EXTERNAL RESOURCES AND INDISCRIMINATE VIOLENCE
Evidence from German-Occupied Belarus

By YURI M. ZHUKOV*

DURING Germany's occupation of Belarus in the Second World War, occupying forces responded to partisan activity with indiscriminate reprisals, burning thousands of villages to the ground and summarily killing their residents. By 1944, 1.6 million Belarusian civilians had died as a result of the war.[1] Reprisals were harsher in some areas than in others. In Liozno district, Vitebsk province, the Germans destroyed 210 villages and killed 8,097 people. In Stowbtsy district, Baranovichi province—an area with comparable demographics, terrain, and a similar position along the railroad network—the toll was "only" 12 villages destroyed and 349 civilians killed.

What explains local variation in violence against civilians? I argue that the scale of anticivilian violence depends on combatants' relative dependence on local and external sources of support. External resources make combatants less dependent on the local population. Although this reliance on external resources enables combatants to operate in hostile areas, it also creates perverse incentives for how the population is to be treated. Efforts by the opposition to interdict the government's external resources can reverse this effect. Disruption of external support reduces violence against civilians.

This article explores the logic behind this relationship and tests it by building a new archival data set on violence in German-occupied Belarus. Consistent with expectations, partisan attacks against German personnel provoked reprisals against civilians, but attacks against railroad networks did not. Where Soviet partisans focused their military

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[1] Krivosheev 2001.

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efforts on disrupting German supply lines rather than killing Germans, occupying forces conducted fewer reprisals, burned fewer houses, and killed fewer people. This effect is substantively large and robust to a multitude of statistical tests, accounting for partisans' selection of targets, posttreatment bias, the effect of Nazi racial ideology on German violence, and other potential confounding factors.

What explains the dampening effect of interdiction on violence? On the supply side, interdiction reduces the flow of external resources such as fuel, ammunition, and personnel, diverting combat units to defensive duties and leaving fewer forces to conduct reprisals. On the demand side, interdiction increases dependence on local labor and supplies to offset these shortages. As a result, the combatant has fewer means with which to use violence against civilians but also fewer incentives to do so.

Following instances of rail sabotage in Belarus, the Germans could have continued to kill local peasants indiscriminately or even to intensify their reprisals, as they had done elsewhere following coercive partisan attacks on army garrisons. Instead, they responded with restraint, with senior military commanders warning political leaders against a heavy-handed response. Rather than kill local peasants, the Germans became more likely to mobilize them for railroad construction duty. As coercive as this mobilization was, it signaled a clear reordering of preferences: restoring communications became a higher priority than punishment, and the population was—at least for the moment—more valuable alive than dead.

These findings contribute to the literature on civilian victimization in war[2] and particularly to the growing research on resource mobilization for violence.[3] Recent empirical work suggests that combatants are more likely to harm civilians if they are less reliant on local support. But that research has mainly focused on civilian victimization by rebels, not by governments, and it has not explored how an adversary's efforts to cut off external resources might shape local dynamics of violence. The overwhelming majority of existing work also relies on highly aggregated, cross-national data—a research design essential to uncovering major trends across conflicts but not ideal for explaining local variation within conflicts.

This article offers the first systematic evidence that disruptions in external support reduce government violence against civilians. It is also one of few quantitative studies to examine this relationship at the local

[2] Downes 2006; Kalyvas 2006; Valentino, Huth, and Balch-Lindsay 2004.

[3] Collier and Hoeffler 2004; Weinstein 2005; Weinstein 2007; Wood 2010; Wood 2014; Salehyan, Siroky, and Wood 2014.

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level, using disaggregated data from one of history's most destructive conflicts.

Although this analysis has implications for a broad range of armed conflicts, it is most directly applicable to wars of foreign occupation. Due to the overwhelming dependence of occupying forces on external supply lines, a sudden disruption in these external resources can have a profound effect on strategies and tactics—particularly if the disruption affects goods with a direct local substitute (for example, labor, food, and building materials). This effect is likely to be more muted in cases of domestic civil war, unless the government derives much of its power from foreign sponsors and fighters (for example, Russian, Iranian, and Hezbollah support for Bashar al-Assad's regime in Syria). Interdiction is less likely to affect incumbents who are either already isolated or deeply embedded in the local population.

The article proceeds in six parts. The first offers an overview of political science research on violence in civil conflicts and the effect of external resources. The second presents the theoretical logic of interdiction and how it relates to the dynamics of violence in war. The third section provides historical background about the Belarusian case and introduces the data used in the empirical test. The fourth and fifth sections present the data and the results of the statistical analysis, respectively. The article concludes with a discussion of these results and offers some remarks about their implications for theory and policy.

External Support and Political Violence

Governments sometimes respond to armed insurrections by committing mass atrocities against civilians. This behavior has puzzled scholars of political violence. An emerging conventional wisdom holds that indiscriminate violence, which selects targets based on collective criteria such as location or ethnicity, rather than on individual offenses, is ineffective or even counterproductive.[4] If violence is unanticipated or unavoidable by accommodation, it offers few incentives for targets to cooperate.[5] When such violence does occur, scholars attribute it to errors or to permissive circumstances where the opposing side is too weak to protect the population.[6]

This puzzle of indiscriminate violence rests on an assumption that local cooperation—or nonresistance—is necessary to establish a monopoly

[4] Leites and Wolff 1970; Mason and Krane 1989; Kalyvas 2004.
[5] Schelling 1966.
[6] Kalyvas 2006.

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on the use of force. If one relaxes this assumption, brutality becomes easier to explain. Recent research has shown that income from lootable resources[7] and support from foreign sponsors[8] make rebels less reliant on local public support and more likely to harm civilians.[9] With less need to strike cooperative bargains with the local population, combatants can operate even where it is very costly for civilians to support them.[10]

Combatants vary in the extent to which they rely on locally obtained resources and those shipped in from the outside.[11] In the first case, a combatant acquires the "ingredients" needed to produce violence—manpower, food, clothing, shelter, weapons, ammunition—from the immediate geographical area.[12] This requires both a local resource base with sufficient carrying capacity to support the force, and the cooperation or acquiescence of the local population. In the second case, the combatant supports operations through a logistical network, connecting supply depots with distribution centers and home bases with forward-deployed units. The external option requires, first and foremost, open and protected lines of communication.

Access to external resources does not entirely eliminate the need for local support, but it makes combatants less dependent on it. While some locally supplied goods (for example, food and fuel) are potentially replaceable; others (for example, human intelligence from local informants) have no external substitute. The extent of dependence on the local population matters for the use of force. If an alternative source exists for at least some of the resources a combatant needs, these resources will not disappear if the population withdraws its support. As a result, actions that might otherwise alienate a local population, such as indiscriminate violence, carry fewer negative consequences than they would if the combatant lived entirely "off the land."

Most of the existing conflict research has maintained a theoretical and empirical focus on the structure of rebel support. The government's resource base has largely eluded study.[13] Yet the assumption of local support is potentially more problematic on the government side. For regular armies and state security forces, requisitions from the immediate neighborhood are too insufficient and uncertain to keep soldiers

[7] Weinstein 2005; Weinstein 2007.
[8] Beardsley and McQuinn 2009.
[9] Wood 2010; Wood 2014; Salehyan, Siroky, and Wood 2014.
[10] Toft and Zhukov 2015.
[11] Leites and Wolff 1970, 76; Kress 2002, 29.
[12] Mao 1966, 111.
[13] One exception is research on biased intervention in civil wars. See Favretto 2009.

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well fed and stocked. To ensure that provisions keep flowing, modern militaries have developed sophisticated networks of supply convoys, garrisons, and magazines.[14] Supply needs are especially great for mechanized units, whose vehicles require ample fuel to remain mobile. This logistical tail is longer still in such expeditionary campaigns as Iraq and Afghanistan, which depend on transnational and transcontinental supply lines.

A relatively high dependence on resources from outside the conflict zone may explain why some governments treat civilians more harshly than others. Cross-national data reveal that governments kill substantially more civilians when fighting outside their own territory.[15] The same is true for other forms of civilian victimization like forcible population resettlement.[16] Extreme cases of this phenomenon include the colonial wars of the late nineteenth century, where governments' local support rested on relatively small communities of settlers and where violence against the more numerous native populations could reach genocidal levels.[17] When a government's support base lies outside the immediate conflict zone, history suggests that civilians in that conflict zone suffer more.

If external resources reduce a combatant's dependence on the local population, disruptions in those resources should increase this dependence. Rather than respond to rebel attacks with indiscriminate reprisals, governments facing supply shortages may instead attempt to draw on local support, at least until the supply lines reopen.

Examples of external supply interdictions abound in military history. T. E. Lawrence observed that the Turks' long supply lines exposed them to ambushes and blockades by Faisal's irregular forces during the Arab Revolt.[18] In subsequent decades, Chinese communists blockaded Suchow in 1948, the Vietcong conducted a siege of Khe Sanh during the 1968 Tet Offensive in Vietnam, and in 1975 the Khmer Rouge laid siege to Phnom Penh.

In modern civil conflicts, interdiction—the disruption of government supplies—has become one of the most common types of rebel operations. During the 2011 Libyan Civil War, rebels focused on cutting off

[14] Van Creveld 2004, 16, 41–42.

[15] The median (mean) "Best Fatality Estimate" for government killings is 103 (298) for incidents within that government's sovereign territory, and 153 (9,685) for incidents located at least partially outside its territory. Data from Eck and Hultman 2007.

[16] Since 1945, forcible resettlement occurred in 47 percent of counterinsurgency campaigns against antioccupation uprisings, but only 28 percent of domestic civil wars. Data from Lyall and Wilson 2009; and Zhukov 2015.

[17] MacDonald 2013.

[18] Lawrence 1920, 1.

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the government's logistical supply routes, while blocking the army's road access to rebel strongholds like the Nafusah Mountains.[19] The Pakistani Taliban has justified its attacks on NATO supply convoys as an attempt to protect "our innocent sisters and brothers in Afghanistan."[20] The stated goal of Free Syrian Army assaults on army positions in Aleppo has been to disrupt supply lines and stop the shelling of civilian areas.[21]

Despite the historical prevalence of this practice, interdiction has received little explicit attention in the literature on civil conflict. Although some studies have examined the effect of external support shocks on the onset[22] and termination of civil conflict,[23] there have been no comparable studies on the relationship between intentional supply disruptions and the severity of violence during war. Siege tactics and attacks against supply lines remain associated primarily with conventional wars[24] and lie outside the scope of leading theories of violence in irregular wars.[25]

A small number of studies have examined why governments use interdiction and similar methods against rebels[26] and whether government attempts to close borders can potentially weaken rebels reliant on external support.[27] Subnational analyses that have examined cordon-and-search operations and efforts to block road traffic[28] have found that interdiction reduces the intensity of rebel attacks.[29] Yet no similar research exists on governments' use of external resources or on the effect of rebel interdiction.

The Logic of Interdiction

Why would a disruption of external resources reduce incentives for indiscriminate violence? This section summarizes the logic behind this claim; the supplementary material provides a formal proof.[30]

Consider a stylized conflict zone, inhabited by neutral civilians and two combatants (for example, government and rebels). The combatants seek a monopoly on the use of force by amassing revenues, manpower,

[19] BBC 2011; Peçanha and Burgess 2011.
[20] Habib 2010.
[21] Al Arabiya 2012.
[22] Nielsen et al. 2011.
[23] Fearon and Laitin 2007.
[24] See, for example, Pape 1996.
[25] Kalyvas and Balcells 2010, 419; Kalyvas 2006.
[26] Valentino 2000; Waxman 1998, 403–4.
[27] Staniland 2005.
[28] Lyall 2010; Zhukov 2012.
[29] Toft and Zhukov 2012.
[30] Zhukov 2016.

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weapons, and other support from local or external sources, while limiting their opponents' access to the same. Civilians seek security and will choose to support one of the combatants or to stay neutral, based on the relative costs of these options.

To achieve their ends, combatants rely on two forms of violence: coercion and interdiction. In the first case, combatants target their opponents' local support. In the second, they target the external supply chain.

To deter local civilians from supporting the opponent, a combatant needs to make collaboration as costly as possible—specifically, killing and capturing more of the opponent's supporters than the opponent can kill or capture of the combatant's. The opponent, in turn, has strong incentives to reciprocate, resulting in a mutual escalation of violence until one party is unable to replace its losses and can no longer extract sufficient local resources to keep fighting.

The amount of coercive violence needed to reach this breaking point depends on the quality of a combatant's information. A combatant who receives reliable tips from local informants on opponents' whereabouts and identities does not need to use a lot of violence and can rely on selective arrests or targeted killings. Combatants who lack such information face a grimmer choice. Because they do not know which targets are the right ones, they can either abstain from violence (and effectively cede the contest to their opponents) or adopt more indiscriminate forms of coercion against an expanded set of targets. Because indiscriminate violence punishes fewer "true" opponents per unit of effort, more of it is needed to achieve the desired coercive effect. The worse one's information, the more massive this violence will need to be.

Without good information, a combatant who relies exclusively on local support will have a hard time competing in this coercive outbidding process. Mass violence requires significant resources: to scale up and sustain violence, a heavily armed and mechanized combatant needs access to potentially thousands of tons of fuel, munitions, and spare parts each day. Even combatants reliant on small arms and edged weapons need to ensure that personnel are present in sufficient numbers and are adequately fed and equipped to keep fighting. Compounding the problem, locally recruited personnel can be reluctant to use force against their neighbors and covillagers, particularly where doing so puts their own families at risk of retaliation. To suppress a local uprising, governments often use units from other parts of their country, further increasing the logistical burden.

External resources allow combatants to operate in hostile areas where

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the population overwhelmingly supports the opponent. But they also generate perverse incentives for how this population is to be treated. With sufficient external support, a combatant no longer needs to persuade locals to be loyal and has less reason to avoid indiscriminate forms of violence. This pattern is self-perpetuating: the ability to get away with indiscriminate violence reduces the value of human intelligence from local informants, which further increases combatants' reliance on brutal tactics. As long as external resources keep flowing, combatants can potentially depopulate an entire conflict zone and still maintain a grip on power.

Interdiction, which targets an opponent's external supply networks rather than its local support base, can constrain a combatant's behavior through several mechanisms. First, it directly disrupts vital supplies like fuel and ammunition, thereby forcing an opponent to reduce consumption levels and gradually rendering its force immobile and inactive. Second, supply disruptions divert the opponent's resources away from offensive operations; units committed to rebuilding bridges, tunnels and railroads, escorting convoys, and monitoring ambush points are ones that cannot be simultaneously used for patrols, sweeps, and other efforts to find and kill enemy supporters. Third, interdiction increases the opponent's dependence on local sources of support to offset temporary disruptions in external supplies and to meet the increased demand for labor in engineering and repairs.

Coercion does not have these effects: it causes supply shortages only if the opponent cannot offset local losses with external resources, and it creates incentives to escalate rather than curtail offensive operations, which in turn increases reliance on external rather than local sources of support.

Taken together, supply disruptions reduce incentives for the harsh treatment of civilians. But interdiction also serves a more basic purpose. If the opponent fails either to reopen the external supply line or to gain support from the local population, interdiction will cause the opponent's resource base—and its capacity for violence—to diminish over time.

The scope conditions of the above narrative and of the underlying formal model are fairly broad, with different conflict scenarios occupying different parts of the parameter space. The type of conflict for which it has most direct bearing is an expeditionary campaign by a government against rebels in a foreign country (for example, Soviets in Afghanistan and the US in Iraq), where outside forces depend very

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heavily on external supply lines. A slightly different local-external balance exists in a domestic civil war (for example, in Chechnya and Syria) in which government forces are more deeply embedded with the local population but still rely on revenues and reinforcements from other parts of the country. At the opposite end of the parameter space are isolated governments fighting foreign-backed rebels (for example, in Ukraine and Congo).

The remainder of this article focuses on the first of these scenarios—a conflict between an occupying force and local rebels. If the theoretical narrative is valid, then violence by the occupying force should increase in response to rebel coercion but decrease in response to interdiction.

German-Occupied Belarus

One of the most extensive campaigns to interdict a combatant's external support took place in German-occupied Belarus during the Second World War. Between 1941 and 1944, Belarusian partisans derailed over 11,128 trains carrying German personnel and supplies to the Eastern Front.[31] At the same time, German forces conducted mass reprisals against the local population, burning some 8,526 villages to the ground and killing hundreds of thousands of civilians who lived there.[32]

Wartime Belarus presents an opportune test case for several reasons. First is the scale of the violence. World War II was the most devastating conflict in human history, claiming more than sixty million lives, almost half of them in the Soviet Union. In its three years under German occupation, Belarus lost a larger share of its population—24 percent—than any other country in the war. Although extreme by any standard, the severity of German reprisals that caused these deaths varied significantly within Belarus, and to date there have been no quantitative studies to explain why.

A second reason to study the Belarusian case is the availability of fine-grained archival data. Since 1991 state archives in Soviet successor states have released thousands of detailed incident reports on the conflict. As a data source, these archival records are not without limitations and biases.[33] But they also represent the information set of key actors on the ground, allowing us to reconstruct the sequence and location of individual events as they were observed at the time. With some

[31] Bryukhanov 1980, 251.
[32] State Archives of the Republic of Belarus 2014.
[33] See Statiev 2014.

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exceptions,[34] social scientists have yet to exploit the full potential of this documentary evidence.

Third, Belarus is a hard test for the proposition that interdiction suppresses indiscriminate violence. German occupation policy was famously ruthless in this part of Europe, with few legal constraints on the use of force and significant ideological pressure against leniency. By most accounts, expectations of reprisals had little influence on the location or timing of partisan interdiction. Concerns over the safety of Belarusian civilians did not weigh heavily on the minds of operational planners at the Central Headquarters of the Partisan Movement (GShPR) in Moscow. For them, the goal of rail sabotage was halting German supplies en route to major conventional battles on the Russian front line, like Stalingrad and Kursk.

To the extent that a partisan target selection effect exists, we should expect it to bias results in the opposite of the predicted direction. A common view among historians is that Soviet partisans *intentionally* provoked German reprisals as a military strategy.[35] Indeed, at the macrolevel, interdiction does not seem to have prevented the slaughter at all: partisans systematically targeted German supply lines, and the Germans killed massive numbers of civilians. If more disaggregated data can show that some partisan attacks had the opposite effect in this least likely case, we should expect similar results in less extreme circumstances.

Last, quantitative investigation of the partisan war can open a new front in Western empirical research on this region, research that has tended to view the treatment of civilians on the Eastern Front principally in the contexts of both the Holocaust and the racial and ideological nature of German war aims. National Socialist officials and the top brass of the Wehrmacht explicitly cast the occupation as part of a broader campaign against Soviet "Judeo-Bolshevism." Their official position was that "revolts in hinterland, as experience proves, have always been caused by Jews." Regular soldiers received orders calling for "severe but just revenge on subhuman Jewry" and "ruthless and radical measures against Bolsheviks, agitators, guerrillas, saboteurs and Jews."[36] Given the content of these directives, it is not surprising that leading historical accounts emphasize the ethnic-religious landscape of Belarus, rather than local partisan activity, as the main driver of civilian

[34] Finkel 2015; Zhukov 2015; Gregory, Schroder, and Sonin 2011.
[35] Snyder 2011; Statiev 2014;
[36] Office of United States Chief of Counsel of Prosecution of Axis Criminality 1946.

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victimization.[37] Yet no empirical study has directly examined the ethnic effect and the partisan effect side by side.

Germany invaded the Soviet Union with extensive colonization plans, according to which "thirty million Soviet citizens were to starve, and tens of millions more were to be shot, deported, enslaved, or assimilated."[38] Prior to the occupation, the German high command removed many of the legal restraints on violence the Wehrmacht had previously observed in Western Europe.[39] Several directives to rank-and-file troops—including the "commissar order" (*Kommissarbefehl*), "military justice decree" (*Gerichtsbarkeitserlaß*), and Field Marshal Walther von Reichenau's "Guidelines for the Conduct of Troops in the East" (*Reichenau-Befehl*)—encouraged violent reprisals against civilians in areas of anti-German activity and decentralized the authority to carry out these measures by leaving it to the discretion of any commissioned officer.[40]

In the wake of the German invasion, Soviet local government structures disintegrated, leaving few residual elements in their place. German occupational power rested on a network of local military garrisons, established at the district level (*rayon*), staffed by a commanding officer and sixteen to twenty men,[41] and supported by military police units, special forces (*Jagdkommandos*), Waffen SS, and paramilitary death squads (*Einsatzgruppen*).[42] At the village level, the Germans appointed local elders (*starosty*) to serve as community representatives. The initial changeover of power was accompanied by a state of emergency, curfews, and summary executions of Communist Party officials, Jews, and suspected saboteurs.

To deter the local population from active resistance, the occupation authorities employed systematic reprisals against villages suspected of supporting anti-German partisans. These raids were notoriously indiscriminate: in just one operation in 1943, the SS-Sturmbrigade Dirlewanger collected 492 rifles from 4,500 dead Belarusians, suggesting that 89 percent of those killed were unarmed peasants.[43]

In a typical reprisal, German troops encircled a village, rounded up all its residents, and interrogated them as a group. Where they were

[37] Bartov 1992.
[38] Snyder 2011.
[39] Shepherd 2004.
[40] Anderson 1999.
[41] Schulte 1989.
[42] Chernov 1995.
[43] Werth 1964, 723.

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able to apprehend individual partisans, the Germans conducted public executions of the suspects, their families, and people harboring them. In other cases, Germans destroyed villages wholesale, killing every man, woman, and child they could find, and burning every structure except the buildings they used to quarter themselves during the raid. Residents who attempted to flee would either be shot or crowded into buildings and burned alive.[44] In the village of Khatyn, near Minsk, the 118th Schutzmannschaft battalion burned 149 residents alive, including 76 children.[45]

An underlying tension in this reprisal policy was the Germans' reliance on the local population for some types of support, particularly food, shelter, and labor. In rural areas, the Germans extracted grain, potatoes, and poultry from peasants, forcing the latter to dig trenches, repair roads, and work the fields. In urban areas, residents worked shifts of twelve to fourteen hour in factories converted for military use, producing ammunition and repairing German equipment.[46] Killing the local population was at odds with these extractive activities—a village destroyed could no longer support the occupation.

What the Germans could not obtain locally, such as refined fuel products, processed foods, and heavy equipment, they shipped in by rail, using the same transportation network that supplied frontline units fighting the Red Army in the East. Rail transit was the most cost-efficient way to keep the Wehrmacht supplied, given the poor quality of Soviet roads, the high cost and low capacity of airdrops, and the heavy supply needs of German units on the front. German troops in rear areas like Belarus were lower on the pecking order for supplies, but could not extract sufficient local resources to relieve the demands placed on the railways.

Using Soviet railroads for logistics was a challenge from the start. German railroad troops (*Eisenbahntruppe*) responsible for keeping the lines open were few in number and underequipped, and they ranked low on the Wehrmacht's list of priorities.[47] Because Soviet engines were larger than German ones, way stations and coal facilities were farther apart. That left long stretches of rail undefended, making unplanned stops risky. As early as 1941, German authorities began forcibly mobilizing local residents to guard sections of the railroad track and clear them of obstructions.[48]

[44] Anderson 1999, 612.
[45] Rudling 2012.
[46] Knyaz'kov 2004.
[47] Van Creveld 2004, 153–54, 157.
[48] Lipilo and Romanovskiy 1965, 265, 300.

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The first instances of partisan resistance emerged in the immediate aftermath of the German invasion in June 1941. Representatives of local communist party military departments (*raykomy*)—responsible for the mobilization of Red Army conscripts prior to the war—took the lead in organizing district-level partisan detachments that drew from the thousands of encircled Soviet troops who had dissolved into the countryside during the Wehrmacht's rapid advance. The district's party secretary would typically serve as the detachment's political commissar, with, in addition, a commander and a chief of staff in charge of planning and operations.[49] Most partisan units had a limited geographic area of responsibility and did not conduct operations outside their home district, which typically overlapped with the administrative units in which German garrisons were based.[50] Initially disorganized and uncoordinated, partisans came under centralized party control after the establishment of the GShPR in May 1942.

The partisans occasionally received weapons, ammunition, and explosives from the center, but the majority of their support—Soviet commanders insisted—was to be "provided entirely by local resources."[51] In Moscow's view, it was the civic duty of the population to provide partisans with everything they needed to keep fighting—principally medicine, shelter, food, and weapons. In addition to voluntary donations, which were limited in the early stages of the war, partisans secured this support through a campaign of brutal, but mostly selective killings of suspected collaborators and their families.[52] Soviet records suggest a stark difference in effectiveness between locally raised partisan units, which secured support through family ties and prewar friendships, and units sent to the area from outside. The outsiders typically isolated themselves from the population to avoid being compromised, and—due to this self-isolation—would later halt operations due to supply shortages.[53] At their peak, partisans controlled 58 percent of occupied Belarusian territory, with 121,903 personnel under arms.[54]

The partisans' core military mission was to support the Red Army by "killing the enemy" (coercion) and "disrupting communications" (interdiction).[55] The first set of tasks entailed systematically raiding German garrisons, police stations, and administrative offices, in addition to

[49] Hill 2005, 71–72.
[50] Ioffe 2009, 28–29.
[51] TsAMO 1942, 10–15.
[52] Statiev 2014, 1530, 1545.
[53] Perezhogin 1997.
[54] Kovalenya and Stashkevich 2004, 126; Musial 2004, 21.
[55] TsAMO 1945, 80–81.

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ambushing patrols. The German Army Group Center's reprisal policy in such cases was to burn every village within a four-kilometer radius of the attack on German troops.[56]

The partisans' second mission—disrupting rail traffic—targeted the primary means by which Germans moved supplies to the front and to the rear areas in occupied territories. Partisan units would carry out multiple, simultaneous rail demolitions in close proximity to their base camps, at average distances of seventy to one hundred kilometers,[57] manually unbolting rail joints and placing high explosives along the tracks.

In planning the location and timing of rail sabotage, GShPR identified sections of the network most essential to German logistics but gave local commanders discretion in selecting exact detonation sites.[58] Tactical considerations favored dense foliage and "downward slopes, where the train travels faster and is more difficult to stop."[59] The timing of the demolitions depended on the situation on the Soviet-German front, with spikes during major conventional campaigns. For instance, partisans derailed 147 trains on a single night on June 20, 1944—the eve of Operation Bagration.[60]

In addition to creating supply shortages on the front, interdiction had a potentially inadvertent impact on local German behavior in Belarus. By disrupting such vital supplies as fuel and ammunition, derailments rendered forces in rear areas increasingly immobile and ill equipped. Already a low priority for supplies, the occupational military government had to stockpile ammunition and reduce consumption, limiting its tempo of operations.

Supply disruptions also diverted military resources away from offensive operations and toward emergency management, engineering, and defense.[61] In the second half of 1942, 10 percent of German ground troops on the Eastern Front were tasked with securing lines of communication. It was a number that proved difficult to sustain during major operations on the front, and it reduced the forces available for punitive expeditions.[62]

As the logjam of idling supply trains continued, demand for local foodstuffs, building materials, and labor increased.[63] Repair work

[56] Knyaz'kov 2004.
[57] Grenkevich 1999, 241.
[58] RGASPI 1945a, 1–4.
[59] TsAMO 1941, 203–10.
[60] Bryukhanov 1980, 251; Grenkevich 1999, 259.
[61] RGASPI 1945b, 59–60.
[62] Efremov et al. 1998, 11.
[63] TsAMO 1943, 109.

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required timber, rail joints, fastenings, metal beams, and other construction materials—much of which had to be obtained locally, particularly when rail sabotage blocked shipments from the West. With *Eisenbahntruppen* stretched thin, the Germans also experienced a shortage of personnel to restore the tracks.

Left with few choices, occupational authorities mobilized local peasants for repair work on the tracks, as well as to help clear forests and lay barbed wire next to the railway line.[64] This practice was not unique to the Germans; in late 1941, the Soviet Western Front mobilized between three thousand and eight thousand local civilians daily to restore railroad communications around Moscow.[65]

By creating a demand for local labor, partisan interdiction changed how occupying forces treated the local population. The individual accounts of German leaders, particularly commander of Army Group Center Gunther von Kluge, suggest that at a minimum, partisan interdiction prevented some German reprisals from being worse than they might have been. At the Minsk war crimes tribunal in January 1946, Johann-Georg Richert, commander of 286 Sicherungs-Division, recalled:

> In August 1942, partisans destroyed the entire Slavnoe railroad junction, demolished the passenger depot and water tower. [. . .] The next day I was summoned by Field Marshall von Kluge, who told me that he received strict orders to burn all villages near the Slavnoe junction [. . .] from Orsha to Borisov [137 km]. I objected to this proposition, noting that the German army would then have no place to quarter its units, and the population would go to the partisans' side. *We needed that population to clear the railroad tracks.* Kluge agreed with me, and convinced the high command that burning these villages was not wise. But an order to shoot 100 people stood, and was executed. [. . .] Because most of the guilty parties from the railroad attack could not be identified, the execution list included individuals with no relationship to the incident.[66]

After talking Berlin down to one hundred dead civilians in Slavnoe and desperate to turn the tide in the partisan war in 1943, von Kluge continued to call for a change in policy toward the local population:

> The development of the total situation is forcing [. . .] the establishment of clear objectives with respect to the Russian people, whose collaboration must be won because it will have a decisive influence on the war. The methods employed thus far have failed: force is not enough.[67]

[64] RGASPI 1945b, 59–60.
[65] Volkonskiy and Dyachkin 2002, chap. 7.
[66] Lipilo and Romanovskiy 1965, 331–32, emphasis added; NARB 1944, 66–68.
[67] Ziemke 1988, 123.

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Such calls for restraint conflicted with the position of the German high command. Both Hitler and SS Reichsführer Heinrich Himmler had called for the creation of a no-man's land all along the railway lines, while Hermann Goering, commander-in-chief of the Luftwaffe, directed his troops to burn all villages in the vicinity of sabotaged tracks. Local army officials favored a lighter approach. Along with the commander of Army Group Center Rear Area Max von Schenkendorff, von Kluge openly protested against these reprisals, arguing that "this strategy would leave Russian railway workers homeless and drive them into the arms of the partisans."[68]

Anecdotes like these, of course, are not evidence of a systematic pattern and cannot tell us whether instances of restraint such as in Slavnoe were outliers or part of a general trend. Macrolevel statistics, meanwhile, suggest that treatment of the local population remained exceedingly harsh. Official estimates are 8,526 to 9,200 villages flattened, 340,718 houses razed, and 2.5 to 3 million Belarusian residents killed over the course of the war, including at least 1.6 million civilians.[69] These numbers, although important for establishing the broader context, cannot explain local variation in brutality—why one village was burned and another was spared—and how the incentives of German commanders varied from place to place. In the absence of microlevel data on where reprisals happened and when and how these patterns relate to partisan activity, we cannot assess the effect of partisan coercion and interdiction on German violence.

Data

The following analysis relies on new disaggregated data on the Belarusian conflict, drawn from several archival sources. To measure the intensity of German reprisals, I used data on 8,526 villages destroyed by occupying forces in 1941–44, including the numbers of people killed and houses razed in each location. I geocoded 7,967 (93 percent) of the reprisals to the district or municipal level. Using official Soviet records, I constructed a geographic information systems (GIS) map of Belarus's WWII-era internal administrative boundaries, that is, from after Stalin's annexation of eastern Poland in 1939 until before the return of Bialystok and neighboring areas to Poland in 1945.[70] I matched the

[68] Heer and Naumann 2000, 116.

[69] State Archives of the Republic of Belarus 2014; Belarusian Research Centre for Electronic Records 2015; Krivosheev 2001.

[70] Presidium of Supreme Soviet of USSR, Information-Statistical Division 1941.

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coordinates of reprisal locations to the wartime borders of Belarus's 192 districts.[71]

To measure partisan interdiction, I used Russian archival documents and military maps to reconstruct the railroad network used by German forces in Belarus, comprising thirty-three major railroad junctions and the routes connecting them.[72] I matched the known locations and dates of 7,917 partisan-caused train derailments to individual segments of the rail network and then used these data to estimate derailments per district-month. To measure the level of partisan coercion against German troops, I used the number of German garrisons destroyed in each district-month.[73] To measure the extent of partisan territorial control, I used the proportion of each district's area that had fallen within the partisan zones by the fall of 1943.

In addition to the raw number of partisan-caused train derailments, I calculated an alternate measure of interdiction: proportion of rebel violence invested in interdiction rather than coercion. To ensure that levels of effort are comparable across the two types of operations (it takes many more partisans to destroy an entrenched garrison than to plant a bomb), I used quantile normalization to transform the two variables to a common distribution of intensities prior to calculating the proportions.[74]

Figure 1 shows the geographic distribution of partisan violence and German reprisals. Figure 2 visualizes these same events over time. Several patterns are immediately clear from these data. First, German reprisals were heaviest in the East, but interdiction—as a share of partisan violence—was heaviest in the West. Second, German reprisals gradually intensified until peaking in the fall of 1943, following a dramatic increase in both coercive and interdictive partisan violence. Yet a previous wave of interdiction in 1942 that was not accompanied by an increase in coercion did not produce a similar jump in reprisals.

Table 1 reports descriptive statistics on reprisals immediately before and after each type of partisan violence. In months after partisans used interdiction (interdict >0), the average district saw almost sixteen fewer houses burned and twenty-two fewer people killed, compared to the previous month. When the partisans did nothing (interdict $= 0$), the destructiveness of German reprisals actually increased. The data do not

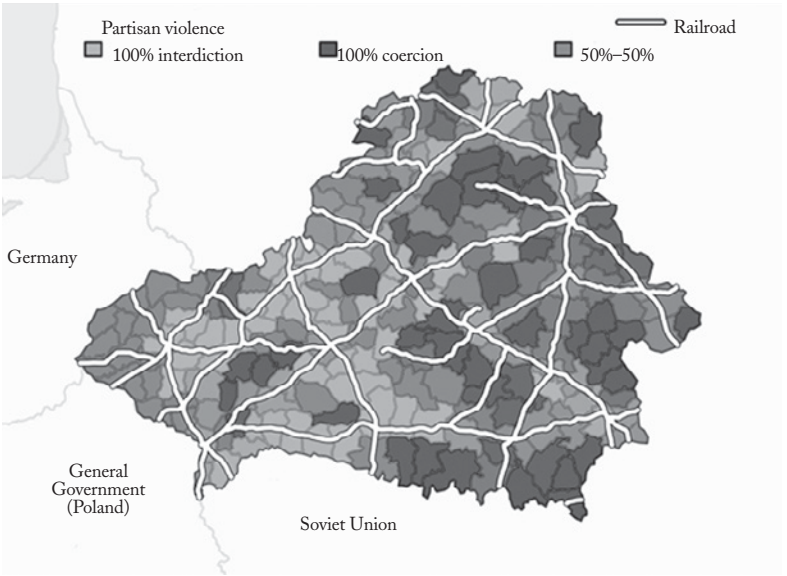
[71] At the provincial level, 252 of the locations were in Baranovichi, 23 in Belostok, 330 in Brest, 18 in Gomel', 992 in Minsk, 1,564 in Mogilev, 258 in Pinsk, 658 in Polessie, 533 in Vileysk, and 2,601 in Vitebsk voblasts.

[72] Military-Topographical Directorate of the General Staff of the Red Army 1945.

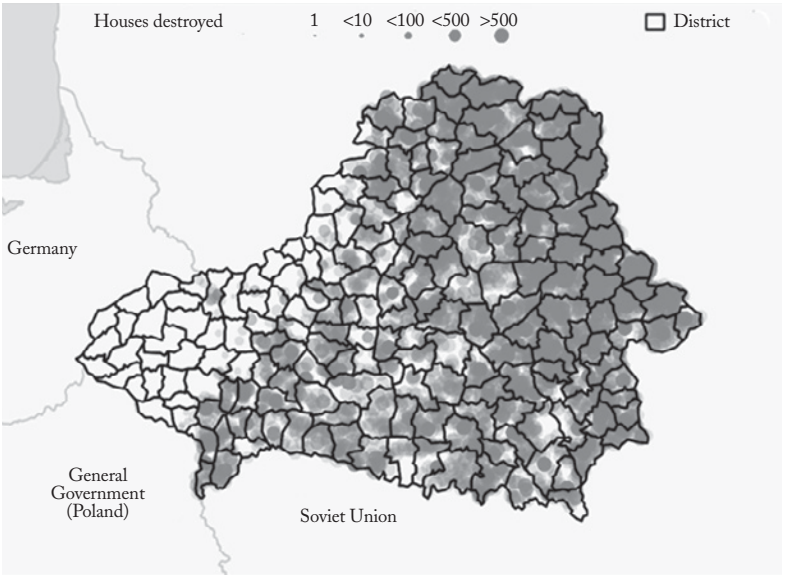
[73] Temushev 2009.

[74] Bolstad et al. 2003.

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Soviet Partisan Violence
(a)

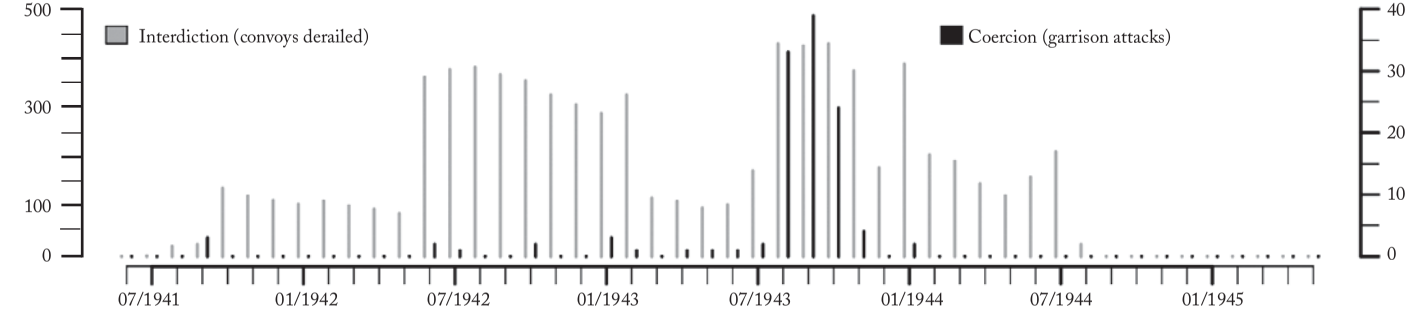


German Reprisals
(b)

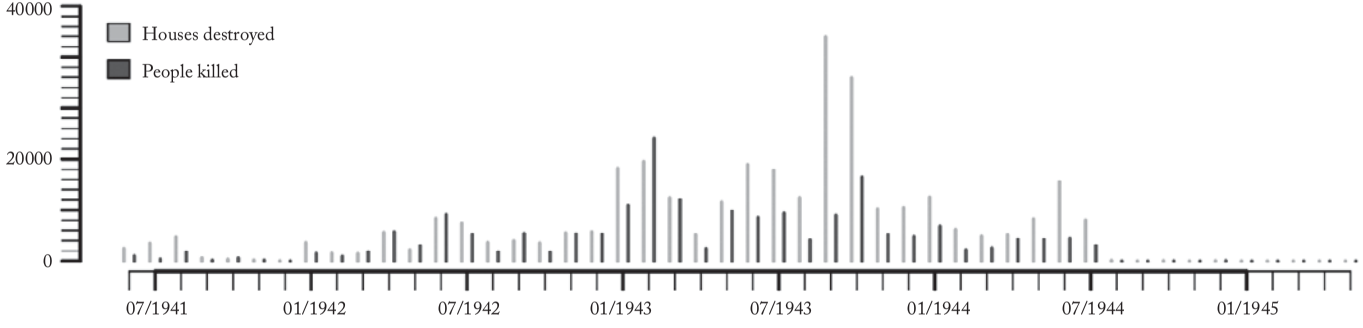
FIGURE 1
GEOGRAPHIC DISTRIBUTION OF VIOLENCE IN BELARUS, 1941–1944

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Soviet Partisan Violence
(a)



German Reprisals
(b)

FIGURE 2
TEMPORAL DISTRIBUTION OF VIOLENCE IN BELARUS, 1941–1944

TABLE 1
GERMAN REPRISALS BEFORE AND AFTER PARTISAN VIOLENCE[a]

	Houses Destroyed		*People Killed*		*Number of Reprisals*	
	Interdict = 0	*Interdict > 0*	*Interdict = 0*	*Interdict > 0*	*Interdict = 0*	*Interdict > 0*
Coercion = 0						
Post	20.16	20.81	31.46	42.9	0.83	1.19
Pre	15.25	36.47	25.64	65.35	0.71	1.68
Δ	(+5.01)	(−15.66)	(+5.44)	(−22.45)	(+0.12)	(−0.48)
Coercion > 0						
Post	140.08	113.42	260.72	296.63	6.64	7.12
Pre	43.74	51.45	97.05	108.62	3.00	2.73
Δ	(+96.33)	(+61.97)	(+163.67)	(+188.02)	(+3.64)	(+4.38)

[a]Numbers indicate average scale of German reprisals per district one month after (post) and before (pre) Soviet partisans used (x > 0) or did not use (x = 0) each type of violence.

suggest that partisans used interdiction where German violence was already low; on the contrary, violence was consistently higher in months prior to interdiction (pre). A very different pattern emerged in months after partisans used coercion (coercion>0). Here, reprisals only intensified, with 62 to 90 additional homes burned and 164 to 188 more people killed than in the previous month, on average. The seemingly inflammatory effect of coercion more than offset any reduction in violence following interdiction.

To facilitate a more rigorous, multivariate analysis, I collected data on other potential drivers of German reprisals. Because the behavior of both sides was heavily influenced by major battles in the East, I included the distance from each locality to the Soviet-German front line in a given month.[75] To control for local ethnic composition, I compiled data from Soviet (1939) and Polish (1932) censuses on the prewar Jewish population share in each district. I collected data from the same sources on the proportion of the prewar population residing in urban areas, where German surveillance capacity was most robust. To control for the size of the settlements under attack, I used the prewar number of residents and houses per village.[76]

To account for geographic and logistical constraints on German force projection, I included Soviet statistics on the travel distance, in kilometers, from each district center to the nearest rail station, and on

[75]This figure was calculated as the average distance from the district center to the closest five settlements liberated by the Red Army; Dudarenko, Perechnev, and Eliseev 1985.
[76] State Archives of the Republic of Belarus 2014.

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the distance to Berlin.[77] I also calculated betweenness network centrality scores for the nearest railroad junction to each district, representing the number of times a rail junction acts as a bridge along the shortest path between two other junctions.[78] Junctions with high betweenness centrality are high-traffic intersections, where bottlenecks are likely to create significant disruptions in network flow. Finally, because much of Belarus is physically inaccessible to mechanized forces due to heavy forests and the Pripyat marshes, I used US Geological Survey land cover data to measure the proportion of each district covered by open terrain (that is, shrublands, grasslands, and sparse vegetation).[79]

Altogether, the data include 9,216 monthly observations for 192 districts between June 1941 (German invasion) and May 1945 (fall of Berlin). Disaggregating further, there are 380,596 monthly observations for the 7,902 villages that comprise these districts. Table 2 reports summary statistics for all variables, at the district-month and village-month levels.

Empirical Analysis

The theoretical narrative has two core empirical implications: reprisals should be *less* intense where partisans interdicted external resources at a high rate and *more* intense where partisan coercive violence was high. I now use archival data on Belarus to test these predictions in several steps.

First, I use semiparametric regression analysis to gauge the overall relationship between partisan violence and reprisals, while accounting for other covariates and fixed differences across geographic locations and time periods. Second, I conduct a more focused, matched analysis of a single major derailment campaign—Operation Rail War, in August 1943—to more rigorously account for partisan target selection and covariate imbalance. Third, I use a marginal structural model to account for posttreatment bias and repeated exposure to interdiction. Unless otherwise indicated, I conducted each test separately on two levels of analysis (district-month and village-month) for three outcome measures of German violence: people killed, houses destroyed, and overall number of reprisals.

[77] Presidium of Supreme Soviet of USSR, Information-Statistical Division 1941.

[78] Formally, the measure is

$$\Sigma_{i \neq j \neq k} \frac{v_{jk}(i)}{v_{jk}},$$

where v_{jk} is the total number of shortest paths from junction j to junction k and $v_{jk}(i)$ is the number of those paths that pass through i.

[79] Loveland et al. 2000.

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TABLE 2
SUMMARY STATISTICS

	Obs.	*Mean*	*Median*	*Std. Dev.*	*Min*	*Max*
District-Month Level						
People killed	9216	21.15	0	124.02	0	4318
Houses destroyed	9216	36.93	0	162.72	0	4805
Number of reprisals	9216	0.99	0	3.98	0	149
Partisan interdiction	9216	0.86	0	2.16	0	21
Partisan coercion	9216	0.01	0	0.13	0	2
Partisan interdiction (proportion)	9216	0.50	0.50	0.33	0	1
Rail network centrality	9216	0.01	0	0.02	0	0.14
Distance to rail station	9216	12.83	5	16.04	0	87
Urbanization	9216	14.23	10.23	18.21	0	100
Open terrain	9216	0.71	0.76	0.20	0.02	0.97
Percent Jewish	9216	8.13	5.02	8.60	0.55	41.46
Partisan control	9216	0.31	0.26	0.30	0	1
Distance from front line	9024	379.21	323.34	295.24	32.80	1288
Distance from Berlin	9216	1552.09	1571.33	298.22	933.40	2127.75
People (prewar)	9216	9900.31	7283	10233.24	0	60205
Houses (prewar)	9216	2409.77	1762.50	2469.70	0	14262
Villages (prewar)	9216	41.30	24	55.13	0	355
Village-Month Level						
People killed	380595	0.51	0	11.77	0	2000
Houses destroyed	380595	0.89	0	9.71	0	1257
Number of reprisals	380595	0.02	0	0.15	0	1
Partisan interdiction	380595	0.02	0	0.14	0	6
Partisan coercion	380595	0	0	0.02	0	2
Partisan interdiction (proportion)	380595	0.50	0.50	0.10	0	1
Rail network centrality	380595	0.01	0	0.03	0	0.14
Distance to rail station	380595	12.69	3	16.62	0	87
Urbanization	380595	19.70	10.03	29.35	0	100
Open terrain	380595	0.73	0.80	0.22	0.02	0.97
Percent Jewish	380595	4.83	2.75	6.73	0.55	41.46
Partisan control	380595	0.37	0.34	0.28	0	1
Distance from front line	372666	295.68	272.15	200.71	57.38	1180.47
Distance from Berlin	380595	1749.94	1776.87	205.69	1103.08	2155.11
People (prewar)	380595	20975	16277	14010.40	32	60205
Houses (prewar)	380595	5066.42	4264	3308.27	7	14262

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Overall Patterns

I examine the general relationship between partisan activity and subsequent reprisals using a semiparametric generalized additive model with a quasi-Poisson link. The quasi-Poisson model—an extension of the Poisson generalized linear model with an unrestricted dispersion parameter—is appropriate because the outcomes are overdispersed event counts. To account for long-term geographic variation and temporal shifts in baseline intensities of reprisals (for example, the east-west trend in Figure 1b, monthly fluctuations in Figure 2), the model includes a spatial spline and time fixed effects.[80]

Table 3 shows regression coefficients and model fit statistics at the district-month level, estimated separately with absolute and proportional levels of rebel interdiction as covariates.[81] Table 4 reports the same results at the village-month level.[82] Figure 3 shows simulations from these models.

The theoretical model's predictions find strong support in the data. As Figure 3 shows, German reprisals were most severe where partisans derailed few trains but destroyed many garrisons. An increase from zero to ten derailments in a district-month was associated with fourteen fewer houses burned (95% confidence interval (CI): −9.88, −20.09) in retaliatory attacks. At the village-month level, the negative relationship was even starker: where partisans carried out at least two derailments per month, there were subsequently zero German reprisals on average. Coercive partisan violence had the opposite impact. For each garrison the partisans attacked per district-month, the Germans razed nineteen additional homes (95% CI: −12.69, 28.5).

A similar story holds with a composite measure of partisan violence—interdiction as a proportion of overall partisan violent activity (rightmost panels of Figure 3(a) and (b)). In district-months where Soviet partisans focused on attacking supply lines rather than personnel, reprisals by occupying forces were less frequent. Compared with localities

[80] The core specification is

$$y_{it} = g^{-1}(\alpha + \gamma Z_{i,t-1} + \theta y_{i,t-1} + \beta X_{it} + s(\text{long}_i + \text{lat}_i) + \zeta_t + \varepsilon_{it}),$$

where $g^{-1}(\cdot)$ is an inverse quasi-Poisson link, $Z_{i,t-1}$ is partisan tactics during the previous month (with separate models for absolute and relative levels of interdiction and coercion), $y_{i,t-1}$ is a one-month time lag of the outcome, X_{it} is a matrix of control variables, $s(\text{long}_i + \text{lat}_i)$ is a thin-plate spatial spline of the geographic coordinates of each district or village (Wood 2006), ζ_t is time fixed effects, and ε_{it} is an i.i.d. error term.

[81] Statistics include the unbiased risk estimator (UBRE), the estimated degrees of freedom (EDF) of the spatial spline, and deviance explained, which is 1− (residual deviance/null deviance).

[82] Models 11 and 12 use a logit link, since the dependent variable takes a value of 1 or 0, indicating whether a reprisal occurred in a village.

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TABLE 3
QUASI-POISSON REGRESSION MODELS, DISTRICT-MONTH LEVEL

	Dependent Variable					
	People Killed		*Houses Destroyed*		*Number of Reprisals*	
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Partisan interdiction	−0.208***		−0.152***		−0.104***	
	(0.043)		(0.024)		(0.020)	
Partisan coercion	0.060***		0.072***		0.053***	
	(0.018)		(0.010)		(0.009)	
Partisan interdiction (proportion)		−0.383***		−0.268***		−0.195***
		(0.049)		(0.031)		(0.026)
Rail network centrality	0.142**	0.134**	0.045	0.048	0.022	0.021
	(0.049)	(0.047)	(0.031)	(0.031)	(0.028)	(0.028)
Distance to rail station	−0.085	−0.116*	−0.004	−0.025	−0.059*	−0.089***
	(0.048)	(0.047)	(0.027)	(0.027)	(0.025)	(0.026)
Urbanization	−0.026	−0.035	−0.017	−0.029	−0.010	−0.013
	(0.041)	(0.041)	(0.026)	(0.027)	(0.021)	(0.021)
Open terrain	−0.027	0.002	−0.034	0.006	0.005	0.036
	(0.098)	(0.096)	(0.060)	(0.060)	(0.054)	(0.055)
Percent Jewish	0.264**	0.274**	0.068	0.076	−0.081	−0.079
	(0.089)	(0.091)	(0.063)	(0.065)	(0.062)	(0.064)
Partisan control	0.167**	0.118	0.036	0.007	0.013	−0.006
	(0.064)	(0.063)	(0.038)	(0.039)	(0.033)	(0.033)
Distance from front line	0.046	0.141	0.103	0.157**	0.034	0.080
	(0.091)	(0.090)	(0.059)	(0.060)	(0.049)	(0.049)
Distance from Berlin	78.011	52.259	22.227	18.174	0.598	−5.218
	(48.292)	(40.805)	(22.727)	(22.428)	(22.501)	(23.252)
People (prewar)	0.498***	0.478***				
	(0.041)	(0.041)				
People killed (t−1)	0.061***	0.060***				
	(0.011)	(0.011)				
Houses (prewar)			0.514***	0.483***		
			(0.026)	(0.026)		
Houses destroyed (t−1)			0.023**	0.027**		
			(0.009)	(0.009)		
Villages (prewar)					0.437***	0.432***
					(0.020)	(0.020)
Number of reprisals (t−1)					0.057***	0.057***
					(0.005)	(0.006)
EDF s(long$_t$,lat$_t$)	28.18***	27.53***	26.06***	26.02***	26.80***	26.97***
Time FE	y	y	y	y	y	y
Observations	8,832	8,832	8,832	8,832	8,832	8,832
UBRE	68.291	67.512	78.664	78.816	1.559	1.558
Deviance explained	0.43	0.44	0.54	0.54	0.62	0.62

*p < 0.05; **p < 0.01; ***p < 0.001

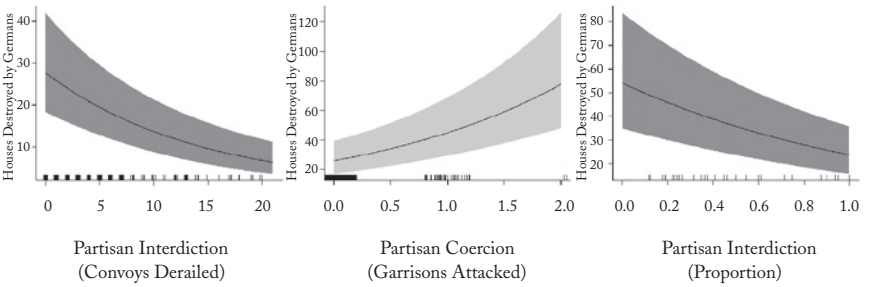
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TABLE 4
QUASI-POISSON REGRESSION MODELS, VILLAGE-MONTH LEVEL

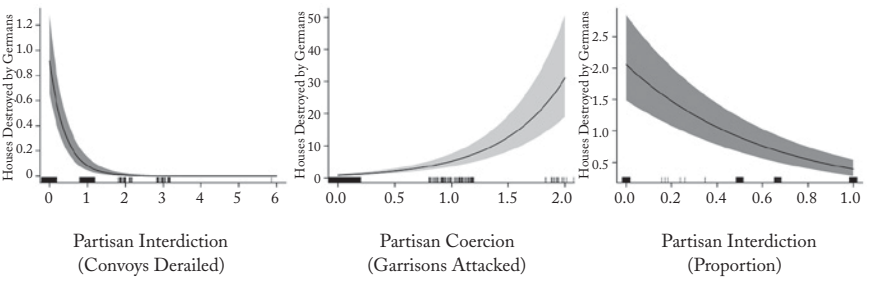
	Dependent Variable					
	People Killed		*Houses Destroyed*		*Number of Reprisals*	
	(7)	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
Partisan interdiction	−0.496***		−0.347***		−0.339***	
	(0.106)		(0.038)		(0.027)	
Partisan coercion	0.047***		0.037***		0.020***	
	(0.003)		(0.002)		(0.002)	
Partisan interdiction (proportion)		−0.196***		−0.164***		−0.127***
		(0.022)		(0.012)		(0.009)
Rail network centrality	0.116**	0.113**	0.011	0.009	−0.009	−0.013
	(0.042)	(0.044)	(0.026)	(0.023)	(0.018)	(0.018)
Distance to rail station	−0.109**	−0.107**	0.004	0.005	−0.011	−0.006
	(0.036)	(0.037)	(0.019)	(0.017)	(0.013)	(0.013)
Urbanization	−0.039	−0.031	−0.012	−0.015	0.016	0.018
	(0.047)	(0.048)	(0.028)	(0.025)	(0.017)	(0.017)
Open terrain	0.006	0.017	−0.077	−0.074*	−0.088**	−0.077**
	(0.071)	(0.074)	(0.042)	(0.038)	(0.029)	(0.028)
Percent Jewish	0.352***	0.330***	0.207***	0.192***	0.040	0.022
	(0.050)	(0.051)	(0.033)	(0.029)	(0.028)	(0.027)
Partisan control	0.230***	0.229***	0.070**	0.071**	0.043**	0.051**
	(0.044)	(0.045)	(0.025)	(0.022)	(0.017)	(0.016)
Distance from front line	−0.144	−0.163	−0.126*	−0.134*	−0.123**	−0.127**
	(0.109)	(0.113)	(0.064)	(0.057)	(0.044)	(0.043)
Distance from Berlin	63.199**	57.170**	13.841	12.333	−12.037	−12.437
	(19.467)	(19.991)	(11.509)	(10.218)	(7.938)	(7.824)
People (prewar)	0.008	0.004				
	(0.042)	(0.043)				
People killed (t−1)	−0.099*	−0.055				
	(0.044)	(0.045)				
Houses (prewar)			−0.023	−0.024		
			(0.023)	(0.021)		
Houses destroyed (t−1)			−0.187***	−0.175***		
			(0.028)	(0.025)		
Number of reprisals (t-1)					0.084***	0.089***
					(0.006)	(0.006)
EDF s($long_i$,lat_i)	28.75***	28.72***	28.32***	28.28***	28.64***	28.64***
Time FE	y	y	y	y	y	y
Observations	364,737	364,737	364,737	364,737	364,737	364,737
UBRE	4.695	4.748	6.364	6.418	0.152	0.152
Deviance explained	0.16	0.15	0.19	0.18	0.17	0.17

*p < 0.05; **p < 0.01; ***p < 0.001

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District-Month Level (Models 3–4)
(a)



Village-Month Level (Models 9–10)
(b)

FIGURE 3
DETERMINANTS OF GERMAN REPRISALS

where partisans used only coercion, interdiction-only districts saw thirty fewer homes (95% CI: −19.97, −46.35) destroyed by the Germans, a 56 percent difference (95% CI: −55.18, −57.25).

The determinants of the two other outcome variables were consistent with these. The higher the relative intensity of rail sabotage in a district- or village-month, the lower the subsequent rate of killings and reprisals. All else equal, a district where partisans engaged exclusively in interdiction saw 69.28 percent fewer killings (95% CI: −68.38, −70.16) and −44.93 percent fewer reprisals (95% CI: −44.05, −45.79) in the next month, compared to a district where partisans engaged exclusively in coercion. Although interdiction was insufficient to fully prevent German reprisals, the data suggest that—at the margins—it more likely reduced rather than increased civilian deaths.

Partisan activity was, of course, not the only driver of German violence. As one may expect in a region at the heart of the Holocaust, districts home to large Jewish communities saw significantly more violence. A district where 30 percent of the prewar population was Jewish

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experienced, on average, twenty-six more killings per month (95% CI: 11.46, 57.69) than one where Jews constituted less than 1 percent of the populace.[83] At the village level, ethnicity appeared to drive violence against people and property, with significantly more houses burned where more Jews lived.

The models also show that by itself, living near the railroad did not increase one's safety. The Germans killed significantly more people near central rail junctions and in villages closer to the railroad. Unless partisans sabotaged nearby stretches of rail—creating increased demand for local labor—such locations were prime targets. But consistent with the Richert quote, proximity to the railroad did not affect the burning of homes.

In addition, German reprisals were heavier in some districts because there were simply more targets—more people, more houses, and more villages to be destroyed. There were also fewer killings in villages closer to the German homeland, in Western Belarus, which had been incorporated into the country only in 1939, and where pro-Soviet loyalties were less deeply entrenched. This geographic heterogeneity is visible for all three outcomes in the nonparametric spatial splines in Figure 4. Baseline levels of violence were consistently lower in the West where, as shown in Figure 1, partisans also focused more on interdiction than on coercion. As Figure 5 further shows, some months simply saw more violence than others across all regions due to the dynamics of battles on the front or to seasonal variation.

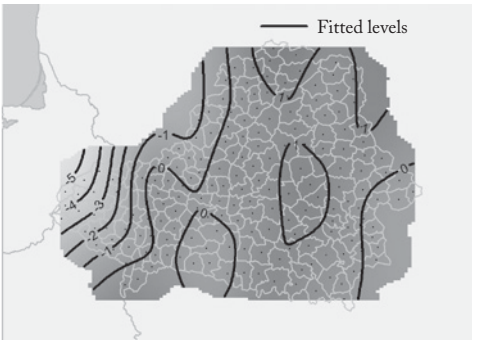
All of the above were key drivers of German violence, but none overturn the partisan effect. All else equal, partisan activity remains a strong predictor in all models after controlling for each alternative explanation.

Operation Rail War and Partisan Target Selection

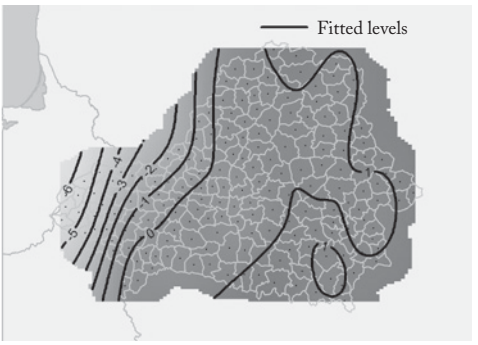
A potential concern with the preceding analysis is that districts where partisans used interdiction were systematically different from those where they did not. A skeptic may wonder whether partisans interdicted trains where German coercive capacity was already low. Rail sabotage could take place only in districts with a major railway line, where Germans already devoted a greater share of their resources to defensive duties. In districts farther from the rail network, where sabotage was impossible due to the lack of targets, more forces may have been available for reprisals. An optimist might instead point to preinterdiction reprisal levels in Table 1 and argue that the opposite is true—that

[83] Predictions based on model 1.

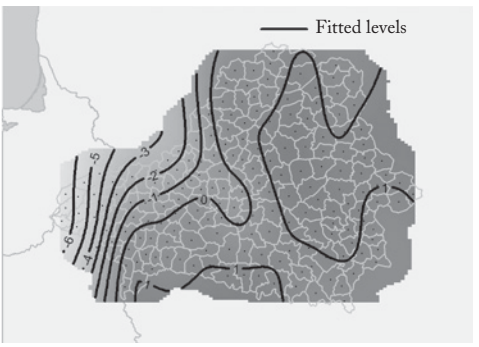
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People Killed
(a)



Houses Destroyed
(b)



Number of Reprisals
(c)

FIGURE 4
LONG-TERM SPATIAL VARIATION IN VIOLENCE[a]

[a] Spatial spline fit from (a) model 1, (b) model 3, and (c) model 5 in Table 3. Darker shades indicate higher baseline level of German violence.

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FIGURE 5
TIME FIXED EFFECTS[a]

[a] Vertical bars have 95 percent CI.

sabotage happened at times of heightened German repressive activity and that this higher baseline may lead us to underestimate interdiction's true suppressive effect.

To account for both possibilities, I examined variation in partisan targeting during a famous episode in the conflict: Operation Rail War. In August 1943, during the Battle of Kursk, Belarusian partisans launched a wave of coordinated attacks against German supply lines and derailed 1,286 trains. These derailments unfolded almost simultaneously, catching all German forces in Army Group Center Rear Area on a similarly high level of alert.

As Figure 2 shows, Operation Rail War occurred during the most violent months of the war. Yet more than at any other point in the conflict, partisan target selection had little to do with local German capacity for reprisals. Local commanders received instructions from GPShR about which sections of the rail network were to be attacked and quotas for the number of rails to be destroyed.[84] GPShR selected general targets for sabotage based on their logistical importance for German operations in Kursk, five hundred to a thousand kilometers to the east, with the goal of "full disorganization and collapse of enemy operations on the front."[85] There was no formal consideration for how dangerous attacking a given section might be, whether for partisans or for civilians.

During the course of Operation Rail War, partisans derailed trains in the vicinity of 728 villages. Of the remaining 7,201 villages where sabotage did not happen, almost a third were directly accessible from a railroad, and 508 were in the same districts (and on the same rail routes) as the villages where interdiction did occur. In short, there was a substantial subset of locations where there were no derailments but where German force posture and other local characteristics were otherwise very similar.

To evaluate the impact of interdiction on reprisals following Operation Rail War, I created a matched sample of railside villages where sabotage did or did not occur.[86] The 1,014 matched villages were as similar as possible on all observable pretreatment covariates (for example, Jewish population, distance to railroad, distance to the front line, and partisan control), but differed in whether they were exposed to interdiction.[87] As Table 5 reports, the matched sample yields a global improvement

[84] RGASPI 1945c, 58–61.

[85] RGASPI 1945c, 80.

[86] I created a new binary treatment variable, T_j, coded 1 if partisans conducted at least one train derailment in the vicinity of a village during the rail war, and 0 otherwise.

[87] I matched the villages on all observable pretreatment covariates in X_{ij}. I matched exactly on villages' home districts, dropping districts with no rail line. The remaining sample only included villages

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TABLE 5
MATCHING BALANCE STATISTICS: OPERATION RAIL WAR

	Mean Treated	*Mean Control*	*SMD*[a]
Full Data Set: N=7929 (T: 728, C: 7201)			
Propensity score	0.267	0.076	0.713
People killed (pre-T)	50.464	12.661	0.216
Partisan coercion (pre-T)	0.01	0.001	0.074
Partisan interdiction (pre-T)	2.264	0.398	0.565
People killed (3 months pre-T)	19.626	1.856	0.176
Partisan coercion (3 months pre-T)	0.001	0	0.026
Partisan interdiction (3 months pre-T)	0.365	0.015	0.423
Rail network centrality	0.017	0.009	0.24
Distance to rail station	7	13.26	–0.517
Urbanization	23.481	19.32	0.136
Open terrain	0.613	0.74	–0.456
Percent Jewish	7.243	4.591	0.298
Partisan control	0.284	0.374	–0.335
Distance from front line	452.376	379.084	0.382
District ID	112.981	119.052	–0.126
Matched Data Set: N=1014 (T: 507, C: 507)			
Propensity score	0.158	0.156	0.01
People killed (pre-T)	18.953	14.442	0.026
Partisan coercion (pre-T)	0.002	0.007	–0.044
Partisan interdiction (pre-T)	1.347	1.653	–0.093
People killed (3 months pre-T)	5.168	0.964	0.042
Partisan coercion (3 months pre-T)	0	0	0
Partisan interdiction (3 months pre-T)	0.105	0.066	0.046
Rail network centrality	0.018	0.018	0
Distance to rail station	6.431	6.431	0
Urbanization	25.27	25.27	0
Open terrain	0.617	0.617	0
Percent Jewish	6.453	6.453	0
Partisan control	0.282	0.282	0
Distance from front line	416.612	415.79	0.004
District ID	119.367	119.367	0

[a] Standardized mean difference.

from districts where interdiction happened at least once, but where some villages were closer to the detonation site than others. Although I considered multiple matching algorithms in creating matching weights, the results reported here are only for propensity scores with .25 caliper—the matching solution that produced the greatest improvement in balance, with the least loss of data. The matched sample includes 507 sets of paired villages.

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TABLE 6
DIFFERENCE-IN-DIFFERENCES ESTIMATES, PARTISAN INTERDICTION[a]

	People Killed	*Houses Destroyed*	*Reprisals*
Δt = 1 month	−4.98 (95%: −7.78, −2.18)	−10.32 (95%: −14.99, −5.64)	−0.18 (95%: −0.23, −0.14)
Δt = 2 months	−5.52 (95%: −8.41, −2.64)	−19.46 (95%: −28.76, −10.16)	−0.29 (95%: −0.35, −0.22)
Δt = 3 months	−7.32 (95%: −10.80, −3.84)	−28.38 (95%: −38.45, −18.32)	−0.42 (95%: −0.50, −0.34)
Δt = 4 months	−10.41 (95%: −14.40, −6.43)	−31.44 (95%: −41.26, −21.62)	−0.52 (95%: −0.61, −0.44)
Δt = 5 months	−15.49 (95%: −20.68, −10.30)	−38.92 (95%: −49.40, −28.44)	−0.68 (95%: −0.77, −0.58)
Δt = 6 months	−12.83 (95%: −17.23, −8.44)	−41.73 (95%: −52.48, −30.99)	−0.75 (95%: −0.86, −0.65)

[a] 95 percent CI.

in covariate balance. I then used a difference-in-differences specification to estimate the change in reprisal rates between treated and control villages before and after Operation Rail War.[88]

Table 6 reports postmatching difference-in-differences estimates for all three outcome variables. Consistent with expectations, villages exposed to rail sabotage saw a significantly steeper drop in German reprisals after the Rail War than did similar villages where interdiction did not occur. In the three months after the operation, interdiction sparked a drop in reprisals equivalent to about seven fewer civilian deaths and twenty-eight fewer homes burned per village, compared to their untreated counterparts. The effect holds for all time windows from one to six months, suggesting that the decline in reprisals was not simply a temporary pause until rail routes were restored.

INTERDICTION AS A DYNAMIC PROCESS

As we saw in Operation Rail War, conventional fighting on the Soviet-German front influenced the timing and location of partisan interdiction. But this interdiction may also have influenced future events there. This dynamic selection process confounds the relationship between interdiction and reprisals. It potentially also produces very different historical patterns of interdiction. If some sections of rail were consistently more important than others for the fighting at the front, partisans likely targeted them repeatedly. This repeated exposure to sabotage may inflate

[88] The difference-in-differences estimating equation is

$$y_{it} = \beta \text{Post}_t + \delta(T_i \cdot \text{Post}_t) + \alpha_i + \varepsilon_{it},$$

where y_{it} is the number of people killed (or houses destroyed, or number of reprisals) in village i during time period t, Post_t indicates whether time period t is post-Rail War, T_i is the treatment indicator, and α_i are village fixed effects. The difference-in-differences estimate is $\delta = E[(Y_{t+\Delta t}(T=1) - Y_{t-\Delta t}(T=1)) - (Y_{t+\Delta t}(T=0) - Y_{t-\Delta t}(T=0))]$, where Δt is the size of the post/pretreatment time window. In the results shown below, I used time windows between one and six months.

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the negative effect of interdiction, since German officials in high-risk areas had a more regular need for local labor and may have grown more hesitant to crack down with each new derailment. On the opposing side, partisan units that routinely carried out sabotage likely became keen observers of German responses and may have selected detonation sites and times that minimized blowback for the local population.

I account for these additional confounding factors by estimating a marginal structural model with inverse probability of treatment weights (IPTW).[89] The logic behind IPTW is to create a reweighted version of the data set, in which more common partisan actions (for example, interdiction due to key battles) receive less weight, and the occurrence of interdiction is unconfounded by observable time-variant factors, such as fighting on the front line.[90] This reweighting allows us to recover both the contemporaneous effect of interdiction and the cumulative effect of repeated interdiction of over time.[91]

Figure 6 reports the main results from these models, estimated separately for interdiction and coercion.[92] Reported quantities are percent changes in each outcome, associated with treatment in the previous month (a) or one additional treatment period prior to that month (b).[93]

These results confirm that partisan violence had both short-term and historical impacts on German reprisals. Averaging across all treatment histories, interdiction in the previous month yields a 45 percent decline in both killings and houses destroyed (95% CI: −51.4, −38.5; −51.9, −38.3, respectively) and a 19 percent decline (95% CI: −22.5, −16.0) in the probability of reprisals. The contemporaneous impact of coercion was larger, more uncertain, and in the opposite direction, producing a 136 percent rise (95% CI: 78.9, 211.1) in killings, a 234 percent increase

[89] I use stabilized IPTW weights of the form

$$sw_{i\tau} = \prod_{t}^{\tau} \frac{\hat{P}(z_{it}|\underline{z}_{it},\phi)}{\hat{P}(z_{it}|X_{it},\underline{z}_{it},\beta)}$$

where $\underline{z}_{it}$ is the treatment history up to time t, X_{it} are time-variant covariates, and $\hat{P}(z_{it}|\cdot)$ is the conditional predicted probability of treatment, from first stage propensity score models including (denominator) and excluding (nominator) X_{it}.

[90] Robins, Hernán, and Brumback 2000; Blackwell 2013.

[91] The MSM specification is as follows:

$$\ln(y_{it}) = \gamma_1 z_{i,t-1} + \gamma_2 \sum_{k=1}^{t-1} z_{i,k} + s(t) + \alpha_i + \upsilon_t + \varepsilon_{it},$$

where $z_{i,t-1}$ is interdiction status at $t-1$, $\sum_{k=1}^{t-1} z_{i,k-1}$ is the sum of past interdiction up to $t-1$, $s(t)$ is a temporal spline, α_i are unit fixed effects, and υ_t are time fixed effects.

[92] Unit of analysis here is the district-month. Results at the village-month level, omitted here for space considerations, are consistent with these.

[93] The contemporaneous and cumulative percent changes are $100(\exp(\hat{\gamma}_1) - 1)$ and $100(\exp(\hat{\gamma}_2) - 1)$, respectively, with $\hat{\gamma}_1$, $\hat{\gamma}_2$ as specified in fn. 91.

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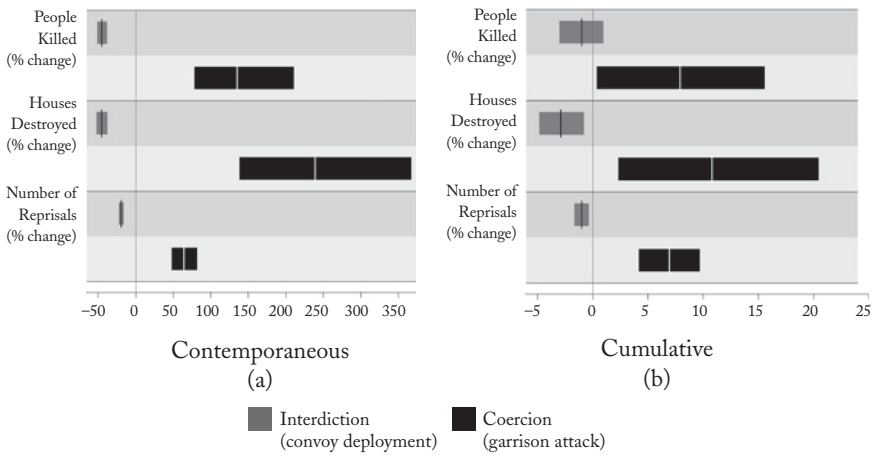


FIGURE 6
CONTEMPORANEOUS, CUMULATIVE EFFECTS OF PARTISAN ACTIVITY[a]

[a] Quantities reported are percent changes in people killed, houses destroyed, and number of reprisals, associated with (1) exposure to treatment at t, or (2) exposure to one additional treatment period up to $t-1$.

(95% CI: 142.7, 362.7) in houses destroyed, and a 65 percent increase (95% CI: 49.5, 82.4) in reprisals.

Turning our attention to the cumulative months in which districts were exposed to each treatment, the impact of both interdiction and coercion grew with time. For each additional month in which rail sabotage occurred, an average district saw a 3 percent drop (95% CI: −4.93, −0.67) in houses destroyed and a 1 percent drop (95% CI: −1.7, −0.3) in reprisals. The cumulative effect on people killed was also negative, but statistically insignificant. Repeated exposure to partisan coercion had consistently strong, inflammatory effects.

As Figure 6 shows, partisan interdiction suppressed German reprisals, even after accounting for posttreatment bias due to fighting on the front line. Importantly, the impact of interdiction was not merely a single-shot blip in German behavior. In districts where partisans conducted rail sabotage repeatedly, the need to draw continuously from the same labor pool incrementally reduced incentives for violence.

THE INTERDICTION-REPRISAL LINK

Was it always obvious to German authorities which villages harbored the partisans responsible for rail sabotage? Of course not. Given partisans' tendency to carry out multiple acts of sabotage per month, the

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connection between individual partisan actions and German reprisals may seem tenuous, even with the most fine-grained data.[94] Although statistical analysis does not enable us to distinguish between "right" and "wrong" targets—in terms of where partisans actually lived and received their support—the archival record points to several reasons why this type of bias is less of a problem for statistical inference than one might expect.

First, because partisan units were typically tied to their home districts, battlefield forensics were relatively straightforward at the district level. If an attack happened in a given district, the locally stationed German garrison could be fairly certain that it was the work of the local partisan unit, based somewhere in the area.

The situation was more complex at the village level. Here, German target selection relied on physical proximity. Army Group Center responded to antipersonnel attacks by burning villages within a four-kilometer radius, while some German officials sought to depopulate all settlements within one to two kilometers of the railroad.[95] My measurement strategy reflects this nearest-match logic, and the models directly test whether villages closest to recent partisan activity saw an increase or decrease in reprisals.

Whether the closest villages were the "wrong" targets is almost beside the point—partisans knew that the Germans would attack these places first. The main empirical finding of this article—that German violence in these locations declined following interdiction—shows that on average, rail sabotage compelled the Germans to diverge from their standard response.

One possible explanation for the decline in reprisals is that the Germans systematically avoided retaliating against villages closest to detonation sites, either because they needed that labor from the village to repair the tracks or because they assumed the partisans were too clever to carry out sabotage so close to their home village. Instead of targeting the closest village, the Germans simply might have shifted their reprisals to other neighboring towns. Archival evidence casts doubt on this interpretation. To take the Slavnoe example, von Kluge managed to prevent adjacent villages from being burned, but his superiors insisted that mass executions still take place in Slavnoe itself. If interdiction limited the geographic spillover of reprisals while concentrating them in the most proximate village, then the resulting bias is more likely to attenuate than to inflate the interdiction effect.

[94] I am grateful to an anonymous reviewer for raising this point.
[95] Knyaz'kov 2004.

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Discussion

Despite the popular perception that Soviet partisans purposely provoked German reprisals, archival evidence suggests that their sabotage of railways had the opposite impact. All else equal, Germans killed fewer noncombatants and destroyed fewer homes where the partisans derailed more trains. This relationship is robust to a variety of model specifications and identification strategies on multiple levels of analysis.

Although the "average" German reaction was to scale down reprisals, occupational authorities did not respond to interdiction in a uniform fashion. Air force personnel—whose combat logistics did not depend as heavily on ground transportation—did not hesitate to act on Goering's orders to burn all villages near derailment sites. SS *Einsatzgruppen*—whose core mission was the extermination of local civilians—took a similarly harsh approach.

Not surprisingly, the military service most heavily invested and dependent on railroad logistics—the ground forces of Army Group Center—represented the loudest voices of dissent, as exemplified by von Kluge's and von Schenkendorff's open opposition to reprisal policy. Since the *Heer* (the army) had a larger presence in occupied Belarus than other components of the Wehrmacht or the SS, this restraint mattered. After all, the army had enthusiastically participated in exterminationist killings elsewhere in the East.[96] This was a service otherwise known for its extreme brutality toward civilians.

Although Operation Rail War and other cases of sabotage may have succeeded in reducing the Germans' capacity for violence against local civilians, these results are not exculpatory of the partisans' strategy and tactics overall. The data suggest that the suppressive effect of interdiction, although significant, was smaller than the inflammatory effect of partisan coercion. Where they continued attacks against German garrisons and troops, partisans eliminated and even reversed any reductions in German violence. Actual *intent* to provoke German reprisals is difficult to discern from these data, but this tendency to cancel out the dampening effect of interdiction has probably reinforced perceptions of Soviet partisans as cynically inciting German retaliation.

Can Soviet archival data be trusted? Contemporary Belarus and Russia are countries with nontrivial restrictions on information and press freedom. One may reasonably worry that the archival records they release have a self-serving bias, glorifying the heroism of the partisans and whitewashing the numerous atrocities they committed. Indeed, we

[96] Shepherd 2004.

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do not know what secrets remain hidden in the archives and how their eventual declassification might change these results. Yet the insights already gleaned from these data suggest that if the intent of archival policy has been to glorify Soviet partisans, it has at least partially failed in that objective.

Alongside the finding that partisan interdiction saved civilians, the data also reveal a darker truth: partisan coercion increased reprisals and almost certainly cost lives. Even if we assume that the archives selectively declassified only those instances of rail sabotage that were followed by a reduction of reprisals, why would they not do the same for the much less numerous but more inflammatory attacks against German garrisons?

The records on which this article's data are based were not originally intended for public consumption. These operational intelligence briefs, directives, after-action reports, and other classified military correspondence include multiple references to drunkenness, lack of discipline, incompetence, and abuse of civilians. These reports do not reflect the whole truth, only the truth Soviet partisans saw and reported through the chain of command. Yet even this limited view of the war contains no shortage of ammunition for critics of the partisan movement. Until post-Soviet archives fully open their doors, these data also offer the most comprehensive, if imperfect, record of why this conflict claimed so many innocent lives. Partisan interdiction, this analysis suggests, was a big part of that story.

Conclusion

This article shows that the scale of government violence against civilians depends on the government's relative dependence on local and external sources of support. External resources make combatants less dependent on the local population and create perverse incentives for how this population can be treated. Efforts to interdict the government's external resources can reverse this effect and potentially save civilian lives.

This finding has several implications for theory and policy. First, external support is not constant. It varies over time and space, partly as a consequence of combatant behavior. The literature has previously overlooked these dynamics, due to the cross-national focus of most previous empirical work. Microlevel evidence from Belarus suggests that variation in external support drives variation in local violence.

Second, the enabling effect of external support on indiscriminate violence is not limited to rebels—the focus of most existing research—

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but extends to governments and occupying forces, as well. Due to the relatively heavy logistical tail of state armies, there are reasons to suspect that the resulting incentives are far more acute on the government side.

Third, the article highlights the significance of an understudied form of violence in civil conflict: the disruption of an opponent's external supply lines, or interdiction. Such actions are widespread in civil conflict but are missing from most research on civil war and insurgency. The fact that interdiction had a suppressive effect on German reprisals in Belarus—the unlikeliest of cases in many ways—suggests that we have been overlooking a potentially decisive conflict dynamic, one that may help explain why rebel violence sometimes provokes retaliation and sometimes does not.

Looking beyond Belarus, the article's findings have the most direct implications for expeditionary campaigns and antioccupation uprisings, where foreign troops encounter local rebels. It is in these cases that incumbents' reliance on external resources is most acute and incentives for engaging with the local population are most lacking. Cross-national data suggest that on average, civilians suffer more in such conflicts. The median number of government-induced civilian casualties is 103 for conflicts inside a government's sovereign territory and 153 for those outside it.[97]

When operating so far from their home territory, different armies have different baseline levels of cruelty toward civilians. The US occupation of Afghanistan, in this sense, is a far cry from the Soviet one. Explaining such macrolevel variation across conflicts is beyond the scope of this article. What the results presented here do suggest is that access to external resources affects how combatants deviate from their baseline at the local level: why violence is higher in some places and times than in others.

To suppress violence by the incumbent, interdiction must either cut off sufficient resources to directly diminish one's capacity for violence (supply side) or force a substitution of local for external resources (demand side). The latter is possible only if the interdiction applies to goods with a local substitute like labor, food, or fuel. If the interdiction applies to more specialized goods like armored vehicles and spare parts, increased demand for local labor is unlikely, although violence may still decline due to supply shortages alone. Empirically distinguishing between these mechanisms and establishing why some armies are more

[97] Data from Eck and Hultman 2007.

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vulnerable to interdiction campaigns should be a priority for future work on this topic.

As with all subnational research, caution is necessary before generalizing the Belarusian experience to other cases. As the deadliest conflict in history, World War II stands alone, and few governments can match the Third Reich's capacity and willingness for indiscriminate violence. Due to its scale, it is tempting to view the case examined here as an outlier. Yet if disruptions of external resources can restrain civilian victimization in a case as extreme as this one, where exterminationist racial ideology and political pressure strongly favored reprisals, we can be hopeful that similar results might hold elsewhere.

Further research is needed to assess how far these findings travel. But the fundamental problems the Germans faced in Belarus were not unique. Since World War II, governments have killed and displaced many more civilians while fighting against antioccupation uprisings than while fighting at home. External support is, of course, not the only reason incumbents treat civilians poorly in such cases. Yet a closer look at the resources needed to sustain such campaigns—and their vulnerability to sabotage—may help explain why some conflicts become much deadlier than others.

Supplementary Material

Supplementary material for this article can be found at https://doi.org/10.1017/S0043887116000137.

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