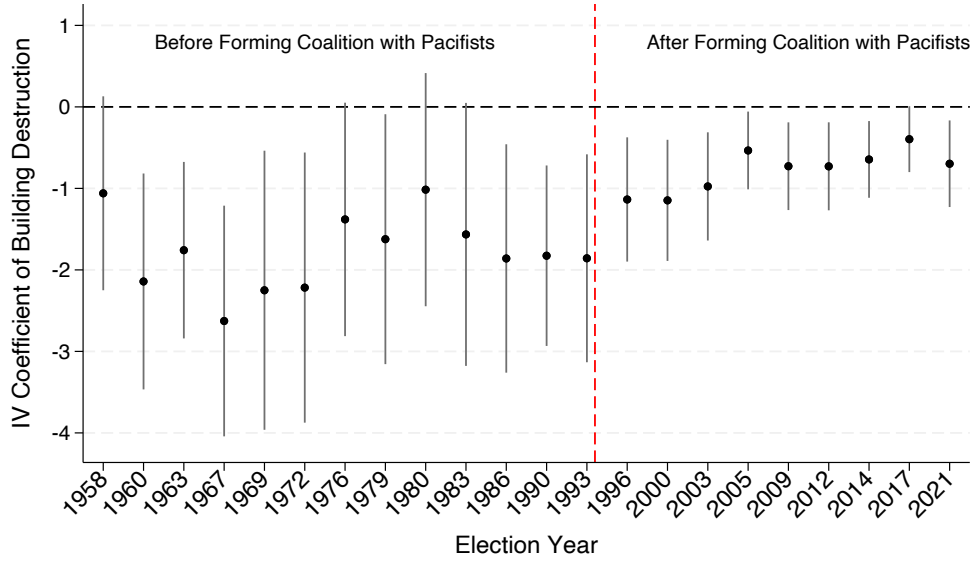


Note: The vertical axis shows the coefficient and 95-percent confidence interval of β_{M_t} , the coefficient on draft-cohort gender ratio from estimating equation (1) separately by election year, with standard errors clustered at the prefecture level. The dependent variable is the LDP Vote Share, i.e., the fraction of votes received by the Liberal Democratic Party, using multi-member-constituency results through 1993 and PRC results from 1996 onward. Per-capita building destruction is instrumented with the city's 1940 manufacturing employment share and a count of army and navy munitions factories (see Appendix A.1.10 for instrument construction and Appendix A.2 for first-stage results). We also control for per-capita bombing deaths, the *Seiyukai* Vote Share, prefecture fixed effects, longitude, and latitude. The red vertical line marks the 1994 electoral reform. See Table 1 for variable definitions.

every postwar election and statistically significant in every pre-reform election except 1990. Within the pre-reform period, 1958–1993, there is no sign of attenuation: the coefficient hovers around 0.4 for almost fifty years after the war, even as the generation with direct experience of the fighting aged and died.

The formation of a coalition between the LDP and pacifist parties coincides with a sudden drop in the martyr effect. The coefficient falls roughly fourfold at the reform—from about 0.38 before it to about 0.09 after—and becomes statistically insignificant in most elections after 2003. Because the coefficient shows no secular decline *within* the pre-reform period, this break is hard to attribute to the slow passing of the wartime generation; it instead lines up with the moment the LDP began governing in coalition with pacifist parties (1996–2021), which plausibly reduced its appeal among voters in high-casualty constituencies who had supported it for its rearmament stance.

Figure 6: Persistence of the Impact of Per-Capita Building Destruction on the LDP Vote Share



Note: The vertical axis shows the coefficient and 95-percent confidence interval of β_{Dr} , the second-stage coefficient on per-capita building destruction from estimating equation (1) separately by election year, with standard errors clustered at the prefecture level. The dependent variable is the LDP Vote Share, i.e., the fraction of votes received by the Liberal Democratic Party, using multi-member-constituency results through 1993 and PRC results from 1996 onward. Per-capita building destruction is instrumented with the city's 1940 manufacturing employment share and a count of army and navy munitions factories (see Appendix A.1.10 for instrument construction and Appendix A.2 for first-stage results). We also control for the draft-cohort gender ratio, per-capita bombing deaths, the *Seiyukai* Vote Share, prefecture fixed effects, longitude, and latitude. The red vertical line marks the 1994 electoral reform. See Table 1 for variable definitions.

The morale effect, the IV coefficient on building destruction plotted in Figure 6, is negative in all twenty-two postwar elections and statistically significant in seventeen of them (the exceptions are 1958, 1976, 1980, 1983, and 2017). Like the martyr effect, it shows no attenuation within the pre-reform period and, although it too weakens after the LDP–pacifist coalition forms, it falls in magnitude by somewhat more than half (from roughly -1.8 to -0.8) and remains significant in every post-reform election except one (2017). That the aversion of bombed cities to the party of rearmament survives the coalition, while the martyr effect is greatly reduced, suggests the morale effect is less contingent on the LDP's short-run prospects for actually amending the constitution.

Table 2: Pooled Regression Estimates

	1958–1993		1996–2021		1958–2021	
	OLS	IV	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. LDP vote share						
Draft-Cohort Gender Ratio	0.509*** (0.095)	0.381*** (0.105)	0.143*** (0.034)	0.086** (0.036)	0.360*** (0.067)	0.260*** (0.074)
Per-Capita Building Destruction	-0.455*** (0.127)	-1.783*** (0.515)	-0.186*** (0.048)	-0.776*** (0.261)	-0.345*** (0.088)	-1.371*** (0.391)
Per-Capita Bombing Deaths	0.236 (0.323)	1.585** (0.649)	0.109 (0.145)	0.708* (0.354)	0.184 (0.249)	1.227** (0.514)
Seiyukai Vote Share in 1928	0.038 (0.078)	0.016 (0.086)	0.051 (0.034)	0.041 (0.038)	0.044 (0.057)	0.027 (0.063)
Observations	3,900	3,900	2,700	2,700	6,600	6,600
Year FE	✓	✓	✓	✓	✓	✓
Prefecture FE	✓	✓	✓	✓	✓	✓
Latitude and Longitude	✓	✓	✓	✓	✓	✓
R-squared	0.361		0.602		0.529	
Kleibergen-Paap rk Wald F		30.81		30.79		30.82
Hansen J p-value		0.520		0.087		0.349
Panel B. First stage: Per-Capita Building Destruction						
1940 Manufacturing Share		0.093*** (0.018)		0.093*** (0.018)		0.093*** (0.018)
Munitions Factory Count		0.002*** (0.000)		0.002*** (0.000)		0.002*** (0.000)
Draft-Cohort Gender Ratio		-0.047 (0.029)		-0.047 (0.029)		-0.047 (0.029)
Per-Capita Bombing Deaths		0.921*** (0.284)		0.921*** (0.284)		0.921*** (0.284)
Seiyukai Vote Share in 1928		0.015 (0.021)		0.015 (0.021)		0.015 (0.021)
Observations		3,900		2,700		6,600
Year FE		✓		✓		✓
Prefecture FE		✓		✓		✓
Latitude and Longitude		✓		✓		✓
Excluded-instruments F		30.80		30.78		30.82
Excluded-instruments p-value		0.000		0.000		0.000

Notes: The dependent variable in Panel A is the LDP Vote Share, i.e., the fraction of votes received by the Liberal Democratic Party (the LDP's vote share after 1993 is calculated using the PRC election results). For each period given in the column headers, we report the OLS estimate and the corresponding IV estimate side by side. The IV columns instrument per-capita building destruction with the city's 1940 manufacturing employment share and a count of army and navy munitions factories (see Appendix A.1.10); the Kleibergen–Paap rk Wald F statistic and the Hansen J overidentification p -value are reported for each IV column. Panel B reports the matching first stage, in which the dependent variable is per-capita building destruction; it applies only to the IV columns, so the OLS columns are left empty, and the excluded-instruments F statistic and p -value are reported for each IV column. We pool the data across all elections within the time period given in the column headers. Standard errors are clustered at the prefecture level and reported in parentheses. See Table 1 for variable definitions. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

5.4 Pooled Estimates

We next estimate average martyr and morale effects within each postwar electoral system by pooling equation (1). Table 2 reports the results. Within each period, the odd columns report OLS estimates, and the even columns report our preferred IV estimates (with the corresponding first stage in Panel B). Focusing on the IV estimates, in the pre-reform period (column 2), a higher draft-cohort gender ratio raises the LDP vote share (military-death coefficient about 0.38), building destruction lowers it (coefficient about -1.78), and—consistent with the martyr interpretation—per-capita civilian bombing deaths *also* raise it (about 1.59, significant at the five-percent level). All three effects are statistically significant. The post-reform IV estimates (column 4) share the same signs but are smaller, and the all-period estimates (column 6) fall in between. The coefficient on the *Seiyukai* vote share is the right sign but imprecisely measured throughout, so a city’s prewar pro-military voting does not explain postwar voting; what does is the city’s wartime experience of death and devastation.

Table 2 reports OLS estimates alongside our IV estimates. The OLS coefficients share the same sign pattern as the IV estimates, though their magnitudes vary substantially. In particular, the coefficient on urban destruction is only about one-quarter the magnitude of its IV counterpart in every period. Under valid instruments, the direction of that gap is informative: it matches what attenuation from measurement error predicts, whereas a confounder that made heavily bombed cities lean left would bias OLS in the opposite direction.²¹ Instrumenting also isolates the component of destruction driven by prewar industrial capacity, so the IV estimates are free of any remaining correlation between targeting and unobserved determinants of the vote.

The coefficient on per-capita bombing deaths is small and statistically insignificant in the OLS

²¹The gap between the OLS and IV estimates is consistent with classical measurement error in building destruction. If measured destruction is true destruction plus independent noise, OLS is attenuated while IV is not, so the ratio of the two estimates identifies $1/\tilde{\lambda}$, where $\tilde{\lambda}$ is the reliability of destruction after partialling out the controls; our estimates imply $\tilde{\lambda} \approx 0.26$. This figure understates the reliability of the underlying measure, because the controls absorb variation in true destruction but none of the noise. Letting λ denote raw reliability and R^2 the R^2 from regressing measured destruction on the controls, the two satisfy $\lambda = \tilde{\lambda} + R^2(1 - \tilde{\lambda})$. Here $R^2 = 0.388$, so $\lambda \approx 0.54$, implying that the controls absorb roughly seventy percent of the variation in true destruction. Reliability of this order is plausible given that our destruction measure is crosswalked from wartime municipal boundaries to our 1980 city units (Appendix A.1.1).

columns but positive and significant in the IV columns, even though bombing deaths are treated as exogenous and are never instrumented. The likely reason is that building destruction and bombing deaths are both products of the same air raids and are therefore correlated. When the destruction coefficient is attenuated toward zero under OLS, the collinear death variable absorbs part of the large, negative morale effect of destruction, masking the positive martyr effect of civilian deaths. Instrumenting building destruction restores its coefficient to full magnitude, extracts the morale effect from the death variable, and yields a consistent positive civilian-martyr effect. Appendix A.3 formalizes this spillover using the Frisch–Waugh–Lovell theorem. Across OLS and IV, the two coefficients retain opposite signs, supporting our interpretation: devastation depresses LDP support, while slaughter raises it.

We are more cautious about the civilian-death coefficient than about the other two because the identifying variation is highly concentrated. Appendix Table A.7 re-estimates our main specification excluding Hiroshima. The coefficient on per-capita bombing deaths loses statistical significance, but its point estimate rises. In other words, we lose precision, not estimated economic significance. This pattern is consistent with Hiroshima providing important variation in the data but not identifying a different effect. By contrast, the estimates on the draft-cohort gender ratio and on per-capita building destruction are essentially unchanged, so the two effects on which the people–places contrast rests do not depend on the atomic cities. We therefore treat the civilian-death result as consistent with the martyr interpretation rather than as independent confirmation of it, and we rest the people–places contrast on military deaths and destruction.

5.5 *Assessing the Magnitudes of the Estimates*

The estimates in Table 2 imply large differences in voting across cities. Using the pre-reform IV estimates in column 2, a city at the ninetieth percentile of military deaths had an LDP vote share roughly 7.6 percentage points higher than a city at the tenth percentile, whereas a city at the ninetieth percentile of building destruction had a vote share about 15 percentage points *lower*. The estimated effect of civilian deaths is small across most of the distribution—about one percentage point over

the tenth-to-ninetieth-percentile range, since most cities lost few residents to bombing—but it is sizable in the handful of cities with extreme death rates, such as Hiroshima and Nagasaki, whose civilian death rates were an order of magnitude beyond the ninetieth percentile.

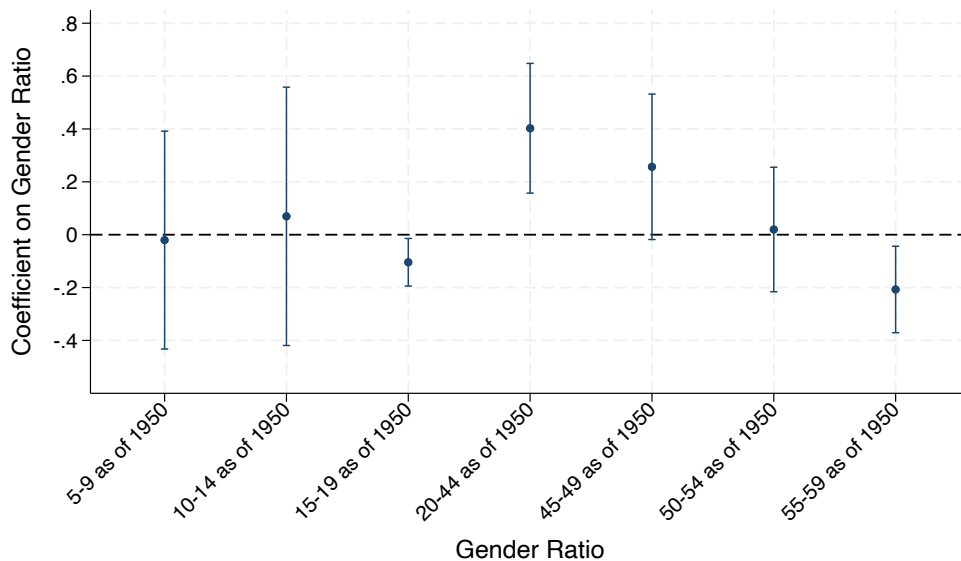
A second way to gauge these magnitudes is to ask what they imply for the 1960 election, when the constitutional question was most salient. The LDP won 296 of the 467 lower-house seats, 16 short of the 312 needed to initiate constitutional revision. Treating the column 2 coefficients as structural, we set building destruction, civilian bombing deaths, or both to zero in every city, convert the implied change in each city’s LDP vote share into votes, and reallocate those votes among the candidates in each constituency in proportion to their actual votes (Appendix A.4 sets out the procedure and the assumptions behind it). Removing building destruction alone would have raised the LDP to 331 seats, removing civilian bombing deaths alone would have lowered it to 290, and removing both—as if the U.S. had never bombed civilian targets—would have given it 328, above the two-thirds threshold in about 98 percent of 10,000 draws from the coefficients’ joint sampling distribution. Because the morale effect of devastation dominates the martyr effect of civilian deaths, the LDP clears the threshold whether the civilian-death coefficient is taken at its estimated value or set to zero. A lower-house supermajority was necessary but not sufficient for revision, which also required a two-thirds majority in the House of Councilors and approval in a national referendum, but the exercise suggests that the morale effect was large enough to help explain why Japan never revised its constitution.

5.6 *Robustness*

We subjected these estimates to a range of robustness checks, which we report in full in Appendix A.5. The first set asks whether the draft-cohort gender ratio captures something other than military deaths. Controlling for a city’s gender ratio in 1930 or at the time of each election has little effect on the martyr and morale effects. If older or younger women simply voted differently from men, the gender ratios of other cohorts should also predict the LDP vote share; yet when we add the gender ratios of the six five-year cohorts on either side of the draft cohort (those aged 5–19 and 45–59 in

1950), none except the draft cohort's is significantly associated with LDP support (Figure 7).

Figure 7: Regression Coefficients of Gender Ratio of Different Cohorts



Note: The vertical axis shows the coefficients and 95-percent confidence intervals for various gender ratios, along with the draft-cohort gender ratio, from estimating equation (1), with standard errors clustered at the prefecture level. The dependent variable is the LDP Vote Share, i.e., the fraction of votes received by the Liberal Democratic Party, using multi-member-constituency results through 1993 and PRC results from 1996 onward. Per-capita building destruction is instrumented with the city's 1940 manufacturing employment share and the count of munitions factories (see Appendix A.1.10). We also control for per-capita bombing deaths, the *Seiyukai* Vote Share, prefecture fixed effects, longitude, and latitude. See Table 1 for variable definitions.

The second set asks whether government transfers, which the LDP used to win votes, explain our results. Controlling for per-capita earmarked expenditures, or for whether more than 20 percent of a city's workforce is employed in agriculture, forestry, and fisheries, leaves our coefficients of interest little changed, although cities with large farm sectors vote three to five percentage points more for the LDP. Across these four specifications, the pre-reform coefficient on the draft-cohort gender ratio ranges from 0.32 to 0.39 (against 0.38 in our baseline), the coefficient on building destruction ranges from -1.49 to -1.78 (against -1.78), and the coefficient on civilian bombing deaths remains positive and significant at the five-percent level.

The results are also robust to how we measure the post-reform vote and to the choice of instruments. Measuring post-reform LDP support with the single-member-constituency vote rather than the proportional-representation vote yields the same signs with larger standard errors (Appendix

Table A.6). Dropping Hiroshima leaves the coefficients on the draft-cohort gender ratio and building destruction essentially unchanged, while the coefficient on civilian bombing deaths more than doubles but is too imprecisely estimated to be statistically significant (Appendix Table A.7; see Section 5.4). Replacing the 1940 manufacturing share with its 1920 counterpart, which predates Japan’s military build-up, yields similar estimates (Appendix Table A.8). Finally, we take up the concern that high-casualty cities favored the LDP for its treatment of veterans’ families rather than its stance on rearmament in Section 6, where we show that military deaths do not raise support for the Japanese Communist Party, which also supported generous veterans’ benefits.

6 Mechanisms

The martyr and morale effects rest on an interpretation—killing sacralizes the dead as “martyrs” whose commemoration benefits the political right, while the physical devastation of a city durably causes its residents to identify with left-wing, dovish policies. This section presents direct evidence for that interpretation, drawn from wartime testimony, contemporaneous opinion surveys, and data on the organizations and school curricula that transmit wartime memory. First, we establish that survivors’ memories and self-reported lessons from WWII differ sharply depending on exposure to morale bombing and military death, and we examine whether either experience also produces anti-American sentiment. This shows that the martyr and morale effects appear in personal memoirs, and neither produces substantial anti-American sentiment. Second, we show that residents of prefectures with more military deaths hold more pro-military attitudes, and that high-casualty cities favor the party of rearmament rather than any party promising generous veterans’ benefits. Third, we show that voters in devastated cities disproportionately elect politicians who espouse pacifist views, while voters in cities with high military and civilian casualty rates elect politicians who argue for rearmament and constitutional revision. Fourth, we examine how families and local networks transmit these political beliefs, and how this affects participation in conservative war-bereaved organizations or support for “peace education” in schools to transmit these views. To keep the main text focused, we report the supporting regressions in Appendix A.6 and describe the underlying

datasets in Appendix A.1; here we summarize what they show.

The lessons of war: pacifism, sacrifice, and anti-Americanism. We first ask whether the “morale” and “martyr” interpretations are visible in how survivors recollect the war. We built a dataset of 1,509 “testimonies,” or personal recollections of the war, from a variety of newspapers and other sources. Using a large-language-model coding of these accounts (Appendix A.1.3), we classify each account by the experience it describes: area bombing, death of a soldier *known to the author*, both, or neither.²² We also code the testimony to indicate whether it expresses the view that the war was futile or hopeless, whether it frames a soldier’s death in positive terms (e.g., as honorable or a sacrifice for the country), or whether it expresses both opinions or neither.

In the regressions we discussed in the previous section, we regressed LDP vote share on death and destruction. Here, we regress war memories on *witnessing* death and destruction. We report the results from this exercise in Table 3 and find that 27 percent of people who witnessed an air raid expressed the view that the war was futile, compared with 18 percent of people who experienced neither area bombing nor the death of a soldier they knew. Similarly, 28 percent of people who knew a soldier who died in the war referred to military deaths in positive terms, while only 3 percent of people who experienced neither death nor destruction did so. These differences are statistically significant at the one percent level, showing that morale and martyr effects not only changed voting behavior but also shaped people’s interpretations of wartime trauma.

The LDP is known for its pro-military and pro-U.S. stance, so the LDP vote share may simply reflect anti-American sentiment rather than right-wing preferences. The same testimonies also prompt us to ask whether these recollections were accompanied by hostility toward the United States. Columns (3) and (4) of Table 3 report the share of accounts expressing anti-American sentiment, defined as negative emotion directed at the United States, its military, or Americans, rather than at the bombing, the atomic bombs, or the war itself (Appendix A.1.3). No more than 1.5 percent of the testimonies in any of these groups express such sentiment, suggesting that anti-American sentiment is not prevalent among Japanese who lived through the war. Moreover, those

²²The latter might occur, for example, if the account describes being sent to the countryside as a child to live with relatives.

describing an air raid or the death of a soldier they knew are only about one percentage point more likely to express anti-American attitudes than those who described neither. The difference in anti-American feelings between people who experienced air raids and those who experienced the death of a known soldier is not significant at conventional levels, making it unlikely that variation in anti-American attitudes is driving the different effects of death and destruction.

Nationally representative polling points the same way. Since June 1960, Jiji Press has asked a nationwide sample of 2,000 adults each month to name up to three countries (out of nine candidates) they like and up to three they dislike.²³ The first of these surveys was conducted at the height of the 1960 security treaty protests. Nonetheless, it found the United States to be *the most* liked of the nine countries on the list, named by 47.4 percent of respondents and disliked by only 5.9 percent. Across the full series of surveys through 2005, the share naming the United States a disliked country averaged 6.3 percent and never exceeded 14.9 percent. Its margin of likes over dislikes was the second largest of any country in the survey, behind only Switzerland's. Anti-American feeling was thus a small minority position throughout the period we study.

Exposure predicts pro-military policy support. Contemporaneous surveys show the same division running through political attitudes and not merely narration (Appendix Table A.9). Using data from the 1976 JABISS survey of 2,028 Japanese voters (Appendix A.1.5), we regressed respondents' answers to survey questions on prefecture-level exposure to military deaths and building destruction. Residents of prefectures with greater military-casualty exposure were more likely to favor right-wing policy positions like strengthening the U.S.–Japan security treaty and Japan's defense forces. Interestingly, repeating our regressions using the 1967 Japanese National Election Study (Appendix A.1.6), we find that building-destruction exposure does not predict the belief that the U.S. occupation or its bases were bad for Japan, whereas military-casualty exposure predicts support for U.S. bases. Once again, we find no evidence that anti-American feelings drive our results.

²³The candidate countries are China, France, India, South Korea, the Soviet Union, Switzerland, the United Kingdom, the United States, and West Germany. See [Muroya \(2005\)](#).

Table 3: Testimony Authors' Exposure and Recollection

	Report Low Morale	Views Military Death Positively	Express Anti-American Sentiment	
	(1)	(2)	(3)	(4)
Treatment Group	Air Raid Only	Military Death Only	Air Raid Only	Military Death Only
Mean of the Treated	0.272	0.275	0.015	0.013
Mean of the Untreated	0.175	0.027	0.004	0.004
Mean Difference	0.097*** (0.029)	0.248*** (0.027)	0.011* (0.006)	0.009 (0.007)
Treated Observations	729	309	729	309
Untreated Observations	263	263	263	263

Notes: Column (1) compares air-raid-only testimonies with untreated testimonies that mention neither air raids nor the death of a person the author knew in the military. Column (2) compares military-death-only testimonies with the same untreated baseline. The outcome in column (1), “Report Low Morale,” equals one when the testimony expresses that the war was hopeless, meaningless, or futile, or should end. The outcome in column (2), “Views Military Death Positively,” equals one when the testimony frames a soldier’s death positively through sacrifice, honor, commemoration, gratitude, or martyrdom, and zero otherwise (including testimonies that mention no such death). Columns (3) and (4) repeat the same two comparisons using an anti-American outcome: a negative emotion directed at the United States, its military, or Americans, rather than at the bombing, the atomic bombs, or the war itself. Comparing the two exposure groups directly on that outcome, rather than each against the untreated baseline, yields a difference of 0.002 with a robust standard error of 0.008 ($p = 0.785$, $N = 1,038$). Each column reports the mean outcome for treated and untreated testimonies and the difference between the two from an OLS regression on the two groups (heteroskedasticity-robust standard errors in parentheses). See Appendix A.1.3 for the construction of the testimony sample and outcome codings. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Veterans’ benefits or rearmament? One alternative reading of the martyr effect is that bereaved families favored the LDP not for its stance on rearmament but for its treatment of veterans’ families. Historically, however, the LDP’s opponents also courted these voters: the Japan Socialist and Communist Parties at times advocated *larger* benefits than the LDP and favored distributing them more evenly across ranks, which would have helped a wider set of families than the LDP’s emphasis on high-ranking officers (Akahata, 2001; Akazawa, 2012). We therefore re-estimate our specification using the vote share of the Japanese Communist Party (JCP), which opposes amending Article 9, advocates dissolving the Self-Defense Forces, and, unlike other opposition parties, ran candidates in every constituency from 1958 through 1993 and in every PRC thereafter (Nakakita, 2021). To avoid a mechanical relationship in which cities that vote more for the LDP vote less for every other party, we measure JCP support both as a share of all votes and as a share of non-LDP votes.

Table 4 shows that the draft-cohort gender ratio does not predict JCP support under either measure: high-casualty cities favored the party of rearmament, not any party promising generous benefits. Building destruction, by contrast, raises the JCP's share of all votes and of non-LDP votes (the latter significant at the ten-percent level), so devastated cities did not merely turn away from the LDP but toward the most stridently pacifist party in the opposition. Appendix A.5 discusses the history of veterans' benefits in more detail.

Table 4: Military Deaths and the Japanese Communist Party Vote Share

	1958–1993		1996–2021		1958–2021	
	JCP share of		JCP share of		JCP share of	
	All Votes (1)	Non-LDP Votes (2)	All Votes (3)	Non-LDP Votes (4)	All Votes (5)	Non-LDP Votes (6)
Draft-Cohort Gender Ratio	-0.020 (0.044)	0.066 (0.071)	-0.006 (0.018)	0.007 (0.024)	-0.014 (0.032)	0.042 (0.049)
Per-Capita Building Destruction	0.565** (0.221)	0.611* (0.359)	0.234*** (0.084)	0.190* (0.099)	0.429*** (0.158)	0.439* (0.237)
Per-Capita Bombing Deaths	-0.298 (0.292)	-0.104 (0.424)	-0.178 (0.110)	-0.114 (0.111)	-0.249 (0.212)	-0.108 (0.282)
Seiyukai Vote Share in 1928	-0.052* (0.031)	-0.077 (0.048)	-0.019 (0.014)	-0.018 (0.016)	-0.039 (0.023)	-0.053 (0.033)
Observations	3,900	3,900	2,700	2,700	6,600	6,600
Year FE	✓	✓	✓	✓	✓	✓
Prefecture FE	✓	✓	✓	✓	✓	✓
Latitude and Longitude	✓	✓	✓	✓	✓	✓
Kleibergen-Paap rk Wald F	30.81	30.81	30.79	30.79	30.82	30.82
Hansen J p-value	0.609	0.492	0.682	0.274	0.770	0.704

Notes: Second-stage IV estimates from equation (1), instrumenting per-capita building destruction with the city's 1940 manufacturing employment share and the count of munitions factories (see Appendix A.1.10); the matching first stages are in Appendix A.2. Standard errors, clustered at the prefecture level, are in parentheses. We pool data across all elections within each period. Both outcomes have Japanese Communist Party votes in the numerator and differ only in the denominator: all votes cast or, in PRC elections, all votes for parties other than the LDP. All columns also control for per-capita bombing deaths, the *Seiyukai* vote share, longitude, and latitude. See Table 1 for variable definitions. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Exposure predicts politicians' views. If the martyr and morale effects reflect preferences over rearmament rather than over the many other things a vote for the LDP might stand for, wartime exposure should predict not only how a district votes but also politicians' views. The National Diet Library's record of House of Representatives plenary and committee meetings from 1947 to 2025 divides each transcript into statements, each containing everything one speaker says before

the transcript moves to another speaker. After dropping statements with no policy content (e.g., procedural statements), we classified roughly three million statements as expressing support for or opposition to rearmament (see Appendix A.1.4 for methodological details). Rearmament-supporting rhetoric appears in 5.6 percent of LDP member meetings and 1.4 percent of other-party member meetings, while rearmament-opposing rhetoric appears in 1.0 and 3.4 percent, respectively. LDP members are therefore about 4 times as likely to express support, whereas members of other parties are about 3.4 times as likely to express opposition.

We next link Diet members to the wartime exposure of the districts that elected them (Appendix A.1.4). Using the same instruments as in our vote-share regressions on roughly 282,000 member-meeting observations, we find that members from districts that suffered more building destruction devote a significantly larger share of their remarks to opposing rearmament and register significantly lower net support for it, while members from districts with a higher draft-cohort gender ratio do the reverse. Per-capita bombing deaths again behave like the martyr effect, predicting less opposition and greater net support. The wartime experiences that moved votes therefore appear in the floor speeches of the representatives those votes produced (see Appendix Table A.10).

Transmission through family and local interactions. Because both effects persist long after the wartime generation has died, they must reach people with no direct memory of the war. Using survey evidence, we find empirical support for transmission within households and through social interactions. We demonstrate the existence of these channels using surveys that report both a respondent's party preference and their parent's (Appendix A.1.7). These data show that a respondent is more likely to prefer the LDP if a parent did (Appendix Table A.11), suggesting that both the morale and martyr effects tend to be passed down in families. Thus, to the extent that parents' wartime experience pushed them toward or against the LDP, the data indicate that these preferences are transmitted to future generations. We also find that even after controlling for voters' parents' political views, voters in prefectures with high military casualties were significantly more likely to support the LDP, consistent with a role for social interactions.²⁴ Per-capita building

²⁴We find related evidence in a different survey of Japanese political beliefs conducted in 1976. We regressed a dummy for whether a person supported the LDP on whether their neighbors, coworkers, friends, or neighborhood

destruction is associated with lower LDP support, although this effect is not statistically significant.

Transmission through institutions. Socialization of political views also occurs in Japan through organizations and the educational system. For example, we estimate that a prefecture’s per-capita membership in politically conservative war-bereaved family associations (*izokukai*) rises significantly with the draft-cohort gender ratio (Appendix Table A.13). Moreover, the morale effect is clearly transmitted through Japan’s school system. Japanese school districts have considerable latitude in deciding whether to offer modules on “peace education.” While we cannot measure how peace education is presented in each school, we can see how prefectures that suffered area bombing try to shape their students’ political views. Japanese schools take students on trips to study various topics, including peace education, and the prefectures that choose to do so reveal how schools in devastated prefectures try to transmit political views. We obtained data on 4,585 high-school trips (within Japan) for 2022 and 2023, which we pooled. Three of Japan’s 47 prefectures account for about 35 percent of high-school trips: Osaka (13.1 percent), Kyoto (11.9 percent), and Okinawa (10.4 percent). Osaka and Kyoto are popular school-trip destinations because they are close to many historic sites. Okinawa stands out in this list because it did not officially become part of Japan until the 1870s, so aside from WWII, its historical relevance to Japan proper is limited. For example, Hokkaido, which also became part of Japan in 1869, drew only 4.9 percent of high-school trips despite having more than three times Okinawa’s population. Okinawa’s popularity also does not reflect its nice beaches. Kagoshima, which combines a rich history with many beaches, accounts for only 1.2 percent of high-school trips. This suggests Okinawa was chosen as a destination to learn about the Battle of Okinawa through the lens of peace education.

Independent survey evidence supports this interpretation of the Okinawa-trip measure. A 2025 survey of 1,000 young adults found that 40.4 percent of respondents whose most recent school trip was to Okinawa reported explicit peace learning, compared with 17.0 percent of those whose trip went elsewhere. Similarly, 51.6 percent of respondents who went to Okinawa on a school trip reported visiting war- or peace-related museums or battle sites, compared with 20.0 percent

association mainly supported the LDP. Not surprisingly, all these variables were associated with LDP support (see Appendix Table A.12).

of respondents in the non-Okinawa group.²⁵ These comparisons support the interpretation that Okinawa school trips include more peace-education activities than trips to other destinations.

Indeed, the Okinawa Prefectural Government actively markets its peace education curriculum to schools, and the curriculum contains clear political content.²⁶ For example, a lesson in Okinawan peace education drawn from the Battle of Okinawa is that “the military does not protect residents.” Its lessons have had students “confirm the existence of the bases and Self-Defense Forces that threaten peace,” reflect on Japan’s peace constitution, and ask children to “consider together whether order maintained by military deterrence and alliances can really be called peace” (Yamaguchi, 2017). Students on these trips are asked to make public statements such as “we must never forget this tragedy, and we must pass it on to later generations—so that all of Japan, and all the world, may come to know peace.”²⁷

Nor is it random which prefectures send their children to Okinawa for peace education. To demonstrate the systematic nature of peace education, we analyze which prefectures are more likely to send students on school trips to Okinawa. Using the destination matrices that Japanese school-trip authorities publish (Appendix A.1.9; Appendix Table A.14), we find that prefectures that suffered more building destruction send a larger share of their high-school trips to Okinawa. Per-capita destruction has a positive and significant coefficient on the share of trips to Okinawa (a pooled coefficient of about 1.24); the draft-cohort gender ratio is generally insignificant, consistent with Okinawa not appealing to teachers in regions with high battle casualties. We also conduct a

²⁵Okinawa Development Finance Corporation, “What Experiential Value Does Generation Z Seek from Tourist Destinations? Demand in Okinawa Tourism in an Era of Population Decline,” February 27, 2026, pp. 10–11, https://www.okinawakouko.go.jp/userfiles/files/news_release/2025/20260227_kisyahappyou_jyuyouhenn.pdf. The online survey covered 1,000 respondents ages 18–29 living in the Kanto and Kansai regions and was conducted on October 8–15, 2025.

²⁶Okinawa school trips are built around a well-defined set of peace-learning (*heiwa gakushū*) sites, including the Himeyuri Peace Memorial Museum and Monument, the Peace Memorial Park at Mabuni—which houses the Cornerstone of Peace and the Okinawa Prefectural Peace Memorial Museum—the wartime shelter and field-hospital caves, and the Former Japanese Navy Underground Headquarters. The Okinawa Prefectural Government and the Okinawa Convention & Visitors Bureau operate a dedicated portal that describes itself as “a specialized school-trip site for travel agencies and educators” and compiles peace-learning destinations and materials for visiting schools. See Okinawa School Trip Navi, Okinawa Convention & Visitors Bureau and Okinawa Prefecture. <https://education.okinawastory.jp/peace-education/> (accessed July 23, 2026).

²⁷Peace education in Hiroshima and Nagasaki is largely anti-nuclear, rather than anti-military, which may explain why these destinations are much less popular than Okinawa (5.4 and 3.9 percent of all high-school trips, respectively).

placebo test to check whether the coefficient on per-capita building destruction simply captures a proclivity to visit historic sites by rerunning our regression using the share of a prefecture's trips to Kyoto and Osaka—the two most frequently visited destinations, which lack the peace-education framing—and find that greater destruction instead predicts a *lower* trip share. This result lends credence to the hypothesis that per-capita building destruction leads local schools to teach a more left-wing, anti-war curriculum rather than simply fostering an interest in history more generally.

These results point to clear channels through which the martyr effect (and possibly the morale effect) shapes voter preferences. People's experiences of war change their views on the futility of war and their tendency to sacralize the dead. These views are transmitted from parents to children and through social interactions. People who lost someone they knew in the military are more likely to view soldiers' deaths positively, and prefectures with higher military casualty rates have more people who support right-wing policies and higher membership in right-wing organizations. Prefectures that suffered more devastation are more likely to have their schools engage in peace education. Thus, parents and the broader community transmit these political beliefs to children and future generations of voters.

Militarism without fascism. Because our point of departure is the finding that high-casualty municipalities in interwar Italy and Germany came to support pro-military parties, it is worth being precise about what Japan shares with those settings and what it does not. What it shares is the axis: in all three, the political right was the pro-military pole. It does not share the radicalism. Fascism had little appeal to successful right-wing Japanese politicians. Hatoyama, the LDP's founder and the postwar right's most forceful advocate of rearmament, had warned in 1936 that it would be “dangerous for anyone in Japan to imitate Hitler or Mussolini” ([Hatoyama, 1936](#)). When SCAP purged him in 1946, it was not for fascism but because, in its judgment, he “upheld the doctrine of territorial expansion by means of war” ([SCAP, 1946](#)). The radical left fared no better: the Japanese Communist Party has rarely won more than a few percent of the vote. The LDP framed its case for rearmament as a matter of sovereignty rather than ideology. In Prime Minister Kishi's words, if Japan were to regain its status as a “respectable member (of) the community of nations it would

first have to revise its constitution and rearm: If Japan is alone in renouncing war, . . . she will not be able to prevent others from invading her land. If, on the other hand, Japan could defend herself, there would be no further need of keeping United States garrison forces in Japan” (quoted in [Samuels, 2001](#)). This is an advantage for our design rather than a limitation. In the interwar cases, a community that moved right also moved toward parties that were radical along many dimensions at once, so the casualty effect cannot be assigned to the military question in particular. In Japan, the right was militarist without being extremist, and the evidence in this section—testimony that frames soldiers’ deaths as sacrifice, survey support for a stronger SDF and the U.S. alliance, and Diet rhetoric on rearmament—shows that the dimension the war moved was the military one.

7 Conclusion

This paper set out to explain a puzzle: why do some communities emerge from war more right-wing and others more left-wing? Our answer is that they respond differently to two kinds of loss. Losing people—soldiers on distant battlefields or civilians under the bombs—sacralizes the dead and durably shifts a community toward the political right, a “martyr effect” visible in the militarist turn of high-casualty municipalities in interwar Italy and Germany and in the pro-rearmament vote of postwar Japan. Losing places—the physical destruction of a city’s buildings—works in the opposite direction, durably shifting communities toward the pacifist left, a “morale effect” named for the bombing strategy that produced it. Because Japan suffered both forms of loss on an immense scale, and because they struck different cities, we can separate them within a single country, war, and party system—something no earlier setting allowed—and in doing so reconcile why battle deaths pushed some electorates right while bombing pushed others left. These are not fleeting reactions. Both effects appear in nearly every postwar election and show no attenuation across the four decades of the pre-reform period, and both survive the wholesale reform of Japan’s electoral system in 1994—the morale effect still clearly significant, the martyr effect weakened but still detectable. Nor is their persistence a mystery. Survivors’ own testimony and contemporaneous surveys reveal the same divide the votes do—those exposed to death recall sacrifice and honor

and hold more pro-military attitudes, while those exposed to devastation recall futility and hold more pacifist ones—and neither group is any more likely than the other to voice hostility toward the United States. And these attitudes are actively reproduced: the martyr effect passes through families and conservative war-bereaved associations, while the morale effect is institutionalized in the peace education that sends children from more heavily bombed communities to study the war, transmitting an antimilitarist outlook to generations born long after the fighting stopped.

Our findings leave open questions we cannot fully resolve. The sharpest concerns are civilian deaths: our point estimates suggest that killing civilians, like killing soldiers, produces a martyr effect, but while the point estimate is robust, statistical significance is fragile. More broadly, whether the opposing legacies of losing people and losing places generalize beyond Japan—to other wars, other party systems, and other forms of devastation—is a question the comparative evidence we have assembled invites but cannot settle.

References

- Acemoglu, Daron, Giuseppe De Feo, Giacomo De Luca, and Gianluca Russo**, “War, socialism, and the rise of fascism: An empirical exploration,” *The Quarterly Journal of Economics*, 2022, 137 (2), 1233–1296.
- Akahata**, “What are the policies regarding military pensions and survivors’ pensions? (Gunjin Onkyu Izoku Nenkin ni tsuite no Seisaku wa?),” https://www.jcp.or.jp/faq_box/001/210418_onkyu_nenkin.html April 18 2001. (In Japanese).
- Akazawa, Shiro**, “The Issue of Military Pensions in the 1950’s (2),” *Ritsumeikan hogaku*, 2012, 341, 511–552. (In Japanese).
- Althaus, Scott L, Brittany H Bramlett, and James G Gimpel**, “When war hits home: The geography of military losses and support for war in time and space,” *Journal of Conflict Resolution*, 2012, 56 (3), 382–412.
- Asai, Kentaro and Ryo Kambayashi**, “The Consequences of Hometown Regiment: What Happened in Hometown When the Soldiers Never Returned?,” Technical Report, Institute of Economic Research, Hitotsubashi University 2023.
- Bauer, Michal, Christopher Blattman, Julie Chytilova, Joseph Henrich, Edward Miguel, and Tamar Mitts**, “Can War Foster Cooperation?,” *Journal of Economic Perspectives*, 2016, 30 (3), 249–274.
- Berrebi, Claude and Esteban F. Klor**, “Are Voters Sensitive to Terrorism? Direct Evidence from the Israeli Electorate,” *American Political Science Review*, 2008, 102 (3), 279–301.
- Blattman, Christopher**, “From Violence to Voting: War and Political Participation in Uganda,” *American Political Science Review*, 2009, 103 (2), 231–247.
- Cantoni, Davide, Yuyu Chen, David Y. Yang, Noam Yuchtman, and Y. Jane Zhang**, “Curriculum and Ideology,” *Journal of Political Economy*, 2017, 125 (2), 338–392.
- Catalinac, Amy, Bruce Bueno de Mesquita, and Alastair Smith**, “A tournament theory of pork barrel politics: The case of Japan,” *Comparative Political Studies*, 2020, 53 (10-11), 1619–1655.
- Clots-Figueras, Irma and Paolo Masella**, “Education, Language and Identity,” *The Economic Journal*, 2013, 123 (570), F332–F357.
- Conley, Timothy G. and Morgan Kelly**, “The standard errors of persistence,” *Journal of International Economics*, 2025, 153, 104027.
- Council on Foreign Relations**, “The Politics of Revising Japan’s Constitution,” n.d. Accessed: 2025-02-06.
- Craven, Wesley Frank and James Lea Cate**, *The Army Air Forces in World War II, Volume V: The Pacific—Matterhorn to Nagasaki, June 1944 to August 1945*, Chicago: University of Chicago Press, 1953.

- Davis, Donald R and David E Weinstein**, “Bones, Bombs, and Break Points: The Geography of Economic Activity,” *American Economic Review*, 2002, 92 (5), 1269–1289.
- **and —**, “A search for multiple equilibria in urban industrial structure,” *Journal of Regional Science*, 2008, 48 (1), 29–65.
- De Juan, Alexander, Felix Haass, Carlo Koos, Sascha Riaz, and Thomas Tichelbaecker**, “War and Nationalism: How WW1 Battle Deaths Fueled Civilians’ Support for the Nazi Party,” *American Political Science Review*, February 2024, 118 (1), 144–162.
- Dell, Melissa**, “Trafficking Networks and the Mexican Drug War,” *American Economic Review*, 2015, 105 (6), 1738–1779.
- **and Pablo Querubin**, “Nation Building Through Foreign Intervention: Evidence from Discontinuities in Military Strategies,” *Quarterly Journal of Economics*, 2018, 133 (2), 701–764.
- Derry, J. A. and N. F. Ramsey**, “Summary of Target Committee Meetings on 10 and 11 May 1945,” Memorandum to Maj. Gen. L. R. Groves, 12 May 1945, Top Secret 1945. U.S. National Archives, RG 77, Manhattan Engineer District, TS Manhattan Project File ’42–’46, folder 5D, “Selection of Targets”.
- Devlin, Jacob, Ming-Wei Chang, Kenton Lee, and Kristina Toutanova**, “BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding,” in “Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, Volume 1 (Long and Short Papers)” Association for Computational Linguistics Minneapolis, Minnesota 2019, pp. 4171–4186.
- Dower, John W.**, *Embracing Defeat: Japan in the Wake of World War II*, W. W. Norton & Company, 1999.
- Duus, Peter, ed.**, *The Cambridge History of Japan, Volume 6: The Twentieth Century*, Vol. 6 of *The Cambridge History of Japan*, Cambridge: Cambridge University Press, 1988.
- Eckert, Fabian, Andrés Gvirtz, Jack Liang, and Michael Peters**, “A Method to Construct Geographical Crosswalks with an Application to US Counties since 1790,” Working Paper 26770, National Bureau of Economic Research 2020.
- Fedman, David and Cary Karacas**, “A Cartographic Fade to Black: Mapping the Destruction of Urban Japan during World War II,” *Journal of Historical Geography*, 2012, 38 (3), 306–328.
- Fouka, Vasiliki**, “Backlash: The Unintended Effects of Language Prohibition in US Schools after World War I,” *The Review of Economic Studies*, 2020, 87 (1), 204–239.
- Getmansky, Anna and Thomas Zeitzoff**, “Terrorism and Voting: The Effect of Rocket Threat on Voting in Israeli Elections,” *American Political Science Review*, 2014, 108 (3), 588–604.
- Gladwell, Malcolm**, *The Bomber Mafia: A Dream, a Temptation, and the Longest Night of the Second World War*, Little, Brown and Company, 2021.

- Gould, Eric D. and Esteban F. Klor**, “Does Terrorism Work?,” *The Quarterly Journal of Economics*, 2010, 125 (4), 1459–1510.
- Grayling, A. C.**, *Among the Dead Cities: The History and Moral Legacy of the WWII Bombing of Civilians in Germany and Japan*, London, UK: Bloomsbury Publishing, 2007.
- Hatoyama, Ichiro**, “Jiyushugisha no techo (自由主義者の手帳),” *Chuo Koron* (中央公論), January 1936, 51 (1), 57–65. New Year Special Issue (新年特別号).
- Heldring, Leander, James A. Robinson, and Parker Whitfill**, “The Second World War, Inequality and the Social Contract in Britain,” *Economica*, 2022, 89 (S1), S137–S159.
- Hesketh, T. and Z. W. Xing**, “Abnormal sex ratios in human populations: causes and consequences,” *Proceedings of the National Academy of Sciences*, Sep 2006, 103 (36), 13271–13275.
- Hirota, Jun**, “War Damage in Japan During the Pacific War: A Postwar History of War Damage Investigation,” *Rikkyo Economic Review*, 1992, 45 (4), 1–20.
- Jaeger, David A. and M. Daniele Paserman**, “The Cycle of Violence? An Empirical Analysis of Fatalities in the Palestinian-Israeli Conflict,” *American Economic Review*, 2008, 98 (4), 1591–1604.
- Japan and the United States of America**, “Treaty of Mutual Cooperation and Security between Japan and the United States of America,” Signed at Washington, 19 January 1960. Text from the Ministry of Foreign Affairs of Japan 1960.
- Japan Defense Agency**, “Bouei ni kansuru yoron chosa (Opinion survey on national defense),” Technical Report 1965. (In Japanese).
- Joint Army-Navy Assessment Committee**, *Japanese Naval and Merchant Shipping Losses During World War II by All Causes*, Washington, D.C.: U.S. Government Printing Office, 1947.
- Kawato, Sadafumi and Noriko Kawato**, *Candidate and Constituency Statistics of Elections in Japan, 1890–1990 (Shugiin sousenkyo kouhosya senkyoku toukei)*, LDB, 1997. (In Japanese).
- Kimura, Haruhisa**, “The Local Character of the Regiment as a Local Unit: The Realities of the Matsumoto 50th Regiment in Pre-War Japan,” *Matsumoto University Research Bulletin*, March 2023, 21. (In Japanese).
- Kocher, Matthew A., Thomas B. Pepinsky, and Stathis N. Kalyvas**, “Aerial Bombing and Counterinsurgency in the Vietnam War,” *American Journal of Political Science*, 2011, 55 (2), 201–218.
- Koenig, Christoph**, “Loose Cannons: War Veterans and the Erosion of Democracy in Weimar Germany,” *The Journal of Economic History*, March 2023, 83 (1), 167–202.
- Kotani, Atsuki**, “Connecting to Electricity: Technical Change and Regional Development,” ISER Discussion Paper 1279, Institute of Social and Economic Research, Osaka University, Ibaraki, Osaka March 2025.

- Kouketsu, Atsushi**, *Tanaka Giichi: A leader of a total war nation (Tanaka Giichi: Souryokusen kokka no sendousha)*, Fuyou Shobou Shuppan, 2009. (In Japanese).
- Kumagaya, Tyokei**, “Hokkaido kaitakuchi ni okeru eiseigaku-teki kenkyu (Sanitary Science Studies in Hokkaido’s Colonization Regions),” *Journal of Nippon Medical School*, 1960, 27 (12), 2264–2274. (In Japanese).
- Liberal Democratic Party**, “Rittō Sengen, Kōryō, Seikō (立党宣言・綱領・政綱),” <https://www.jimin.jp/aboutus/declaration/> 1955. Party Founding Declaration, Platform, and Policies. Accessed: 2026-01-09.
- Lott, John R.**, “Public Schooling, Indoctrination, and Totalitarianism,” *Journal of Political Economy*, 1999, 107 (S6), S127–S157.
- Lyall, Jason**, “Does Indiscriminate Violence Incite Insurgent Attacks? Evidence from Chechnya,” *Journal of Conflict Resolution*, 2009, 53 (3), 331–362.
- Metzler, Mark**, *Lever of Empire: The International Gold Standard and the Crisis of Liberalism in Prewar Japan* number 17. In ‘Twentieth-Century Japan: The Emergence of a World Power.’, Berkeley: University of California Press, 2006.
- Mizusaki, Tokifumi and Hiroki Mori**, (*JED-M (Mizusaki, Mori)*) *Shuugiin giin sousenkyo deta JED-M (Mizusaki, Mori) House of Representatives general election data*, LDB, 2021. (In Japanese).
- Morison, Samuel Eliot**, *Victory in the Pacific, 1945*, Vol. XIV of *History of United States Naval Operations in World War II*, Boston: Little, Brown and Company, 1960.
- Murayama, Yuji and Keiitsu Watanabe**, “Rekishhi chiiki toukei deta no seibi to kongo no kadai (Development of Historical Regional Statistical Data and Future Issues),” *Journal of Human Geography Studies (Graduate School of Life and Environmental Sciences, University of Tsukuba, Division of Earth Environmental Sciences)*, 2007, 31, 115–132. (In Japanese).
- Muroya, Katsumi**, “Yoron chosa bunseki: Nihonjin no ‘suki na kuni, kirai na kuni’ (Public-opinion survey analysis: Japanese people’s liked and disliked countries),” *Chuo Chosa Ho*, September 2005, (575), 5119–5123. (In Japanese).
- Nakakita, Koji**, “Yatou Kyoutou eno Michi – Rengou Seiken to Senkyo Kyouryoku wo Meguru Nihon Kyousantou no Mosaku (The Path to Opposition Cooperation: The Japanese Communist Party’s Search for a Coalition Government and Electoral Collaboration),” *Journal of Ohara Institute for Social Research*, 2021, 753. (In Japanese).
- Nakamura, Takafusa, ed.**, *Shiryō: Taiheiyō Sensō Higai Chōsa Hōkoku [Materials: Pacific War Damage Survey Reports]*, Tokyo: University of Tokyo Press, 1995. In Japanese. Reprints the Economic Stabilization Board’s 1949 comprehensive war-damage report.
- Naval Historical Branch, Ministry of Defence**, *War with Japan, Volume VI: The Advance to Japan* Naval Staff History, Second World War, London: HMSO, 1995.

- Nishikawa, Yoshihide**, “Sengo Nihon no Ayumi to Yoshida Shigeru no Kōzai: Yoshida Shigeru wa ‘Saishō’ no Na ni Ataisuru ka,” *Heiwa Seisaku Kenkyūjo*, 2025.
- Ochsner, Christian and Felix Roesel**, “Activated History: The Case of the Turkish Sieges of Vienna,” *American Economic Journal: Applied Economics*, 2024, 16 (3), 76–112.
- Ogasawara, Kota and Mizuki Komura**, “Consequences of war: Japan’s demographic transition and the marriage market,” *Journal of Population Economics*, 2022, 35 (3), 1037–1069.
- Ogi, Yuta**, “8% of Komeito candidates back SDF revision to Constitution,” *The Asahi Shimbun* (Asia & Japan Watch) October 2024. <https://www.asahi.com/ajw/articles/15473421>. Accessed: 2025-01-19.
- Ohi, Yoshiyasu**, “Kushu handan to kushu yoso: Taiheiyo senso chu no Nihon hondo kushu ni okeru shoidan no rakka mitsudo no bunseki kara (The estimation and actual air raid on Japan in WWII),” *Bulletin of the National Defense Academy, Social Science Series*, 2015, (110), 121–148. (In Japanese).
- Pangakis, Nicholas and Sam Wolken**, “Knowledge Distillation in Automated Annotation: Supervised Text Classification with LLM-Generated Training Labels,” in “Proceedings of the Sixth Workshop on Natural Language Processing and Computational Social Science (NLP+CSS 2024)” Association for Computational Linguistics Mexico City, Mexico 2024, pp. 113–131.
- Pape, Robert A.**, *Bombing to Win: Air Power and Coercion in War*, Ithaca, NY: Cornell University Press, 1996.
- Pollack, Kenneth M.**, *Arabs at War: Military Effectiveness, 1948-1991*, Lincoln, NE: University of Nebraska Press, 2002.
- Samuels, Richard J.**, “Kishi and Corruption: An Anatomy of the 1955 System,” JPRI Working Paper 83, Japan Policy Research Institute December 2001.
- , “Constitutional Revision in Japan: The Future of Article 9,” Roundtable Luncheon Transcript, The Brookings Institution, Center for Northeast Asian Policy Studies, Washington, DC December 2004. Roundtable luncheon at The Brookings Institution, Washington, DC.
- SCAP**, “SCAPIN-919: Removal and Exclusion from Public Office of Diet Member,” Memorandum, General Headquarters, Supreme Commander for the Allied Powers (APO 500), AG 014.1 (3 May 46) GS 1946. Directed to the Imperial Japanese Government, through Central Liaison Office, Tokyo.
- Sinfonica**, *Shikuchoson-jinko no choki keiretsu: Heisei no daigappei go no shikuchoson kyoiki ni yoru sokyū jinko keiretsu (Long-term Series of Municipal Populations: Retrospective Population Series Based on Post-Heisei-Merger Municipal Boundaries)*, Japan Statistical Association, 2005. (In Japanese).
- Statistics Bureau of Japan**, “Population Census of Japan 1940,” 1940.
- , “Population Census of Japan 1950,” 1950.

- Tellez, Juan Fernando**, “Worlds apart: Conflict exposure and preferences for peace,” *Journal of Conflict Resolution*, 2019, 63 (4), 1053–1076.
- Titmuss, Richard M.**, *Problems of Social Policy* History of the Second World War: United Kingdom Civil Series, London: His Majesty’s Stationery Office and Longmans, Green and Co., 1950.
- Tsukagoshi, Hayato, Shengzhe Li, Akihiko Fukuchi, and Tomohide Shibata**, “ModernBERT-Ja,” Hugging Face model collection 2025.
- United States Strategic Bombing Survey**, *Summary Report (Pacific War)*, Washington, D.C.: United States Government Printing Office, 1946.
- USSBS: Aircraft Division**, “Kawasaki Aircraft Industries Company, Inc.,” Corporation Report 19, United States Strategic Bombing Survey, Washington, D.C. 1947.
- Voigtländer, Nico and Hans-Joachim Voth**, “Nazi Indoctrination and Anti-Semitic Beliefs in Germany,” *Proceedings of the National Academy of Sciences*, 2015, 112 (26), 7931–7936.
- Voth, Hans-Joachim**, “Persistence—myth and mystery,” in “The handbook of historical economics,” Elsevier, 2021, pp. 243–267.
- Ward, Robert E.**, “The Constitution and Current Japanese Politics,” *Far Eastern Survey*, 1956, 25 (4), 49–58.
- Watanabe, Tsutomu**, “War and Social Inequality,” *Trends in the Sciences*, 2022, 27 (12), 22–27. (In Japanese).
- Yamaguchi, Takeshi**, “Okinawa no heiwa kyôiku [Okinawa’s Peace Education],” in Peace Education Research Society, ed., *Heiwa kyôikugaku jiten [Encyclopedia of Peace Education Studies]*, Kyoto: Kyoto University of Education, Department of Educational Sociology, 2017. https://kyoiku.kyokyo-u.ac.jp/gakka/heiwa_jiten/pdf/okinawa.pdf.
- Yoshida, Yutaka**, *Japanese soldiers: The reality of the Asia-Pacific War (Nihon-gun heishi: Ajia taiheiyô sensô no genjitsu)*, Chuo Koron Shinsha, 2017. (In Japanese); Chuko Shinsho no. 2465.

Online Appendix

A.1 Data Construction

A.1.1 Geographic Boundaries

Our analysis is conducted at various levels of regional aggregation, depending on the variables we construct. At the most aggregated level, Japan’s geography can be divided into 47 “prefectures” or *ken* in Japanese. However, we often work with more disaggregated data when building our dataset. For much of our analysis, we work with data at the “municipality” (*shi-ku-cho-son*) level, in which Japan was divided into 3,284 municipalities in 1980.²⁸ The number of municipalities varies across time, but this number gives some sense of the level of aggregation at the midpoint of our sample. We aggregate these data in various ways to make them suitable for our analysis. The centers of the largest cities are divided into wards (*ku*), which we aggregate to form the data for the largest Japanese cities like Tokyo and Osaka. We combine our definitions of the largest Japanese cities with those of the official set of cities (*shi*) to form our city database, from which we draw the 300 largest cities that make up our regression sample.

One issue with municipality data is that their definitions frequently change, so we need to construct a consistent set of municipality boundaries. We follow Eckert et al.’s (2020) procedure to standardize all data to 1980 municipality boundaries. The process involves three steps:

1. We denote the set of municipalities in 1980 by I and the set of municipalities in some other year by J . We then overlay the maps of municipality sets I and J and compute the area of municipality $j \in J$ that falls within the boundary of municipality $i \in I$ and denote this by A_{ij} .
2. We define w_{ij} to be the fraction of municipality j in set J that overlaps with municipality i :

$$w_{ij} \equiv \frac{A_{ij}}{A_j}$$

where A_j is the total area of municipality j .

3. Our estimate of the 1980 value of any variable X_i from a dataset based on different municipal boundaries represented by set J is given by

$$X_i = \sum_{j \in J} w_{ij} X_j.$$

A.1.2 Details on the Construction of Other Variables

Civilian Death and Destruction Data We follow Davis and Weinstein (2002) in that our regression results are based entirely on the data of Japan’s 300 largest cities in 1940. Since the U.S. Army Air Forces did not area bomb small cities and rural regions, this sample covers virtually all civilian death and destruction. All of our data on civilian death and destruction comes from this paper. We exclude cities in Okinawa, as the region was under U.S. occupation during the early postwar period, making it difficult to measure attitudes toward military action using LDP vote share.

²⁸See <https://uub.jp/upd/transition.html> for more details on the definitions of municipalities.

LDP Vote Share We obtain LDP vote share for all postwar lower house elections since the LDP’s formation, except for 2024, from [Mizusaki and Mori \(2021\)](#). These data include votes for each candidate, party affiliation, and the number of eligible voters (all people over the age of 19 before 2016 and over the age of 17 thereafter) at the municipality level. In some elections, a single municipality contains multiple electoral constituencies or candidates from the same party. In these cases, we aggregate vote counts across constituencies to construct municipality-level vote shares and then aggregate across municipalities to obtain city data.

Seiyukai Vote Share We obtain prewar voting results at the electoral constituency level from [Kawato and Kawato \(1997\)](#). We aggregate these to the city level using a correspondence table between electoral constituencies and cities (<https://lab.ndl.go.jp/dl/book/1445520?page=35>).

Gender Ratio Population by gender is reported at the municipality level based on census data reported in [Murayama and Watanabe \(2007\)](#) for 1930, [Statistics Bureau of Japan \(1940\)](#) for 1940, [Statistics Bureau of Japan \(1950\)](#) for 1950, and from 1960 onward, we use the quinquennial census data from [Sinfonica \(2005\)](#). We compute the gender ratio in municipality j for age cohort k as the number of women in cohort k divided by the number of men in cohort k .

Earmarked Expenditures To control for the impact of pork-barrel politics, we control for earmarked expenditures directed to each locality (*kokko shishutsukin*). These are central government expenditures in municipalities that are not based on nationally mandated formulas. Examples include infrastructure projects (e.g., road construction, schools, hospitals, etc.), special subsidies for agriculture, forestry, and fisheries, and elderly care facilities. Earmarked expenditures are a principal mechanism for winning votes in a municipality by delivering special benefits to the locale (cf. [Catalinac et al., 2020](#)). To obtain city-level discretionary intergovernmental expenditures, we digitized the 1960 and 1970 Local Public Finance Statistics Yearbooks. For later years, we use the Nikkei Needs FinancialQuest database.

A.1.3 *Wartime Testimony Data*

We supplement the city-level voting evidence with direct textual evidence on how survivors and bereaved family members narrate their wartime experiences in their own words. This exercise asks whether the interpretive labels we attach to our two wartime shocks—“morale” for civilian bombing and “martyr” for military death—are visible in first-person wartime narratives.

Source and sample. The testimony sample pools two kinds of Japanese-language archives. The first is Asahi Shimbun’s “*Koe: Kataritsugu Senso*” (“Voices: Retelling the War”) feature, which solicits short reader-submitted wartime memories; ordinary submissions are requested at roughly 400–500 Japanese characters and are subject to Asahi’s editorial selection and editing. The second is a set of non-Asahi local and organizational testimony collections, including municipal and ward war-damage pages, digitized peace-museum archives, resident-submission collections, bereaved-family-association materials, and broader war-memory testimony databases. The analysis sample consists of 1,509 cleaned testimonies, each originally written or narrated in Japanese by a survivor, bereaved family member, or related witness; all classification and coding described below are performed on the original Japanese text, and the English text we report is our translation.

Classification of wartime experience. We use a large language model (GPT-5.5) to classify the wartime experience anchoring each testimony directly from the testimony text. The classification step asks three questions. The Japanese text below is the literal text sent to the model; the English text is our translation, included here as documentation rather than as a second model input:

Q1 (air raid/civilian bombing). Japanese: 「この証言は、空襲、焼夷弾、原爆、民間地域への爆撃、空襲からの避難、爆撃による家屋・都市の破壊、または爆撃による民間人の負傷・死亡について述べているか。」 English: “Does the testimony describe direct experience of air raids, firebombing, atomic bombing, bombing of civilian areas, evacuation from bombing, destruction of homes or cities by bombing, or injury/death of civilians caused by bombing?”

Q2 (military death/fallen soldiers). Japanese: 「この証言は、日本軍兵士の戦死、戦没した戦友、召集された家族・近隣住民・友人・同級生など、兵役中に亡くなった人について述べているか。」 English: “Does the testimony describe Japanese soldiers who died in military service, including fallen comrades, conscripted family members, neighbors, friends, classmates, or other known people who died as soldiers?”

Q3 (primary anchor). Japanese: 「この証言の中心となっている戦争経験はどれか。」 English: “Which experience is the main experience anchoring the testimony? Choose exactly one: air raid or civilian bombing, military death or fallen soldiers, mixed, other, unclear.”

This classification sorts the 1,509 testimonies into four exposure groups: 729 testimonies were anchored only in an air raid, 309 anchored only in the military death of a known individual, 208 anchored in both (“mixed”), and 263 anchored in neither focal experience (“other”). “Other” testimonies discuss wartime experiences outside these two focal categories—for example hunger, evacuation, military service without a known death, occupation, or colonial experience. Testimonies submitted to Asahi’s *Koe* feature are systematically shorter than the non-Asahi testimonies: the median Asahi testimony in each exposure group is 446 to 494 characters, compared with 909 to 2,138 characters for non-Asahi testimonies in the same groups, consistent with Asahi’s shorter reader-submission format.

Mechanism coding. Two further coding steps, both using GPT-5.5, measure three narrative outcomes directly from the testimony text. *Lowered morale* is a binary outcome equal to one when the testimony directly or indirectly expresses that the war was hopeless, meaningless, or futile, or that the war should end or should have ended; mere hardship, fear, or suffering is not sufficient unless the testimony also expresses futility or a wish for the war to end. *Sacrifice/honor framing* is a 0/1/2 variable: 0 means the testimony does not mention the death of a Japanese soldier; 1 means it mentions such a death without a positive sacrifice/honor frame; and 2 means it frames the death positively through sacrifice, honor, commemoration, gratitude, or martyrdom. *Anti-American sentiment*, coded in a separate later run, is a binary outcome equal to one only when all three of the following hold: the testimony identifies an American actor (the United States, the U.S. government, the U.S. military, American soldiers, or Americans); it expresses a negative emotion such as anger, hatred, resentment, hostility, or blame; and that negative emotion is directed at the American actor. Naming the United States as the cause of harm is not sufficient by itself: condemnation of an air raid, the atomic bombs, nuclear weapons, or the war in general is coded zero when the negative reaction is not directed at an American actor, which separates anti-American sentiment from antiwar, antinuclear, or general suffering narratives. The Japanese text below gives the opening instruction and coding criteria of the literal prompt sent to the model for each outcome (the full prompt also

includes additional coding rules and three worked examples, omitted here for length); the English text is our translation.

Lowered morale. Japanese: 「以下の証言を読み、戦争の遂行・継続に対する気力・意欲・希望を失ったこと、具体的には、(a) 戦争は絶望的だ・無意味だ・無駄だという感情、(b) 戦争を早く終わらせたい・終わらせるべきだという気持ち、のいずれかが、直接的または間接的に表れているかを判定してください。」 English: “Read the following testimony and judge whether it directly or indirectly expresses loss of the will, motivation, or hope to carry on or continue the war—specifically, either (a) the feeling that the war is hopeless, meaningless, or futile, or (b) the feeling that the war should end, or should have ended, soon.”

Sacrifice/honor framing. Japanese: 「以下の証言を読み、日本の軍人（陸軍・海軍・空軍の兵士）の死について、次の三段階のいずれに該当するかを判定してください。0：日本の軍人の死に言及していない。1：日本の軍人の死に言及しているが、それを犠牲・名誉・顕彰・感謝・殉国といった肯定的な枠組みでとらえていない。2：日本の軍人の死に言及し、かつそれを犠牲・名誉・顕彰・感謝・殉国といった肯定的な枠組みでとらえている。」 English: “Read the following testimony and judge which of the following three levels applies to the death of a Japanese soldier (army, navy, or air force). 0: the testimony does not mention the death of a Japanese soldier. 1: it mentions the death of a Japanese soldier but does not frame it positively through sacrifice, honor, commemoration, gratitude, or martyrdom. 2: it mentions the death of a Japanese soldier and frames it positively through sacrifice, honor, commemoration, gratitude, or martyrdom.”

Anti-American sentiment. Japanese: 「以下の証言を読み、米国・米国政府・米軍・米兵・米国人という主体に対する反米感情が、直接的または明確に間接的に表れているかを判定してください。反米感情には、これらの主体に向けられた恨み、憎しみ、怒り、敵意、嫌悪、または「許せない」という感情を含みます。米国が行った特定の行為を理由としている場合でも、否定的な感情が米国・米軍・米兵・米国人という主体に向けられていれば「あり」とします。」 English: “Read the following testimony and judge whether anti-American sentiment toward the United States, the U.S. government, the U.S. military, American soldiers, or Americans is expressed, either directly or clearly indirectly. Anti-American sentiment includes resentment, hatred, anger, hostility, disgust, or an expression that one cannot forgive one of these actors, when directed at those actors. Where a particular American action is the stated reason, code the sentiment as present so long as the negative emotion is directed at the United States, the U.S. military, American soldiers, or Americans themselves.”

A.1.4 Diet Speech Data

Voting is not the only way wartime exposure could register in politics. If the martyr and morale effects operate through what constituents want, representatives from heavily exposed districts should also argue for different policies in the Diet, and the universe of postwar parliamentary speech lets us test whether they do. We construct these data in four steps: assembling the speech sample, classifying support for and opposition to rearmament with natural-language-processing methods, aggregating statements into outcomes, and relating those outcomes to wartime exposure.

Source and raw records. Japan’s parliamentary record is unusually complete, making this exercise possible. The National Diet Library’s Diet Proceedings Database records who spoke, when they spoke, and what they said in every House of Representatives meeting from 1947 through 2025. The database divides each meeting transcript into separately numbered “statements” (発言). Each

statement contains everything one speaker says continuously before the transcript moves to another speaker. Thus, a member's question, a minister's response, and the chair's introduction of the next speaker are separate statements. If the original member speaks again later, it is recorded as another statement. The database contains 6,245,425 statements before we impose the sample restrictions described below.

Constructing the analysis sample. A statement is informative for our purposes only if we know whose wartime experience stands behind it, so we retain statements by elected House members whose seats we can identify. We identify each speaker and represented district using records of which politicians served in the House, the dates they served, and the districts they represented. We exclude proportional-representation members because we cannot assign them to a single district. We retain elected House members speaking as cabinet ministers but remove statements made while chairing a meeting, appearing in a nonlegislative capacity, or devoted entirely to meeting administration. The remaining 3,049,167 statements constitute our sample of House-member statements. We assign each statement the represented district's draft-cohort gender ratio, per-capita building destruction, and per-capita bombing deaths.

Classifying rearmament rhetoric. Mentioning defense policy is not the same as taking a position on it. We therefore classify whether each House-member statement in the analysis sample constructed above expresses the speaker's own support for or opposition to Japan's rearmament and military and defense capability. We first identify 101,204 statements containing at least one defense-policy subject, such as rearmament, the Self-Defense Forces, defense spending, Article 9, or collective self-defense. Hand-coding a hundred thousand statements is infeasible, so we trained a natural-language-processing (NLP) model using examples whose positions have already been labeled. Rather than labeling all the training examples manually, we use GPT-5.5 to classify a random sample of 3,000 statements, which then serve as the model's training data. This design follows [Pangakis and Wolken \(2024\)](#), who study 14 text-classification tasks. They find that a model trained using 1,000 GPT-generated labels correctly classified 87 percent of previously unseen texts, compared with 92 percent for a model trained using 1,000 human-generated labels. These results suggest that GPT-generated labels can provide a practical substitute for human training labels. The Japanese prompt used to classify the 3,000 statements appears below, followed by our English translation. We then use the 3,000 GPT-5.5 labels to train ModernBERT-Ja, a Japanese-language text-classification model ([Devlin et al., 2019](#); [Tsukagoshi et al., 2025](#)).

Coding questions. Japanese: 「以下の前後発言と判定対象発言を読み、次の二つの質問をそれぞれ独立に判定してください。1. 判定対象の発言者本人が、日本自身の再軍備または軍事・防衛能力を支持する方向の立場を表しているか。2. 判定対象の発言者本人が、日本自身の再軍備または軍事・防衛能力に反対する方向の立場を表しているか。」 English: “Read the preceding statement, target statement, and following statement, and judge each of the following two questions separately. 1. Does the target speaker personally express a position supporting Japan's own rearmament or military and defense capability? 2. Does the target speaker personally express a position opposing Japan's own rearmament or military and defense capability?”

Concept to be coded. Japanese: 「本研究でいう『再軍備または軍事・防衛能力』とは、日本が武力攻撃に備え、抑止し、対処し、または武力を行使するための制度、権限、任務、組織、人員、予算、装備、訓練、施設、補給、研究および生産基盤を指します。自衛隊を日本の国防組織として存在、維持、承認、制度的に強化または正当化する立場も含みます。」 English: “In this study, ‘rearmament or military and defense

capability’ refers to Japan’s institutions, authority, missions, organizations, personnel, budgets, equipment, training, facilities, logistics, research, and production base for preparing for, deterring, responding to, or using force against armed attack. It also includes positions supporting the existence, maintenance, recognition, institutional strengthening, or justification of the Self-Defense Forces as Japan’s national-defense organization.”

Attribution and evidence. Japanese: 「判定される立場は、判定対象発言者本人が判定対象発言の中で表明または採用したものでなければなりません。evidence は必ず判定対象発言から引用してください。」 English: “The coded position must be one that the target speaker personally expresses or adopts in the target statement. Evidence must always be quoted from the target statement.”

Constructing the outcomes. We construct outcomes at the member-meeting level to measure each representative’s rhetoric within a meeting, combining all statements by the same representative in a meeting on a given day. Let T_{im} denote the total number of statements by representative i in meeting m , S_{im} the number of statements classified as support only, and O_{im} the number classified as opposition only. We define

$$\text{Support Share}_{im} \equiv \frac{S_{im}}{T_{im}}, \quad \text{Opposition Share}_{im} \equiv \frac{O_{im}}{T_{im}},$$

and define *Net Support* as the support share minus the opposition share. For example, if a member makes ten statements in a meeting, of which two support and one opposes rearmament, the support share is 0.20, the opposition share is 0.10, and net support is 0.10. Statements classified as *both*, *neither*, or *unclear*, and statements without a defense-policy subject, remain in the denominator but enter neither numerator. The estimation sample contains 282,107 member-meeting observations representing 2,981,650 statements.

Estimation. We ask whether the exposure measures that predict how a district voted also predict what its representative said. Table A.10 reports the results from estimating the following equation using instrumental variables:

$$Y_{im} = \alpha_{t(im)} + \beta_M \text{Military}_{d(im)} + \beta_D \widehat{\text{Destruction}}_{d(im)} + \beta_B \text{Deaths}_{d(im)} + \varepsilon_{im},$$

where the first stage is

$$\begin{aligned} \text{Destruction}_{d(im)} = & \pi_M \text{Manufacturing}_{d(im)}^{1940} + \pi_F \text{Factories}_{d(im)} \\ & + \gamma_M \text{Military}_{d(im)} + \gamma_B \text{Deaths}_{d(im)} + \alpha_{t(im)} + u_{im}. \end{aligned}$$

Here, Y_{im} is the support share, opposition share, or net-support outcome defined above for member i in meeting m ; $d(im)$ is the district represented by that member at the time of the meeting; *Military* is the draft-cohort gender ratio; *Destruction* is per-capita building destruction; *Deaths* is per-capita bombing deaths; $\text{Manufacturing}^{1940}$ is the 1940 manufacturing employment share; and *Factories* is the count of army and navy munitions factories. As in the pooled specification of equation (1), β_M , β_D , and β_B denote the coefficients on military deaths, building destruction, and civilian bombing deaths, respectively. All specifications include calendar-year fixed effects, $\alpha_{t(im)}$. Unlike equation (1), these regressions do not include prefecture fixed effects, the *Seiyukai* vote share, or coordinates, and we cluster standard errors by term-specific electoral district.

A.1.5 1976 JABISS Survey

We use *JABISS: The Japanese Election Study, 1976* (ICPSR study 04682) to test whether military-casualty exposure predicts defense-oriented political attitudes, and to examine whether local social networks reinforce party preferences.²⁹ Because JABISS reports respondents' electoral district and candidate information rather than current prefecture directly, we infer each respondent's current prefecture from district and candidate evidence and merge it to our prefecture-level military-casualty and building-destruction exposure measures.

Defense and security attitudes. We use two JABISS items, each a five-point agree/disagree statement. Japanese: 「日米安保体制は現在よりもっと強化すべきである」 English: “The Japan-U.S. security system should be strengthened.” Japanese: 「日本の防衛力はもっと強化すべきだ」 English: “Japan's defense forces should be strengthened.”³⁰ For each item, the binary outcome equals one if the respondent answered “agree” or “agree slightly,” and equals zero if the respondent answered “can't say,” “disagree slightly,” or “disagree”; respondents who answered “don't know,” were not asked the item, or are missing the item are excluded. We regress each outcome on standardized current-prefecture military-casualty exposure (the draft-cohort gender ratio) and standardized current-prefecture building-destruction exposure, with standard errors clustered by current prefecture; the regression samples are 786 respondents for the security-treaty item and 909 respondents for the defense-forces item.

Local social-network channels. We also use four JABISS items asking whether the respondent's neighbors, coworkers, friends, and local community association mainly support the LDP, to test whether party preferences are reinforced through everyday local social environments rather than only through the family. The neighbor, coworker, and friend items are standalone questions; the community-association item is one row of a longer battery covering several types of group membership, introduced by a shared stem question. The Japanese questionnaire wording, with English translation, is:

²⁹The principal investigators were Scott C. Flanagan, Kohei Shinsaku, Miyake Ichiro, Bradley M. Richardson, and Watanuki Joji. JABISS is a national area-probability, face-to-face, individual-level panel survey of 2,028 respondents eligible to vote in the 1976 House of Representatives election, with a pre-election wave fielded November 20–28, 1976, a post-election wave fielded December 14–19, 1976, and a 72 percent response rate as reported by ICPSR.

³⁰Quoted exactly as printed in the original 1976 questionnaire, including its typewriter-era orthography, which renders the adverb *motto* (“more”) with a full-size つ rather than the small っ used in present-day printed Japanese; this is a feature of the original document throughout, not a transcription error.

Neighbors (G1, asked of all respondents). Japanese: 「あなたのご近所で非常に親しくおつき合いしている人がありますか。」 English: “Are there people in your neighborhood toward whom you feel intimate and whom you visit with?” Follow-up (party support), Japanese: 「その人達はおもに何党を支持していると思いますか。」 English: “Generally, what party do these persons support?”

Coworkers (G2). Japanese: 「同じ職場の中や仕事関係で、かなり深くおつき合いしている人がありますか。」 English: “Are there persons at your work place or in connection with your work toward whom you feel intimate and whom you visit with?” The same party-support follow-up is used.

Friends (G3). Japanese: 「ご近所や仕事関係以外で親しくつき合っているお友達との間で政治問題が話題になることはよくありますか、時々ありますか、あるいはありませんか。」^a English: “Do political matters come up as a topic of discussion with friends or acquaintances outside of those where you live or in relationship to your work often, sometimes, or not at all?” Follow-up (party support), Japanese: 「その人達はおもに何党を支持していると思いますか。」 English: “Generally, what party do these persons support?”

Community association (row G6 of a group-membership battery, items G5–G13). The battery’s shared stem question, Japanese: 「今の日本には色々な種類のグループや組織がありますが、あなたはこれからあげるとれかの組織に加入していますか。もしあなたが加入していれば、あなたはそのグループの会合にどれ位参加するか、グループの他の加入者はおもに何党を支持しているか、...をお聞かせください。」 English: “There are various kinds of groups and organizations in Japan today; are you a member of any of the organizations listed below? If you are a member, we would like to ask how often you attend that group’s meetings, which party the group’s other members mainly support, ...” The G6 row label, Japanese: 「自治会・町内会・部落会」 English: “neighborhood association / town council / hamlet association.”

^aThe typewriter-era orthography described above also appears here (つき合っている), and again does not distinguish small from full-size つ.

For each of the four items, the resulting indicator equals one if the respondent reports having the relevant contact (or group membership) and identifies that contact or group as mainly supporting the LDP, and equals zero if the respondent identifies the contact or group as mainly supporting another party. Respondents who report having no such contact or membership, or who do not answer the party-support question, are excluded from the corresponding indicator rather than coded as zero, so that non-response is not conflated with a contact who does not support the LDP. The four indicators are entered jointly in a single regression of the respondent’s own LDP preference, with standard errors clustered by JABISS sampling district, on a sample of 684 respondents who answered all four network items. We read these coefficients as descriptive associations between a respondent’s party preference and the reported partisanship of their everyday social environment, not as estimates of a causal peer effect.

A.1.6 1967 Japanese National Election Study

We use the *Japanese National Election Study, 1967* (JNES; ICPSR study 07294), conducted by the University of Michigan Center for Japanese Studies under principal investigators Robert E. Ward and Kubota Akira, to address two questions.³¹

³¹JNES is a multistage stratified nationwide probability survey of respondents aged 15 and older, fielded around the 1967 House of Representatives election. The ICPSR 07294 files include the English codebook and setup files but not

Anti-Americanism diagnostics. A natural alternative interpretation of our building-destruction results is that bombing produced anti-Americanism rather than pacifism. We test this directly using two JNES items. The first, “Generally speaking, is it a good thing to have foreign military bases in Japan or is it a bad thing?”, offers three substantive responses—good, depends, bad—of which 116 respondents said good, 431 said depends, and 1,114 said bad. The second, “After the end of the war, the United States occupied Japan and carried out many reforms. Generally speaking, do you think that they were good or bad?”, offers the same three-way good/depends/bad response, with 865 good, 483 depends, and 109 bad. For each item we construct a binary outcome from the two polar responses only: *Bases Bad* equals one for “bad” and zero for “good,” and *US Occupation Good* equals one for “good” and zero for “bad”; respondents who answered “depends” or did not answer are excluded, rather than pooled into either binary category. We regress each outcome on standardized current-prefecture military-casualty exposure and standardized current-prefecture building-destruction exposure, with standard errors clustered by current prefecture, on samples of 1,094 respondents (*Bases Bad*) and 895 respondents (*US Occupation Good*). If building destruction mainly captured anti-Americanism rather than pacifism, it should strongly and positively predict saying that foreign bases are bad or that U.S. occupation reforms were bad.

Parent-to-respondent political transmission. We also use JNES respondent and parent party-preference items, together with the 1975 SSM survey described below, to ask whether intergenerational family transmission explains the local persistence of political preferences, or whether location continues to matter after parent preferences are controlled for. The 1967 JNES codebook provides respondent party identification, father’s party preference, and mother’s party preference; either parent’s stated preference is used when observed. The resulting outcome, *Child LDP*, equals one if the respondent supports or prefers the LDP; here “child” denotes the survey respondent as the child of the observed parent, not a minor. The pooled JNES/SSM regression sample described in the next section has 2,185 respondents.

A.1.7 1975 Social Stratification and Social Mobility Survey

We pool the 1967 JNES parent-transmission items with the corresponding items from the 1975 *Social Stratification and Social Mobility Survey* (SSM), distributed by the Social Science Japan Data Archive (SSJDA), Center for Social Research and Data Archives, Institute of Social Science, the University of Tokyo, as SSJDA study 0761, deposited by the 2015 SSM Survey Management Committee.³² We use the 1975 wave specifically because it contains respondent and father party-support items that can be harmonized with the 1967 JNES items while remaining temporally close to the early postwar political environment that the parent-transmission exercise is designed to study; later SSM waves would mix in substantially later birth cohorts and period effects.

In the 1975 SSM survey, we use the respondent’s own party support and the father’s party support, because this wave does not record the mother’s party support in a comparable form. The Japanese item labels are:

the Japanese-language questionnaire, so we report only the English codebook wording for the JNES items below.

³²The data for secondary analysis were provided by the Social Science Japan Data Archive, Center for Social Research and Data Archives, Institute of Social Science, the University of Tokyo.

Respondent's own party support: 問22a 「支持政党」.

Father's party support: 問23 「15歳時の父親の支持政党」, i.e., the father's party support when the respondent was 15 years old.

Both items are recoded to equal one when the relevant person supports the LDP and zero when another observed party is reported; respondents who do not name a party are excluded. The pooled sample is restricted to male respondents whose current place of residence is observed in both surveys, and a 1975 *SSM Survey Indicator* absorbs average level differences between the two survey sources; standard errors are clustered by current prefecture.

A.1.8 *Izokukai (War-Bereaved Family Association) Membership Data*

To test whether places with greater inferred military-casualty exposure continue to host stronger organized constituencies of war-bereaved families, we use prefectural membership figures for *izokukai*, war-bereaved-family associations, reported by the *Sankei Shimbun*.³³ The article is based on a Sankei survey of prefectural bereaved-family associations and related organizations, which asked each organization for its current membership, its membership roughly ten years earlier, and information on youth-division organization and pandemic-era changes to memorial activities. Current membership was reported as nonpublic, unknown, or untracked for five prefectures (Miyagi, Hyogo, Nara, Tokushima, and Okinawa), and Osaka's earlier membership count was unavailable; some reported figures are approximate, and a small number are household counts rather than individual-member counts.

We digitized Sankei's reported prefecture-level table and constructed *Izokukai Members per Capita* as the reported membership count divided by 1940 prefecture population, separately for the current (approximately 2020) count and the roughly-ten-years-earlier (approximately 2010) count. We regress each outcome on the prefecture-level draft-cohort gender ratio and per-capita building destruction, with heteroskedasticity-robust standard errors, on samples of 42 prefectures (2020 count) and 41 prefectures (2010 count) out of Japan's 47 prefectures; prefectures with an unavailable membership count for the relevant year are excluded.

A.1.9 *High-School Peace-Education School-Trip Destinations (2022–2023)*

To probe whether places with greater civilian-bombing exposure are more likely to sustain peace education through school curricula, we pool the destination matrices of Japanese high-school domestic school trips (*shugaku ryoko*) published by the Japan School Excursion Association (公益財団法人日本修学旅行協会) in its *Educational Travel Annual Report, Databook* (教育旅行年報「データブック」) for 2023 and 2024, Table 13, “List of Destinations by Prefecture” (都道府県別旅行先一覧表), which cover high-school trips implemented in the 2022 and 2023 school years, respectively.³⁴ The published matrix counts a destination prefecture once per trip if the trip visited that prefecture at any point, regardless of the length of the stay or the number of visits; if a single trip spans multiple prefectures, each visited prefecture is counted separately. These are therefore destination-incidence counts, not counts of student-days, nights, or enrollment-weighted shares.

³³Sankei Shimbun. 2020. “【戦後75年】都道府県の遺族会会員、10年で4割近く減少 産経新聞調査” [After 75 years: prefectural Izokukai membership falls by nearly 40 percent over 10 years, Sankei survey]. *Sankei News*, August 14, 2020.

³⁴Online viewer for the 2024 report: <https://c.logosware.com/dx25r7/hniqB/ca0HL/index.html#page=27>.

We construct *Okinawa Trip Share* for each origin prefecture as the number of trips with Okinawa as a destination divided by the total number of recorded destination trips from that origin prefecture. We regress Okinawa Trip Share on the prefecture-level draft-cohort gender ratio and per-capita building destruction, pooling the two reports with a report-year indicator; distance-controlled specifications additionally include log distance from the origin prefecture's centroid to the Okinawa prefecture centroid (computed as $\log(\text{distance})$ in kilometers). We cluster standard errors by origin prefecture, yielding a pooled sample of 92 prefecture-report observations (46 prefectures across the two reports). The excluded prefecture is Okinawa itself, which we also exclude from the main voting analysis because it lacks comparable wartime-era exposure data and was under separate U.S. administration until 1972 (see Section 4.1). A positive coefficient on building destruction is consistent with bombed prefectures sending a larger share of high-school trips to Okinawa, a leading site of organized peace education in Japan; because school-trip destinations are only a proxy for curricular content, we treat this evidence as suggestive.

A.1.10 Instruments for Civilian-Bombing Destruction: 1940 Manufacturing Share and Munitions Factories

In our empirical analysis, we report instrumental-variables specifications that address the concern that U.S. target selection, rather than building destruction itself, drives our bombing results. We instrument per-capita building destruction with two predictors of prewar industrial target value: the 1940 manufacturing employment share and the count of army and navy munitions factories, both measured at the level of our 300-city panel.

1940 manufacturing share. We construct *1940 manufacturing share* as each city's secondary-sector (manufacturing) employment divided by total broad-sector employment (primary, secondary, and tertiary) in the 1940 population census, reported originally at the *gun* (county) level. We crosswalk the 1940 *gun*-level industry data to our 1980 city-unit definitions using an area-weighted spatial overlay of 1940 and 1980 administrative-boundary shapefiles, following the same general boundary-standardization logic described in Appendix A.1.1. This measure is intended to proxy a city's industrial target value for U.S. area bombing while avoiding a mechanical dependence on city population and to correct for measurement error in the destruction variable.

Munitions factories. We construct a raw count of army and navy munitions factories in each city. The army count is digitized from the Army Designated-Factory and Workshop Roster (陸軍指定工場作業場名簿), a 1942-era factory address list that we match to historical municipalities and then to our 1980 city-unit definitions. The navy count is a manually compiled list of major naval arsenal (海軍工廠) cities—Yokosuka, Kure, Sasebo, Maizuru, Suzuka, Sagami(hara), Numazu, and Tsu, with the Hiro arsenal assigned to Kure because it is not a standalone city unit in our panel—based on the glossary of Japan's National Archives Center for Asian Historical Records (JACAR).³⁵ *Munitions Factory Count* is the sum of the army and navy counts, used as a raw (not per-capita) count because it is intended to proxy direct military-industrial target value without scaling by population. Cities without a matched army or navy factory record are assigned a count of zero.

³⁵JACAR glossary entry, “海軍工廠”: <https://www.jacar.go.jp/exhibition/glossary/term1/0090-0010-0060-0020-0120.html>.

1920 manufacturing share (robustness). As a robustness check on the timing of the manufacturing-share instrument, we also construct a *1920 manufacturing share*: each city’s secondary-sector employment share in the 1920 population census, crosswalked directly from the 1920 census source units to our 1980 city-unit definitions using an area-weighted spatial overlay of 1920 and 1980 administrative-boundary shapefiles. Because the 1920 share predates both the 1930s armaments build-up and the wartime economy, it is not contemporaneous with the 1940 city structure used elsewhere in the analysis. Table A.8 re-estimates Table 2 with this prewar instrument, keeping the munitions-factory count as the second excluded instrument; the estimates are essentially unchanged, and the first stage is, if anything, slightly stronger.

A.2 First Stages

This section reports the first-stage estimates paired with our IV second-stage tables. In each first stage, the dependent variable is per-capita building destruction, and the excluded instruments are the city’s 1940 manufacturing employment share and a count of army and navy munitions factories (see Appendix A.1.10 for instrument construction). The first stage paired with Table 2 is reported directly as Panel B of that table; the three first stages below correspond to Table A.5, Table 4, and Table A.6, respectively.

A.3 OLS versus IV Estimates: A Frisch–Waugh Decomposition

This appendix explains why the OLS and IV estimates in Table 2 differ, and in particular why instrumenting per-capita building destruction changes the estimated effect of per-capita bombing deaths, even though the latter is treated as exogenous and is never instrumented.

Setup. Let y denote the LDP vote share, D per-capita building destruction, and B per-capita bombing deaths, and let W collect the remaining regressors (the draft-cohort gender ratio, the prewar controls, and the year and prefecture fixed effects). This is the notation of equation (1), in which β_D multiplies destruction and β_B multiplies deaths. In our specification D is the only endogenous regressor; it is instrumented by the city’s 1940 manufacturing employment share and its munitions-factory count, while B and W are treated as exogenous. Throughout we work with variables residualized on W , so that every covariance below is a partial covariance given W .

Building destruction. With a single endogenous regressor, two-stage least squares is numerically identical to OLS after replacing D by its first-stage fitted value $\hat{D}$. The OLS estimate of the destruction effect is biased toward zero because per-capita destruction is measured with error, which attenuates the coefficient; the instruments retain only the component of destruction driven by prewar industrial capacity and are therefore unaffected. In our data, the IV estimate is roughly four times the magnitude of the OLS estimate, which the reliability calculation in the main text shows is consistent with attenuation alone. The direction of the gap is itself informative: a confounder that made heavily bombed cities lean left would bias OLS away from zero, not toward it.

The spillover onto bombing deaths. Write the first stage as $D = \hat{D} + v$. Because B is included among the first-stage regressors, the first-stage residual is orthogonal to it: $\text{Cov}(v, B) = 0$. By the

Table A.1: First-Stage Estimates for Table A.5

	1958–1993				1996–2021			1958–2021				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1940 Manufacturing Share	0.093*** (0.019)	0.093*** (0.018)	0.093*** (0.018)	0.085*** (0.018)	0.093*** (0.019)	0.094*** (0.017)	0.093*** (0.018)	0.092*** (0.018)	0.093*** (0.019)	0.093*** (0.018)	0.093*** (0.018)	0.088*** (0.018)
Munitions Factory Count	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)
Draft-Cohort Gender Ratio	-0.059 (0.035)	-0.066* (0.039)	-0.047 (0.030)	-0.043 (0.030)	-0.059 (0.035)	-0.065* (0.035)	-0.047 (0.029)	-0.047 (0.030)	-0.059 (0.035)	-0.064* (0.037)	-0.047 (0.030)	-0.045 (0.030)
Per-Capita Bombing Deaths	0.919*** (0.279)	0.925*** (0.281)	0.922*** (0.284)	0.914*** (0.282)	0.919*** (0.280)	0.904*** (0.268)	0.914*** (0.284)	0.922*** (0.284)	0.919*** (0.279)	0.920*** (0.278)	0.922*** (0.284)	0.918*** (0.283)
Seiyukai Vote Share in 1928	0.013 (0.021)	0.015 (0.020)	0.016 (0.021)	0.016 (0.021)	0.013 (0.021)	0.016 (0.021)	0.016 (0.021)	0.016 (0.021)	0.013 (0.021)	0.016 (0.020)	0.016 (0.021)	0.016 (0.021)
Gender Ratio (1930)	-0.037 (0.054)				-0.037 (0.054)				-0.037 (0.054)			
Contemporaneous Gender Ratio		0.068 (0.049)				0.130 (0.087)				0.078 (0.053)		
Per-Capita Earmarked Expenditures			0.000 (0.000)				0.027 (0.024)			0.000 (0.000)		
High Agricultural Employment Share				-0.006*** (0.002)				-0.007* (0.004)				-0.005*** (0.002)
Observations	3,900	3,900	3,900	3,900	2,700	2,700	2,700	2,700	6,600	6,600	6,600	6,600
Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prefecture FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Latitude and Longitude	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Excluded-instruments F	29.83	36.95	30.67	29.66	29.80	32.96	30.43	30.56	29.85	35.32	30.75	30.21
Excluded-instruments p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: The table shows first-stage estimates and clustered standard errors (in parentheses) from regressing per-capita building destruction on the excluded instruments (1940 manufacturing employment share and the count of army and navy munitions factories) and the same controls used in the corresponding column of Table A.5. The excluded-instruments F statistic and p-value test the joint significance of the two excluded instruments. We cluster standard errors at the prefecture level. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.2: First-Stage Estimates for Table 4

	1958–1993		1996–2021		1958–2021	
	JCP / All Votes	JCP / Non-LDP Votes	JCP / All Votes	JCP / Non-LDP Votes	JCP / All Votes	JCP / Non-LDP Votes
1940 Manufacturing Share	0.093*** (0.018)	0.093*** (0.018)	0.093*** (0.018)	0.093*** (0.018)	0.093*** (0.018)	0.093*** (0.018)
Munitions Factory Count	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)
Draft-Cohort Gender Ratio	-0.047 (0.029)	-0.047 (0.029)	-0.047 (0.029)	-0.047 (0.029)	-0.047 (0.029)	-0.047 (0.029)
Per-Capita Bombing Deaths	0.921*** (0.284)	0.921*** (0.284)	0.921*** (0.284)	0.921*** (0.284)	0.921*** (0.284)	0.921*** (0.284)
Seiyukai Vote Share in 1928	0.015 (0.021)	0.015 (0.021)	0.015 (0.021)	0.015 (0.021)	0.015 (0.021)	0.015 (0.021)
Observations	3,900	3,900	2,700	2,700	6,600	6,600
Year FE	✓	✓	✓	✓	✓	✓
Prefecture FE	✓	✓	✓	✓	✓	✓
Latitude and Longitude	✓	✓	✓	✓	✓	✓
Excluded-instruments F	30.80	30.80	30.78	30.78	30.82	30.82
Excluded-instruments p-value	0.000	0.000	0.000	0.000	0.000	0.000

Notes: The table shows first-stage estimates and clustered standard errors (in parentheses) from regressing per-capita building destruction on the excluded instruments (1940 manufacturing employment share and the count of army and navy munitions factories) and the same controls used in the corresponding column of Table 4. The first stage is identical for the two columns within each period, since only the second-stage outcome differs. The excluded-instruments F statistic and p-value test the joint significance of the two excluded instruments. We cluster standard errors at the prefecture level. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Frisch–Waugh–Lovell theorem, the estimated coefficient on B under either estimator is the slope of y on the part of B orthogonal to the *destruction measure that is used* (and to W):

$$\hat{\beta}_B = \frac{\text{Cov}(y, \tilde{B})}{\text{Var}(\tilde{B})}, \quad \tilde{B} = B - \frac{\text{Cov}(B, D_m)}{\text{Var}(D_m)} D_m, \quad (2)$$

where $D_m = D$ under OLS and $D_m = \hat{D}$ under IV. Equivalently, in terms of second moments,

$$\hat{\beta}_B = \frac{\text{Var}(D_m) \text{Cov}(B, y) - \text{Cov}(D_m, B) \text{Cov}(D_m, y)}{\text{Var}(D_m) \text{Var}(B) - \text{Cov}(D_m, B)^2}. \quad (3)$$

Moving from OLS to IV changes only the two moments that involve the destruction measure: its variance, which shrinks from $\text{Var}(D)$ to the instrument-driven variance $\text{Var}(\hat{D})$, and its covariance with the outcome, $\text{Cov}(D_m, y)$. The covariance between the destruction measure and deaths is left unchanged, because $\text{Cov}(D, B) = \text{Cov}(\hat{D}, B)$ whenever B enters the first stage. Those two substitutions alone move the estimated death coefficient from small and insignificant to positive and significant.

Sign of the spillover. Building destruction and bombing deaths are positively correlated even after conditioning on W . As Section 4.5 reports, the raw correlation among bombed cities is 0.36, rising to 0.42 when Hiroshima is excluded and to 0.80 when both atomic cities are excluded, so outside the atomic cities the two measures are far more collinear, and the spillover is stronger. Because the true destruction effect is negative ($\beta_D < 0$), the collinear death variable absorbs part of that negative morale effect whenever destruction is imperfectly controlled. Under OLS, the destruction

Table A.3: First-Stage Estimates for Table A.6

	(1) 1958–1993	(2) 1958–1993	(3) 1996–2021	(4) 1996–2021	(5) 1958–2021	(6) 1958–2021
1940 Manufacturing Share	0.090*** (0.018)	0.093*** (0.018)	0.090*** (0.018)	0.093*** (0.018)	0.090*** (0.018)	0.093*** (0.018)
Munitions Factory Count	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)
Draft-Cohort Gender Ratio	-0.048 (0.032)	-0.047 (0.029)	-0.048 (0.032)	-0.047 (0.029)	-0.048 (0.032)	-0.047 (0.029)
Per-Capita Bombing Deaths	0.907*** (0.288)	0.921*** (0.284)	0.907*** (0.288)	0.921*** (0.284)	0.907*** (0.288)	0.921*** (0.284)
Seiyukai Vote Share in 1928		0.015 (0.021)		0.015 (0.021)		0.015 (0.021)
Observations	3,900	3,900	2,700	2,700	6,600	6,600
Year FE	✓	✓	✓	✓	✓	✓
Prefecture FE	✓	✓	✓	✓	✓	✓
Latitude and Longitude		✓		✓		✓
Excluded-instruments F	37.32	30.80	37.31	30.78	37.33	30.82
Excluded-instruments p-value	0.000	0.000	0.000	0.000	0.000	0.000

Notes: The table shows first-stage estimates and clustered standard errors (in parentheses) from regressing per-capita building destruction on the excluded instruments (1940 manufacturing employment share and the count of army and navy munitions factories) and the same controls used in the corresponding column of Table A.6. The excluded-instruments F statistic and p-value test the joint significance of the two excluded instruments. We cluster standard errors at the prefecture level but cannot cluster at the city level because city definitions change over time. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

coefficient is attenuated, so this negative bias is large and masks the positive martyr effect of civilian deaths, leaving the death coefficient close to zero. Instrumenting building destruction restores its coefficient to full magnitude, and the positive civilian-martyr effect emerges. The same attenuation therefore explains both movements from OLS to IV: it shrinks β_D , and the portion of the morale effect that the attenuated coefficient fails to capture is assigned by OLS to the correlated deaths variable, biasing β_B downward.

A.4 The Impact of Bombing on Article 9 Revision

This appendix gives the details of the counterfactual exercise summarized in Section 5.5.

We can use our estimates to conduct a simple counterfactual exercise to understand whether the political effect of area bombing was large enough to help explain why Japan has not revised its constitution and rearmed despite decades of LDP rule. We assume that the IV parameters in Table 2, column 2, are structural, in the sense that they would not have differed had the course of WWII been different. While this is a strong assumption, we impose it to gauge the magnitude of the effects we identify. It lets us recompute electoral outcomes under an alternative bombing strategy. Because area bombing simultaneously destroyed buildings *and* killed civilians, and because these two shocks moved the vote in opposite directions—devastation toward the left and deaths toward

the right—we consider three counterfactuals: removing a city’s building destruction only, removing its civilian bombing deaths only, and removing both, as would have occurred had the U.S. never bombed civilian targets.

We consider a case in which the U.S. had limited itself to targeting soldiers by implementing unrestricted submarine warfare, engaging in all battles that happened in the Pacific, implementing Operation Starvation, etc., but refraining from bombing civilian targets. While it is hard to know if Japan would have surrendered without the bombing, American unrestricted submarine warfare coupled with “Operation Starvation” produced mass starvation among Japan’s soldiers and civilians, which probably would have caused the Japanese to surrender before November 1945 even if the U.S. had not dropped the atomic bombs ([United States Strategic Bombing Survey, 1946](#), p. 26). It is reasonable to conjecture that Japan would not have been able to continue fighting through the ensuing winter without imported food or oil, even without the firebombing.

We focus on the outcome of the 1960 election because the constitutional issue was so salient. For each counterfactual, we construct a revised LDP vote share in every constituency under the assumption that the relevant war damage—building destruction, civilian bombing deaths, or both—was zero, applying the estimated coefficients (−1.783 on per-capita building destruction and 1.585 on per-capita bombing deaths). We then transfer the implied change in LDP votes to each LDP candidate in the constituency in proportion to the candidate’s share of LDP votes. Thus, if the LDP ran two candidates in a constituency and one candidate won 60 percent of the LDP votes, we assume that 60 percent of the change in LDP votes would accrue to that candidate. Similarly, we add the offsetting votes to or subtract them from the opposition candidates in proportion to their ability to obtain votes. We then recompute the total vote tallies for each candidate in each constituency and note the election winner.

Table A.4: LDP Seat Share in the 1960 Election Under Counterfactual Bombing

	LDP Seat Share (%)		
	Point estimate	5th pct	95th pct
Actual 1960 election	63.4	—	—
Remove building destruction	70.9	67.7	71.7
Remove bombing deaths	62.1	61.9	62.7
Remove both	70.2	67.0	71.5

Notes: The table reports LDP seats as a percentage of the 467 seats in the House of Representatives. The point estimate is the seat share obtained by evaluating the counterfactual at the estimated coefficients. In each counterfactual, we set the indicated war damage to zero in every city and compute the implied change in the city’s LDP vote share from the IV estimates in Table 2, column 2. We give the corresponding votes to LDP candidates in proportion to their LDP votes, take them from the other candidates in proportion to their votes, and award each constituency’s seats to its top vote-getters. The 5th and 95th percentiles come from 10,000 draws of the building-destruction and bombing-death coefficients from their estimated joint sampling distribution; we draw them jointly because they are strongly negatively correlated ($\rho = -0.80$). Initiating constitutional revision requires two-thirds of the seats (312 seats, or 66.8 percent).

The results, reported in Table A.4, indicate that area bombing, on net, cost the LDP the lower-house supermajority it would have needed to pursue constitutional revision. In the actual 1960 election, the LDP won 296 of the 467 seats in the lower house, short of the 312 seats—two-thirds—required to initiate constitutional revision. Removing building destruction alone, which switches off the morale effect, would have raised the LDP to 331 seats, comfortably above the threshold.

Removing civilian bombing deaths alone, which switches off the civilian martyr effect, would instead have *lowered* the LDP to 290 seats, consistent with civilian deaths, like military deaths, working in the LDP’s favor. Removing both—the full “no area bombing” counterfactual—would have given the LDP 328 seats. To gauge how precisely these counts are estimated, we draw the two coefficients 10,000 times from their jointly estimated sampling distribution and re-run the seat allocation for each draw. The LDP clears two-thirds in about 98 percent of draws when we remove building destruction, and in none when we remove only deaths. When we remove both, the LDP obtains two-thirds of the Diet seats in about 98 percent of draws. The morale effect of devastation thus dominated the martyr effect of civilian deaths, and on net a Japan whose cities had been spared area bombing would have handed the LDP more than two-thirds of the seats in the House of Representatives. This conclusion does not depend on the civilian-death coefficient. Removing building destruction alone would have given the LDP 331 seats, and removing both shocks, 328, so the LDP clears the 312-seat threshold whether the civilian-death effect is taken at its estimated value or set to zero.³⁶ The area bombing of Japan’s largest cities drives much of this counterfactual. The seats that switch are concentrated in the metropolitan areas that lost the greatest share of their building stock—among them Tokyo, Osaka, Nagoya, Kobe, and Hiroshima—where the estimated morale effect on the LDP vote was largest.

A.5 Robustness Checks

This appendix reports in full the robustness checks summarized in Section 5.6. Figure 7 and Table 4, which are discussed below, appear in the main text.

A.5.1 *Do Other Cohorts Vote Like the Draft Cohort?*

One alternative explanation is that women’s pro-military voting behavior in the draft cohort is correlated with gender ratios in other cohorts, thereby biasing our results. We address omitted-variable bias by rerunning our specification in several ways. First, in Table A.5, columns 1, 5, and 9, we control for the city’s 1930 gender ratio to assess whether pre-existing gender imbalances are associated with electoral outcomes. We find no evidence supporting this hypothesis. Second, we control for the contemporaneous gender ratio at the time of the election in columns 2, 6, and 10 to assess whether our results are driven by that ratio. We find that including the contemporaneous gender ratio has little impact on the magnitudes of the martyr and morale effects.

Omitted-variable bias might also arise if older and younger generations of women differ in political beliefs, so what we interpret as variation due to draft-cohort membership may instead reflect the voting behavior of women over age 20 in 1950. We test this by adding six alternative measures as controls: the gender ratios of people aged 5–9, 10–14, 15–19, 45–49, 50–54, and 55–59 in 1950. Thus, if older women tend to be more right-wing, we would expect the coefficient on the female-to-male ratio of people aged 45–49 to be as pro-LDP as that in the draft cohort. We report the results in Figure 7, which plots the coefficients from each specification. The results indicate that gender ratios are not significantly associated with greater LDP support in any cohort except the draft cohort. In other words, our result is driven only by the voting behavior of cities that experienced more military deaths.

³⁶This was a necessary condition for initiating constitutional revision, though not a sufficient one, since revision also requires a two-thirds majority in the House of Councilors and approval in a national referendum.

Table A.5: Robustness

	1958–1993			1996–2021			1958–2021					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Draft-Cohort Gender Ratio	0.392*** (0.118)	0.318** (0.128)	0.375*** (0.102)	0.370*** (0.098)	0.098** (0.044)	0.077* (0.045)	0.086** (0.036)	0.085** (0.035)	0.271*** (0.084)	0.187** (0.088)	0.256*** (0.071)	0.250*** (0.067)
Per-Capita Building Destruction	-1.783*** (0.509)	-1.734*** (0.506)	-1.783*** (0.514)	-1.487*** (0.496)	-0.776*** (0.255)	-0.773*** (0.256)	-0.778*** (0.262)	-0.767*** (0.257)	-1.371*** (0.384)	-1.320*** (0.394)	-1.371*** (0.390)	-1.110*** (0.354)
Per-Capita Bombing Deaths	1.587** (0.638)	1.554** (0.621)	1.583** (0.648)	1.358** (0.581)	0.710** (0.346)	0.696** (0.332)	0.712* (0.354)	0.695* (0.351)	1.229** (0.505)	1.171** (0.483)	1.225** (0.513)	1.023** (0.442)
Seiyukai Vote Share in 1928	0.018 (0.086)	0.015 (0.086)	0.015 (0.086)	0.012 (0.082)	0.043 (0.037)	0.042 (0.037)	0.041 (0.038)	0.039 (0.037)	0.029 (0.062)	0.026 (0.063)	0.026 (0.063)	0.021 (0.059)
Gender Ratio (1930)	0.034 (0.148)				0.036 (0.063)				0.035 (0.107)			
Contemporaneous Gender Ratio		0.242 (0.185)				0.069 (0.129)				0.354** (0.142)		
Per-Capita Earmarked Expenditures			-0.002 (0.002)				-0.005 (0.039)				-0.002 (0.002)	
High Agricultural Employment Share				0.034*** (0.011)				0.037** (0.017)				0.050*** (0.011)
Observations	3,900	3,900	3,900	3,900	2,700	2,700	2,700	2,700	6,600	6,600	6,600	6,600
Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prefecture FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Latitude and Longitude	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Kleibergen-Paap rk Wald F	29.83	36.96	30.68	29.67	29.81	32.97	30.44	30.57	29.85	35.33	30.75	30.21
Hansen J p-value	0.525	0.482	0.506	0.864	0.086	0.091	0.084	0.093	0.356	0.330	0.336	0.724

Notes: The table presents second-stage IV estimates and clustered standard errors (in parentheses) from estimating equation (1), instrumenting per-capita building destruction with the city's 1940 manufacturing employment share and a count of army and navy munitions factories (see Appendix A.1.10); the matching first-stage estimates are reported in Appendix A.2. We pool data across all elections within the time period indicated in the column headers. The dependent variable is the LDP vote share, i.e., the fraction of votes received by the Liberal Democratic Party (the LDP vote share since 1996 is calculated using the PRC election results). High Agricultural Employment Share equals one if more than 20 percent of a city's employed population works in primary industry (agriculture, forestry, and fisheries), measured in the first census taken in or after the election year. All columns include per-capita bombing deaths, the *Seiyukai* vote share, longitude, and latitude as additional controls. The Kleibergen-Paap rk Wald F statistic and Hansen J overidentification p-value are reported for each column. See Table 1 for variable definitions. We cluster standard errors at the prefecture level. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A.5.2 Controlling for Earmarked Expenditures and Farm Support

Another potential set of omitted variables that might matter concerns government subsidies and transfers that could affect voting patterns. We investigate this by exploring the potential impact of two additional controls. First, [Catalinac et al. \(2020\)](#) argue that earmarked funds are a principal mechanism for securing votes in municipalities by delivering benefits to the locale. For example, the LDP might garner the support of veterans' families by channeling earmarked expenditures to these locations.³⁷ If the LDP disproportionately supports veterans' families by providing them with more earmarked expenditures, we might observe an association between military casualties and LDP support not because of any martyr effect, but because the LDP offers these families more support. As a robustness check, we therefore include per-capita earmarked expenditures (*kokko shishutsukin*) for the city as a control variable to account for the possibility that these expenditures are correlated with military casualty rates. Columns 3, 7, and 11 in Table A.5 reveal that controlling for per-capita earmarked expenditures has little explanatory power and does not qualitatively affect our results.³⁸

A second possible omitted variable concerns policies intended to help farmers, such as agricultural subsidies and trade protection. The LDP is well known for viewing farmers as a core constituency. If cities with disproportionately high shares of farmers also tended to have high military casualty rates or suffered less from morale bombing, this could bias our results. However, there may still be substantial variation across cities within prefectures in how their citizens benefit from farm support packages. We investigate this possibility in columns 4, 8, and 12 of Table A.5, where we include a dummy variable, "High Agricultural Employment Share," for cities in which more than twenty percent of the employed population works in primary industry (agriculture, forestry, and fisheries). We find support for the hypothesis that the LDP vote share tends to be about three to five percentage points higher in these cities (depending on the period analyzed), consistent with the hypothesis that Japanese farmers strongly support the LDP. However, controlling for the agricultural employment share in a city hardly affects the magnitudes of our coefficients of interest, leaving our main results intact.

A.5.3 Veterans' Benefits vs. Militarism

Another potential threat to identification is that families of deceased veterans may not care about constitutional revision but instead support the LDP because it favors generous transfers to veterans and their families. Since these transfers are not allocated by location, they do not appear in the (place-based) earmarked expenditures we examined earlier. The main problem with this argument is that, historically, both the LDP and its opposition vied for these votes by advocating generous benefits for veterans' families. Figure A.1 shows the total amount of military pensions and the number of recipients over time. The principal cleavages were not over the amount of benefits but over the relative amounts allocated to the families of high-ranking officers and the terminology used to describe the benefits.³⁹ Indeed, the Japan Socialist and Communist Parties have, at times,

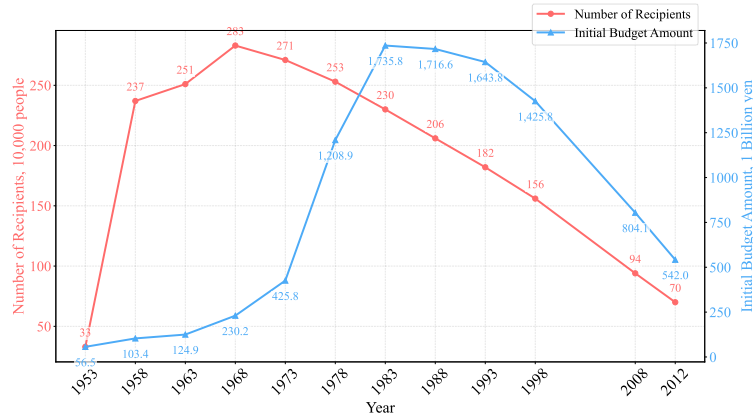
³⁷Examples of earmarked expenditures include infrastructure projects (e.g., road construction, schools, hospitals), special subsidies for agriculture, forestry, and fisheries, and elderly care facilities.

³⁸The fact that we cannot identify any impact of earmarked expenditures on LDP voting behavior may reflect the fact that our prefecture fixed effects absorb much of the regional variation in earmarked expenditures.

³⁹The parties do differ in the language used to describe benefits. [Akazawa \(2012\)](#) notes that the LDP's opponents often support calling the benefits "social security relief." In contrast, the LDP and the main lobby group for veterans'

supported *greater* benefits than those offered by the LDP. Moreover, because opposition parties historically advocated a relatively even distribution of veterans' benefits, while the LDP favored dramatically higher benefits for high-ranking officers in the Imperial Japanese Army, opposition policies were likely to be financially better for a wider set of veterans' families (Akahata, 2001; Akazawa, 2012).

Figure A.1: Military Pensions Time Trends



Note: This figure shows the time trends of the total amount and recipient count of military pensions. Source: https://www.soumu.go.jp/main_content/000175196.pdf#:~:text=237%20251%20282%20283%20271,253%20230%20206%20182%20156

We formally test whether the driver of LDP support in high-military-casualty constituencies is financial or rearmament-related by rerunning our specifications using the JCP vote share instead of the LDP vote share. While the LDP has been pro-rearmament since its founding, the JCP is an extreme pacifist party. It not only opposes amending Article 9 (which prohibits Japan from having an army) but also advocates dissolving Japan's Self-Defense Forces. It is also relatively easy to study because the JCP ran candidates in all electoral constituencies from 1958 through 1993 (Nakakita, 2021). It also ran candidates in every PRC in the later period, thereby obviating any sample-selection concerns.⁴⁰

We report the results of the analysis of drivers of voting for the JCP in Table 4. To avoid a mechanical relationship in which districts that supported the LDP tend to support opposition parties less, we run our regressions in two ways. First, we calculate the JCP vote share as a share of all votes cast, and second, we calculate it as a share of all votes cast for opposition (i.e., non-LDP) parties. The coefficient on the *Seiyukai* vote share is negative in every column, so cities that voted more for the pro-military *Seiyukai* before the war tended to vote less for the pacifist JCP after it, although the coefficient is significant (at the 10 percent level) only in column 1. More important for our thesis are the coefficients on the draft-cohort gender ratio and per-capita building destruction.

families, the Bereaved Families Association, have opposed using this term because it “disregards the essence of the pension system” and causes misunderstandings. They therefore advocate calling them “military pensions,” which embodies the idea that veterans made special contributions to the nation and their benefits should not be lumped together with other social insurance schemes. The JCP and JSP are loath to use this terminology precisely because they do not want to institute policies that might appear to glorify Japan's military.

⁴⁰These facts make focusing on the JCP cleaner than using voting data for other opposition parties, which typically ran candidates in only some constituencies.

The first row shows that military casualties are not associated with higher support for the JCP. This is consistent with the martyr effect: high military casualty rates make cities more likely to support the pro-military LDP and less likely to support pacifist parties, regardless of whether they offer the cities' residents generous veterans' benefits.

In contrast, the second row of the table indicates that residents of cities that suffered the most urban devastation are more likely to vote for the pacifist JCP. While the results in columns 1, 3, and 5 might simply reflect the fact that people who do not support the LDP are more likely to support opposition parties of any stripe, the results in columns 2, 4, and 6 tell a different story. In these columns, we present results in which we define the JCP vote share relative to votes for opposition parties. Since the opposition is entirely composed of relatively pacifist Japanese parties, the positive and significant coefficient on per-capita building destruction indicates that it is associated with voting for the most extreme pacifist party.

In summary, we find that voters in cities that experienced high military casualties are not simply seeking financial restitution. They support parties that advocate rearmament. Voters in cities that experienced devastation, however, are more likely to support the most extreme pacifist party on the spectrum.

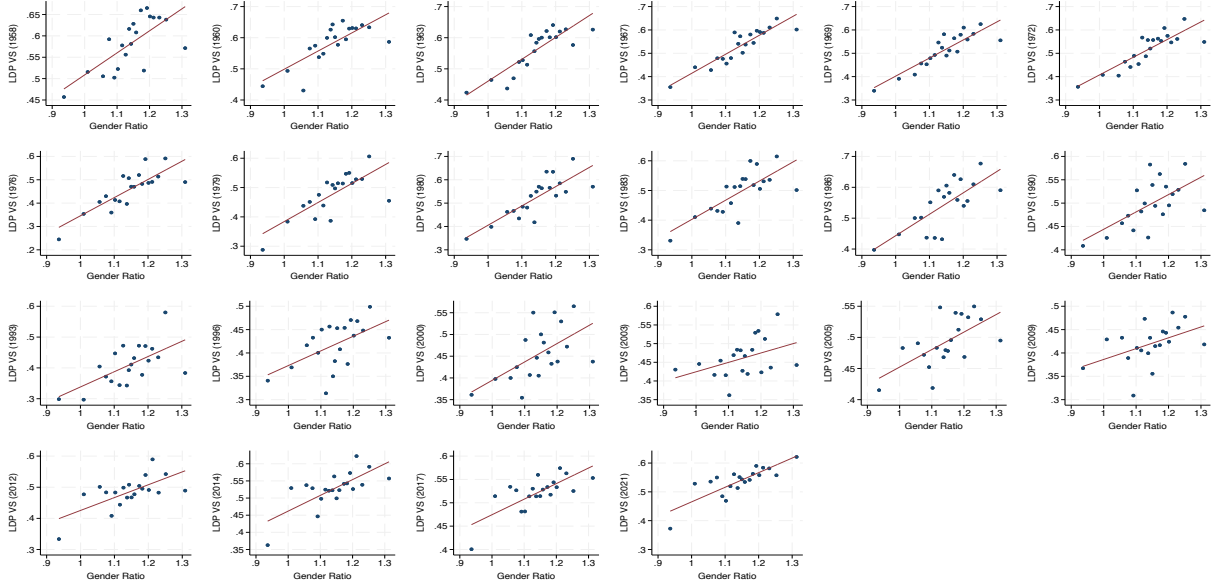
A.5.4 *Single-Member-Constituency Results*

Our results in the post-reform period were based on measuring the LDP's vote share in proportional representation constituencies. The pre-reform ballot was cast for a candidate rather than a party, so no post-reform ballot reproduces it exactly; the PRC vote is nonetheless the closest counterpart, because every major party competed in every constituency under both systems, so summing a party's votes yields a measure of its aggregate support that is comparable across the reform. Comparing the pre-reform multi-member elections with post-reform SMC elections is not a clean experiment and creates a host of problems.⁴¹ Nevertheless, we report results using SMC data in Table A.6, and Figures A.2–A.5 repeat Figures 3–6 using SMC vote shares after 1994.

Using SMC data in the post-reform period yields results broadly consistent with the martyr and morale effects discussed earlier. In the post-reform period, military casualties raise LDP vote shares, while per-capita building destruction lowers them. However, the results have larger standard errors, making it harder to detect differences between the two periods.

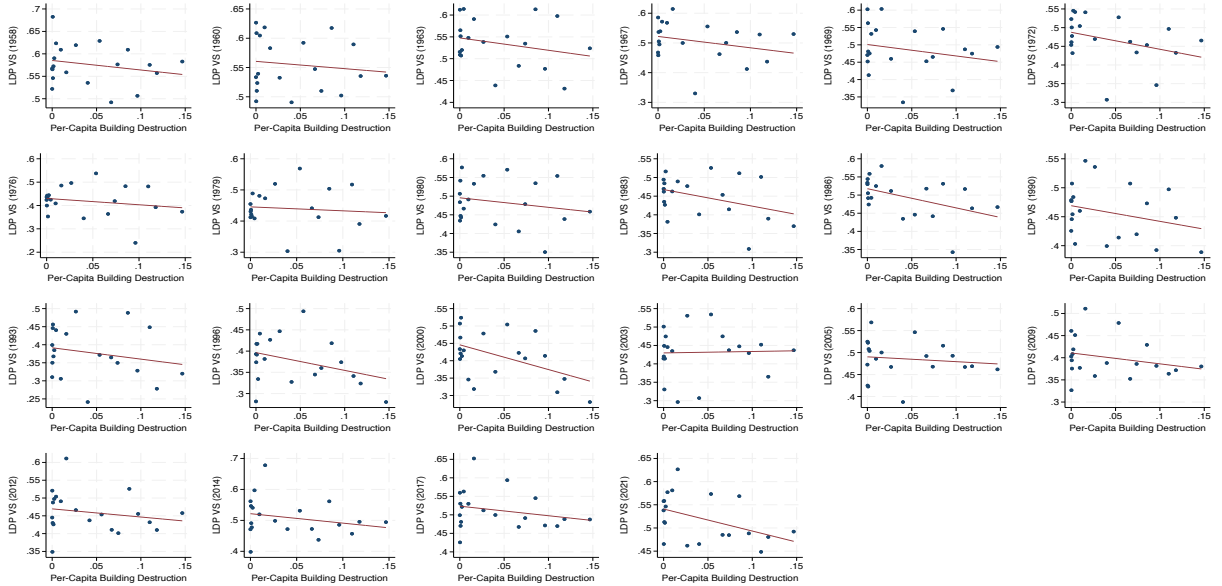
⁴¹First, it is more difficult to compare the pre-reform voting system with SMCs because of rumored vote trading. Because small parties often did not run candidates in SMCs in which they were unlikely to win, party votes in these areas can differ from population party preferences. This strategic behavior in SMCs distorts vote shares relative to PRCs. The second problem is more insidious. One of the LDP's pacifist coalition members, the CGP, was a small party that struggled to win seats in SMCs but could win in more PRCs. It therefore instructed its voters to vote for LDP candidates in SMCs in exchange for powerful cabinet positions in the coalition government. Since some pacifists voted for the LDP in SMCs and against it in PRCs, the voting behavior in SMCs likely did not reflect voter attitudes toward militarism.

Figure A.2: LDP Share (SMC) and Gender Ratio (Draft Cohort as of 1950)



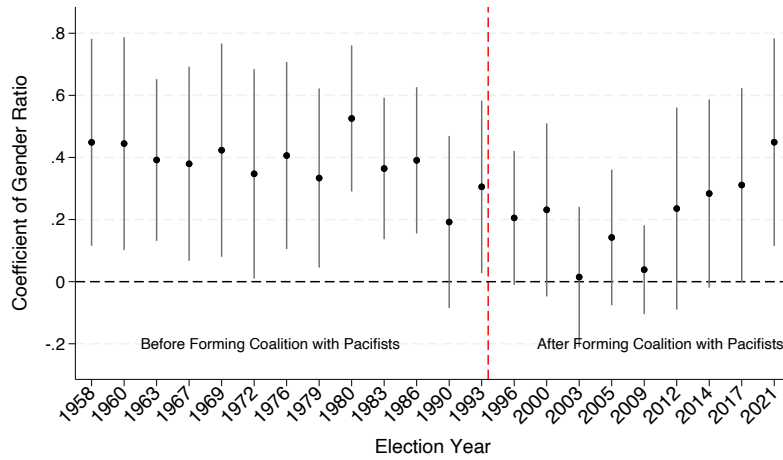
Note: This figure presents a bin-scatter plot of the LDP vote share (vertical axis) against the female-to-male ratio of people in the draft cohort (horizontal axis) for each election year from 1958 to 2021. We use multi-member-constituency results through 1993 and SMC results from 1996 onward. Each dot represents a bin of cities, and we plot the fitted line.

Figure A.3: LDP Share (SMC) and Per-Capita Building Destruction Excluding Zero Destruction



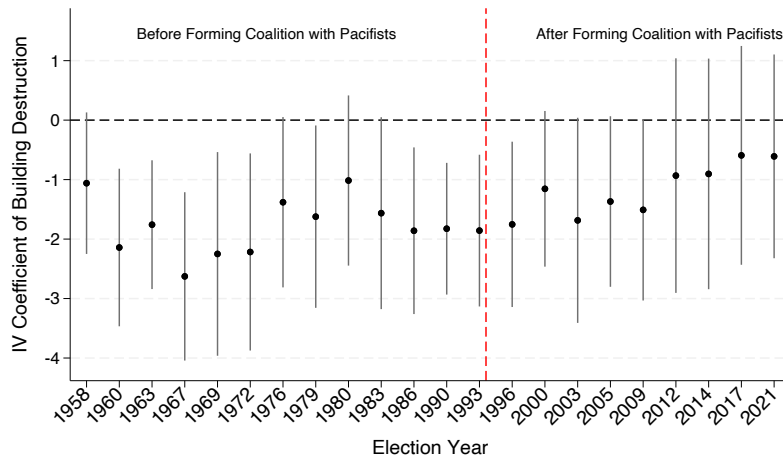
Note: This figure presents a bin-scatter plot of the LDP vote share (vertical axis) against the per-capita building destruction (horizontal axis) for each election year from 1958 to 2021. We use multi-member-constituency results through 1993 and SMC results from 1996 onward. Each dot represents a bin of cities, and we plot the fitted line. The sample excludes the 164 cities with no recorded building destruction.

Figure A.4: Persistence of the Impact of 1950 Draft-Cohort Gender Ratio on the LDP Vote Share (SMC, IV Estimates)



Note: The vertical axis shows the coefficient and 95-percent confidence interval of β_{MI} , the coefficient on draft-cohort gender ratio from estimating equation (1) separately by election year, with standard errors clustered at the prefecture level. The dependent variable is the LDP vote share, measured using multi-member-constituency results through 1993 and SMC results from 1996 onward. Per-capita building destruction is instrumented with the city's 1940 manufacturing employment share and a count of army and navy munitions factories (see Appendix A.1.10). We also control for per-capita bombing deaths, the *Seiyukai* Vote Share, prefecture fixed effects, longitude, and latitude. The red vertical line marks the 1994 electoral reform. See Table 1 for variable definitions.

Figure A.5: Persistence of the Impact of Per-Capita Building Destruction on the LDP Vote Share (SMC, IV Estimates)



Note: The vertical axis shows the coefficient and 95-percent confidence interval of β_{DI} , the second-stage coefficient on per-capita building destruction from estimating equation (1) separately by election year, with standard errors clustered at the prefecture level. The dependent variable is the LDP vote share, measured using multi-member-constituency results through 1993 and SMC results from 1996 onward. Per-capita building destruction is instrumented with the city's 1940 manufacturing employment share and a count of army and navy munitions factories (see Appendix A.1.10). We also control for the draft-cohort gender ratio, per-capita bombing deaths, the *Seiyukai* Vote Share, prefecture fixed effects, longitude, and latitude. The red vertical line marks the 1994 electoral reform. See Table 1 for variable definitions.

Table A.6: Pooled Regression Results (SMC)

	(1) 1958–1993	(2) 1958–1993	(3) 1996–2021	(4) 1996–2021	(5) 1958–2021	(6) 1958–2021
Draft-Cohort Gender Ratio	0.388*** (0.111)	0.381*** (0.105)	0.248*** (0.082)	0.211** (0.085)	0.330*** (0.087)	0.312*** (0.084)
Per-Capita Building Destruction	-1.802*** (0.496)	-1.783*** (0.515)	-1.331** (0.615)	-1.173* (0.652)	-1.610*** (0.478)	-1.535*** (0.509)
Per-Capita Bombing Deaths	1.573** (0.659)	1.585** (0.649)	1.209 (0.798)	1.107 (0.789)	1.425** (0.663)	1.392** (0.652)
Seiyukai Vote Share in 1928		0.016 (0.086)		0.163** (0.066)		0.075 (0.069)
Observations	3,900	3,900	2,689	2,689	6,589	6,589
Year FE	✓	✓	✓	✓	✓	✓
Prefecture FE	✓	✓	✓	✓	✓	✓
Latitude and Longitude		✓		✓		✓
Kleibergen-Paap rk Wald F	37.33	30.81	36.96	30.54	37.19	30.72
Hansen J p-value	0.499	0.520	0.624	0.797	0.726	0.674

Notes: The table shows second-stage IV estimates and clustered standard errors (in parentheses) from estimating equation (1), instrumenting per-capita building destruction with the city's 1940 manufacturing employment share and a count of army and navy munitions factories (see Appendix A.1.10); the matching first-stage estimates are reported in Appendix A.2. We pool the data across all elections within the time period given in the column headers. The dependent variable is the LDP vote share measured from the single-member-district ballot from 1996 onward and from the multi-member district results before 1994, when no single-member districts existed; columns 1–2 therefore use the same outcome as Table 2, and columns 5–6 pool the two. Odd-numbered columns include per-capita bombing deaths as the only additional control; even-numbered columns add the *Seiyukai* vote share in 1928 and each city's latitude and longitude. The post-reform samples are slightly smaller than in Table 2 because the single-member vote share is unavailable for a few city-years. The Kleibergen–Paap rk Wald F statistic and Hansen J overidentification p-value are reported for each column. See Table 1 for variable definitions. We cluster standard errors at the prefecture level but cannot cluster at the city level because city definitions change over time. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.7: Pooled Regression Estimates Excluding Hiroshima

	1958–1993		1996–2021		1958–2021	
	OLS (1)	IV (2)	OLS (3)	IV (4)	OLS (5)	IV (6)
Panel A. LDP vote share						
Draft-Cohort Gender Ratio	0.502*** (0.094)	0.388*** (0.106)	0.140*** (0.034)	0.091** (0.035)	0.354*** (0.066)	0.266*** (0.074)
Per-Capita Building Destruction	-0.330** (0.136)	-1.910*** (0.683)	-0.137*** (0.045)	-0.820** (0.354)	-0.251*** (0.093)	-1.464*** (0.525)
Per-Capita Bombing Deaths	-1.664*** (0.323)	3.407 (4.281)	-0.644*** (0.188)	1.547 (2.178)	-1.246*** (0.211)	2.646 (3.382)
Seiyukai Vote Share in 1928	0.048 (0.077)	0.007 (0.091)	0.055 (0.033)	0.037 (0.038)	0.051 (0.055)	0.019 (0.066)
Observations	3,887	3,887	2,691	2,691	6,578	6,578
Year FE	✓	✓	✓	✓	✓	✓
Prefecture FE	✓	✓	✓	✓	✓	✓
Latitude and Longitude	✓	✓	✓	✓	✓	✓
R-squared	0.364		0.604		0.531	
Kleibergen-Paap rk Wald F		24.35		24.33		24.36
Hansen J p-value		0.438		0.070		0.285
Panel B. First stage: Per-Capita Building Destruction						
1940 Manufacturing Share		0.070*** (0.021)		0.070*** (0.021)		0.070*** (0.021)
Munitions Factory Count		0.002*** (0.000)		0.002*** (0.000)		0.002*** (0.000)
Draft-Cohort Gender Ratio		-0.035 (0.025)		-0.035 (0.025)		-0.035 (0.025)
Per-Capita Bombing Deaths		2.706 (1.870)		2.706 (1.871)		2.706 (1.869)
Seiyukai Vote Share in 1928		0.003 (0.019)		0.003 (0.019)		0.003 (0.019)
Observations		3,887		2,691		6,578
Year FE		✓		✓		✓
Prefecture FE		✓		✓		✓
Latitude and Longitude		✓		✓		✓
Excluded-instruments F		24.34		24.32		24.35
Excluded-instruments p-value		0.000		0.000		0.000

Notes: The table re-estimates Table 2 on the 299-city sample that excludes Hiroshima City, which is dropped from every year of the panel; the specification is otherwise identical. The dependent variable in Panel A is the LDP Vote Share, i.e., the fraction of votes received by the Liberal Democratic Party (the LDP's vote share after 1993 is calculated using the PRC election results). For each period given in the column headers we report the OLS estimate and the corresponding IV estimate side by side. The IV columns instrument per-capita building destruction with the city's 1940 manufacturing employment share and a count of army and navy munitions factories (see Appendix A.1.10); the Kleibergen–Paap rk Wald F statistic and the Hansen J overidentification p -value are reported for each IV column. Panel B reports the matching first stage, in which the dependent variable is per-capita building destruction; it applies only to the IV columns, so the OLS columns are left empty, and the excluded-instruments F statistic and p -value are reported for each IV column. We pool the data across all elections within the time period given in the column headers. Standard errors are clustered at the prefecture level and reported in parentheses. See Table 1 for variable definitions. Asterisks indicate significance:

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.8: Pooled Regression Estimates: 1920 Manufacturing-Share Instrument

	1958–1993		1996–2021		1958–2021	
	OLS (1)	IV (2)	OLS (3)	IV (4)	OLS (5)	IV (6)
Panel A. LDP vote share						
Draft-Cohort Gender Ratio	0.509*** (0.095)	0.356*** (0.098)	0.143*** (0.034)	0.091** (0.037)	0.360*** (0.067)	0.247*** (0.070)
Per-Capita Building Destruction	-0.455*** (0.127)	-2.047*** (0.562)	-0.186*** (0.048)	-0.733*** (0.240)	-0.345*** (0.088)	-1.509*** (0.414)
Per-Capita Bombing Deaths	0.236 (0.323)	1.854** (0.741)	0.109 (0.145)	0.664** (0.312)	0.184 (0.249)	1.367** (0.551)
Seiyukai Vote Share in 1928	0.038 (0.078)	0.012 (0.087)	0.051 (0.034)	0.042 (0.037)	0.044 (0.057)	0.024 (0.063)
Observations	3,900	3,900	2,700	2,700	6,600	6,600
Year FE	✓	✓	✓	✓	✓	✓
Prefecture FE	✓	✓	✓	✓	✓	✓
Latitude and Longitude	✓	✓	✓	✓	✓	✓
R-squared	0.361		0.602		0.529	
Kleibergen-Paap rk Wald F		32.22		32.20		32.23
Hansen J p-value		0.269		0.066		0.196
Panel B. First stage: Per-Capita Building Destruction						
1920 Manufacturing Share		0.094*** (0.030)		0.094*** (0.030)		0.094*** (0.030)
Munitions Factory Count		0.002*** (0.001)		0.002*** (0.001)		0.002*** (0.001)
Draft-Cohort Gender Ratio		-0.052* (0.028)		-0.052* (0.028)		-0.052* (0.028)
Per-Capita Bombing Deaths		0.917*** (0.303)		0.917*** (0.303)		0.917*** (0.302)
Seiyukai Vote Share in 1928		0.015 (0.022)		0.015 (0.022)		0.015 (0.022)
Observations		3,900		2,700		6,600
Year FE		✓		✓		✓
Prefecture FE		✓		✓		✓
Latitude and Longitude		✓		✓		✓
Excluded-instruments F		32.21		32.19		32.23
Excluded-instruments p-value		0.000		0.000		0.000

Notes: The table re-estimates Table 2 replacing the city's 1940 manufacturing employment share with its prewar counterpart: the 1920 manufacturing (secondary-sector) employment share, constructed by crosswalking the 1920 census source units directly to our 1980 city-unit definitions using an area-weighted spatial overlay (see Appendix A.1.10); the count of army and navy munitions factories remains the second excluded instrument. The dependent variable in Panel A is the LDP Vote Share, i.e., the fraction of votes received by the Liberal Democratic Party (the LDP's vote share after 1993 is calculated using the PRC election results). For each period given in the column headers we report the OLS estimate and the corresponding IV estimate side by side; the OLS columns do not involve the instruments and are therefore identical to those of Table 2. The Kleibergen–Paap rk Wald F statistic and the Hansen J overidentification p -value are reported for each IV column. Panel B reports the matching first stage, in which the dependent variable is per-capita building destruction; it applies only to the IV columns, so the OLS columns are left empty, and the excluded-instruments F statistic and p -value are reported for each IV column. We pool the data across all elections within the time period given in the column headers. Standard errors are clustered at the prefecture level and reported in parentheses. See Table 1 for variable definitions. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A.6 Supporting Tables for the Mechanisms Analysis

This section collects the supporting regression tables for Section 6: survey-based attitude measures (Table A.9), the rearmament rhetoric of the legislators those districts elected (Table A.10), intergenerational and social-network transmission (Tables A.11 and A.12), war-bereaved-family association membership (Table A.13), and peace-education school trips (Table A.14). The testimony results are in Table 3 in the main text. See Appendix A.1 for the construction of each underlying dataset.

Table A.9: Wartime Exposure and Survey Attitudes (1976 JABISS and 1967 JNES)

	1976 JABISS		1967 JNES	
	Strengthen Security Treaty	Strengthen Defense Forces	Bases Bad	US Occupation Good
Military Casualty Exposure	0.055* (0.029)	0.048** (0.019)	-0.020** (0.008)	0.006 (0.009)
Building Destruction Exposure	0.011 (0.020)	0.013 (0.016)	0.006 (0.008)	0.004 (0.009)
Observations	786	909	1094	895
R-squared	0.015	0.011	0.007	0.000

Notes: Columns 1–2 use the 1976 JABISS survey; columns 3–4 use the 1967 JNES survey (see Appendix A.1.5 and Appendix A.1.6 for item wording and sample construction). Military Casualty Exposure and Building Destruction Exposure are standardized current-prefecture exposure measures. Standard errors, clustered by current prefecture, are in parentheses. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.10: Wartime Exposure and Rearmament Rhetoric in House of Representatives Speech, 1947–2025

	Support Share (1)	Opposition Share (2)	Net Support (3)
Draft-Cohort Gender Ratio	1.878*** (0.577)	-1.609*** (0.359)	3.488*** (0.665)
Per-Capita Building Destruction	-4.945** (2.459)	10.621*** (1.516)	-15.566*** (2.826)
Per-Capita Bombing Deaths	6.576 (4.358)	-9.709*** (1.401)	16.286*** (4.447)
MP-Meetings	282,107	282,107	282,107
Calendar-Year FE	✓	✓	✓
Kleibergen-Paap rk Wald F	321.39	321.39	321.39

Notes: An observation is one House member in one date-specific meeting (a “member-meeting”); the 282,107 member-meetings in the sample comprise 2,981,650 substantive statements. The outcome in each column is the share of that member’s substantive statements in that meeting classified as supporting rearmament and defense expansion (column 1), as opposing them (column 2), and the difference between the two (column 3), expressed in *percentage points*. Statements are classified by an ensemble of three Japanese ModernBERT models trained on a sample of 3,000 statements labeled by GPT-5.5; see Appendix A.1.4 for the training, validation, outcome construction, and linkage of members to electoral districts. Per-capita building destruction is instrumented with the district’s 1940 manufacturing employment share and count of army and navy munitions factories, as elsewhere in the paper (Appendix A.1.10); the draft-cohort gender ratio and per-capita bombing deaths enter as included regressors. All columns absorb calendar-year fixed effects. They deliberately do *not* absorb the member’s party, so the estimates capture the total representation a district receives, including differences in which parties win office there. Standard errors, clustered by term-specific electoral district (4,765 clusters), are in parentheses. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.11: Intergenerational Transmission: Parent and Location Effects on Respondent LDP Preference

	Respondent Preferred LDP
Parent Preferred LDP	0.143*** (0.023)
Draft-Cohort Gender Ratio	0.501** (0.198)
Per-Capita Building Destruction	-0.623 (0.425)
1975 SSM Survey Indicator	-0.068*** (0.023)
Observations	2185
R-squared	0.030

Notes: Pooled sample of male respondents from the 1967 JNES and 1975 SSM surveys (see Appendix A.1.6 and Appendix A.1.7). The dependent variable equals one if the respondent prefers the LDP. Parent Preferred LDP equals one if the respondent's parent (either parent in JNES; father in SSM) prefers the LDP. Draft-Cohort Gender Ratio and Per-Capita Building Destruction are measured at the respondent's current prefecture. The 1975 SSM Survey Indicator absorbs level differences between the two survey sources. Standard errors, clustered by current prefecture, are in parentheses. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.12: Local Social-Network Channels and Respondent LDP Preference

	LDP Networks
Neighbor LDP	0.220*** (0.058)
Coworker LDP	0.166** (0.064)
Friend LDP	0.127** (0.062)
Association LDP	0.127** (0.051)
Observations	684
R-squared	0.091

Notes: 1976 JABISS survey (see Appendix A.1.5 for item wording). The dependent variable equals one if the respondent prefers the LDP. Neighbor LDP, Coworker LDP, Friend LDP, and Association LDP equal one if the respondent reports that the corresponding contact or group mainly supports the LDP; respondents who report no such contact or who do not answer are excluded rather than coded as zero. Standard errors, clustered by JABISS sampling district, are in parentheses. We read these coefficients as descriptive associations, not causal peer effects. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.13: War-Bereaved Family Association (Izokukai) Membership

	2020	2010
Draft-Cohort Gender Ratio	0.036*** (0.012)	0.051*** (0.017)
Per-Capita Building Destruction	-0.014 (0.026)	-0.016 (0.039)
Observations	42	41
R-squared	0.225	0.233

Notes: Source: *Sankei Shimbun* prefectural survey (see Appendix A.1.8). The dependent variable is Izokukai members per capita, defined as reported membership divided by 1940 prefecture population; column (2020) uses current membership and column (2010) uses the roughly-ten-years-earlier count. Heteroskedasticity-robust standard errors are in parentheses. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.14: High-School Peace-Education School Trips to Okinawa, Osaka, and Kyoto

	Okinawa		Osaka		Kyoto	
	(1)	(2)	(3)	(4)	(5)	(6)
Draft-Cohort Gender Ratio	-0.006 (0.247)	0.419 (0.298)	-0.975*** (0.262)	-0.514* (0.274)	-1.142*** (0.265)	-0.761*** (0.279)
Per-Capita Building Destruction	1.242** (0.565)	1.738*** (0.620)	-2.040*** (0.552)	-1.169** (0.499)	-2.762*** (0.529)	-1.804*** (0.523)
Log Distance to Destination		0.146*** (0.043)		0.057*** (0.014)		0.052*** (0.016)
Observations	92	92	90	90	90	90
R-squared	0.099	0.175	0.275	0.387	0.403	0.471

Notes: Source: Japan School Excursion Association Databook 2023 and 2024 reports, covering high-school trips implemented in the 2022 and 2023 school years, respectively (see Appendix A.1.9). Each pair of columns takes a different destination as the outcome: the dependent variable is that destination's Trip Share, defined for an origin prefecture as the number of its recorded high-school trips that visit the destination divided by the prefecture's total recorded destination count across all destinations (each visited destination prefecture is counted once per trip regardless of duration or repeat visits, and a trip spanning several prefectures contributes one incidence to each destination visited). The outcome destination is Okinawa in columns 1–2, Osaka in columns 3–4, and Kyoto in columns 5–6. Okinawa is the peace-education destination; Osaka and Kyoto are major non-peace tourism destinations included as contrasts. All columns pool the two reports and include a report-year indicator (its coefficient is absorbed and not shown); the even columns add Log Distance to the column's destination, $\log(\text{distance})$, measured in kilometers from the origin prefecture's centroid to that destination prefecture's centroid. Every column excludes its own destination prefecture as an origin, and Okinawa is excluded throughout because its 1950 census and 1940 bombing covariates are missing; the estimation sample is therefore 92 prefecture-report observations (46 prefectures $\times$ 2 reports) for Okinawa and 90 (45 prefectures $\times$ 2 reports) for Osaka and Kyoto. Standard errors, clustered by origin prefecture, are in parentheses. Asterisks indicate significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A.7 Raid-Level Mechanisms in the Ten Cities with the Highest Per-Capita Bombing Deaths

In this appendix we provide evidence for treating per-capita bombing deaths as exogenous variation. We do so by asking why, among the cities the U.S. chose to attack, death rates differed so widely. Table A.15 lists the top ten cities by per-capita death along with the decisive raid and the documented reason for each city's toll. We draw on Japanese municipal and prefectural war-damage records, memorial registers, regional newspaper retrospectives, and U.S. operational records. Hiroshima, Nagasaki, and Tokyo are already discussed in the main text and receive brief entries here.

The cases point to a single conclusion: destruction and death were generated by different features of the same raids. Destruction mirrored what the bombers dropped and how readily it burned. Tonnage, incendiary share, wind, and construction density predicted destruction scale, whereas death was a function of the circumstances of the people below. The scale of death depended heavily on the hour the ordnance arrived relative to the working shift, whether an alert had been sounded or lifted, whether a leaflet warning happened to precede that particular raid, and where people happened to be when the bombs fell. We highlight four channels. First, the ordnance type: high explosive and naval gunfire kill instantly, even inside shelters, but burn few buildings. Conversely, incendiaries destroy on a scale that blasts cannot approach yet give residents hours to flee. Second, timing: a bomb that fell on a plant mid-shift, or on a holiday, caused the same destruction but a different level of death. Third, warning: an alert that held, or an American leaflet, enables evacuations without sparing a single building. Fourth, incendiary density above the norm and the weather determined how far fires ran. Only the fourth affects both deaths and destruction; the first three affect deaths while leaving destruction unchanged or lower.

We do not claim that the U.S. lacked control over these inputs. Bomb type, time over target, and leaflet policy were set by the Twentieth Air Force's bomber command on Guam ([Craven and Cate, 1953](#); [Fedman and Karacas, 2012](#)). However, these were decided for the campaign as a whole based on operational grounds: aircraft attrition, ordnance stocks, or target-system priorities. These plans were not chosen city by city on any dimension that could plausibly correlate with a city's postwar politics or measurement error in building destruction. Moreover, purely local accidents of timing, warning, shelter, and terrain produced death rates that differ by orders of magnitude across cities and raids. Building destruction was the margin the U.S. was deliberately optimizing in selecting target cities and bomb loads, which is why we instrument it. How many people a given bomb load killed was not, which is why we treat deaths as exogenous. In the subsequent sections, we discuss the experiences of the cities with the highest per-capita death rates, how this affects our identification, and why there is large variation in the local Japanese counts of casualties.

Table A.15: The Ten Cities with the Highest Per-Capita Bombing Deaths

Rank	City	Prefecture	Deaths per 1,000 residents	Buildings destroyed per 100	Decisive raid(s)	Principal documented reason
1	Hiroshima	Hiroshima	208.4	15.3	6 Aug 1945	Atomic detonation without warning over the city center at mid-morning
2	Nagasaki	Nagasaki	84.7	6.6	9 Aug 1945	Cloud cover over Kokura caused pilots to switch targets mid-flight. Missed target by 3 km.
3	Ashiya	Hyogo	20.1	19.4	11 May 1945; 5–6 Aug 1945	Spillover from a precision strike on an adjacent aircraft plant; later inside a designated urban-area target; fragmentation clusters loaded alongside incendiaries; asphyxiation in backyard shelters
4	Tsu	Mie	19.6	13.2	24 Jul 1945; 28–29 Jul 1945	Un-warned daylight attack far more lethal than the leafleted night incendiary attack that followed and burned three times as much
5	Akashi	Hyogo	16.0	11.6	19 Jan 1945; 9 Jun 1945	Aircraft plant made the city a repeat precision target; bombs struck mid-shift, and on 9 June fell long into the park designated as the civilian refuge
6	Tokyo	Tokyo	14.1	9.8	9–10 Mar 1945	First mass low-altitude incendiary attack; residents did not anticipate a firestorm and did not evacuate
7	Toyama	Toyama	11.5	12.2	1–2 Aug 1945	Incendiary density roughly three times the campaign average; alert sounded and lifted hours beforehand; fire-defense system collapsed
8	Iwakuni	Yamaguchi	11.0	1.8	10 May 1945; 14 Aug 1945	High explosive on the marshaling yards at midday, as three trains had arrived simultaneously; the city was never an incendiary urban-area target
9	Kagoshima	Kagoshima	10.2	9.1	17 Jun 1945; 27 Jul 1945	Front-line transit position; high incendiary density; mass shelter asphyxiation; students retained on site as fire-watch personnel
10	Hitachi	Ibaraki	9.8	11.4	10 Jun 1945; 17–18 Jul 1945	Daylight high explosive on the Hitachi Ltd. machinery plant while the shift was present; then naval gunfire from the Third Fleet—the incendiary raid that burned most of the city killed an order of magnitude fewer

Notes: Cities are ranked by per-capita bombing deaths, defined as in Section 4.5; “Buildings destroyed per 100” is per-capita building destruction per hundred 1940 residents, from [Davis and Weinstein \(2002\)](#). The sample is the 300 largest Japanese cities by 1940 population. Raid dates, ordnance, and times over target are from XXI Bomber Command mission summaries, bomb-group unit histories, and [Craven and Cate \(1953\)](#); mechanisms are from the Japanese sources cited in Appendix A.7.1. On the divergence among locally reported fatality counts, see Appendix A.7.3. All URLs were last accessed July 30, 2026.

A.7.1 Why Death Rates Were High in Each City

Hiroshima and Nagasaki (ranks 1 and 2). A single detonation was delivered without warning to a population with no basis for anticipating it, so that essentially the whole toll was incurred in an instant and inside what residents took to be shelter. At Nagasaki, cloud cover forced three bomb runs and put the weapon some 8,500 feet up the Urakami valley from the harbor, into a bowl of hills that confined the blast.⁴² The Nagasaki weapon was the more powerful of the two, yet it killed a bit over a quarter as many people in absolute terms and left a per-capita death rate about two-fifths of Hiroshima's, the difference between the two ratios reflecting Nagasaki's smaller 1940 population. Both cities are discussed in Section 4.5.

Ashiya (Hyogo, rank 3). Ashiya was never attacked as a primary target. On 11 May 1945 B-29s attacking the Kawanishi Aircraft plant immediately to its west scattered high explosive across the coastal strip. Although Ashiya was not the target, this single raid accounts for more than a quarter of the air-raid dead recorded by the city. On 5–6 August it fell inside the designated “Nishinomiya–Mikage Urban Area” of Mission 314, in which some 250 aircraft delivered about 2,000 tons of mixed incendiary, fragmentation, and general-purpose bombs in thirty-six minutes. Two causes of death were specific to that night. Shrapnel bombs dropped along with the incendiaries inhibited firefighting, and many suffocated in backyard shelters. One survivor recalled: “incendiaries were burning at the shelter entrance; they could not get out.”⁴³

Tsu (Mie, rank 4). Tsu's two major attacks demonstrate that destruction and death did not always move together. The raid of 24 July 1945 dropped 280 tons of high explosive on the city center and killed some 950 people. Four nights later, 76 B-29s burned 57 percent of the city and killed about a third as many. The second raid was less lethal thanks to a prior warning. On 27–28 July, six B-29s scattered 660,000 leaflets over eleven cities, Tsu among them, urging civilians to evacuate. The first raid came without any such notice.⁴⁴

Akashi (Hyogo, rank 5). Since Akashi hosted the Kawasaki Aircraft engine and airframe complex, it was responsible for about twelve percent of Japan's engine production ([USSBS: Aircraft Division, 1947](#)). It was attacked repeatedly by daylight precision raids that arrived mid-shift rather than at night. However, its deadliest attack was a bombing error. On 9 June 1945, 24 B-29s released 72 four-thousand-pound bombs through almost unbroken cloud, by radar, and the village rather than the plant was hit. A navigator recalled that bombs “landed about 3,000 feet long” and reconnaissance photographs showed they had come down “in the middle of the town.” They fell

⁴²Craven and Cate (1953), Vol. V, p. 724, which attributes the severity of the blast partly to “the bowl-shaped region into which it fell.” The miss distance is contested: field orders specified the Mitsubishi Steel and Arms Works, 0.75 miles from ground zero, while the 509th Group's planning summary placed the aiming point in the commercial district east of the harbor.

⁴³Ashiya City and Board of Education, *Ashiya no Sensō* (1991), <https://www.city.ashiya.lg.jp/jinken/peace/documents/sensoukiroku1.pdf>, and *Watashi no Sensō Taikenki* (2006), <https://www.city.ashiya.lg.jp/jinken/peace/documents/sensoukiroku2.pdf>; Mission 314 composition from the XXI Bomber Command mission summary for August 1945, <https://user.xmission.com/~tmathews/b29/56years/missionsummary4508.html>.

⁴⁴Craven and Cate (1953), Vol. V, p. 656 (leaflet text) and p. 675, Table 1 (share of urban area destroyed); aircraft counts and tonnages from the XXI Bomber Command mission summaries for Missions 288 and 297; per-raid damage from *Mie-ken Shi*, Q&A 68, “Tsu-shi no Sensai Jōkyō,” https://www.bunka.pref.mie.lg.jp/rekishi/kenshi/asp/Q_A/detail.asp?record=177.

into Akashi Park, which the city had designated a place of refuge, where shelters were “no more than a hole dug in the ground, covered with boards and then soil.”⁴⁵

Tokyo (rank 6). The 9–10 March 1945 attack was the first mass low-altitude night incendiary raid of the campaign. Two complementary explanations are usually given for its lethality relative to later raids of comparable or greater tonnage. First is the weather noted in Section 4.5: little prior rain, and strong winds that night drove the fires far faster than the incendiary load alone would have. Second, neither the population nor the civil-defense system anticipated a firestorm. The 1941 Air Defense Law obliged residents to remain in place and fight fires rather than evacuate.⁴⁶ An Osaka raid four days later delivered slightly more tonnage and produced a death rate roughly a twelfth as high.⁴⁷

Toyama (Toyama, rank 7). Toyama received a bomb load scaled to a much larger target: 1,465 tons of incendiaries over a designated target area of 1.88 square miles, or roughly 780 tons per square mile, while proof tests had put the requirement for destroying Japanese residential construction at ten tons per square mile (Ohi, 2015). The target point was the city center; under clear skies, 99.5 percent of the designated area burned, compared to an average of 43 percent across the small-city incendiary attacks. Furthermore, B-29s had overflowed the city around 10 p.m. without releasing bombs, and the alert was canceled around 11 p.m., an hour and a half before the actual attack began. In fact, the municipal fire-defense system collapsed, with over half the deployed pump trucks failing within five hours.⁴⁸

Iwakuni (Yamaguchi, rank 8). Iwakuni is the clearest case of deaths without destruction: it lost fewer than two buildings per hundred residents, the lowest figure among these ten cities and roughly a seventh of Toyama’s, yet it records the eighth-highest death rate in our sample. It was struck entirely as a precision target and never appeared on the sixty-seven-city urban-area incendiary list. On 14 August 1945, 108 B-29s dropped 709 tons of general-purpose bombs. The aiming point was the rail yards, and Iwakuni’s passenger station stood immediately beside them. The municipal

⁴⁵The Survey ranks Kawasaki third in the Japanese aircraft industry, with 17 percent of combat airframes and 12 percent of combat engines manufactured in 1944. Aircraft count, cloud cover, and bombing result from 6th Bomb Group, *Pirates Log*, p. 47, and the 20th Air Force summary for Mission 192, <https://6thbombgroup.com/mission-49-kawasaki-aircraft-company-at-akashi-1-june-9/>; the navigator’s account from Donald W. Kearney, “4000 Lb. Bombs! — Kawasaki Aircraft Plant — June 9, 1945,” <https://6thbombgroup.com/4000-lb-bombs-kawasaki-aircraft-plant-june-9-1945/>; Japanese quotations and raid-by-raid detail from Akashi City, *Akashi no Kūshū: Shijitsu-hen* (2022), pp. 1–2, 4–5, 8, https://www.city.akashi.lg.jp/community/jinken_ka/heiwa/peasep20.html.

⁴⁶Ōmae Osamu, “Naze Kūshū kara Nigete wa Ikenai no ka,” *SYNODOS*, <https://synodos.jp/opinion/politics/13238/>, which reproduces the statutory prohibition on leaving one’s locality and the duty to extinguish fires, both enforceable by fine and imprisonment.

⁴⁷Craven and Cate (1953), Vol. V, pp. 617, 620. Tokyo, 9–10 March: 279 B-29s, 1,665 tons, 15.8 square miles burned out, 83,793 dead. Osaka, 13–14 March: 274 B-29s, 1,732.6 tons, 8.1 square miles burned out, 3,988 dead and 678 missing. Against the 1940 populations used throughout, death rates of 11.5 and 1.0 per 1,000 residents.

⁴⁸Craven and Cate (1953), Vol. V, p. 657 (both percentages) and ch. 21, Table 1 (Mission 307); tonnage, target area, and the 99.5 percent assessment from the XXI Bomber Command mission summary for Mission 307, <https://user.xmission.com/~tmathews/b29/56years/>; alert sequence from Kitanihon Shimbunsha, ed., *Toyama Daikūshū* (1972), p. 35; aiming point and weather from Nakayama Isao, ed., *LeMay: Saigo no Kūshū* (1997), pp. 167–169; fire-defense collapse from *Toyama-shi Shōbō-shi* (1990), pp. 328–329. These Japanese sources are compiled at <https://ja.wikipedia.org/wiki/%E5%AF%8C%E5%B1%B1%E5%A4%A7%E7%A9%BA%E8%A5%B2>; see also Toyama City, <https://www.city.toyama.toyama.jp/etc/kuushuu/>.

history records that the up train, the down train, and the Gantoku Line train had all pulled in within moments of each other, leaving the platforms packed with passengers and people seeing them off. A bomb pattern intended for rolling stock came down on the crowds instead. The same tonnage half an hour earlier or later would have done nearly identical damage to the track and killed a small fraction as many people.⁴⁹

Kagoshima (Kagoshima, rank 9). Kagoshima was attacked eight times and lost 93 percent of its urban area, but its deaths were concentrated on a few days. Four of the eight raids have no recorded death toll, and 2,316 of the roughly 3,300 recorded dead fall on a single night, 17 June 1945. The number was a consequence of shelter and civil-defense doctrine rather than the scale of the fire: a mass suffocation episode in a single air-raid shelter.⁵⁰

Hitachi (Ibaraki, rank 10). Hitachi is the clearest within-city demonstration, because it was attacked three different ways and the attack that destroyed the most buildings killed the fewest people. On 10 June 1945 a daylight formation delivered roughly eight hundred one-ton general-purpose bombs onto Hitachi Ltd.'s machinery plant and the housing around it. The day was a substitute holiday on which the work force had reported anyway; 634 employees and mobilized students died inside the plant perimeter. On the night of 17–18 July the city became one of only four Japanese cities shelled by Allied battleships, when Task Unit 34.8.2 fired roughly 1,800 rounds over two hours, aiming by radar through rain and fog. Only three of nine designated industrial targets were hit, but the rounds that missed came down in residential districts. Finally, on the night of 19–20 July, 126 B-29s delivered 963 tons of incendiaries and burned 64.5 percent of the urban area—the single most destructive event of the city's war—while killing roughly an order of magnitude fewer people than the two previous raids.⁵¹

A.7.2 *Implications for Identification*

The factors that determined how many people a raid killed, conditional on the city having been targeted, were the ordnance, the time of a raid, whether any alerts occurred, and whether a bomb hit its intended target. None of these is a function of a city's politics. Several of these decisions were made at the bomber command on Guam or at Third Fleet headquarters on campaign-wide grounds, and others came down to chance.

⁴⁹Iwakuni Genbaku to Sensō Ten, "Iwakuni Kūshū," quoting *Iwakuni Shishi*, <https://iwakuni-genbaku-sensouten.jimdofree.com/>; mission composition from the XXI Bomber Command mission summary for Mission 327 and 6th Bomb Group, "Mission 75 — Marifu Railroad Yards, Aug 14," <https://6thbombgroup.com/mission-75-marifu-railroad-yards-aug-14/>.

⁵⁰Raid chronology and per-raid damage from Kagoshima City, "Kūshū-tō no Jōkyō," <https://www.city.kagoshima.lg.jp/soumu/soumu/soumu/kurashi/hewa/sensai/jokyo-3.html>, and the Ministry of Internal Affairs civilian war-damage register, https://www.soumu.go.jp/main_sosiki/daijinkanbou/sensai/situation/state/kyushu_11.html; the shelter and fire-watch episodes from *Minami-Nippon Shimbun*, <https://373news.com/news/local/photo/235325/> and <https://373news.com/news/local/detail/217912/>.

⁵¹Raid sequence, ordnance, and district-level damage from the Hitachi civic archive, "Hitachi-shi no Sensai" and "Hitachi Kōjō Sensai Kiroku, 10 June 1945," <http://saki-archives.com/modern/hc-sensai.html> and http://saki-archives.com/2015/hitachi_factory_war_damage.html; aircraft count, tonnage, and the damage assessment for the incendiary raid (0.88 square miles, or 64.5 percent of the built-up area) from the XXI Bomber Command mission summary for Mission 278; ship list, round counts, weather, and target assessment from Morison (1960), p. 316, and *Naval Historical Branch, Ministry of Defence* (1995), pp. 220–221.

These cases also make a sharper point than independence. Most of these mechanisms are not merely orthogonal to destruction but negatively related to it, since the ordnance and the warnings that raised mortality were precisely those that spared the building stock. Hitachi and Tsu show this within a single city: the attacks that caused the most destruction were also the least lethal. Iwakuni shows it across cities, recording the eighth-highest death rate in our sample with fewer than two buildings destroyed per hundred residents. The cities with the highest death tolls are therefore not the most-destroyed cities with noise added. The opposite signs the two measures carry in our specifications are not an artifact of decomposing a single shock.

A.7.3 A Note on the Japanese Casualty Sources

Locally reported fatality counts for these raids vary widely, which is why the paper uses the single consistent series from [Davis and Weinstein \(2002\)](#) rather than assembling figures from municipal records. At Iwakuni the municipal history records 517 dead while the official who handled the bodies testified that the toll was no fewer than a thousand. In Hitachi, the city's count of 886 for the 10 June raid explicitly excluded the 634 employees and mobilized students who died inside the Hitachi Ltd. plant, and the city's own 1949 yearbook and 1950 memorial register differ again, at 1,266 and 1,354.⁵² Three structural reasons account for the dispersion. The first is definitional scope: various sources include or exclude the missing, those who died later of wounds, and institutional populations. The second is jurisdictional attribution: at factory and arsenal sites many of the dead were not residents of the bombed city, and municipal, prefectural, school, and workplace registers each capture a different subset of the population. The third is the collapse of the recording apparatus itself in the final months of the war.

A.8 Additional Historical Background

This appendix collects historical material that supplies context for the political and military history summarized in the main text.

A.8.1 Party Formation, 1946–1955

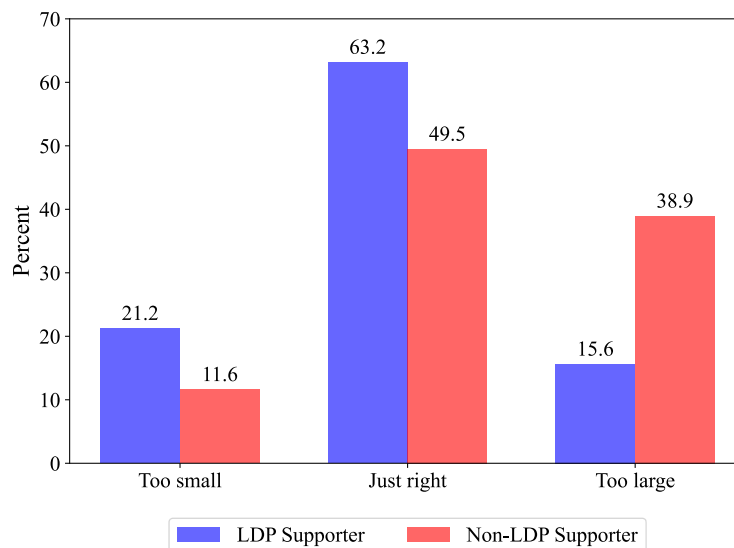
The dizzying number of party splits and mergers between 1946 and 1955 makes it hard to neatly categorize parties and politicians as militarist or pacifist before the formation of the LDP. Moreover, during the U.S. occupation, politicians often refrained from publicly stating their positions on rearmament. For example, after SCAP purged Hatoyama, the Liberal Party elected Yoshida Shigeru as its leader and Prime Minister. Yoshida publicly upheld the constitution, including Article 9, to mollify SCAP, but privately told the emperor, “Once the occupation ends, Japan will likely possess military forces. However, that is something I cannot say today” ([Nishikawa, 2025](#), pp. 4–5)—so the Liberal Party was composed of people who wanted to rearm yet enacted the very constitution that banned it.

⁵²Iwakuni Genbaku to Sensō Ten, “Iwakuni Kūshū,” quoting *Iwakuni Shishi*, <https://iwakuni-genbaku-sensouten.jimdofree.com/>; Hitachi figures from the civic archive, “Hitachi-shi no Sensai,” <http://saki-archives.com/modern/hc-sensai.html>.

A.8.2 Survey Evidence on LDP Supporters' Views

As best we can measure, LDP supporters tend to be more supportive of the LDP's pro-military stance than other respondents. Figure A.6 presents the results of a nationally representative survey of 2,412 people that was conducted in 1965 (Japan Defense Agency, 1965), the earliest year in which we could find a representative survey of attitudes toward military spending. We use the 1,206 respondents who expressed a view on the size of the Self-Defense Forces budget. Among LDP supporters, 21.2 percent believed the SDF budget was too small, compared to only 11.6 percent of non-LDP respondents.⁵³ Similarly, while 38.9 percent of non-LDP respondents thought the SDF budget was too large, only 15.6 percent of LDP supporters shared this view. These results show that LDP supporters were more likely to favor increased spending on the SDF and oppose cuts to military expenditures.

Figure A.6: LDP Supporters' and Opponents' Views of Defense Expenditures (1965)



Note: The figure reports the results of a nationally representative survey of 2,412 people that was conducted in 1965 (Japan Defense Agency, 1965).

A.8.3 Recruitment Rates by Birth Cohort

Figure A.7, taken from Watanabe (2022), shows the fraction of each birth cohort that served in the IJA at any time. We see a substantial uptick in service rates for the 1906 to 1910 birth cohort, reflecting people who would have been 35–39 years old in 1945. We also see that 44 percent of Japanese males born between 1916 and 1920 (i.e., 25–29 years old in 1945) served in the military. In contrast, 6 percent of males born between 1926 and 1930 served, suggesting a lower bound of around 15 years old in 1945.

⁵³The question asked was “Do you think the current budget for the Self-Defense Forces is too large, too small, or just right when viewed in terms of citizens’ standard of living? A general impression is fine.”

Figure A.7: Recruitment Rate by Birth Cohort



Note: Percentage of men who served in the Imperial Japanese Army from [Watanabe \(2022\)](#).