The Long Shadow of the Spanish Civil War[*]

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Abstract: We study the long-lasting effects of the Spanish Civil War (1936-39), between Nationalists and Republicans, on social capital and political attitudes. To this end, we use geo-located data on historical mass graves, disaggregated modern-day survey data on trust and electoral results (1977-2019). For identification, we exploit deviations from the initial military plans of attack in an IV framework and a geographical RDD along the frontline of Aragon. Our cultural results reveal a significantly negative relationship between political violence and generalized trust. Politically, we find more support for left-wing parties during the democratic period in places where Republican troops were staged. In terms of mechanisms of persistence—using our own survey and data on street names—we find stronger anti-Franco attitudes and collective memory about the war in formerly Republican areas, as well as more Francoist street names in places that faced more repression historically.

Keywords: Conflict, Civil War, Political Repression, Spain, History, Trust, Voting, Collective Memory, IV, RDD, Survey

JEL classification: D72, D74, N14, Z10

In Spain, the dead are more alive than the dead of any other country in the world.[1]

—Federico García Lorca, 1933

1. Introduction

Social capital is a fundamental driver of economic performance and a key factor underpinning democratic institutions (Putnam *et al.* [1994]; Knack and Keefer [1997]; Guiso *et al.* [2016]; Tabellini [2010]; Algan and Cahuc [2010]). Trust, in particular, has taken center stage in economics since the seminal work of Arrow [1972]. Given its economic and political importance, an active literature has tried to uncover its contemporary and historical determinants (La Porta *et al.* [1997]; Alesina and La Ferrara [2002]; Nunn and Wantchekon [2011]; Becker *et al.* [2016]). Here, we study civil conflict as a driver of social capital destruction. Though the immediate human, social and economic costs of conflict are evident (Collier *et al.* [2003]; Blattman and Miguel [2010]; Federle *et al.* [2024]), the cultural and political aftereffects of war remain less well understood.

In this paper we focus on the Spanish Civil War (1936-1939) to study the long-term consequences of conflict on social capital and political outcomes. The Spanish Civil War, pitting Nationalists against Republicans, was one of the most significant conflicts of the twentieth century. The most salient cleavage of this war was ideological, with the Nationalists on the right, and Republicans on the left of the political spectrum. Though the exact numbers are still a matter of debate, it is estimated that more than 500,000 people died during the struggle, out of a total population of 23.6 million in 1930 (Thomas [2001]). Political repression against civilians was particularly severe, claiming almost 200,000 victims. Approximately 140,000 people were killed by Nationalist troops in the so-called white terror, while the Republican red terror killed up to 50,000 people (Prada [2010]; Preston [2012]; Vera Ledesma [2010]).[2]

To carry out repression at this massive scale, authorities relied on collaborators, who often informed against their neighbors to allay suspicions or avoid reprisals (Gil Vico [1998]). We hypothesize that such practices may have had long-term consequences on both trust and political behavior. Due to the internecine nature of the conflict, people had to live alongside the enemy, and the ensuing turn-in-thy-neighbor actions may have

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[1]Cited and translated in `https://www.nytimes.com/2016/12/08/opinion/the-ghosts-spain-tries-to-ignore.html`

[2]Approximately 300,000 soldiers died in combat, an indeterminate number died of hunger, in bombings and related incidents, while up to 440,000 people were forcedly displaced (Rubio [1977]).

eroded generalized trust in the long term. Though in a different context, the underlying mechanism, whereby individuals turned on other community members to protect themselves, generating a culture of mistrust, is similar to the one expounded by Nunn and Wantchekon [2011] for the transatlantic slave trade in Africa and by Lichter *et al.* [2021] for the East German Stasi.

On the political front, there is consensus that selective repression can deter expressions of disloyalty (Kalyvas [2006]; Blaydes [2018]), though causality has proven elusive. Political scientists have studied the effects of political repression on shaping political identities and engagement (Lupu and Peisakhin [2017]; Balcells [2017]; Rozenas *et al.* [2017]; Rozenas and Zhukov [2019]). In the Spanish Civil War context, to avoid raising suspicions and maximize survival chances, some individuals not only became informants but also changed their behavior, adjusting it to the dictates of the ruling regime. For instance, Lison-Tolosana [2014] documents how after the Nationalist troops occupied an Aragonese town, religious practice—a measure of support for the Nationalists—increased sharply. This induced obedience, we posit, can translate into long-lasting political preferences.

More than 80 years have passed since the conflict ended making it an appropriate scenario to study persistence and inter-generational transmission. Two special features of the war are relevant in the Spanish scenario. First, after the victory of the Nationalists in 1939, its leader General Franco, established a dictatorship that lasted until his death in 1975. This repressive regime could have worked as a reinforcing mechanism of the changes in cultural and political traits. Second, there has not been in Spain any official prosecution of the war crimes, which could have helped to further cultivate a culture of mistrust, shaping the collective memory about the war.

To gauge the intensity of conflict, and political repression in particular, we use geo-located data on mass graves. This data was compiled by the Spanish Ministry of Justice, and has only become available recently, after the passing of the Spanish Historical Memory Law in 2007.[3] Exhumed mass graves are particularly well-suited to study politically-motivated violence, targeted against civilians who were typically executed without a trial during the initial stages of the war. To test our hypotheses about the cultural and political legacies of war, we use geographically disaggregated data on trust from Spain's Sociological Research Center (CIS, or *Centro de Investigaciones Sociológicas*) and voting records from 1977 (the first free democratic elections since 1936) to 2019 as our main outcome variables.

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[3]We have, in turn, supplemented this information with regional sources from the historical memory project for the region of Aragon, as well as with the comprehensive forensic work of Francisco Etxebarría, containing the universe of modern exhumed mass graves.

We combine this data with additional economic, social, and geographic indicators from the Spanish National Institute of Statistics (INE), along with other sources. In our baseline trust specifications, we control for such individual and geographic characteristics, while netting out fixed effects at the regional (autonomous community) level.

Because the occurrence of conflict was presumably non-random, we employ an Instrumental Variables (IV) identification strategy based on military plans of combat and the actual marching of troops. Here it is important to note that the war started as a military uprising against the democratically elected Republican government. The insurgents, also called Nationalists, planned to converge in Madrid—Spain's capital, located at the geographical center of the Iberian Peninsula—using troops from several peripheral cantonments, such as the Spanish protectorate of Morocco. To reach Madrid, the rebel troops were constrained by the existing highway network, which we have digitized using historical maps from 1931. Due to unforeseen and last-minute circumstances (explained later in further detail) the rebel military leaders deviated in some cases from the initial military plan. We interpret the deviations from the planned routes as plausibly exogenous shocks to the intensity of conflict (in the spirit of Card and Dahl [2011]; Baum-Snow [2007]). Namely, we use as instrument for conflict the distance to the marching of rebel troops in their way to Madrid, controlling for the initial plan. To implement this empirical strategy, and to disentangle potential confounders, we further restrict the sample to places historically covered by the 1931 primary road network.

We find that victimization type matters for the aftereffects of war. Our initial results show a negligible impact of total casualties (battlefield and civilian) on generalized trust. This null effect becomes significantly *negative* when we turn to exhumed mass graves, our proxy for political violence against civilians, consistent with the mistrust hypothesis. The results are strongly present in both the Ordinary Least Squares (OLS) and the IV specifications.[4] Since exhumed mass graves combine earlier conflict with later exhumations, we run differences-in-differences specifications and find that our baseline results are *not* driven by exhumations themselves. These mass graves rather proxy for historical political repression against civilians, as described later. We further scrutinize the trust results by looking at trust in different institutions: those already present before the war and more closely associated with it and those more associated to the post-1975 democratic period. These are the army, the Civil Guard and the Catholic Church on the one hand and the

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[4]Our preferred measure of conflict is the number of bodies divided by the district population in 1930. Our results are robust to other measures of conflict at the extensive margin, such as number of mass graves and a dummy indicating their presence in a given district.

Constitutional Court, the Ombudsman and the Parliament, on the other. We find broadly negative results for the former set only, suggesting that the effect is associated with the war rather than capturing broader trends. Overall, our cultural results indicate that civil conflict can have a significant and negative impact in the long run, through increased interpersonal suspicion and mistrust in particular institutions.

To see whether the cultural effects observed transcend into *politically* relevant actions, we zoom into the region and front of Aragon, which suffered disproportionately from the war. At this historic battlefront, Nationalist and Republican troops were enmeshed in a trench warfare that lasted almost two years, from 1936 to 1938. This setting offers the key advantage that information on mass graves includes which side caused the repression: Nationalist or Republican. It possesses the additional feature of having detailed municipal data for pre-war elections. These features allow us to examine the consequences of selective violence on political identities. For econometric identification, we apply a Regression Discontinuity Design (RDD) to the two opposing sides of the frontline.

We first show that the boundary was effective, leading to political repression by the faction in power on each side of the border. Using electoral data (1977-2019), we find long-lasting effects on voting for the left or the right as a function of the political repression implemented. Individuals vote more for the right in places formerly occupied by Nationalist troops and for the left in those where Republican soldiers were stationed historically. The results are not only statistically significant, but also sizable, representing around 7% of the vote share. These congressional results extend to municipal elections as well. These results are consistent with our hypothesis that politically-motivated violence can enforce political loyalties, though we defer a full discussion to Section 6.3.

To study transmission mechanisms, we conduct our own survey in the region of Aragon, focusing on attitudes towards Franco and collective memory about the war. Again we exploit the RDD set up from before. We find that in areas occupied by Republican troops historically, participants express stronger anti-Francoist sentiments. We also find that in the former Nationalist side, people report that the memory of the war is less alive today. To complement this evidence, and to determine the role of the state in shaping collective memory, we use national data on Francoist street names compiled by Oto-Peralías [2018]. We find more Francoist streets closer to exhumed mass graves, our preferred proxy for conflict and where repression was strongest. Our results suggest that the state shaped the collective memory of the Spanish Civil War, echoing the findings of Ochsner and Roesel [2017] for Austria and Williams [2019] for the US.

We contribute to several strands of the literature, reviewed in the next section. This is

the first paper in economics to look at the long-term impact of the Spanish Civil War—a major twentieth century conflict—using newly available data and modern econometric techniques. More broadly, we find that the type of victimization matters in explaining the impact of conflict on social capital, showing that repression against civilians has a negative and long-lasting effect on trust. We thus help to shed light on some of the contrasting findings in the literature on social capital and conflict. Apart from generating a culture of mistrust, we show that this type of violent repression also translated into meaningful political outcomes. Hence, we contribute to the literature on the political consequences of conflict by pinning down the role of selective violence in inducing obedience and shaping political identities in the long run. We also show how collective memory provides a novel reinforcing mechanism of transmission of these enduring effects.

1.1. Related Literature

The empirical study of civil wars in the social sciences started with the seminal work of Fearon and Laitin [2003]. In economics, Blattman and Miguel [2010] summarized the contributions on the study of civil wars, while calling explicitly for more micro studies on the consequences of conflict.[5] An emerging body of literature in conflict has then identified political and economic legacies with modern techniques. Acemoglu *et al.* [2011] and Michalopoulos and Franck [2018] study the long-term consequences of the French Revolution, while Dell [2012] analyzes the impact of the Mexican Revolution. More recently, Dell and Querubin [2018] show that US bombing during the Vietnam War increased support for the Communist insurgency. We contribute to the literature by focusing on the Spanish Civil War, one of the most important conflicts of the twentieth century.

The literature on conflict offers two opposing views on the economic and political impact of conflict in the short run. On the one hand, studies have found a positive impact of conflict on political participation and cooperation. Bellows and Miguel [2009] find that exposure to conflict during Sierra Leone's Civil War led to more political participation, while in Uganda it led to increased voting (Blattman [2009]). Experimental evidence from Burundi (Voors *et al.* [2012]) reveals higher altruism for individuals exposed to violence. In their survey piece on this topic, Bauer *et al.* [2016] conclude that war exposure can lead to cooperation, prosocial behavior and political participation worldwide. They state, however, that "the effect of exposure to war violence on trust is close to zero" [p. 263]. We add to this literature by disentangling different types of victimization, finding that

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[5]Ray and Esteban [2017] reassessed this topic, focusing on the relationship between conflict and development.

political violence against civilians can have a *negative* and enduring effect on trust.

On the other hand, papers that have focused on trust have found mostly negative effects. Rohner *et al.* [2013] show that conflict in Uganda decreased generalized trust and increased ethnic identity. Using experimental evidence from Tajikistan, Cassar *et al.* [2013], show that exposure to violence undermined trust. In a similar vein, Lichter *et al.* [2021] show how state surveillance eroded interpersonal and institutional trust in East Germany. Alacevich and Zejcirovic [2020] also find that individuals living in high-violence areas in Bosnia and Herzegovina are less trusting and politically active. A natural question to ask is whether these findings are also present when longer time horizons are considered (see Grosjean [2014]), as in the case at hand.

Recent literature has also analyzed the *political* impact of state repression. Iwanowsky and Madestam [2017] examine voting outcomes after the Khmer Rouge genocide in Cambodia, while Lupu and Peisakhin [2017], Rozenas *et al.* [2017] and Rozenas and Zhukov [2019] analyze the political legacy of Stalinist repression. Another related article is Fontana *et al.* [2018] on the long-term political repercussions of the Nazi occupation of Italy, using a Regression Discontinuity Design along the Gothic Line. Similarly, Adena *et al.* [2021] show how bombing reduced political support in Germany and Cannella *et al.* [2021] show that the Nazi annexation of Italy led to increased political opposition and lower participation. We build on this literature and employ both IV and RDD identification strategies to analyze the cultural and political reverberations of a historical conflict, several generations later. By doing so, we also speak to the literature on conflict, reconciliation and state building, as in Voigtländer and Voth [2015]; Blouin and Mukand [2019]; Rohner and Zhuravskaya [2023]. Our context differs in that the fascists won in Spain and a prolonged dictatorship ensued the end of the conflict.

With regards to the transmission mechanisms, we contribute to the literature on collective memory, especially in the context of war. We follow the theoretical framework of Dessi [2008] and echo the empirical findings of Ochsner and Roesel [2017] for the siege of Vienna, and Williams [2019] for Confederate streets in the US South. Namely, we show how the state has reinforced the recollection of the war, using data on street names collated by Oto-Peralías [2018], in line with the findings of Aguilar [1996]. This channel is particularly relevant in a country that to this day has not formally prosecuted the war crimes nor established a truth or reconciliation commission.

More broadly, this article is related to the literature on long-term economic persistence, summarized recently by Michalopulos and Papaioannou [2017]; Nunn [2020]. Theoretically, Acemoglu and Wolitzky [2014] show how mistrust and misinformation can generate

cycles of conflict, and Rohner *et al.* [2013] link conflict to cycles of mistrust and trade. Michalopoulos and Papaioannou [2016] show how conflict has affected Africa in the long term. Here we show empirically how mistrust is a long-lasting legacy of conflict.

There exists a rich literature in history and political science on the Spanish Civil War, briefly summarized next. Authoritative historical accounts of the war include Thomas [2001], Beevor [1982, 2012] and Preston [1996, 2007, 2012]. Balcells [2011, 2012, 2017] distinguishes between direct and indirect violence and examines the consequences of victimization on political identities. Villamil [2020] studies the role of local networks and political mobilization, and Oto-Peralías [2015] focuses on political attitudes. Still, to the best of our knowledge, no paper in economics has looked at the broader long-term impact of the Spanish Civil War.

The rest of the paper is organized as follows. Section 2 provides the historical background about the Spanish Civil War and Section 3 presents the conceptual framework. We then offer a description of the data in Section 3 and detail our empirical strategy in Section 4. Section 5 presents the empirical results divided into OLS estimates, IV results using military plans of attack, and RDD findings for the Aragon front. Section 6 contains the mechanisms of transmission, and Section 7 concludes.

2. The Spanish Civil War (1936-1939)

Under the broader context of the Second Spanish Republic (1931-1939), the *Popular Front*, a leftist coalition, won the national election by a narrow margin on February 16, 1936. In response, part of the military supported by right-wing forces (fascists, religious conservatives and monarchists), staged a coup against the democratically elected Republican government on July 18, 1936.[6] The uprising was led by military commanders garrisoned across the country. Conceived as a swift uprising, the military coup failed and ended up dividing the armed forces, and Spanish territory, fairly evenly between those loyal to the Republican government (known as *Republicans* or *Loyalists*) and the rebels (also called *Nationalists*), as detailed next.

The coup was supported by military units in the Spanish protectorate of Morocco, most of northern peninsular Spain (except for the Basque country, Catalonia and some adjacent areas) and southern cities such as Seville, Cordoba and Cadiz. However, the coup failed to take hold in important cities such as Madrid, Barcelona, Valencia and Bilbao (see Figure A-1), leading to a stark division of the country. The Nationalists

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[6]The coup was discovered on July 17, in Melilla, northern Africa.

received dedicated support from Fascist Italy and Nazi Germany, whereas the Republican government received irregular help from the Soviet Union and Mexico. Stalin and Hitler turned the operations of the Spanish Civil War into a proxy battle and testing ground for World War II (1939-1945).[7]

The goal of the Nationalists was to take over the capital, Madrid, in the center of the country. To this end, they planned and launched a major offensive against the city, which withstood the siege almost until the end of the war. In 1937, Nationalist troops took most of northern Spain,[8] and expanded their influence in the South (Figure A-1, top right panel). By the summer of 1938, they had managed to break the front of Aragon (Figure A-1, bottom left panel) and moved towards the French border, until they secured control of the whole region of Catalonia (Figure A-1, bottom right panel). The war officially ended in April 1, 1939, after a protracted fight, as the last Republican forces surrendered in Alicante. General Franco, who became the leader of the military coup in the fall of 1936—after the accidental death of the two other leading generals—established a dictatorship that ruled over Spain from 1939 until his death in 1975.

The Front of Aragon (1936-1938)

The front of Aragon (*Frente de Aragón*) was one of the defining battlefronts of the Spanish Civil War. Nationalist troops coming from the east and Republican troops coming from the west reached a stalemate that split the region of Aragon in half (Figures A-2 and 4). The warring factions were stationed along the two sides of the front from July 1936 to the spring of 1938, making it the longest-lasting front of the war. This epic battle was described by world-renowned authors.[9] In terms of military strategy, the front was unique, serving as a transition from the trench warfare that had characterized the First World War to the total war of the Second.

The military coup that started the war, described above, was successful in the three main cities (and provincial capitals) of Aragon: Huesca, Teruel and Zaragoza. These cities are located following almost a vertical line that splits the region in half. This plain geographic fact determined the general location of the frontline, since the Nationalists wanted to hold these capital cities and their transportation routes. However, the exact

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[7]The Communist International assisted Republican troops mostly through the support of the International Brigades. Hitler's Germany, in turn, helped with airlifts, aerial bombing and armored vehicles.

[8]The bombing the Basque town of Guernica, immortalized by Picasso, took place on April 26.

[9]The French novelist André Malraux, who fought during the war, describes the Aragon battlefront in his novel *L'Espoir* (Man's Hope), George Orwell who fought in Zaragoza, described in *Homage to Catalonia*, and Ernest Hemingway reported from Teruel.

location was defined in a rather haphazard fashion. Quoting from Aragonese historian [Maldonado, 2007, p. 86], "slowly, the frontline was outlined in an involuntary and unforeseen manner." Its consolidation was marked by the immediate need for the Nationalists to set defensive positions to stop the advance of Republican troops coming from Catalonia and Valencia. In our empirical analysis, we provide balancedness tests, including on geographic characteristics, transportation infrastructure and pre-conflict voting results.

The military strategy on both sides was to maintain their defensive positions, with few and isolated attacks. This contributed to the stability of the frontline. Some of the most relevant military offensives from the Republican side were attempts to take control of the main cities in the region: Huesca in June 1937, Belchite and Zaragoza during the summer of 1937 and Teruel in December 1937. Most ended in defeat for the Republicans. In March 1938, General Franco decided to break the front and initiated the largest battle of the Civil War, known as the Aragon Offensive. With this military campaign, the Nationalists managed to overrun the Republican half of Aragon and reached the Mediterranean, isolating Catalonia from the remaining Republican territory (see Figure A-1, bottom left panel). After the decisive Nationalist victory in the famous Battle of the Ebro in 1938, the war was all but lost for the Republican side. By then, the front of Aragon had lasted for almost two years.

Political Repression

Political violence was particularly widespread and severe during the war, representing roughly a third of all war-related casualties. Vera Ledesma [2010] and Prada [2010] estimate that the so-called red terror exerted by the Republican side killed approximately 50,000 people. On the Nationalist side, the so-called white terror killed about 140,000 people (Table A-1).[10] The bulk of repression against civilians on both sides took place during the war, particularly in the second half of 1936 (Figure A-3, left panel). At first, victims were typically killed without a trial and buried in unmarked mass graves. Military trials against civilians were instituted by Franco's regime in 1939, and political persecution continued throughout the dictatorship through special courts (Villamil [2020]), executions, imprisonments, forced labor and purges (Balcells and Villamil [2020]).

A nationally representative survey conducted by Spain's Sociological Research Center (CIS) in 2008 illustrates the extent of the conflict's severity in general and of repression

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[10]To put these figures in perspective, these numbers far exceed the approximately 40,000 victims of the military dictatorship in Chile (1973-1990) and the 30,000 forced disappearances during the Argentinian dictatorship (1976-1983) (Bautista *et al.* [2023]; Klor *et al.* [2020]).

against civilians in particular: 52.4% of respondents reported at least one family member or close connection victimized as a consequence of the Civil War. A quarter of the reported victims were killed in combat or in a bombing, another quarter were either imprisoned or sentenced to death and more than 20% were murdered or disappeared. Table A-2 summarizes these findings and further decomposes the type of victimization. We confirm these devastating findings in our survey for Aragon.

Victimization by the Republican side was mainly revolutionary and anticlerical, and also less organized.[11] It mostly targeted Catholic clergy and religious people, as well as members of the nobility, industrialists and conservatives. Political persecution on the Nationalist side was institutionalized and carefully planned to eliminate, in the words of the original coup director General Mola, "without scruple or hesitation those who do not think as we do" (Iribarren [1937]). Nationalist repression mostly targeted citizens loyal to the Second Spanish Republic and the Popular Front, but also included intellectuals, socialists, union leaders, homosexuals, Basque and Catalan nationalists.[12]

To carry out selective repression at a massive scale, authorities relied on informers and collaborators to acquire information about individuals' specific actions. Often under threat or in fear of being targeted themselves, some individuals informed against their neighbors (Gil Vico [1998]; Casanova Ruiz [2015]). To avoid raising suspicions and maximize survival chances, some individuals not only became informants but also changed their behavior, adjusting it to the dictates of the ruling regime (Prada [2010]). For instance, Lison-Tolosana [2014] documents the situation in Belmonte de los Caballeros, an Aragonese town of 1,300 inhabitants, taken by the Nationalist troops at the beginning of the war. The number of individuals in this town not attending Easter religious services, a measure of support to the Nationalists, dropped from 302 in 1936 to 58 in 1937. We hypothesize that the nature of the repression—massive, selective and based on informants—generated persistent effects on trust and political identities, as we expand next.

3. Conceptual Framework and Hypotheses

The models of parochial social preferences by Bowles [2006]; Bowles and Gintis [2011]; Bernhard *et al.* [2006]; Choi and Bowles [2007] try to explain the relationship between

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[11]For more information on such religious violence, martyrdom and sainthood see McCleary and Barro [2020].

[12]For instance, the poet Federico García Lorca, quoted in the epigraph, was assassinated by a firing squad and buried in an unmarked mass grave on August 18, 1936.

conflict and prosociality from an evolutionary perspective. These models argue that conflict fosters cooperation towards the in-group members but not towards the outsiders, who represent a threat. One of the main assumptions of these models is that one can draw clear boundaries between in-group and out-group members. However, in reality, this cannot always be done easily, as in our context. The Spanish Civil War was fought broadly along ideological lines, so individuals were often not able to identify their enemies within their communities, as is often the case in ethnic conflicts, for example. Moreover, political prosecution relied heavily on anonymous informants that, as we describe above, often reported against their own neighbors. All of these features might have generated a culture of suspicion and mistrust. The underlying mechanism is similar to the one shown by Nunn and Wantchekon [2011] for the transatlantic slave trade in Africa, by Lichter *et al.* [2021] for the government surveillance by the Stasi in East Germany, and by Drelichman *et al.* [2021] for the Spanish Inquisition. We test the hypothesis that individuals who were subjected to more repression experienced a more pronounced decrease in generalized trust and that this persisted over time.

Political violence during the Spanish Civil War was not indiscriminate but rather targeted towards certain individuals based on their political ideology, behavior and activities. Kalyvas [2006] describes selective violence as a joint process that requires civilian collaboration to acquire information about individuals' specific actions. Even though there is consensus in the theoretical literature that selective repression can foster political loyalty (Kalyvas [2006]; Blaydes [2018]), the empirical evidence is scant mainly due to challenges in finding exogenous sources of variation in repression. The front of Aragon provides a suitable setting to empirically test the impact of repression on political identities since we can exploit the sharp differences in the identity of the perpetrator in an RD setting. As documented in the previous section, in order to survive or simply not to raise suspicion, individuals changed their behavior and adapted it to the dictates of the ruling regime. As Kalyvas, 2006, p. 130 states, referring to the political violence exerted during the Spanish Civil War: "initially the result of repression and fear, this shift eventually produced new, real, and enduring identities." Our hypothesis is that this induced obedience and submissiveness shaped long-lasting political preferences and identities.

An important remaining question is why the cultural and political effects persisted after the war finished in 1939. In this respect, it is worth mentioning two historical features of the Spanish case that may help explain persistence. First, the winning side of the war, the Nationalists, established a dictatorship led by General Franco that lasted until his death in 1975, different from Germany and Italy. Repression and political propaganda

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continued during this period, potentially reinforcing the initial change in trust and political preferences. We expand on this topic in our survey, described next. Second, different from other major conflicts, there has been no formal investigation of war and dictatorship crimes. The uncertainty about the identity of the perpetrators of violence and the authors of denunciations could have further cultivated the culture of mistrust.

Conceptually, our results speak to the literature of cultural evolution and cultural transmission, reviewed in Nunn [2021]. In our case, the heuristic decision-making strategies or "rules of thumb" may have perpetuated the initial destruction in trust and the new political loyalties coming from conflict (Boyd and Richerson [1988]). We add to this literature by studying collective memory as a mechanism of transmission, following the theoretical contribution by Dessi [2008] and the concept of salience by Bordalo *et al.* [2012]. We think that beyond the war itself, it is important how historical events are reconstructed, and remembered, in line with Fontana *et al.* [2018] and Esposito *et al.* [2021]. In the words of Nguyen [2016], "All wars are fought twice, the first time on the battlefield, the second time in memory." To examine these issues we conduct our own survey in the region of Aragon, exploiting the historical divisions of the battlefront. In the survey we focus on collective memory in general and anti-Francoist attitudes in particular.

4. Data

4.1. Data on Conflict

Mass Graves in Spain

To measure the intensity of conflict, we use information recently released by the Spanish Ministry of Justice on mass graves related to the Spanish Civil War. The map of mass graves was started after the enactment of the Historical Memory Law in 2007, which recognized and expanded the rights of those who had suffered violence during the Civil War and under the dictatorship. Regional governments and several civil society organizations contributed to the map by sending information to the central government.[13] The information collected by the Ministry of Justice contains the geo-referenced location of the mass graves and basic details about the burial sites. We have complemented and updated this initial information using several sources.[14]

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[13]Article 12.2 establishes that the administration is responsible for creating and making publicly available a map showing all the areas in Spain where the remains of people disappeared under violent circumstances during the Civil War and the subsequent dictatorship have been found. We include regional fixed effects to account for such potential differences.

[14]In particular, we completed the information on mass graves exhumed until 2015 with additional mass graves found on the map available from the Ministry of Justice website that had not been included in

For each mass grave, we know what type of intervention was carried out (Figures A-4 and A-5). There are four categories labeled as: fully or partially exhumed, transferred to the Valley of the Fallen, not intervened and missing. Table A-3 reports the number of graves for each category and Table A-4 the estimated number of bodies. As of 2015, there were 2,458 mass graves that contained an estimated 68,950 individuals.

With regards to exhumed mass graves, 81% of them were exhumed after 2000 (see Figure A-3, right panel). The cause of most deaths is execution by firing squads (63.13%), followed by violent death other than by a firing squad (13%) and rearguard reprisals (9%, Table A-5). Most of these graves are not in cemeteries (62%, Table A-6), and the bulk (64%) were buried in 1936, after the first outbreak of violence (see Figure A-3, left panel). These facts largely correspond to the political repression against civilians that took place while the rebel troops were advancing towards Madrid, described above. These civilian victims were typically killed without a trial and buried in unmarked mass graves, often next to the roads the troops marched on. We expand on the history of mass grave exhumations in the Appendix.[15]

Transferred mass graves correspond to those moved to the Valley of the Fallen—a mausoleum built by Franco to honor those who had fallen during the war—during the period 1958-1983. As described in more detailed in the Appendix, these contain a mix of soldier and civilian victims from both warring sides. Though included in our data set, given potential selection issues, we mostly exclude them from the empirical analysis. Mass graves which have not been intervened yet are concentrated around key battle sites and fronts. By and large, they hold the remains of soldiers who died during combat or in military hospitals. Since many Nationalist soldiers were exhumed and transferred to the Valley of the Fallen during Franco's dictatorship, most of the remaining bodies presumably correspond to Republican soldiers. Though unexhumed, we still have estimated body counts for these mass graves.

Finally, the Ministry of Justice lists as missing mass graves those for which there is historical evidence showing their existence, but which cannot be exhumed owing to terrain-

the initial dataset, as well as information on the universe of exhumed mass graves provided by *Aranzadi*, a scientific society devoted to researching on this matter. We also filled in information missing in the original dataset by adding burial and exhumation dates, information on cause of death, and body count. For this purpose, we consulted the detailed information in the website (accessible by clicking on each individual grave) and conducted searches for individual mass graves.

[15]The bulk of the first wave of exhumations conducted during the war and its immediate aftermath, without modern technology, are not included in our dataset. The Spanish Ministry of Justice's dataset does not include information on the identity of the perpetrator that led to each mass grave. Only the data on mass graves for the region of Aragon contains this information, as explained next.

specific circumstances—for instance, if a road has been built covering the site. This category represents less than 10% of the total mass graves and around 5% of the over-all estimated death toll. Despite potential limitations of the historical data—such as measurement error—we have assembled the most comprehensive fine-grained database on casualties of the Spanish Civil War for the entire country. Though our dataset covers different types of casualties and victimization, it is particularly well-suited to study severe political violence against civilians, through the usage of exhumed mass graves.

Mass Graves in Aragon

The Spanish region of Aragon has a state-of-the-art historical memory project, partly due to the fact that its battlefront constituted one of the key struggles of the entire war. We take advantage of this fact and use the highly detailed information on historical conflict, which *crucially* allows us to identify the side perpetrating civilian repression. We focus on repression-related mass graves: a total of 398 mass graves classified as Nationalist repression and 238 marked as Republican repression. A total of 229 mass graves have been exhumed in the region. There are also 114 classified as combat deaths. The data allows us to examine selective violence and thus analyze the political dimension of the conflict.

4.2. Trust Data

Data on trust at the individual level comes from multiple cross-sectional surveys conducted by the Spanish Sociological Research Center (CIS). We select all surveys conducted during 1998-2015, a nationally representative sample containing information on generalized trust (N=38,287). The coverage of the sample at the district level can be seen in Figure A-6. The specific question asked in the surveys is the following: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" Answers range between 10 (most people can be trusted) and 0 (need to be very careful). The average generalized trust in our sample is 4.86. These surveys also report information on trust in different institutions, such as the military, the Civil Guard police force (*Guardia Civil* in Spanish), the Catholic Church, the Constitutional Court, the National Parliament and the citizens' Ombudsman (*Defensor del Pueblo* in Spanish). These surveys have been partially anonymized to include information at the district level.[16] The data has other socio-demographic information at the individual level,

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[16]There are four sub-national levels of division in Spain (from smaller to larger): municipalities, judicial districts, provinces and autonomous communities. Judicial districts, *partidos judiciales*, simply called

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which we use as controls.

4.3. Voting Data

We use publicly available voting data published by the Spanish Ministry of Internal Affairs.[17] We have collected data for most of the elections conducted in Spain since democracy was reinstated in 1977, following Franco's death. Our main dataset consists of general election results for the lower house of the national parliament (Congress, or *Congreso de los Diputados*) in 1977, 1979, 1982, 1986, 1989, 1993, 1996, 2000, 2004, 2008, 2011, 2015, 2016 and 2019.[18] We supplemented these data with municipal election results for 1987, 1991, 1995, 1999, 2003, 2007 and 2011. Raw data is provided at the municipal level and we limit our analysis to the region of Aragon (containing the provinces of Huesca, Zaragoza and Teruel) given the availability of detailed historical voting and political information (from Balcells [2011]). We classify the voting behavior as supporting right-wing or left-wing parties. Additionally, we classify political parties as moderate or extreme, code populist parties—(*Podemos* and *Vox*), which appear for the first time in our sample in 2015—and categorize regionalist and Communist parties.[19]

4.4. Survey Data and Persistence Mechanisms

To better understand the mechanisms of persistence, we conducted our own survey in the region of Aragon. We surveyed a random sample of 1,000 Spanish individuals who live in this region and asked them questions related to three main topics: their socio-demographic status; trust and social capital; attitudes towards the Civil War and Franco's dictatorship and recollection of these historical events.[20] We complement the existing trust measures with questions about in-group and out-group trust. All interviews were conducted by phone during the last week of June, 2022 and lasted approximately 15 minutes.

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districts in this text, are territorial units for the administration of justice and include one or more municipalities within the same province. There are currently 431 judicial districts in Spain.

[17]Available at: https://infoelectoral.interior.gob.es/opencms/es/elecciones-celebradas/area-de-descargas/

[18]Spain became a representative democratic monarchy when it adopted its current Constitution in 1978.

[19]We largely follow the categorization for Congress and municipal elections available at http://www.historiaelectoral.com/calcul.html and follow the populist characterization of https://popu-list.org/. In our baseline specifications, we include center parties within right-wing parties. Our results are essentially unchanged when using an alternative categorization of right-wing parties that exclude center parties. This is shown in Figure A-16 in the Appendix.

[20]These last questions were mostly based on a survey conducted by the Spanish Sociological Research center (CIS) in 2008 (CIS 2760).

The 1,000 interviews were geographically distributed in the following way: 450 interviews are conducted in the former Republican side, 460 in the former Nationalist side, and 90 in municipalities that constituted the frontline during the war. Since our goal was to run a RD around the frontline with this survey data, respondents were selected based on how far they lived from the frontline during the war. 75% of the respondents lived in municipalities 50 kilometers away from the frontline. To maximize the geographical coverage of our sample and to avoid including only a few large municipalities, we imposed a maximum of 30 interviews in the same municipality. As a result, 71% of the respondents live in municipalities with less than 10,000 inhabitants. Table A-7 reports the main descriptive statistics for the socio-demographic variables in the survey. Respondents have an average age of 53 and 49% are men. 22% of them have primary education only, and 38% have their children living with them. 43% of the surveyed individuals are working and 30% are retired or receiving a pension. The average distance to the front is almost 36 km.

We further explore mechanisms related to collective memory by using data on Francoist and religious street names (shared by Oto-Peralías [2018]). Street data are based on the *2001 Electoral Census Street Map*, which contains a total of 730,082 streets, 701,346 of which are left after data cleaning. In our analysis, we employ two measures: the total number of Francoist-named streets and the same measure divided over the total number of streets for a given municipality, multiplied by 100.

4.5. Historical Maps and Control Variables

To construct our IV, we rely on historical road maps and military plans of attack for the war and actual troop movements (Coll-Hurtado [2012]; Puell and Huerta [2007]). For the RDD, we digitize historical maps depicting the frontline of Aragon and information on municipalities on either side of the frontline or within it, based on Maldonado [2007].

Aside from the main variables described, we use an extensive set of geographic, weather, historical and individual controls. These include ruggedness, area, an index of caloric yield of the soil (Galor and Özak [2016]), land cover, standard deviation of temperature, distance to river and to coast. Additionally, we control for measures of infrastructure such as road density and the existence of a primary road in 1931. We also include a set of individual-level controls contained in the surveys (age, educational level, employment status and municipality size) as we explain in detail in the next section. Table A-8 reports the sources of these control variables.

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5. Empirical Strategy

5.1. OLS Analysis

We begin our empirical analysis by regressing generalized trust on bodies in mass graves according to the following equation:

$$y_{idy} = \alpha + \beta x_d + \boldsymbol{\delta z}_{idy} + \gamma_r AC_r + \lambda_y + \epsilon_{idy} \tag{1}$$

where y is (generalized) trust of individual i who lives in district d in survey year y, x are bodies in mass graves (total or by category) located in district d divided by 1930 population in the district and multiplied by 1,000. β is our coefficient of interest, where a negative value would indicate mistrust. z_{idy} denotes a vector of control variables at the individual level (age-group fixed effects, educational level, employment status and municipality size). We also include district-level controls, such as population in 1930 and during the survey year (in logarithms), ruggedness, area, index of caloric yield of the soil, standard deviation of temperature, distance to nearest river and to coast, a land cover index, and a meausre of road density in 1931. Lastly, we include region (autonomous community) and survey-year fixed effects. We use robust standard errors. OLS results are presented in Section 6.1.

5.2. Instrumental Variables Strategy

To deal with the potential endogeneity of conflict, we employ an IV strategy where we instrument the intensity of conflict by the distance to the path taken by Nationalist troops on their way to Madrid. As explained before in Section 2., the objective of the rebels when planning the coup was to take over Madrid and depose the Republican government (see Figures 1 and A-7). Since there are different routes to Madrid, we use as instrument the distance to the route actually taken by Francoist troops in their advance to the capital during the first months of the war, conditioning on the historical existence of a primary road (Figures 2 and 3). As can be seen in this last figure, where troops passed historically there are more exhumed mass graves.

We further condition on distance to the initial military plans of attack (Figure 1). Hence the instrument is similar to Baum-Snow [2007], but here we focus on deviations from the plan, more than the plan itself. The identifying assumption is that, conditional on the initial plans of attack, the actual routes taken by the Francoist troops are plausibly random (cf. Feigenbaum *et al.* [2018]; Alix-Garcia *et al.* [2020]). This framework is inspired

by the one proposed by Card and Dahl [2011] to study the link between family violence and emotional cues triggered by unexpected wins or losses by professional football teams. Card and Dahl [2011] infer the expected outcome of each match using betting-market information and interpret the actual outcome of a football game as random, conditional on the pre-game spread. In our setting, we take the initial plan of attack devised by General Mola as the reference point, and interpret deviations from this plan due to largely unforeseen circumstances as plausibly exogenous. We provide supporting historical evidence next.

General Mola, the mastermind of the coup plot, had planned a centripetal movement of troops from Valencia, Zaragoza, Burgos, Pamplona, Valladolid and the south of Spain (including Algeciras, Malaga and Seville) towards the capital, Madrid. The military columns were to march swiftly using the main roads, which made geographic and tactical sense. He did not expect the Madrid and Barcelona garrisons to support the coup, and was skeptical about Seville, the Basque Country and Asturias (Martínez [2009]). General Goded's insurrection was unsuccessful in Barcelona, while contrary to Mola's expectations, the coup failed in Valencia, due to General González Carrasco's change of heart, and was successful in Seville.[21] Hence our identification strategy also relies on the idiosyncrasies (and loyalties) of the local garrison leaders [Dippel and Heblich, 2021; Dippel and Ferrara, 2023].

Under these circumstances, General Franco, who was in charge of bringing troops from North Africa to Madrid, took an unanticipated strategic decision: instead of using the Despeñaperros pass (Figure A-7), he opted for the only available alternative route, through Badajoz (Martínez [2009]). His fateful decision was motivated by the vulnerability of the narrow mountain pass, given the failure of the insurrection in Valencia. The Badajoz route offered the additional advantage of being close to the Portuguese border, where dictator Salazar was willing to support the rebels. This tactical decision constitutes the main deviation from the initial military plan of attack. Section 6.2. presents the IV results.

5.3. Regression Discontinuity Design

As an alternative identification strategy, we employ a Regression Discontinuity Design along the front of Aragon. By zooming into this decisive area of the war, we gain in terms of data quality, though we sacrifice external validity. Importantly, we are able to distinguish which side (Nationalist or Republican) was responsible for the repression,

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[21]Valencia actually became the (last) Republican capital later in the war.

allowing us to analyze political identities. As described in Section 2., the front divided Aragon between the two warring factions, along a nearly vertical line (Figure 4). Thus, we can compare outcomes to the west of the line (Nationalist side) with those to the east of it (Republican side).

In particular, we run an RD specification of the form

$$y_{ipt} = \alpha + \beta Nationalist_{ip} + f(DistanceFront)_{ip} + x'_{ip}\gamma + \delta_p + \zeta_t + \epsilon_{ipt} \qquad (2)$$

where y represents voting results for municipality i in province p in election year t. $Nationalist_{ip}$ is an indicator equal to one if the observation fell in the Nationalist side and equal to zero if it fell in the Republican side. Though it has been argued before that the consolidation of the front was largely haphazard, to be conservative we drop municipalities located at the frontline and run robustness tests that include them. The running variable is distance to the front $DistanceFront$, in kilometers, which we calculate from the centroid of each municipality.[22] In our convention, distance to the front is positive for the Nationalist side, and negative for the Republican one. We also add a function of latitude and longitude as a control in x'_{ip}, both linearly in the baseline specification and quadratically for robustness (no higher-order terms are included, as in Gelman and Imbens [2019]). We also include fixed effects at the province level δ_p to account for time-invariant differences between the provinces of Huesca, Teruel and Zaragoza.[23] Additionally, we include election (time) fixed effects.

We apply the optimal bandwidth selection algorithm proposed by Calonico *et al.* [2014] to estimate Equation 2, where the running variable is distance to the front. We report non-parametric results graphically with the corresponding local linear coefficients, along with their standard errors. Since we drop municipalities at the frontline, in effect, we estimate a Donut RD, as in Barreca *et al.* [2011].[24] As is standard, we show that the two sides are balanced in terms of potentially relevant covariates. In terms of actual outcomes, we first examine whether the front was effective, i.e., whether political repression was higher in the side (Nationalist or Republican) that controlled the area before the front ceased to exist.[25] We then look at measures of trust, both generalized and regarding particular

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[22]Specifically, we calculate the nearest distance from the centroid of each municipality in Aragon to the centroid of one of the 47 municipalities that constitute the frontline. When sub-municipality information is available (as in the case of geo-located mass graves) we use those coordinates instead.

[23]Technically, this is equivalent in this setting to having border-segment fixed effects across the provincial borders.

[24]This is analogous to the "thick" border design in Michalopoulos and Papaioannou [2013].

[25]We use a simpler version of Equation 2 with the indicator variable along with controls, when we look at data on streets, which we denote coarse RD.

institutions. To exploit the set-up more fully, we analyze voting results for congressional and municipal elections, as described in Section 4.3. We present the OLS and IV results next and the empirical RDD results in Section 6.3.

6. Empirical Results

6.1. OLS Results

We begin the empirical analysis by examining the relationship between our most general measure of historical conflict and generalized trust in modern times. We take the total number of bodies in all mass graves, as in Equation 2. The result of this first empirical exercise can be seen in Table 1, Panel A. We observe slightly positive coefficients in Columns 1, without controls, and Column 2, when we include population and area controls. The coefficient turns negative with region and year fixed effects in Column 3. This coefficient becomes insignificant when including more controls (Columns 4-6). These initial inconclusive results could be driven by several factors such as endogeneity or heterogeneous effects for different types of mass graves, which we explore next.

In turn, when we focus on exhumed mass graves, in Panel B, results are negative and statistically significant across the board, without and with different sets of controls (Columns 1 to 6). In particular, results are robust to the inclusion of population and area controls, region and year fixed effects, geographic controls, age and municipality size fixed effects, as well as age and municipality size fixed effects. These results suggest that the type of victimization matters when it comes to trust, providing an explanation for some of the conflicting results in the literature. In this context, exhumed mass graves are proxying for political violence against civilians, as described in Section 4.1. Results for non-exhumed mass graves reported in Appendix Table A-9 reveal first a slightly positive and then negative and non-significant relationship with generalized trust. This makes sense as many of these mass graves contain combat casualties, in which soldiers from different localities typically fell in yet another place, hindering any local cultural transmission.[26] Altogether, it appears from the OLS results that political violence against civilians is associated with the unraveling of generalized trust in the long run.

An important related question is whether the results observed are due to the exhumation process itself. To investigate this possibility we look at trust responses at different points in time. We construct an indicator variable that takes the value 1 for the post-exhumation

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[26]Our results are also consistent with an informational story whereby violence against civilians shifts people's priors about soldiers more than combat casualties. We thank Luigi Guiso for offering this interpretation, consistent with the theoretical literature.

years, and zero before the first exhumation. In a differences-in-differences (DID) setting, we include district fixed effects and look at how generalized trust changes within the district once the mass grave is opened and exhumed. As shown in Table 2, exhumations themselves do not seem to be changing trust levels, which appear insignificant in Column 1. This holds for the population as a whole as well as for people older than 65 years, who might have been more directly affected by the war, in Column 2. We obtain the same non-results when we restrict the sample to districts where an exhumation was carried out, in Columns 3 and 4. These findings suggest that exhumed mass graves are capturing the prevalence of previous historical conflict, more than the exhumation intervention itself. The DID findings also point to the stability of the trust measure.

To further scrutinize the exhumation process, we return to the history of mass grave exhumations. We focus on Priaranza del Bierzo, the first mass grave exhumed with modern forensic techniques, in 2000. We find that proximity to this municipality has no impact on our measure of generalized trust, in Figure A-8. As above, it seems that the impact of the war on trust does not operate through the exhumation processes themselves, which give insignificant results. Instead, exhumed mass graves constitute important markers of historical political violence against civilians, which appear to have had long term consequences. We focus on potential identification issues next.

6.2. Instrumental Variables Results

Even though we control for a large set of covariates, results in the previous section could still be driven by the potential endogeneity of conflict. OLS results might be biased if, for instance, communities were targeted according to their pre-existing levels of social capital. Exhumation processes aside, there could also be other unobservable factors, such as class struggles, correlated with conflict and trust, which we are not able to control for directly. Because of these reasons, we employ an Instrumental Variables identification strategy, based on military plans of attack, the 1931 highway network, and the actual routes taken by military troops, as described in Section 5.2.

Table 3, Panel A, reports the first-stage regression results of our measure of exhumed mass graves on distance to the path taken by the troops marching to Madrid.[27] The farther a district is from the route used to march to Madrid, the fewer bodies in exhumed mass graves it has (in Column 1). This results holds when adding the age, municipality size, education and labor controls in Columns 2-3. The relationship also holds when we

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[27]We exclude Madrid from these regressions, and we control for distance to this capital.

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use the number of exhumed mass graves instead of the number of bodies in exhumed mass graves divided by the population in 1930. This is true again throughout the regressions with different controls (in Columns 4-6). The first stage is strongly significant in all cases. We hypothesize (and empirically test) that our instrument is capturing violence against civilians, particularly during the beginning of the war, as described in Section 2.

Panel B presents the second-stage results following the same structure as before. The (instrumented) effect of exhumed mass graves on trust is negative and significant across all specifications. This holds for both measures of repression (exhumed bodies and mass graves), and also after controlling for individual variables. Though not exactly comparable to the OLS results, the IV estimates are larger in magnitude than before. This might be due to the fact that the local average treatment effect (LATE) estimated in the IV is capturing compliers for whom the effect is larger than the average treatment estimated in the OLS (see Imbens and Angrist [1994]; Becker [2016]).[28] In the present context, even though the war was widespread across Spain, areas where Francoist troops passed were affected disproportionately.

For completeness, we report results for all mass graves and different categories of mass graves. The results hold for all mass graves in Table A-10, both for number of bodies over population and number of mass graves. The results are also negative and significant for transferred mass graves in Table A-11. These graves were also exhumed and later transferred to the Valley of the Fallen mausoleum during Franco's dictatorship. The results do *not* hold for intervened mass graves in Table A-12, which correspond mostly to soldiers' casualties. We do not expect there to be an effect in this case. Overall, the results suggest that our instrument is better suited to capture political violence.

Table A-13 presents further robustness checks, incorporating different ways of measuring repression. Columns 1-3 measure repression as the logarithm of the number of bodies in exhumed mass graves, and Columns 4-5 use a binary indicator that takes the value 1 if there is at least one exhumed mass grave in the district, and zero otherwise. Our results hold throughout the different specifications.

Trust in Institutions

We further investigate the effect on trust by looking at trust in institutions associated to some extent with the Civil War. The idea is to see whether the generalized trust results could entail political manifestations, as we test more formally next. We find, in Appendix

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[28]Alternatively, the difference could also be due to measurement error of the endogenous variable.

Table 4, that the instrumented effect of exhumed mass graves is negative and significant for those institutions typically associated with the conflict and the later dictatorship, such as the Army (Column 1), the Civil Guard (Column 2) and the Catholic Church (Column 3). It appears that the war not only generated cultural, but also long-term institutional damage. Conversely, the impact on trust in institutions less associated with the war or established after the Democratic Transition of 1975 is negligible and non-statistically significant.[29] This holds true for the Constitutional Court, the Ombudsman for citizen rights, and National Parliament, in Columns 4 to 6. Altogether, the IV results point towards a detrimental effect of exhumed massed graves on generalized trust, and on trust in institutions more associated with the armed struggle, suggesting that the mistrust effect is more specific to conflict. These results on national institutions also motivate our political analysis.

6.3. Regression Discontinuity Results

To further grasp the long-term consequences of the Spanish Civil War, we zoom into the region of Aragon (Figure A-2), and focus on *political* behavior and identity. The fact that we have information of the perpetrator of violence allows us to explore the political dimension of the conflict, in the relation between selective violence and political identity. Electorally, this is an interesting region, working as a "swing" state, similar to Ohio or Iowa in the US, providing meaningful variation for our voting analysis.

For identification purposes, we use the stark division of the region into two halves dominated by the Nationalist and Republican armies, as described before (see Figure 4). Econometrically, we employ a RDD, using distance to the front as the running variable, as in Calonico *et al.* [2014]. We follow the empirical specification in Equation 2. First, in Figure A-9 we report a manipulation test, finding no apparent discontinuities. The p-value is 0.522.

As is standard in RD designs, we also show balancedness for an extensive set of co-variates in Figure 5. We include geographic controls such as ruggedness, elevation, land cover, municipal land area, and a caloric index based on the agricultural suitability of crops. We also include different sets of distances: to the capital city of Zaragoza, any of the provincial capitals (Huesca, Teruel and Zaragoza), the coast and other water bodies. Similarly, we use distance to Roman roads as well as a measure of modern road and rail-

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[29]The Constitutional Court and the Ombudsman were established after the 1978 Constitution, whereas even though parliaments existed since medieval times, the question in the survey alludes to their post 1975 congressional form. These formal institutions are also working at the national, more than the local level, as in Becker *et al.* [2016]. Table A-14 shows results for all mass graves.

road density, to test for potential differences in infrastructure. These measures appear smooth at the border.[30]

We then check whether the frontline was effective. To this end we run a Regression Discontinuity specification for Republican and Nationalist repression on distance, as described in Section 6.3. We measure repression as the presence of mass graves (extensive margin) at a given distance from the frontline. Results can be found in Figure 6. We find that Republican repression is higher where Republican troops were stationed, in the left panel. The same holds true for Nationalist repression, which is higher where Nationalist troops were present, in the right panel, as expected. In terms of magnitudes, Republican repression goes from an average of 0.6 to almost zero, while Nationalist repression ranges from 0.2 to around 0.9, slightly higher. This not only corresponds to accounts of repression at the national level, but also reflect the fact that the Nationalists broke the frontline in 1938 and exerted repression in previously Republican areas. The estimated RD coefficients are -.88 (Republican repression) and .46 (Nationalist repression), and the former is significant at the 1% level. Results are similar when we use measures of repression at the intensive margin instead: with number of mass graves (Figure A-10) and executions (Figure A-11).[31] Overall, it appears that the frontline was binding, with respect to these different repression measures.

When analyzing *total* repression, in Figure A-13, we do find any discontinuity. This allows us to examine the effect of selective violence on political identities, focusing on the perpetrator's identity while keeping constant the overall intensity of political violence at the border. To this end, we use our own survey, for the autonomous community of Aragon. We find a decrease in generalized trust at the border, in Table 6, Panel A Column 1. This result is confirmed when we ask about membership in associations, as an alternative measure of social capital, in Column 2. We find no significant differences for in-group, out-group trust or their differences in Columns 3 to 5. We further look into political differences next, using voting data.

Political Outcomes

We extend the analysis of the legacy of the war, by looking at political outcomes. The idea is to see whether the cultural differences reported thus far may have also translated into relevant political behavior. We focus on the identity of the perpetrator, to see whether

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[30]This holds at the 5% confidence level, except for municipal land area.

[31]Figure A-12 confirms this with a lower level of precision, using modern victimization data from our survey, assuaging migration concerns.

this shaped political allegiances. We report first the results for congressional elections, where we code up parties as "left" or "right." Figure 7 summarizes the results. We see in the left-hand panel that more people vote for the left in areas that were formerly occupied by Republican troops. The same is true for votes for the right in areas formerly occupied by Nationalist troops, in the right-hand panel. The results are not only statistically significant, but also substantial, in the order of 7% of the vote share.

We report the actual magnitudes in Table 5. In our baseline specification, which excludes municipalities at the front as in the Figure above, we find a negative coefficient of 0.07 for voting for the left and a positive one of 0.07 for the right, in Column 1. They maintain their significance and hover from 7% when we include latitude and longitude, in Column 2, and province fixed effects, in Column 3. Column 4 reports the coefficients for the full specification, with both sets of controls, which remains negative, significant and in the order of 10%. Appendix Table A-15 presents further robustness tests, where we exclude the capital city of Zaragoza and include a quadratic polynomial expansion of latitude and longitude, in Columns 1 and 2. We also present specifications with election fixed effects, in Column 3, and using municipal averages throughout the period, in Column 4. In Column 5 we use a second order polynomial of distance as the running variable. In Column 6 we present the local randomized RD coefficient, which appears smaller, but is still highly significant. In Column 7 we include the municipalities within the frontline, which leads to a larger effect. Overall, the results maintain their sign, significance, and approximate magnitudes throughout.

We further decompose the voting results into different categories. For moderate parties, we code votes for the right and left minus the extremes. These largely correspond to votes for PSOE (*Partido Socialista Obrero Español*) on the moderate left, and PP (*Partido Popular*) on the moderate right—the two main modern political parties in Spain since the 1980s until the 2010s.[32] More people support the moderate left in the former Republican side, and the moderate right in the former Nationalist side (Figure 8, Panels A and B, respectively). The differences are statistically significant at the 1% level and are in the order of 7-8% of the vote. With regards to extreme parties, in Figure A-14, we do not find any significant discontinuity either for the extreme left (Panel A) or extreme right (Panel B). When focusing on populist parties *Podemos* on the far left, and *Vox* on the far

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[32]Other parties in the Spanish political moderate landscape include UCD, CDS, UPyD and Ciudadanos. Center parties are included within "right" category in our baseline specifications. However, as shown in Figure A-16, we find very similar results with an alternative categorization of the "right" that excludes center parties (Panel A), and we do not find any discontinuity when analyzing these center parties only (Panel B).

right) in Figure A-15, we find a significantly negative jump of -0.172 in the probability of voting for *Podemos*, but not *Vox*. Finally, we analyze Aragonese regionalist parties and Communist parties and we do not find significant differences in any of these categories (Figure A-17 Panels A and B, respectively). Overall, our voting results appear to be driven by moderate parties (cf. Fontana *et al.* [2018]; Cannella *et al.* [2021]).

We run various empirical tests to assess the robustness of the electoral findings. First, we check whether results are simply driven by political pre-trends. It is plausible that troops from a given side advanced until they faced opposition. This does not seem to be the case, judging from election results at the municipal level from right before the war, in 1936. There is no statistical difference for votes for the left in this historical election (Figure 9, left panel). We also find no discontinuity in the number of people affiliated in 1936 with the CNT (*Confederación Nacional del Trabajo*), a major anarcho-syndicalist (leftist) labor union, in the right panel, nor for measures of political competition or previous conflict (Figure A-19), from Balcells [2011]. The estimated coefficients are also insignificant. Additionally, we look at potential differences in population at the municipal level, to see whether they might be driving the results. First, we focus on changes between 1930 and 1940, the census years before and after the war. We observe no discontinuity at the threshold for these variables (Figure A-20). The same is true for the return to democracy after 1975, using the 1970 and the 1981 Censuses (Figure A-21). Overall, it does not seem that results are driven by such demographic trends or pre-existing political differences.

So far our results were based on congressional elections, we now extend our voting analysis to municipal level elections, available from 1987 to 2011, starting one decade later. The coding here is more complex, as there are more local political parties, some of which are relatively unknown. Still, despite this potential increase in measurement error, the results parallel those for congressional elections (Figure A-18). As before, there are more votes for the left in former Republican held territories, and more for the right where Nationalist troops were stationed. The estimated coefficients are reported in Table A-16, and go in the same direction as the ones found for congressional elections. They are as large as 12% of the vote, in the first specification, and range between 10 to 15% in the remaining ones. Despite the increased measurement error at the municipal level, we find larger estimates.

The RD results for Aragon provide another way to see the long shadow of the Spanish Civil War. Notably, they transcend trust measures to include actual political behavior. As in Fontana *et al.* [2018], we find long-lasting impacts on political identities despite the different historical settings. In both cases, it appears that the winning side (Nationalists)

received more political support down the road.[33] Our findings are even more aligned with those of Stalin's credible political repression in Ukraine (Rozenas and Zhukov [2019]). There might be in Spain a process of what Acharya *et al.* [2020] term "behavioral path dependence" in their analysis of the US southern politics. In this case we observe the effect of selective repression on political obedience and the shaping of political identity, as discussed in the conceptual framework. Altogether, the empirical results show the long-lasting (cultural and political) impact of civilian repression. In the next section, we explore the role of anti-Francoist sentiment and collective memory as reinforcing mechanisms of transmission of these enduring results.

7. Mechanisms of Persistence

An important question about the results reported concerns their persistence. How could the political and cultural aftereffects been maintained across generations, long after the conflict stopped? To answer these questions we use our own survey in Aragon. It is worth recalling that civilian repression continued during Franco's regime until his death in 1975. For instance, Villamil [2020] documents the presence of Francoist tribunals (*Tribunales de Orden Público*, or TOPs) that persecuted political offences. Using this data, for Aragon, we do find marginally more presence of illegal associations and propaganda prosecuted by political tribunals in Figure A-22. As the author, we interpret this as evidence of the continued existence of collaborator networks, even after the conflict ended. These networks may have then continued mining trust and shaping political identities of obedience. An important element in the persistence of the effects of the Spanish Civil War is the consequent dictatorship of Francisco Franco, which we study next.

7.1. Anti-Francoist Sentiment

Figure 10 depicts the results of an anti-Franco index on the frontline. This index is composed by the combination of a question about human rights violations during the regime as well as expressing fear about reprisals. We can see a discontinuous jump at the threshold, so that people in the former Republican side are more anti-Franco today, while the converse is true for areas historically occupied by the Nationalists. We expand on these results in Table 6 where we see, in the first two columns of Panel B, the decomposition of the anti-Franco index presented above. The first two components ask whether during the dictatorship human rights were violated and whether people could not express themselves

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[33]We thank Guido Tabellini for offering this interpretation for the Nationalist side.

due to fear of reprisals. The results are negative and significant, and the effects are sizable. The next two columns ask about positive associations with the Franco regime. Whether it helped to promote peace and order in Column 3 and if it helped with Spain's modernization in Column 4.[34] The results for the first question are positive and significant, while the ones for the second remain positive, but insignificantly so. Overall, there appears to be a sustained anti-Francoist sentiment in historically Republican areas, consistent with (and reinforcing) the voting results.

7.2. Collective Memory

We also asked participants directly about the memory of the Spanish Civil War. The results are in Tables 6 and A-17, Column 5. We find that respondents in former Nationalists area answer that the memory of the war remains less alive for Spaniards. These significant results are consistent with a winning mentality.[35] In the Spanish context, since the Nationalists won and there was never a truth and reconciliation commission, there might be a desire to not revisit old wounds. In the theoretical framework of Dessi [2008] on collective memory, the winning faction might be less interested in revisiting the past and recover 'bad' signals.

7.3. Francoist Street Names

Motivated by the previous findings for Aragon, we dig deeper into collective memory as a potential mechanism of transmission at the national level. To this end, we use data on street names as a highly disaggregated measure of culture. The idea here is that the naming of streets contains relevant cultural information, as explained in the literature section (see also, Rose-Redwood *et al.* [2008]; Mask [2020]). For instance, religious-sounding streets highly correlate with religiosity in Spain at the province level (Oto-Peralías [2018]).

In our analysis we use data on streets with names associated with Franco for the whole of Spain.[36] It is telling that in Spain, unlike other parts of Europe, there still are municipalities with streets that commemorate a fascist dictatorship, well into the twenty-first century. As of 2001, there were "2000 streets commemorating figures or events related to Franco's dictatorship, and more than 1000 municipalities had at least one such street" [Oto-Peralías, 2018, p. 208]. In our sample, some municipalities have up to 11 such streets, with names including General Franco, other famous generals such as Mola and Yagüe,

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[34]Table A-17 presents robustness by including individual controls and province fixed effects.

[35]We thank Roberta Dessi for suggesting this interpretation.

[36]We thank Daniel Oto-Peralias for generously sharing his data on streets with us.

Falangist divisions, and overtly fascist slogans such as *Arriba España.* As with the survey, the naming patterns of Spanish streets provide a suitable set-up to study important questions of collective memory and cultural transmission (as in Bisin and Verdier [2001]).

We plot non-parametric estimates of the street variables (using a kernel-weighted local polynomial regression) against distance to the nearest exhumed mass grave, our preferred proxy for conflict. The results in Figure 11 are apparent: the farther away a municipality is from an exhumed mass grave, the lower the number of Francoist-named streets. This is true in both absolute and relative terms, left and right panels, respectively.[37] Overall, there are more remaining Francoist streets in areas more affected by the war, suggesting a differential pattern of remembrance of this historical event.[38] The timing here goes from the conflict to the naming of streets. The persistence of these street names remains a contentious issue in Spain today, and even a matter of litigation. Hence we interpret our results as those streets for which the Francoist names have not been yet removed. Tellingly, we do not find the same pattern for an indicator of religiosity using this same street-level data, plotted in Figure A-23, right panel.

We complete the analysis for the region of Aragon using a coarse RD, estimating a simpler version of Equation 2 that does not include the distance to the front, but uses dummy variables for the warring factions. As before, we exclude municipalities at the frontline, so we only report coefficients for one of the sides. It appears that there are significantly more Franco-named streets on the Nationalist side in Table A-18. This holds true for the total number of Francoist streets in Column 1, for the percentage of Francoist streets in Column 2, and a dummy indicating the presence of a Francoist street in Column 3. We repeat the analysis for religious-named streets, and we find no effect (Column 4). The same is true for the total number of streets, in Column 5. The results for Aragon are consistent with those for the entire country, and show more streets commemorating the winning side on the former Nationalist zone.

Overall, our results on mechanisms suggest that collective memory, along with anti-Francoist sentiment, is a plausible channel through which the aftereffects of conflict are reinforced and perpetuated. Through the naming of streets, the government constantly reminds the citizens of this major historical event. In this case, the circulated memory of the war is slanted towards the winning (Nationalist) side of the struggle. As such, our findings can also be interpreted as a type of sustained and indiscriminate political

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[37]Results also hold at the extensive margin when using a dummy for the existence of a Francoist street, presented in Figure A-23, left panel.

[38]Our findings are also consistent with Aguilar [1996] descriptive work on Francoist newsreels about the war.

propaganda (as in Gagliarducci *et al.* [2020]). They resonate with the recent theoretical and empirical literature on collective memory (Dessi [2008]; Ochsner and Roesel [2017]; Fontana *et al.* [2018]; Williams [2019]; Esposito *et al.* [2021]).

8. Conclusions

Our results show that the Spanish Civil War had significant cultural and political after-effects, several generations after its official end in 1939. We find that in the relationship between historical conflict and trust, victimization type matters. Though initially we find no significant effects on generalized trust for our broadest measure of conflict, the effects are negative and sizable for exhumed mass graves, which proxy for political violence against civilians. We also find negative effects on trust in institutions more closely associated with the war, such as the army, the Civil Guard and the Church. The results are present in both the OLS and IV estimations—based on deviations from military plans of attack—suggesting a causal and long-lasting effect of conflict on mistrust. Reassuringly, we do not find that exhumations themselves have any (negative) effect on trust. Political violence against civilians in the context of a civil war can thus be reinterpreted as a driver of mistrust, along with other important historical determinants espoused in the literature.

We further test whether the self-reported cultural survey results translate into relevant political behavior. We find this to be the case in the region of Aragon, where we exploit rich historical data and employ an RDD along its most important military frontline. Areas historically occupied by the Republican side vote significantly more for the left today, while those where Nationalist troops were stationed do so for the right. These results are driven by moderate parties and hold both for congressional and municipal elections. We do not find important differences for extreme, populist and regionalist parties. We hypothesize that the selective political violence exerted—i.e., which targeted individuals based on their behavior and relied on civilian informants—not only generated a persistent culture of mistrust but also forged political allegiances that are still present today.

The persistent nature of the findings suggests the existence of inter-generational mechanisms of transmission, as the majority of those involved in the struggle are no longer alive. To explore such mechanisms, we conducted our own survey in the Aragon region. We find stronger anti-Francoist sentiment today in areas that were previously occupied by Republican forces. Our results point to collective memory of the Spanish Civil War as a key mechanism of transmission. It is not only the war itself, but also how people portray and think about it, which matters in the long run—along with intervening actions

from relevant actors. Namely, the government via different means, such as the naming of streets, was able to promote a certain narrative of the conflict, through the lens of the winning (Nationalist) side. Such actions feed back into citizens' perceptions of the confrontation. The fact that such collective memory mechanisms matter calls for a more accurate and nuanced reconstruction of the historical events, especially in a country that did not establish a formal truth commission. Such enduring cultural and political results expand our knowledge of the multifaceted and enduring impact of historical conflict, long after its official end.

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Figures and Tables

FIGURE 1: *General Mola's Plan using the 1931 Road Network*

NOTES: The red lines depict the Mola plan. Own elaboration based on the 1931 road network and information on the troops' movements from Coll-Hurtado [2012] and Puell and Huerta [2007].

FIGURE 2: *The Taking Over Madrid using the 1931 Road Network*

NOTES: The red lines denote the roads taken for the takeover of Madrid. Own elaboration based on the 1931 road network and information on the troops' movements from Coll-Hurtado [2012] and Puell and Huerta [2007].

FIGURE 3: *General Mola's Plan and the Taking Over Madrid using the 1931 Road Network*
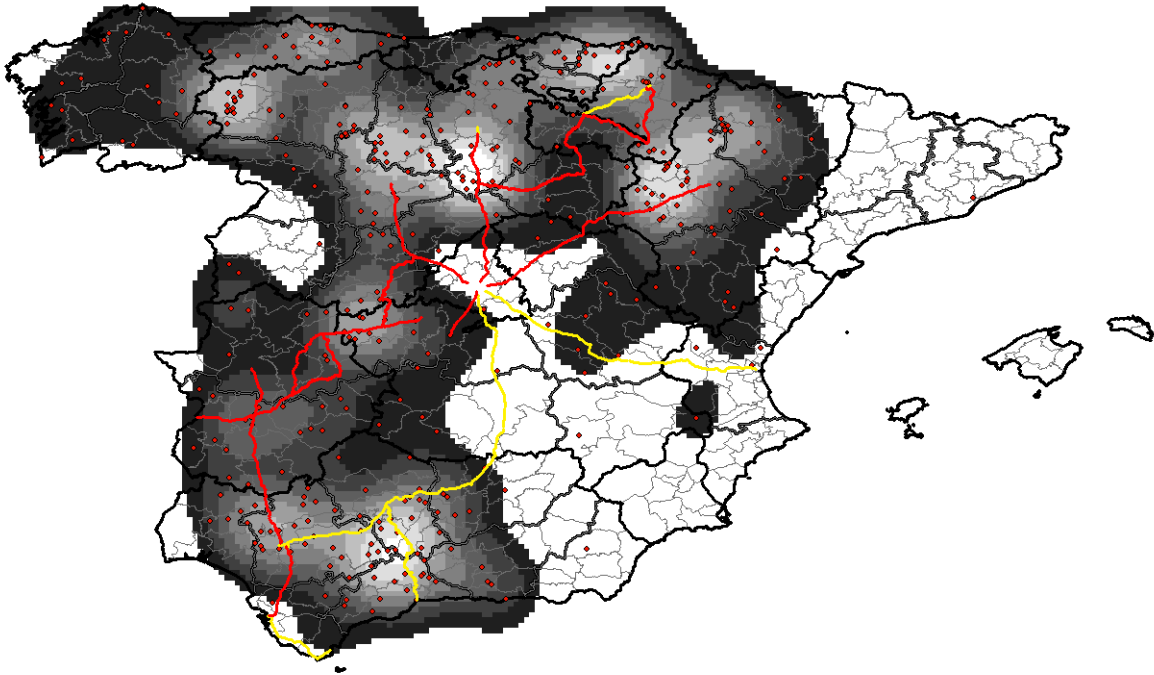
NOTES: The red lines denote the roads taken for the takeover of Madrid. The yellow lines depict the Mola plan and the red dots exhumed mass graves, with their corresponding underlying heat map in black. Own elaboration based on the 1931 road network, information on the troops' movements from Coll-Hurtado [2012] and Puell and Huerta [2007], and on exhumed mass graves from the Spanish Ministry of Justice.

FIGURE 4: *The Front of Aragon*
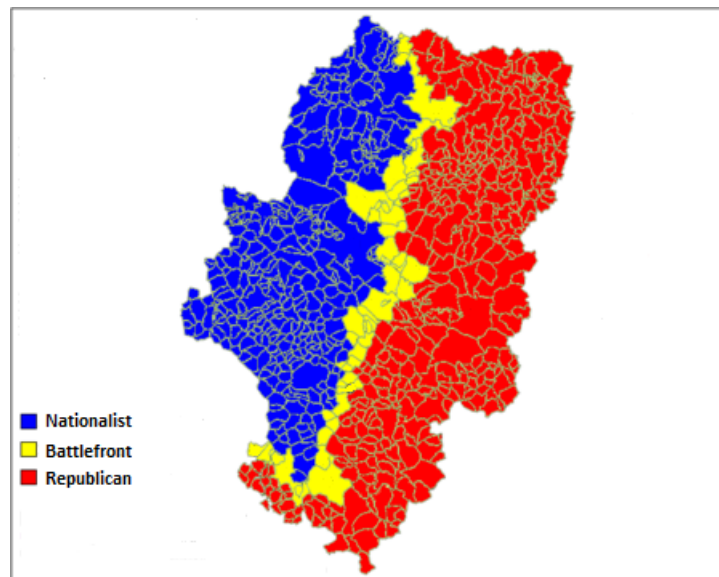
NOTES: Own elaboration based on Maldonado [2007]. Municipalities depicted in blue, on the left side of the region, fell under the Nationalist side. Municipalities in red, on the right side, were on the Republican side. Municipalities in yellow, in the middle, correspond to the battlefront.

FIGURE 5: *Smoothness Tests in the Front of Aragon*
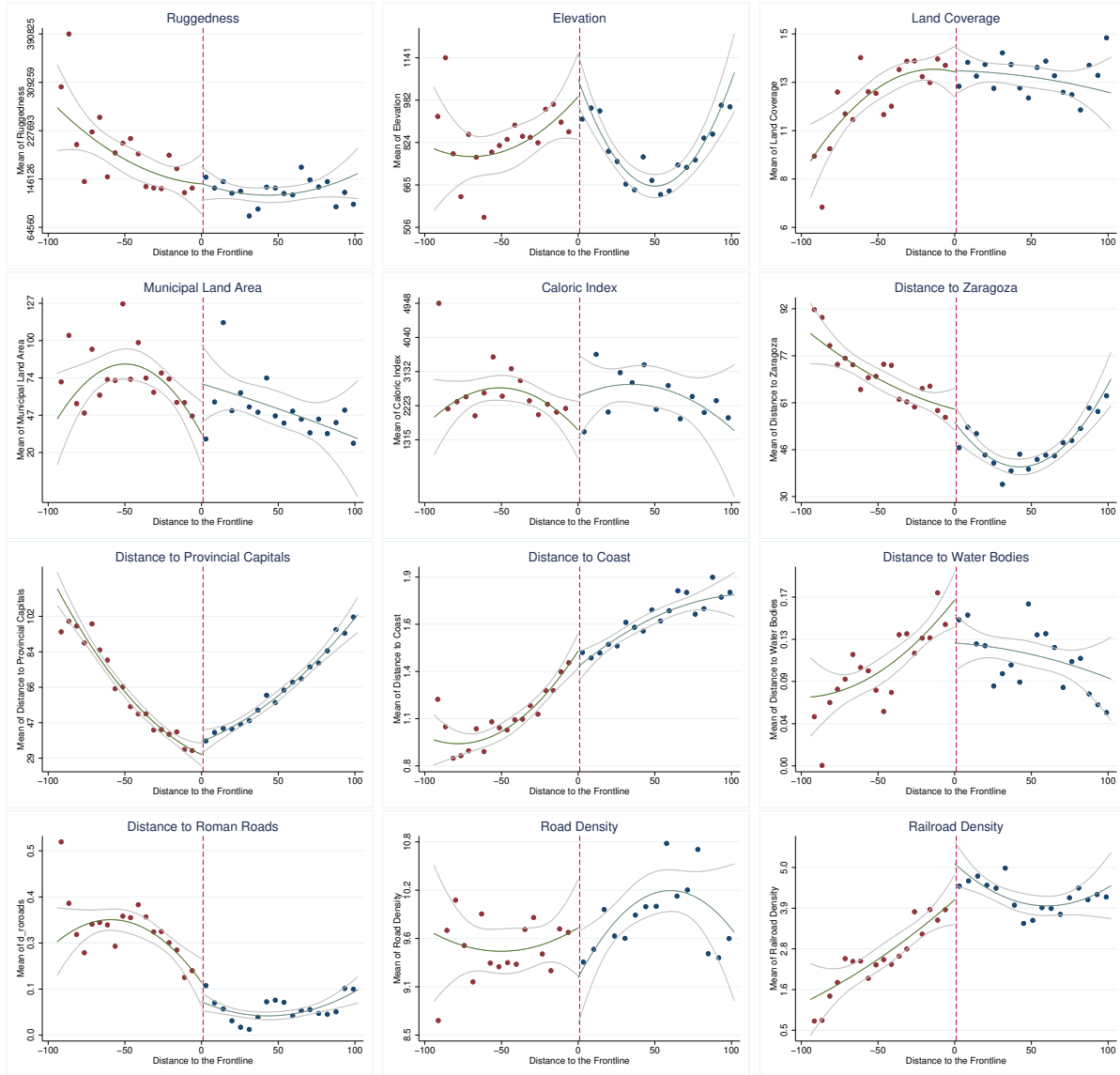
NOTES: The dots show the non-parametric averages for ruggedness (33987, 65210), elevation (180.11, 194.74), land cover (-1.58, 1.454), municipal land area (-46.72**, 22.66), caloric index (-1466.8*, 773.4), distance to Zaragoza (-0.07, 10.4), distance to provincial capitals (8.05, 11.65), distance to the sea (-0.07, 0.09), distance to water bodies (-0.004, 0.044), distance to Roman roads (0.005, 0.07), modern roads density (-0.70, 0.67), modern railroads density (0.75, 0.85), at the municipality level and conditional on distance to the frontline, with quadratic fits. Negative values of distance correspond to the Republican side. RD coefficients and standard errors using the `rdrobust` command are shown in parenthesis.** $p < 0.05$, * $p < 0.1$.

FIGURE 6: *Political Repression in the Front of Aragon*

NOTES: Repression is measured as the presence of mass graves that are due to repression by Republicans (left) or Nationalists (right) at a given distance. The dots show the mean of political repression conditional on distance to the front. The lines are quadratic best fits, with confidence intervals. Mass graves located within the front are excluded. We restrict to mass graves that are not missing, i.e., exhumed or localized. We compute distance to the frontline by using the geo-located information for the individual mass grave when available or the municipality centroid when missing. The frontline is computed by using information on the centroid of all 47 municipalities that comprised the frontline. Negative values of distance correspond to the Republican side. RD bias-corrected coefficient (robust st.error) are -0.88*** (0.304) for the left panel and 0.46 (0.324) for the right panel, using the `rdrobust` command. *** $p < 0.01$, * $p < 0.1$.

FIGURE 7: *Voting Results: Congressional Elections (1977-2019)*
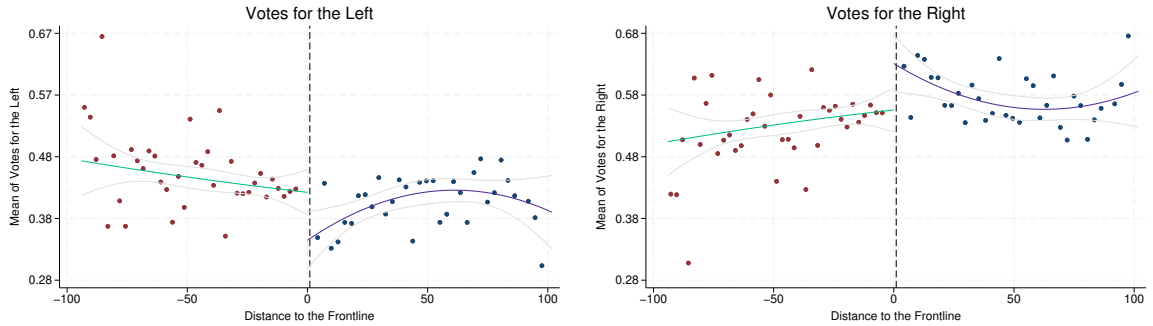
NOTES: The dots show the means of votes for left-wing (left panel) or right-wing parties (right panel) for the Spanish Parliament elections to Congress 1977-2019, conditional on distance to the frontline. The lines are quadratic fits, with confidence intervals. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side. RD bias-corrected coefficients (robust st.error) are -0.068*** (0.016) for the left and 0.073*** (0.015) for the right, using the `rdrobust` command. *** $p < 0.01$.

FIGURE 8: *Voting Results: Congressional Elections (1977-2019). Votes for Moderate Parties*
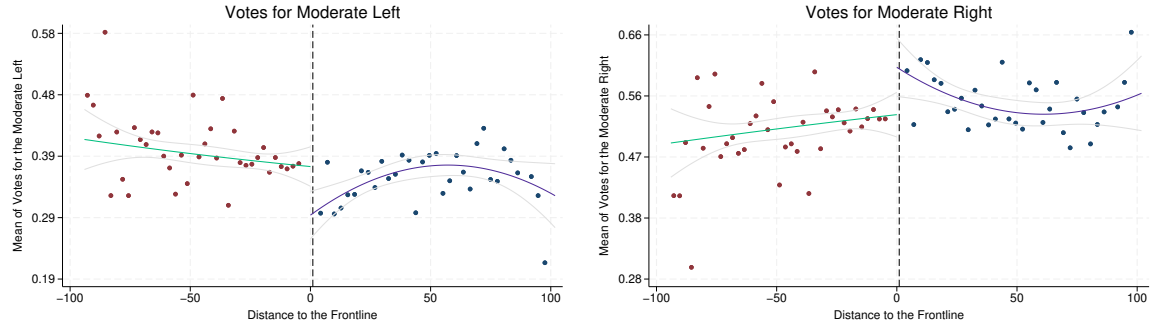
NOTES: The dots show the means of votes for moderate left-wing (left panel) or moderate right-wing parties (right panel) for the Spanish Parliament elections to Congress 1977-2019, conditional on distance to the frontline. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. RD bias-corrected coefficients (robust st.error) are -0.079*** (0.016) for the left and 0.074*** (0.018) for the right, using the `rdrobust` command. *** $p < 0.01$.

FIGURE 9: *Pre-trends: 1936 Left Votes and CNT Union Membership*
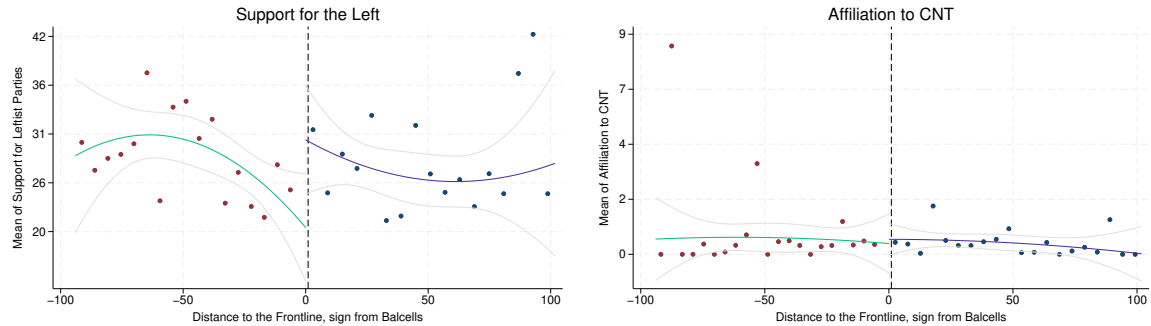
NOTES: The dots show the average votes for leftist parties in the 1936 elections (left) and the average affiliation rate to the anarcho-sindicalist union (CNT, *Confederación Nacional del Trabajo*) in 1936 (right), both at the locality level and conditional on distance to the frontline. Data on the outcome variables comes from Balcells [2011]. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side. RD bias-corrected coefficient (robust st.error) are -2.00 (10.1) (left) and 0.088 (0.75) (right), using the `rdrobust` command.

FIGURE 10: *Attitudes Towards Franco's Dictatorship Using Modern Survey Data*
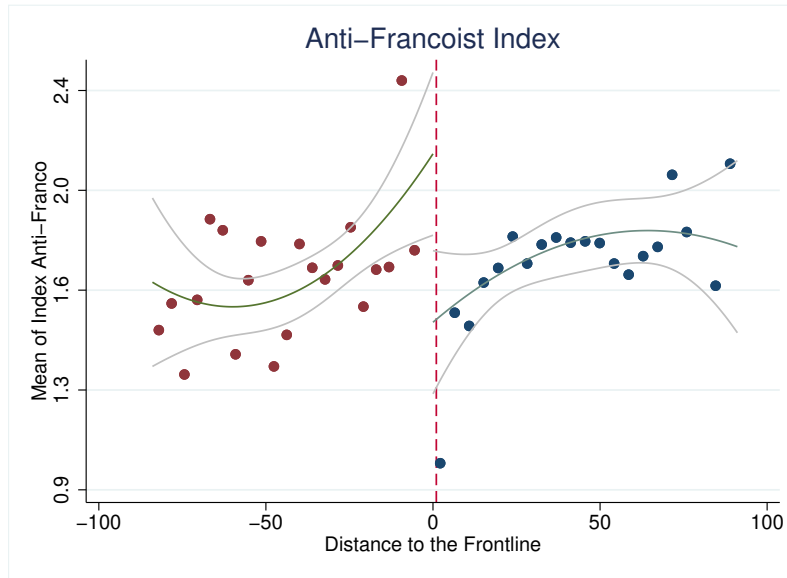
NOTES: The dots show the average value of anti-Francoist sentiment measured at the individual level conditional on distance to the frontline. The variable takes the mean value of the agreement or disagreement with the two following statements: (1) during Franco's dictatorship, basic human rights were violated and (2) during Franco's dictatorship, people did not express themselves out of fear of reprisals. Data on the outcome variables comes from our own survey. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side. RD coefficients (st.error) is -1.10*** (0.424), using the `rdrobust` command. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

FIGURE 11: *Collective Memory: Francoist Streets and Mass Graves*
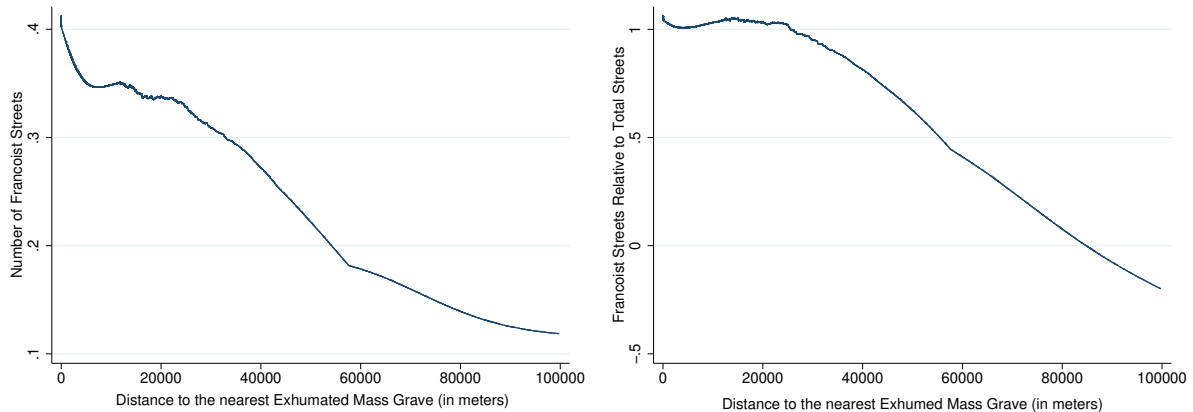
NOTES: The figures depict a Kernel-weighted linear regression of Francoist streets (left) and Francoist streets relative to total streets (right) on distance to the nearest exhumed mass grave (in meters) at the municipality level.

TABLE 1: *OLS Results on Generalized Trust*

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All Mass Graves						
Bodies/population	0.002***	0.001***	-0.001*	-0.001	-0.001	-0.001
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Adj-R^2	0.001	0.010	0.036	0.038	0.044	0.069
Panel B: Exhumed Mass Graves						
Bodies/population	-0.010***	-0.012***	-0.008***	-0.006**	-0.005**	-0.004*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Adj-R^2	0.001	0.010	0.036	0.038	0.044	0.070
Population & area		✓	✓	✓	✓	✓
Region & year FE			✓	✓	✓	✓
Geographical controls				✓	✓	✓
Age & municipal. size					✓	✓
Educ. & labor						✓
Observations	36,166	36,110	36,110	34,435	34,425	34,117
Mean dependent var.	4.88	4.88	4.88	4.87	4.87	4.87

Notes: The dependent variable takes values from 0 to 10, where 0 indicates that you need to be very careful when dealing with people and 10 that most people can be trusted. Sample restricted to Peninsular Spain. *Bodies/population* is measured as the number of bodies in all types of mass graves in panel, A and in exhumed mass graves in panel B, in each district, divided by the population that district had in 1930 and multiplied by 1,000. *Population & area controls* includes the logarithm of population in 1930 and in the survey-year at the district level, as well as the area of the district. *Individual and district controls* includes fixed effects for age groups, for current size of the municipalities, population in 1930 as well as in the survey year, and area at the district level. *Geographical controls* includes an index of caloric yield of the soil, ruggedness, landcover, standard deviation of temperature, distance to the nearest river and to the coast, and a measure of road density in 1931. *Age & municipal. size* includes age and municipality size fixed effects. *Educ. & labor* includes level of education and employment status of the individual fixed effects. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 2: *Effects of Exhumations on Generalized Trust*

	(1)	(2)	(3)	(4)
Post-Exhumation	0.066	0.051	0.042	0.026
	(0.0763)	(0.0772)	(0.0938)	(0.0962)
Post-Exhumation*Older65		0.073		0.076
		(0.0653)		(0.1256)
Observations	34,377	34,377	11,591	11,591
Adj-R^2	0.10	0.10	0.12	0.12
Year FE	✓	✓	✓	✓
District FE	✓	✓	✓	✓
Restricted sample			✓	✓
Mean dependent variable	4.9	4.9	4.9	4.9

Notes: The dependent variable takes values from 0 to 10, where 0 indicates that you need to be very careful when dealing with people and 10 that most people can be trusted. All models include district fixed effects, survey-year fixed effects, as well as fixed effects for age groups, level of education and employment status of the individual. Sample restricted to those districts with at least one exhumation in Columns 3 and 4 (147 vs 374 in the unrestricted sample in Columns 1 and 2). Columns 2 and 4 include an interaction term of post-exhumation with being older than 65. Robust standard errors in parentheses.

TABLE 3: *IV Results: Exhumed*

	Bodies/Population			Mass graves		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: First-Stage Results						
Distance troops	-0.013***	-0.010***	-0.010****	-0.010***	-0.009***	-0.009***
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
F-statistic	306.02	233.22	232.59	568.01	525.15	526.44
Panel B: Second-Stage Results						
Exhumed	-0.085**	-0.089**	-0.084*	-0.112**	-0.106**	-0.099*
	(0.038)	(0.045)	(0.045))	(0.050)	(0.054)	(0.053)
Region & year FE	✓	✓	✓	✓	✓	✓
Age & munic. size		✓	✓		✓	✓
Educ. & labor			✓			✓
Observations	20,854	20,852	20,676	20,854	20,852	20,676
Mean dep. var.	4.82	4.82	4.82	4.82	4.82	4.82

Notes: *Bodies/Population* is measured as the total (and updated) number of total bodies in each district divided by the population that district had in 1930 and multiplied by 1,000. The instrument is the nearest distance (in meters) from the district's centroid to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking over Madrid. All models include the logarithm of the population at the district in 1931 and in the survey-year, area of the district and geographical controls (an index of caloric yield, ruggedness, landcover, standard deviation of temperature, nearest distance to river and coast), distance to Madrid, and the nearest distance to General Mola's plan of attack. *Age & munic. size* includes age and municipality size fixed effects. *Educ. & labor* includes level of education and employment status of the individual fixed effects. Sample restricted to Peninsular Spain, excluding Madrid, and to those districts with a main road in 1931. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 4: *IV Results: Trust in Institutions with Exhumed Mass Graves*

	Army	Civil Guard	Church	Const. Court	Ombudman	Parliament
Bodies/Population	-0.153**	-0.183*	-0.184**	-0.017	0.110	0.015
	(0.070)	(0.106)	(0.076)	(0.070)	(0.082)	(0.049)
F-statistic	93.70	41.53	94.38	89.11	79.24	179.78
Region & year FE	✓	✓	✓	✓	✓	✓
Age & municipal. size	✓	✓	✓	✓	✓	✓
Observations	8,819	5,222	7,810	9,472	9,375	16,494
Mean dependent var.	5.57	3.69	5.93	4.24	4.67	4.13

Notes: The dependent variable takes values from 0 to 10 (from lowest to highest trust) in the Army in Column 1, Civil Guard in Column 2, Catholic Church in Column 3, Constitutional Court in Column 4, Ombudsman in Column 5 and National Parliament in Column 6, at the individual level. *Bodies/Population* is measured as the number of bodies exhumed in each district divided by the population that district had in 1930 and multiplied by 1,000. The instrument is the nearest distance (in meters) from the district's centroid to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking over Madrid. All models include the logarithm of the population at the district in 1931 and in the survey-year, area of the district and geographical controls (an index of caloric yield, ruggedness, landcover, standard deviation of temperature, nearest distance to river and coast), distance to Madrid, and the nearest distance to General Mola's plan of attack. *Age & municipal. size* includes age and municipality size fixed effects. Sample restricted to Peninsular Spain, excluding Madrid, and to those districts with a main road in 1931. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 5: *RD Results for the Front of Aragon: Voting. Congressional Elections (1977-2019)*

	(1)	(2)	(3)	(4)
	Panel A: Votes for the Left			
RD coefficient	-0.071***	-0.066***	-0.078***	-0.099***
	(0.016)	(0.019)	(0.021)	(0.021)
	Panel B: Votes for the Right			
RD coefficient	0.073***	0.068***	0.082***	0.081***
	(0.015)	(0.017)	(0.022)	(0.019)
Latitude and Longitude controls		✓		✓
Province fixed effects			✓	✓
Observations	10,212	10,212	10,212	10,212

Notes: Bias-corrected coefficients display the difference among mean on the right and the left side of the front of Aragon. Robust standard errors are displayed in parenthesis. All estimations are local RD using the `rdrobust` command. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 6: *Francoism, Collective Memory, and Social Capital: RD Results from the Aragon Survey*

	(1)	(2)	(3)	(4)	(5)
	Panel A: Social Capital				
	General. Trust	Association	Family/Friends	Neighbors	Scope Trust
RD coeff.	-2.44**	-0.44**	0.42	-0.10	0.71
	(1.305)	(0.219)	(0.613)	(0.793)	(0.869)
Mean dep. var.	6.65	0.57	9.00	5.69	3.65
Observations	907	910	882	877	910
	Panel B: Francoism & Collective Memory				
	HR Violation	Fear to Express	Peace & Order	Modernization	Memory of War Alive
RD coeff.	-1.34***	-0.89*	2.55***	0.46	-2.75***
	(0.448)	(0.467)	(0.938)	(0.474)	(0.770)
Mean dep. var.	1.79	1.65	3.21	3.09	2.73
Observations	867	886	865	865	877

Notes: The dependent variables in Panel B reflect the agreement or disagreement with the following statements: (1) during Franco's dictatorship, basic human rights were violated, (2) during Franco's dictatorship, people did not express themselves out of fear of reprisals, (3) during Franco's dictatorship, there was more peace and public order than now, (4) Franco's dictatorship contributed to Spain's economic modernization, (5) the memory of the Civil War still remains very alive among Spaniards. All these measures are on a 1-5 scale, where 5 express full agreement and 1 full disagreement. Coefficients display the difference among mean on the right and the left side of the front of Aragon. All estimations are local RD using the `rdrobust` command. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Appendix

History of Mass Grave Exhumations

Scholars distinguish between different periods of mass grave exhumations (Ríos and Etxeberria [2016]). The earliest exhumations took place during the war and its immediate aftermath, and correspond to victims of Republican repression.[39] The second period corresponds to the exhumations of mass graves that were transferred to the *Valle de los Caídos* ("Valley of the Fallen"), a mausoleum built by Franco to honor those who had fallen during the war. The transfer of mass graves from all around the country lasted from 1958 through 1983, and there are 33,847 individuals currently buried in the mausoleum, including war casualties and victims of political violence from both sides. Recent research based on historical archives estimates that around two thirds of the bodies correspond to Nationalist soldiers and some civilian victims of the Republican repression, and one third to Republican soldiers, along with some civilian victims of Nationalist violence (Etxeberria and Solé [2019]).

The next wave of exhumations started after Franco's death in 1975. During the initial years of democracy and until the failed coup in 1981, relatives of victims of Francoist repression dug up their remains for proper burial. This process was carried out by the families with no state involvement. The largest and most systematic wave started after a mass grave in Priaranza del Bierzo (León) was exhumed in 2000, using modern forensic archaeology for the first time. This drive peaked around 2010, and then abated a few years later (Figure A-3, right panel).

Law 52/2007, known as the Historical Memory Law, provided some subsidies and included a protocol for exhumations, but did not take full responsibility for the research, location and victim identification; instead, it established a partnership between public authorities and private citizens. Article 11 states that "the public administrations, within their jurisdiction, will facilitate for families that so request it the work of researching, locating, and identifying persons forcibly disappeared during the Civil War or the subsequent political repression whose whereabouts are unknown." Article 19 acknowledges the work of victims' associations. Judges are generally not present at the exhumations and usually do not initiate judicial proceedings, arguing that Civil War crimes are subject to the statute of limitations or fall under the Amnesty Law of 1977. This law, which is still in force, institutionalized the "pact of forgetting" by guaranteeing immunity for those who participated in crimes during the Civil War and Francoist dictatorship. It also freed political prisoners and allowed exiled persons to return.

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[39]Some were exhumed by the Republican government in Catalonia, which prosecuted extrajudicial killings within its own territory (see, for instance, Dueñas and Solé [2014]).

A-1 Additional Figures and Tables

FIGURE A-1: *Division of the Spanish Territory by September 1936, October 1937, July 1938 and February 1939*
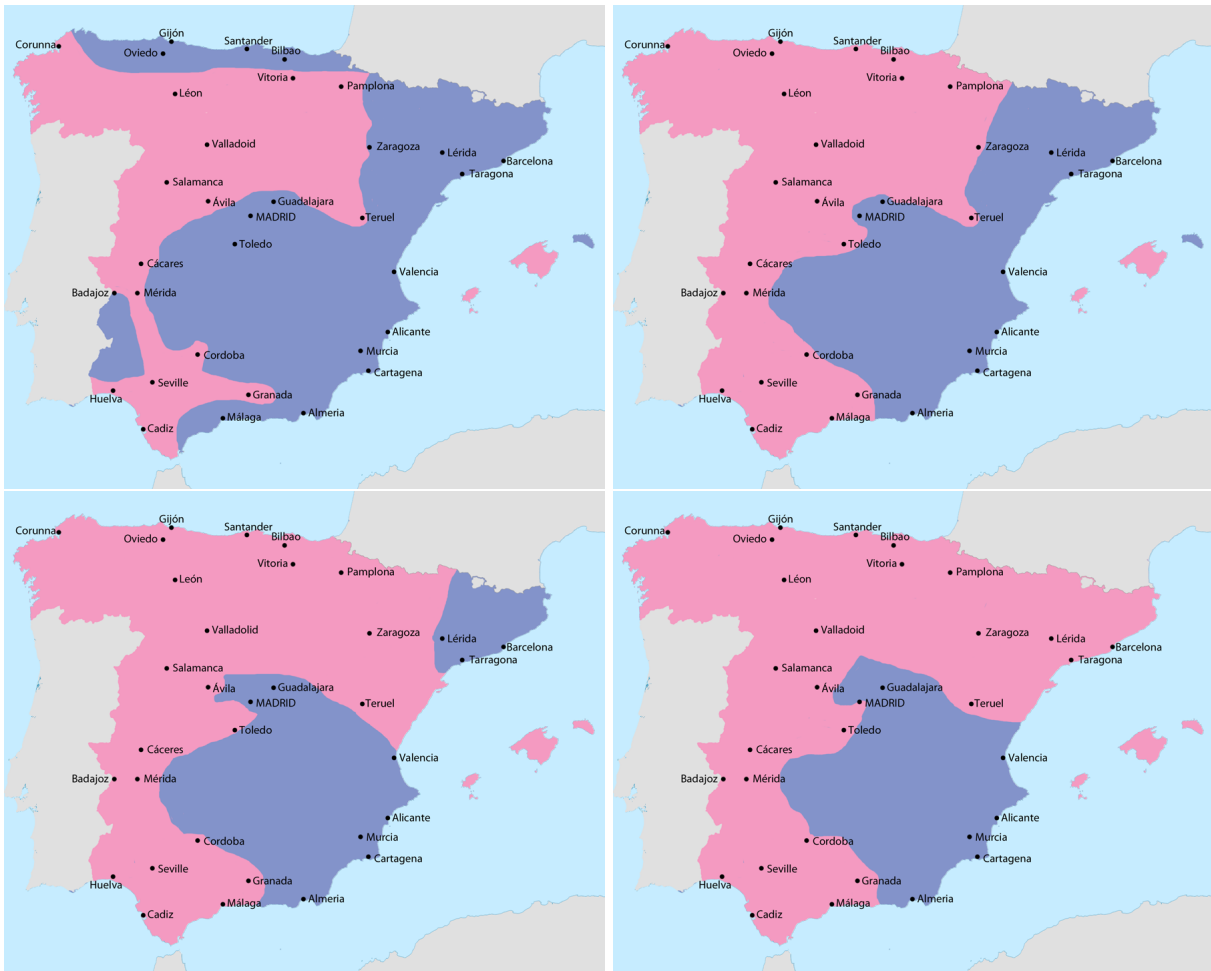
NOTES: The territory under the control of the Nationalists is shown in pink, and under the control of the Republicans is shown in blue. Each figure shows the division of the Spanish territory in one specific date: September 1936 (top left), October 1937 (top right), July 1938 (bottom left) and February 1939 (bottom right). Taken from: `https://commons.wikimedia.org/wiki/File:Map_of_the_Spanish_Civil_War_in_July_1938.png`

FIGURE A-2: *The Aragon Region*

FIGURE A-3: *Exhumed Mass Graves: Burial and Exhumation Year*
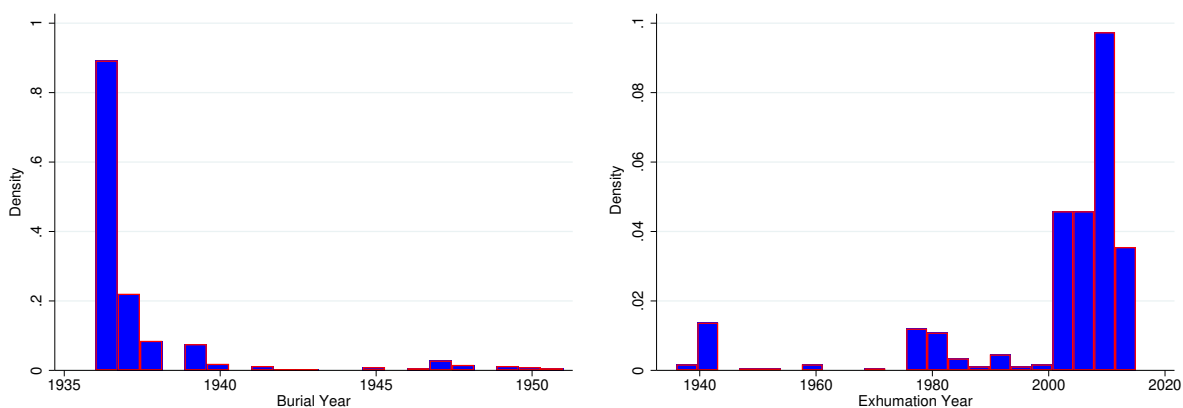
NOTES: These figures depict the histograms for the burial year (left panel) and exhumation year (right panel) for the exhumed mass graves in our sample. Additional information was extracted from the individual graves registry at the Ministry of Justice website and from internet searches on individual graves.

FIGURE A-4: *Map of Mass Graves. Spanish Ministry of Justice*
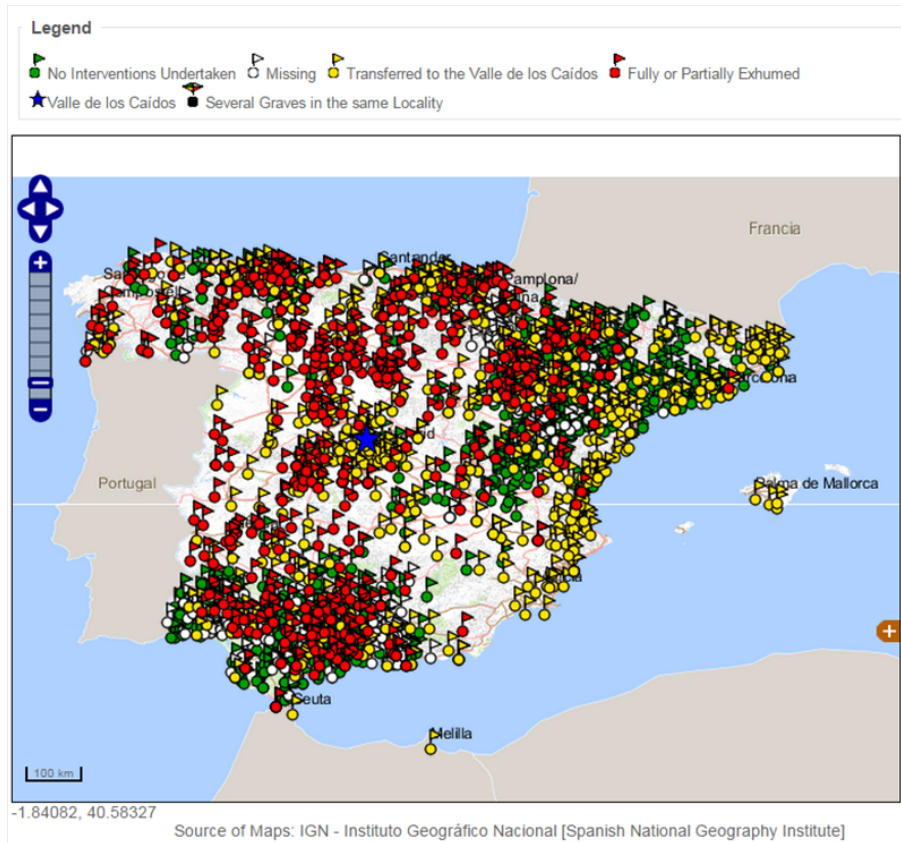
NOTES: Raw mass grave data from the Spanish Ministry of Justice available at `https://mapadefosas.mjusticia.es/exovi_externo/CargarMapaFosas.htm`

FIGURE A-5: *Map of Mass Graves. Intensive Margin at the Municipal Level*
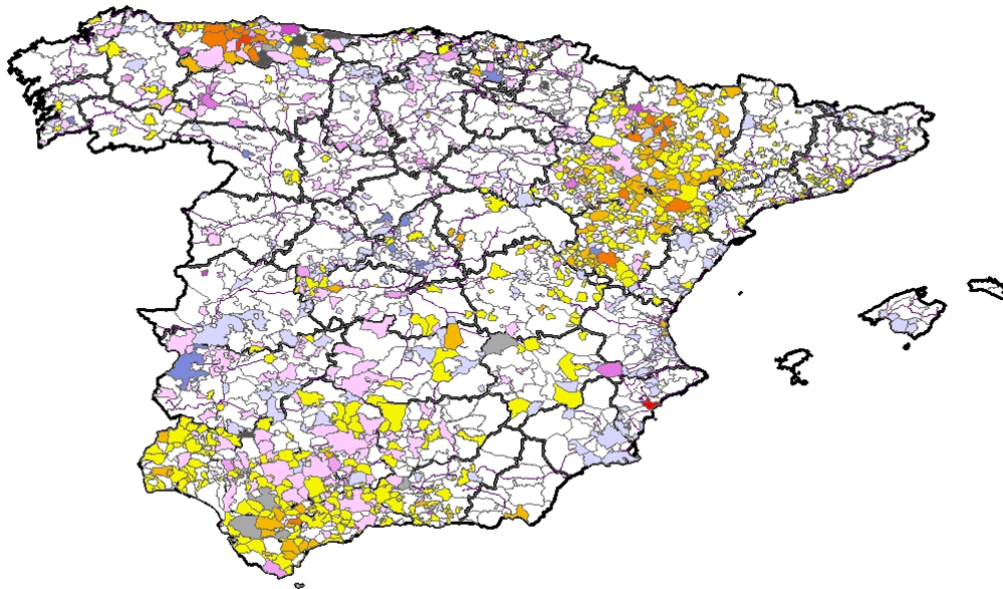
NOTES: Digitized information with different mass graves at the district level. Gray denotes disappeared, purple exhumed, yellow not intervened, and blue transferred. Intensity is denoted by color tones in their respective spectra.

FIGURE A-6: *Generalized Trust in Spain (1998-2015)*
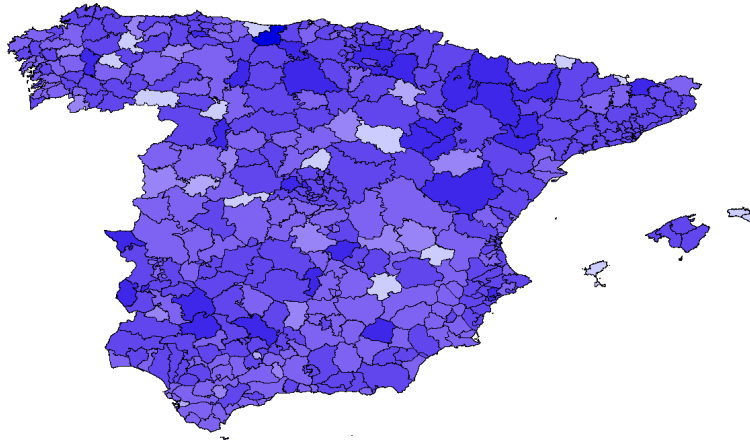
NOTES: Own elaboration from survey data (1998-2015). Districts in light grey are missing values. The mean trust is of 4.9 with a standard deviation of 2.19.

FIGURE A-7: *General Mola's Plan*

NOTES: Map taken from Puell and Huerta [2007].
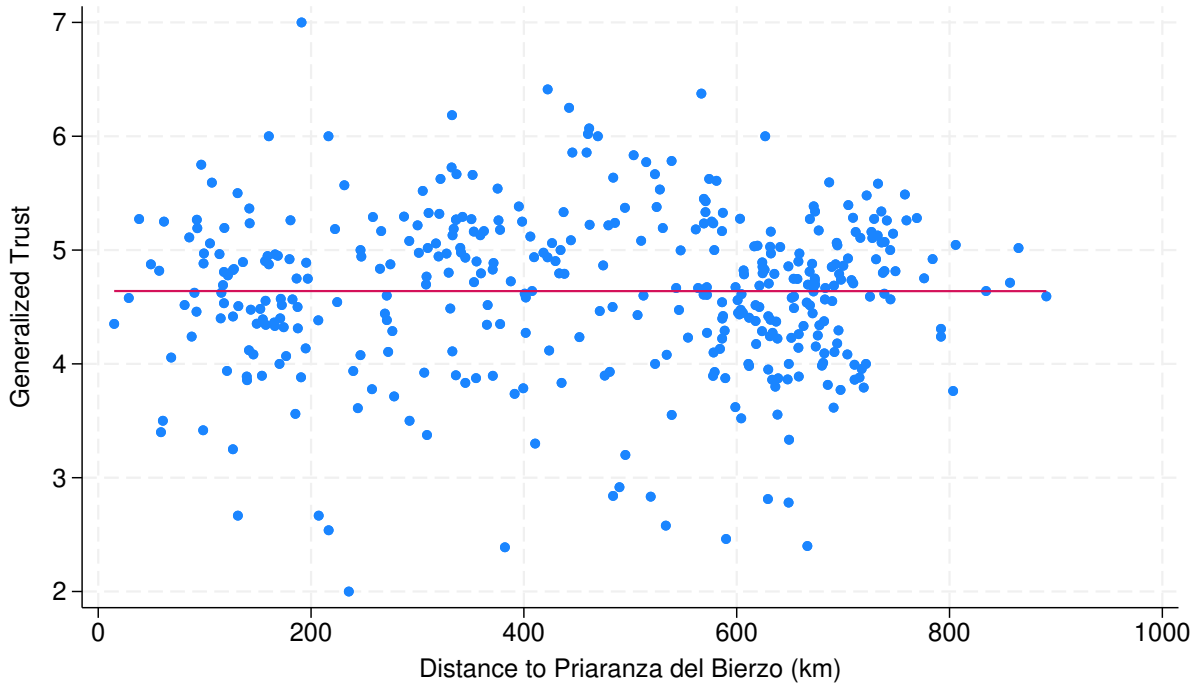
NOTES: The dots show the average generalized trust for each district. The x-axis shows the distance of each district to the Priaranza del Bierzo (León) mass grave in kilometers. Correlation coefficient -.0000137 with standard error of .000162.

FIGURE A-9: *Cattaneo (2019) Test of Manipulation of the Running Variable*
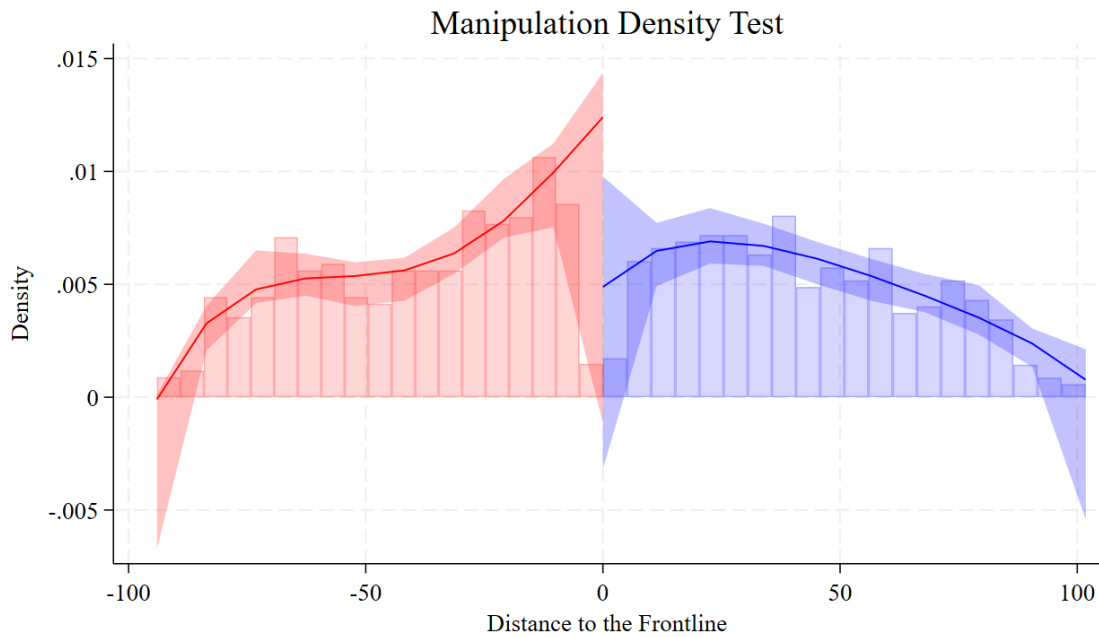
NOTES: Manipulation test using the local-polynomial density estimators proposed by Cattaneo *et al.* [2019], using the command `rddensity`. Excludes frontline municipalities. Negative values of distance correspond to the Republican side. We report 95% confidence intervals. Test p-value: 0.522.

FIGURE A-10: *Political Repression in the Front of Aragon. Intensive Margin with Number of Mass Graves*
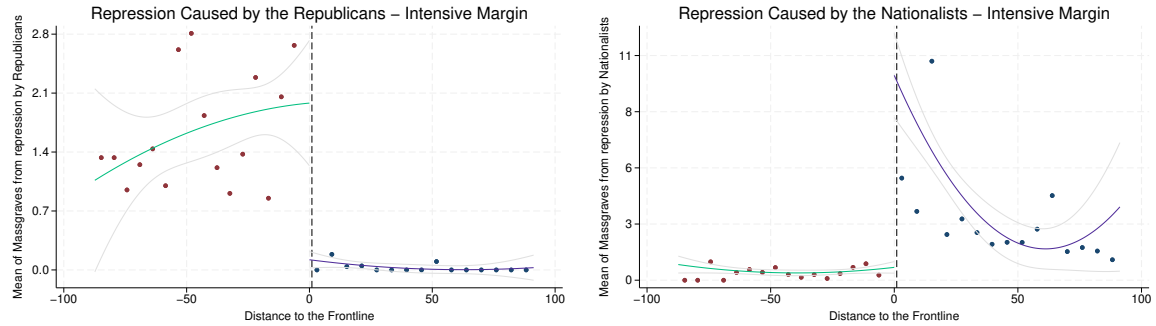
NOTES: Repression is measured as the total number of mass graves that are due to repression by Republicans (left) or Nationalists (right) at a given distance, computed at the municipal level. The dots show the means of political repression conditional on distance to the front. The lines are quadratic best fits, with confidence intervals. We restrict to mass graves that are not missing., i.e., we exhumed or localized. We compute distance to the frontline by using the municipality centroid. The frontline is computed by using information on the centroid of all 47 municipalities that comprised the frontline. Negative values of distance correspond to the Republican side. RD coefficient (st.error) is -8.957** (3.691) for the left panel and -1.053 (2.156) for the right panel, using the `rdrobust` command. ** $p < 0.05$.

FIGURE A-11: *Political Repression in the Front of Aragon. Intensive Margin with Executions (Direct Violence)*
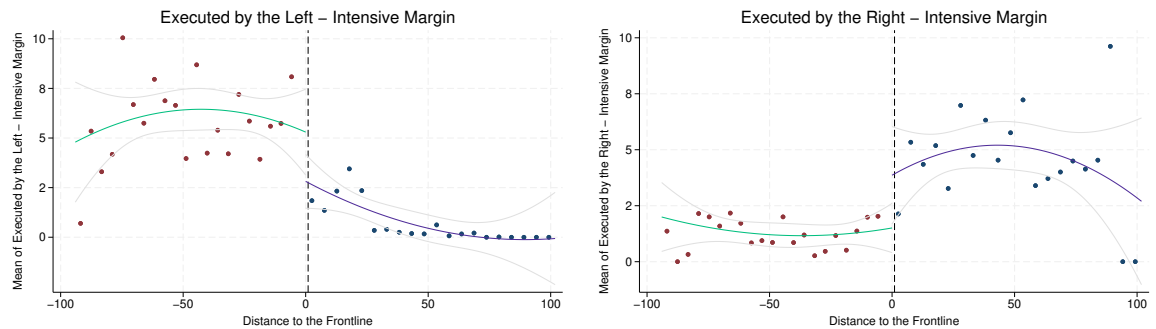
NOTES: Repression is measured as the total number of victims of direct violence killed by the Republicans (left) or Nationalists (right) at a given distance, computed at the locality level and divided by its population in 1936 and multiplied by a 1,000. Data on executions and population at the locality level comes from Balcells [2011]. The dots show the means of political repression conditional on distance to the front. The lines are quadratic best fits, with confidence intervals. We compute distance to the frontline by using the municipality centroid. The frontline is computed by using information on the centroid of all 47 municipalities that comprised the frontline. Negative values of distance correspond to the Republican side. RD coefficient (st.error) is -3.234*** (0.580) for the left panel and 15.202** (6.419) for the right panel, using the `rdrobust` command. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

FIGURE A-12: *Victimization Using Modern Survey Data*
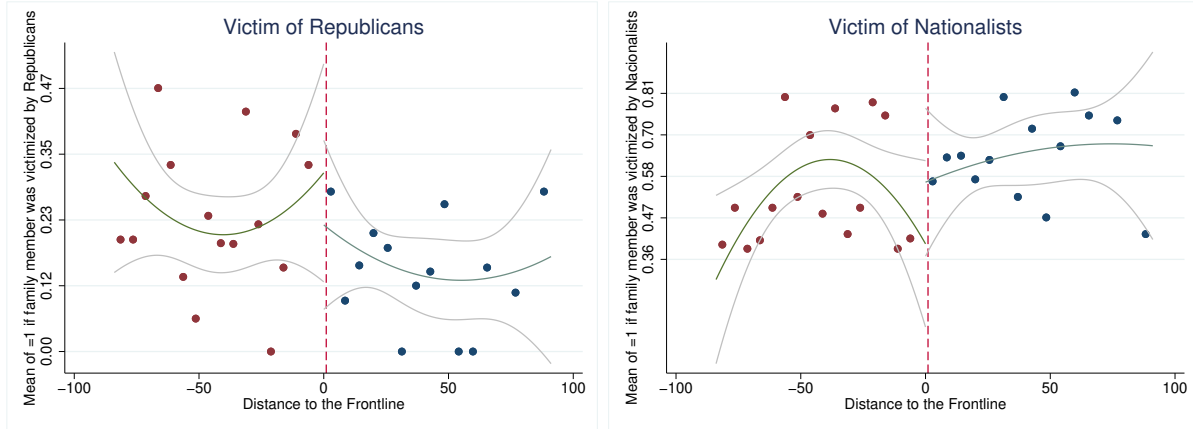
NOTES: The dots show the average victimization of relatives or close people by the Republican side on the left panel and by the Nationalist side on the right panel, measured at the individual level and conditional on distance to the frontline. The variable takes the value 1 if someone in the respondent's family or close circle was victimized by either side, and zero otherwise. Data on the outcome variables comes from our own survey. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side. RD coefficients (st.error) are -0.16 (0.349) (left) and 0.27 (0.389) (right), using the `rdrobust` command.

FIGURE A-13: *Political Repression in the Front of Aragon*

NOTES: Repression is measured as the presence of mass graves that are due to repression by Republicans (left) or Nationalists (right) at a given distance. The dots show the mean of political repression conditional on distance to the front. The lines are quadratic best fits, with confidence intervals. Mass graves located within the front are excluded. We restrict to mass graves that are not missing, i.e., exhumed or localized. We compute distance to the frontline by using the geo-located information for the individual mass grave when available or the municipality centroid when missing. The frontline is computed by using information on the centroid of all 47 municipalities that comprised the frontline. Negative values of distance correspond to the Republican side. The RD coefficient for total repression is -0.355 and standard error is 0.409, using the `rdrobust` command.

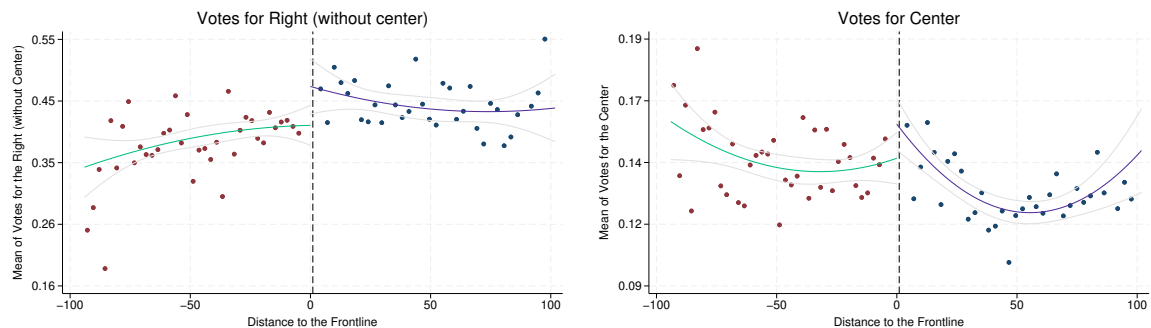FIGURE A-14: *Voting Results: Congressional Elections (1977-2019). Extreme Parties*
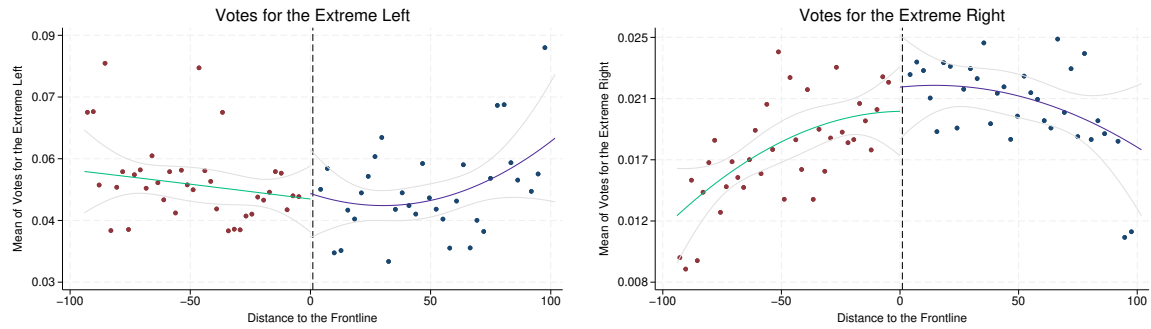
NOTES: The dots show the means of votes for extreme left-wing or extreme right-wing parties for the Spanish Parliament elections to Congress 1977-2019, conditional on distance to the frontline. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. RD coefficients (st. error) are 0.002 (0.009) for the left and -0.0009 (0.007) for the right, using the `rdrobust` command.

FIGURE A-15: *Voting Results: Congressional Elections 2015-2019. Populist Parties*
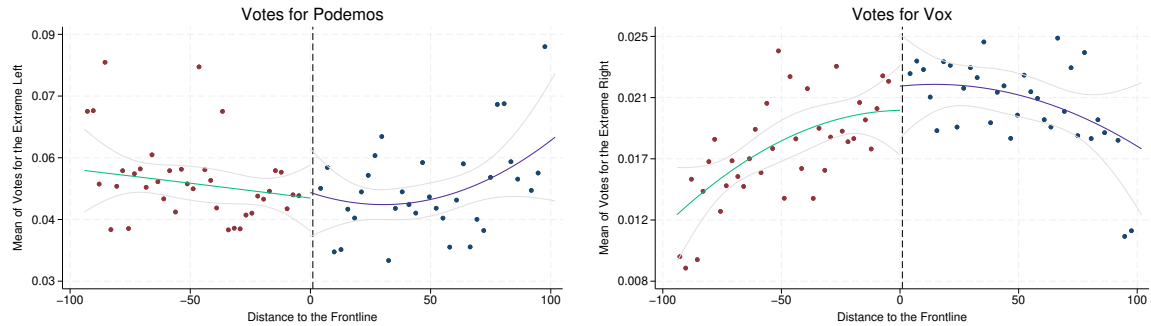
NOTES: The dots show the means of votes for *Podemos* (left-wing) or *Vox* (right-wing) for the Spanish Parliament elections to Congress in 2015-2019, conditional on distance to the front. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. RD coefficients (st. error) are -0.172*** (0.027) for *Podemos* and -0.008 (0.0121) for *Vox*, using the `rdrobust` command. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

FIGURE A-16: *Voting Results: Congressional Elections 1977-2019. Right-wing Parties (Excluding Center) and Center Parties*
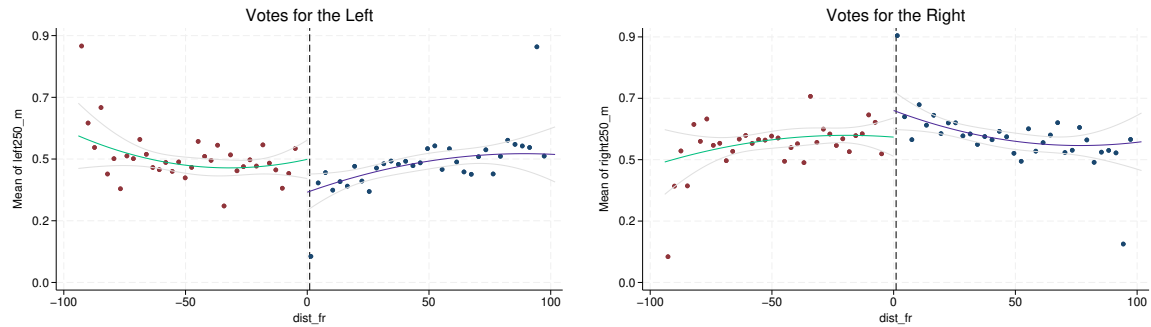

NOTES: The dots show the means of votes for right-wing parties (excluding center parties) and center parties for the Spanish Parliament elections to Congress in 1977-2019, conditional on distance to the front. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. RD coefficients (st. error) are 0.070** (0.029) for right-wing parties and 0.002 (0.027) for center parties, using the `rdrobust` command. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

FIGURE A-17: *Voting Results: Congressional Elections (1977-2019). Regionalist and Communist Parties*
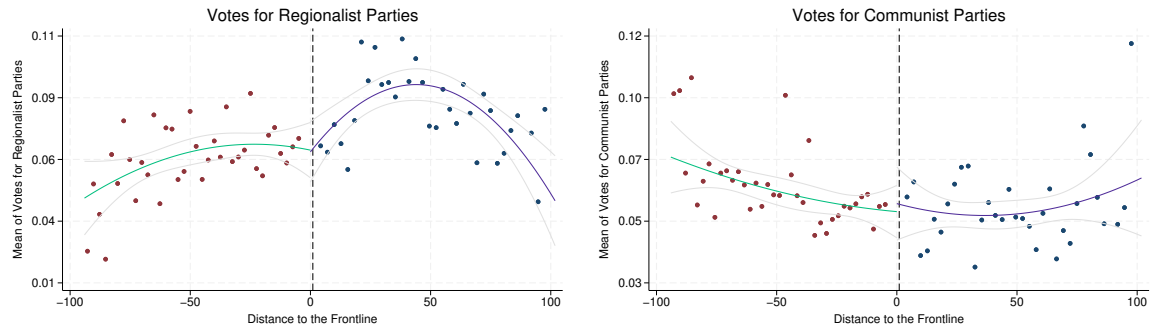

NOTES: The dots show the means of votes for regionalist (left panel) and Communist parties (right panel) for the Spanish Parliament elections 1977-2019, conditional on distance to the front. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. RD coefficient (st. error) are 0.002 (0.014) for the regionalists parties and 0.015 (0.011) for the Communist parties using the `rdrobust` command.

FIGURE A-18: *Voting Results: Municipal Elections (1987-2011)*

NOTES: The dots show the means of votes for left-wing or right-wing parties for municipal elections 1987-2011, conditional on distance to the frontline. The lines are quadratic fits, with confidence intervals. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side. RD coefficients (st.error) are -0.119*** (0.045) for the left and 0.109** (0.045) for the right, using the `rdrobust` command. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

FIGURE A-19: *Pre-trends. 1936 Balance of Power and Prewar Political Violence*
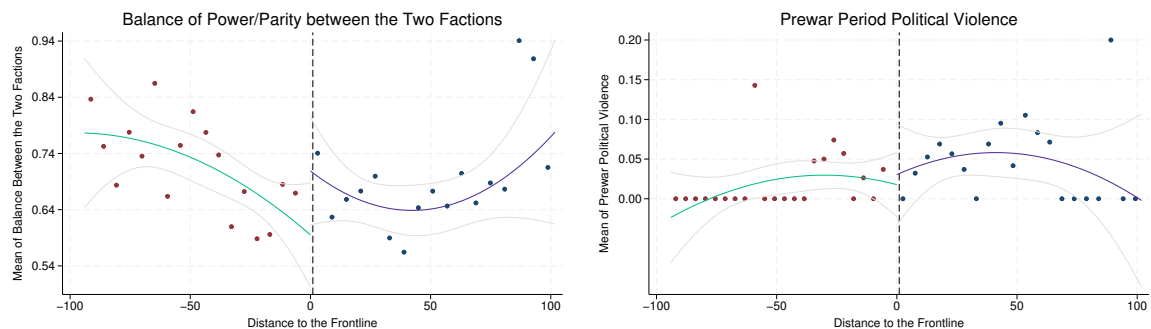
NOTES: The dots show the average of an index capturing the extent to which there is a balance of power or parity between the two factions—left and right—(left panel) and political violence during the prewar period (right panel), at the locality level and conditional on distance to the frontline. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side. RD coefficients (st.error) are -0.035 (0.044) (left) and -0.006 (0.0165) (right), using the `rdrobust` command.

FIGURE A-20: *Historical Population Data for Aragon at the Municipal Level Using 1930 and 1940 Censuses*
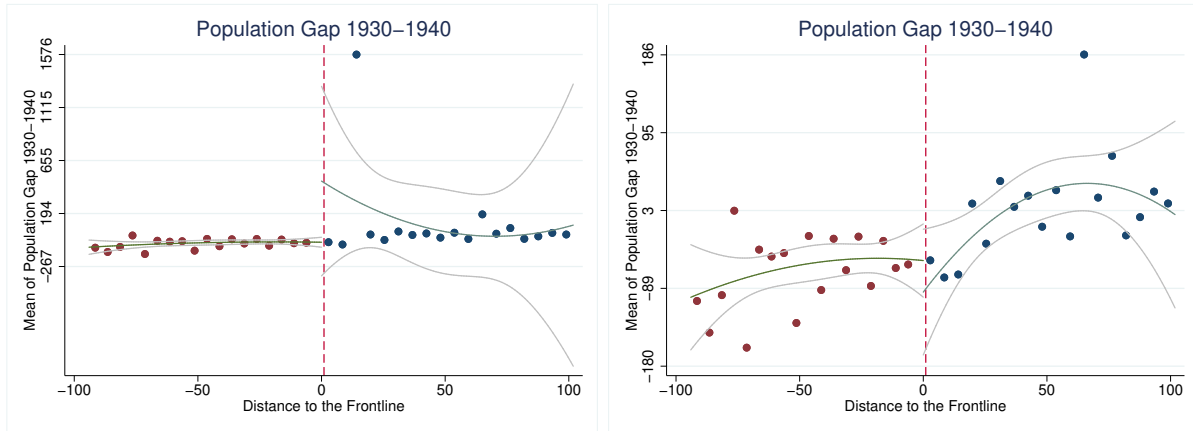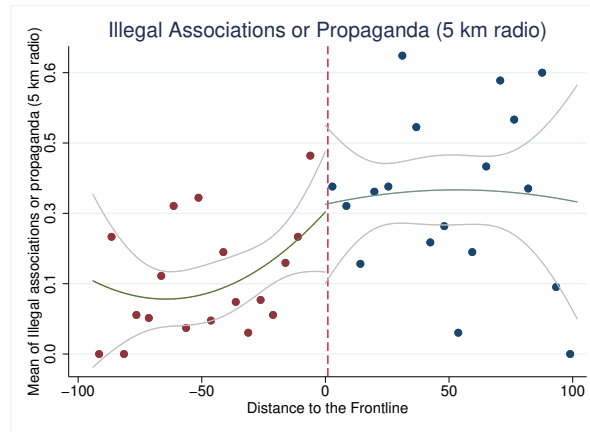

NOTES: The dots show the average of the difference between population in 1940 and in 1930 at the municipal level, conditional on distance to the frontline. The left panel includes all municipalities (except the ones in the frontline) and the right panel additionally excludes Zaragoza, the capital of the Aragon region. Negative values of distance correspond to the Republican side. RD coefficients (st.error) are -226.7 (165.7) (left) and -25.2 (40) (right), using the `rdrobust` command.

FIGURE A-21: *Historical Population Data for Aragon at the Municipal Level Using 1970 and 1981 Censuses*
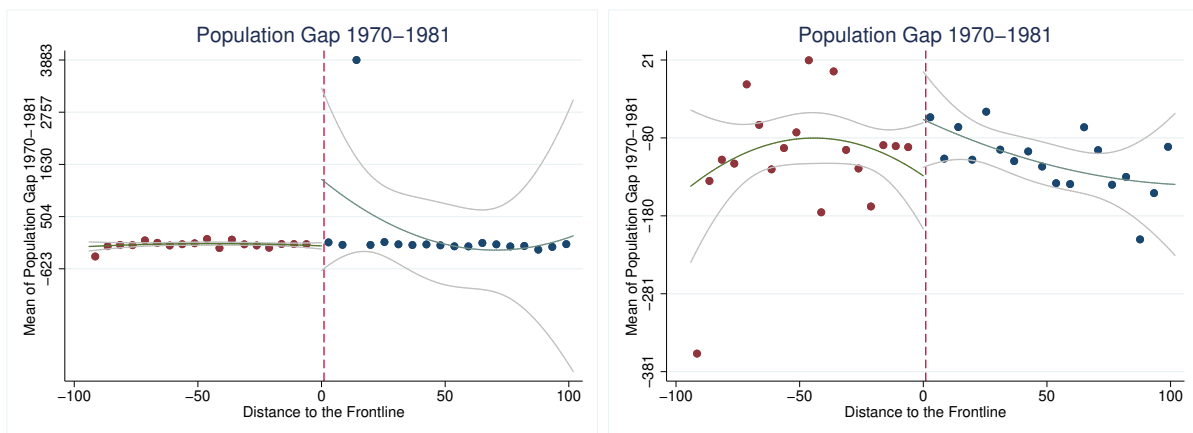
NOTES: The dots show the average of the difference between population in 1970 and in 1981 at the municipal level, conditional on distance to the frontline. The left panel includes all municipalities (except the ones in the frontline) and the right panel additionally excludes Zaragoza, the capital of the Aragon region. Negative values of distance correspond to the Republican side. RD coefficients (st.error) are 74.5 (111.2) (left) and 42.4 (36) (right), using the `rdrobust` command.

Illegal Associations or Propaganda (5 km radio)

NOTES: The dots show the mean of oppositional activity in the Aragon region, measured by a dummy variable that takes the value 1 if there were offenses classified as "illegal association" or "illegal propaganda" in a given municipality or in any of its neighbors within 5 km, and 0 otherwise. This information was first compiled by Del Águila [2001] and later coded by Villamil [2020]. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side and positive to the Nationalist one. RD coefficient (st.error) is -0.09 (0.196), using the `rdrobust` command.

FIGURE A-23: *Collective Memory: Francoist / Religious Streets and Mass Graves*
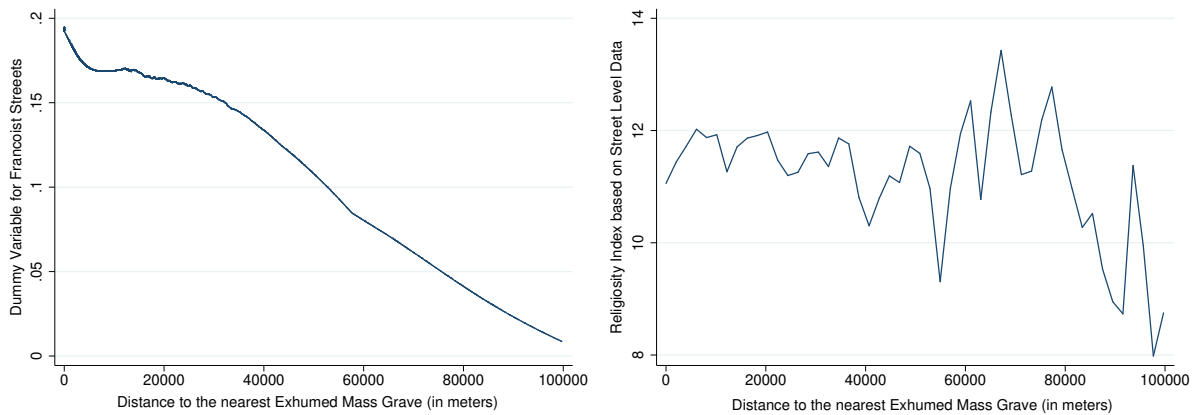
NOTES: The figure in the left panel depicts a Kernel-weighted linear regression of a dummy for Francoist streets on distance to the nearest exhumed mass grave (in meters) at the municipality level. The figure in the right panel depicts a Kernel-weighted local polynomial regression of an index for religious streets (number of religious streets over total streets, times a hundred) from Oto-Peralías [2018] on distance to the nearest exhumed mass grave (in meters) at the municipal level.

TABLE A-1: *Battlefront and Civilian Victims of the Spanish Civil War*

Killed in combat	300,000	Preston [2012]
Repression by the Republicans (red terror)	50,065	Prada [2010]
	49,272	Vera Ledesma [2010]
Repression by the Nationalist (white terror)	141,951	Prada [2010]
	130,199	Preston [2012]
Population in 1930	23,614,418	Census

NOTES: Population in 1930 includes Ceuta, Melilla and the Northern Africa territories. Data from Prada [2010], Preston [2012] and Vera Ledesma [2010].

TABLE A-2: *As a Consequence of the Civil War, at Least One Family Member or Close Person...*

Type of victimization	Number	%
No victims	713	24.28
Was imprisoned	330	11.24
Was killed in combat	321	10.93
Was murdered	256	8.72
Had to hide	136	4.63
Had to leave Spain	129	4.39
Disappeared	73	2.49
Was killed in bombing	64	2.18
Was sentenced to death	49	1.67
Was fired from her job	18	0.61
Other situation	162	5.52
Total victims	1,538	52.38
Don't know	396	13.49
Don't answer	289	9.84

Notes: Own elaboration based on the survey on the Civil War and Franco's Dictatorship (CIS 2760) conducted in 2008.

TABLE A-3: *Mass Graves*

Type	Number	%
No Interventions Undertaken	1,177	47.83
Fully or Partially Exhumed	540	21.47
Transferred to the Valley of the Fallen	500	20.32
Missing	243	9.87
Valley of the Fallen	1	0.04
Total graves	2,461	100

Notes: Information taken from the Spanish Ministry of Justice (2015). The information on exhumed graves has been revised and updated until 2015.

TABLE A-4: *Mass Graves: Death Toll*

Type	Number	%
Transferred to the Valley of the Fallen	33,840	49.31
No Interventions Undertaken	15,536	22.64
Fully or Partially Exhumed	14,977	21.83
Missing	4,270	6.22
Total dead	68,523	100

Notes: Information taken from the Spanish Ministry of Justice (2015). The information on exhumed graves has been revised and updated until 2015.

TABLE A-5: *Exhumed Graves: Cause*

Cause	Number	%
Execution by firing squad	214	63.13
Execution	43	12.68
Reprisal in the rearguard	30	8.85
Guerrilla warfare	27	7.96
Armed fight	14	4.13
Other	11	3.24
Total	339	100
No information	201	37.22

Notes: Additional information was extracted from the individual graves registry at the Ministry of Justice website. Execution means violent death by other than a firing squad. Guerrilla warfare also includes guerrilla helpers.

TABLE A-6: *Exhumed Graves: Location*

	Number	%
Cemetery	182	37.68
Other	301	62.32
Total	483	100
No information	57	10.56

Notes: Additional information was extracted from the individual graves registry at the Ministry of Justice website.

TABLE A-7: *Descriptive Statistics of Socio-Demographic Variables from the Aragon Survey*

Variable	Mean	Standard Deviation	No. Observations
Gender (male=1)	0.49	0.5001	1000
Age	53.32	14.75	999
Primary Education	0.22	0.413	996
Secondary Education	0.45	0.497	996
University Education	0.34	0.473	996
Children Living Together	0.38	0.485	1000
Children Not Living Together	0.42	0.494	1000
No Children	0.27	0.446	1000
Unemployed	0.06	0.238	995
Self-employed	0.13	0.337	995
Hired employment	0.43	0.496	995
Retired or pensioner	0.30	0.458	995
Student	0.02	0.154	995
Distance to the Front	35.59	23.339	1000

TABLE A-8: *Control Variables. Sources of Information*

Variables	Sources
1931 road network	Ministry of Public Infrastructure
Population	Census. Spanish Institute of Statistics (*INE*)
Climatic variables	WorldClim - Global Climate Data (`worldclim.org/bioclim`)
Index of caloric yield	Galor, Oded and Ömer Özak (2016), "The Agricultural Origins of Time Preference", *American Economic Review* 106(10):3064-3103.
Ruggedness	Nunn and Puga [2012].
Distance to river	Hydrographical network. Ministry for Ecological Transition and Demographic Challenge
Distance to coast	Spain Shapefile - European Environment Agency
Land cover	Land Use Information System SIOSE2005. National Geographic Institute of Spain
Modern roads and railroads	DIVA-GIS, `http://www.diva-gis.org/gdata`

TABLE A-9: *OLS Results on Generalized Trust: Non-Exhumed Mass Graves*

	(1)	(2)	(3)	(4)	(5)	(6)
Bodies/population	0.003***	0.002***	-0.001	-0.000	-0.001	-0.000
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Adj-R^2	0.001	0.010	0.036	0.038	0.044	0.069
Population & area		✓	✓	✓	✓	✓
Region & year FE			✓	✓	✓	✓
Geographical controls				✓	✓	✓
Age & municipality size					✓	✓
Education & labor						✓
Observations	37,599	36,110	36,110	34,435	34,425	34,117
Mean dependent variable	4.86	4.88	4.88	4.87	4.87	4.87

Notes: *Bodies/population* is measured as the number all mass graves minus exhumed mass graves for each district, divided by the population in 1930 and multiplied by 1,000. *Population & area controls* includes the logarithm of population in 1930 and in the survey-year at the district level, as well as the area of the district. *Individual and district controls* includes fixed effects for age groups, for current size of the municipalities, population in 1930 as well as in the survey year, and area at the district level. *Geographical controls* includes an index of caloric yield of the soil, ruggedness, landcover, standard deviation of temperature, distance to the nearest river and to the coast, and a measure of road density in 1931. *Age & municipality size* includes age and municipality size fixed effects. *Education & labor* includes level of education and employment status of the individual fixed effects. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-10: *IV Results: All*

	Bodies/Population			Mass graves		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: First-Stage Results						
Distance troops	-0.018***	-0.017***	-0.016***	-0.017***	-0.016***	-0.016***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
F-statistic	214.5	177.51	174.81	144.17	119.92	121.56
Panel B: Second-Stage Results						
All	-0.060**	-0.056**	-0.053*	-0.063**	-0.060*	-0.055*
	(0.027)	(0.029)	(0.029)	(0.028)	(0.031)	(0.030)
Region & year FE	✓	✓	✓	✓	✓	✓
Age & munic. size		✓	✓		✓	✓
Educ. & labor			✓			✓
Observations	20,854	20,852	20,676	20,854	20,852	20,676
Mean dep. var.	4.82	4.82	4.82	4.82	4.82	4.82

Notes: *Bodies/Population* is measured as the total (and updated) number of total bodies in each district divided by the population that district had in 1930 and multiplied by 1,000. The instrument is the nearest distance (in meters) from the district's centroid to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking over Madrid. All models include the logarithm of the population at the district in 1931 and in the survey-year, area of the district and geographical controls (an index of caloric yield, ruggedness, landcover, standard deviation of temperature, nearest distance to river and coast), distance to Madrid, and the nearest distance to General Mola's plan of attack. *Age & munic. size* includes age and municipality size fixed effects. *Educ. & labor* includes level of education and employment status of the individual fixed effects. Sample is restricted to Peninsular Spain, excluding Madrid, and to those districts with a main road in 1931. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-11: *IV Results: Transferred*

	Bodies/Population			Mass graves		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: First-Stage Results						
Distance troops	-0.006***	-0.007***	-0.007***	-0.009***	-0.009***	-0.009***
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
F-statistic	156.33	170.23	169.61	668.35	596.32	594.51
Panel B: Second-Stage Results						
Transferred	-0.172**	-0.143**	-0.134*	-0.120**	-0.107**	-0.101*
	(0.077)	(0.073)	(0.072)	(0.053)	(0.054)	(0.054)
Region & year FE	✓	✓	✓	✓	✓	✓
Age & munic. size		✓	✓		✓	✓
Educ. & labor			✓			✓
Observations	20,854	20,852	20,676	20,854	20,852	20,676
Mean dep. var.	4.82	4.82	4.82	4.82	4.82	4.82

Notes: *Bodies/Pop* is measured as the total (and updated) number of total bodies in each district divided by the population that district had in 1930 and multiplied by 1,000. The instrument is the nearest distance (in meters) from the district's centroid to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking over Madrid. All models include the logarithm of the population at the district in 1931 and in the survey-year, area of the district and geographical controls (an index of caloric yield, ruggedness, landcover, standard deviation of temperature, nearest distance to river and coast), distance to Madrid, and the nearest distance to General Mola's plan of attack. *Age & munic. size* includes age and municipality size fixed effects. *Educ. & labor* includes level of education and employment status of the individual fixed effects. Sample is restricted to Peninsular Spain, excluding Madrid, and to those districts with a main road in 1931. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-12: *IV Results: Not Intervened*

	Bodies/Population			Mass graves		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: First-Stage Results						
Distance troops	0.001	0.000	0.000	0.002**	0.003***	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
F-statistic	1.01	0.04	0.12	6.20	6.96	6.47
Panel B: Second-Stage Results						
Not Intervened	1.686	7.539	3.991	0.461*	0.371	0.360
	(1.853)	(38.127)	(11.584)	(0.270)	(0.230)	(0.234)
Region & year FE	✓	✓	✓	✓	✓	✓
Age & municipal. size		✓	✓		✓	✓
Educ. & labor			✓			✓
Observations	20,854	20,852	20,676	20,854	20,852	20,676
Mean dependent var.	4.82	4.82	4.82	4.82	4.82	4.82

Notes: *Bodies/Pop* is measured as the total (and updated) number of total bodies in each district divided by the population that district had in 1930 and multiplied by 1,000. The instrument is the nearest distance (in meters) from the district's centroid to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking over Madrid. All models include the logarithm of the population at the district in 1931 and in the survey-year, area of the district and geographical controls (an index of caloric yield, ruggedness, landcover, standard deviation of temperature, nearest distance to river and coast), distance to Madrid, and the nearest distance to General Mola's plan of attack. *Age & municipal. size* includes age and municipality size fixed effects. *Educ. & labor* includes level of education and employment status of the individual fixed effects. Sample is restricted to Peninsular Spain, excluding Madrid, and to those districts with a main road in 1931. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-13: *IV Results: Exhumed Mass Graves, Alternative Measures*

	Log Bodies			Binary		
	(1)	(2)	(3)	(4)	(5)	(6)
Exhumed	-0.117**	-0.105**	-0.098*	-0.413**	-0.361**	-0.338*
	(0.052)	(0.053)	(0.053)	(0.182)	(0.183)	(0.180)
Region & year FE	✓	✓	✓	✓	✓	✓
Age & municipal. size		✓	✓		✓	✓
Educ. & labor			✓			✓
Observations	20,854	20,852	20,676	20,854	20,852	20,676
Adj-R-squared	0.038	0.046	0.069	0.040	0.047	0.071

Notes: *Exhumed* is measured as the logarithm of exhumed bodies in columns 1-3, and as a binary variable that takes the value 1 if there is at least 1 exhumed mass grave in a given district, and zero otherwise. The instrument is the nearest distance (in meters) from the district's centroid to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking over Madrid. All models include the logarithm of the population at the district in 1931 and in the survey-year, area of the district and geographical controls (an index of caloric yield, ruggedness, landcover, standard deviation of temperature, nearest distance to river and coast), distance to Madrid, and the nearest distance to General Mola's plan of attack. *Age & municipal. size* includes age and municipality size fixed effects. *Educ. & labor* includes level of education and employment status of the individual fixed effects. Sample is restricted to Peninsular Spain, excluding Madrid, and to those districts with a main road in 1931. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-14: *IV Results: Trust in Institutions with All Mass Graves*

	Army	Civil Guard	Church	Const. Court	Ombudman	Parliament
Bodies/Population	-0.140**	-0.157*	-0.164**	-0.012	0.084	0.011
	(0.066)	(0.092)	(0.071)	(0.049)	(0.064)	(0.035)
F-statistic	37.68	22.08	45.45	60.16	44.85	119.44
Region & year FE	✓	✓	✓	✓	✓	✓
Age & municipal. size	✓	✓	✓	✓	✓	✓
Observations	8,819	5,222	7,810	9,472	9,375	16,494
Mean dependent var.	5.57	3.69	5.93	4.24	4.67	4.13

Notes: The dependent variable takes values from 0 to 10 (from lowest to highest trust) in the Army in Column 1, Civil Guard in Column 2, Catholic Church in Column 3, Constitutional Court in Column 4, Ombudsman in Column 5 and National Parliament in Column 6, at the individual level. *Bodies/Population* is measured as the number of bodies exhumed in each district divided by the population that district had in 1930 and multiplied by 1,000. The instrument is the nearest distance (in meters) from the district's centroid to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking over Madrid. All models include the logarithm of the population at the district in 1931 and in the survey-year, area of the district and geographical controls (an index of caloric yield, ruggedness, landcover, standard deviation of temperature, nearest distance to river and coast), distance to Madrid, and the nearest distance to General Mola's plan of attack. *Age & municipal. size* includes age and municipality size fixed effects. Sample restricted to Peninsular Spain, excluding Madrid, and to those districts with a main road in 1931. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-15: *RD Results: Voting. Congressional Elections (1977-2019). Robustness Tests*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Panel A: Votes for the Left				
RD coefficient	-0.069***	-0.072***	-0.062***	-0.085*	-0.088***	-0.042***	-0.186***
	(0.016)	(0.019)	(0.015)	(0.049)	(0.026)	-	(0.032)
			Panel B: Votes for the Right				
RD coefficient	0.072***	0.072***	0.074***	0.085*	0.084***	0.044***	0.174***
	(0.015)	(0.018)	(0.013)	(0.049)	(0.026)	-	(0.030)
Excludes Zaragoza	✓						
Add. Lat.-Long.		✓					
Election fixed effects			✓				
Average municipality				✓			
Local Rand. Coeff.						✓	
Includes Frontline							✓
Local Poly. Order	1	1	1	1	2	1	1
Observations	10,197	10,212	10,212	684	10,212	10,212	10,917

Notes: All models exclude frontline municipalities. Zaragoza is the capital of the Aragon region. *Additional Latitude and Longitude controls* encompasses latitude, longitude, squared latitude and longitude and the interaction of latitude and longitude. Average municipality values are computed as the municipality mean for all election years (1977-2019). Coefficients display the difference among mean on the right and the left side of the front of Aragon. Robust standard errors are displayed in parenthesis. Estimations (1)-(5) and (7) are local RD using the `rdrobust` command, and estimation (6) uses `rdrandinf` command. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-16: *RD Results: Voting. Municipal Elections (1987-2011)*

	(1)	(2)	(3)	(4)	(5)
			Panel A: Votes for the Left		
RD coefficient	-0.123***	-0.117***	-0.109***	-0.146***	-0.114***
	(0.036)	(0.034)	(0.034)	(0.035)	(0.030)
			Panel B: Votes for the Right		
RD coefficient	0.111***	0.082***	0.083***	0.107***	0.091***
	(0.036)	(0.028)	(0.031)	(0.030)	(0.031)
Add. Lat.-Long.		✓	✓		
Province fixed effects				✓	
Includes Frontline					✓
Observations	6,140	6,140	6,140	6,140	6,563

Notes: Coefficients display the difference among mean on the right and the left side of the front of Aragon. Robust standard errors are displayed in parenthesis. All estimations are local RD using the `rdrobust` command. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-17: *Francoism and Collective Memory: RD Results from the Aragon Survey. Robustness*

	HR Violation	Fear to Express	Peace & Order	Modernization	Memory of War Alive
RD coeff.	-1.01***	-0.84*	3.27***	0.58	-2.51***
	(0.373)	(0.462)	(1.011)	(0.534)	(0.713)
Mean dep. var.	1.77	1.64	3.24	3.12	2.73
Controls	✓	✓	✓	✓	✓
Province FE	✓	✓	✓	✓	✓
Observations	818	835	814	817	828

Notes: The dependent variables reflect the agreement or disagreement with the following statements: (1) during Franco's dictatorship, basic human rights were violated, (2) during Franco's dictatorship, people did not express themselves out of fear of reprisals, (3) during Franco's dictatorship, there was more peace and public order than now, (4) during Franco's dictatorship, (5) Franco's dictatorship contributed to Spain's economic modernization, (6) the memory of the Civil War still remains very alive among Spaniards. All these measures are on a 1-5 scale, where 5 express full agreement and 1 full disagreement. All models include individual controls (gender, age, and indicator variables for having primary education, not having children, and being unemployed) and province fixed effects. Coefficients display the difference among mean on the right and the left side of the front of Aragon. All estimations are local RD using the `rdrobust` command. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-18: *Collective Memory: Francoist and Religious Streets in the Aragon Region*

	(1) Francoist (Total)	(2) % Francoist	(3) Francoist (dummy)	(4) Religiosity	(5) All Streets
Nationalist side	0.197***	0.819***	0.066**	-0.443	15.020
	(0.070)	(0.277)	(0.027)	(0.782)	(10.459)
Observations	682	682	682	677	682
R-squared	0.07	0.04	0.07	0.03	0.48

Notes: The dependent variable is the total number of Francoist streets at the municipal level in Column 1, the total number of Francoist streets divided by the total number of streets in the municipality and multiplied by 100 in Column 2, and an indicator variable that takes the value 1 if there is at least one Francoist street in the municipality and 0 otherwise in Column 3, a religiosity index (number of religious streets over total streets, times a hundred) at the municipal level in Column 4, and the total number of streets in the municipality in Column 5. Data for all dependent variables comes from Oto-Peralías [2018]. *Nationalist side* is a dummy variable that takes the value 1 if the municipality fell under the Nationalist troops in the Aragon region and 0 otherwise. Municipalities within the frontline are excluded. Controls include ruggedness, mean elevation, distance to modern roads, distance to Roman roads, landcover, municipal area, distance to water bodies and distance to rivers. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.