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THE LONG SHADOW OF THE SPANISH CIVIL WAR

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THE LONG SHADOW OF THE SPANISH CIVIL WAR

Abstract

The Spanish Civil War (1936-1939) was one of the most devastating conflicts of the twentieth century, yet little is known about its long-term legacy. We show that the war had a long-lasting effect on social capital, voting behavior and collective memory. To this end we use geo-located data on historical mass graves, disaggregated modern-day survey data on trust, combined with modern electoral results. For econometric identification, we exploit deviations from the initial military plans of attack, using the historical (1931) highway network. We also employ a geographical Regression Discontinuity Design along the Aragon Front. Our results show a significant, negative and sizable relationship between political violence and generalized trust. We further scrutinize the trust results, finding negative effects of conflict on trust in institutions associated with the Civil War, but no effects when looking at trust on Post 1975 democratic institutions. We also find long-lasting results on voting during the Democratic Period (1977-2016), corresponding to the sided political repression implemented in the Aragon region. In terms of mechanisms—using a specialized survey on the Civil War, street names data and Francoist newsreels about the war—we find lower levels of political engagement and differential patterns of collective memory about this traumatic historical event.

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The Long Shadow of the Spanish Civil War[*]

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Keywords: Conflict, Civil War, Political Repression, Spain, History, Trust, Voting, Collective Memory, Political Propaganda

JEL classification: D72, D74, N14, Z10

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

—Federico García Lorca, 1933

1. Introduction

Social capital is a fundamental driver of economic performance and a key factor underpinning the workings of democratic institutions (Putnam *et al.* [1994], Knack and Keefer [1997], La Porta *et al.* [1997], Alesina and La Ferrara [2002], Guiso *et al.* [2016], Tabellini [2010], Algan and Cahuc [2010], Besley [2019]). 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 the deep determinants of trust via slave shipments, former imperial boundaries and weather variability (Nunn and Wantchekon [2011], Becker *et al.* [2016], Buggle and Durante [2017]). At the same time, it is known that conflict brings widespread human, social and economic devastation to affected populations, while economic costs have shown to be particularly devastating (Collier *et al.* [2003]). Given its damaging nature, civil conflict could be an important driver of social capital destruction. In this paper we examine the relationship between conflict and social capital, focusing on the case of mistrust generated by the Spanish Civil War.

We further examine the potential *political* repercussions conflict might have had in the long run. The key idea here is to see whether the cultural aftereffects observed may have also translated into relevant political behavior. In this line, Nunn *et al.* [2018] show that during downturns, there is more political turnover in countries with lower levels of generalized trust. Recent contributions in economics have directly linked conflict with later political outcomes (Fontana *et al.* [2018]; Iwanowsky and Madestam [2017]). In political science, scholars have pointed out the particularly deleterious long-term effects of political repression (Lupu and Peisakhin [2017]; Rozenas *et al.* [2017]; Rozenas and Zhukov [2019]). We build on this literature to argue that along with the cultural dimension, the political one constitutes another important component of the lingering effects of conflicts, long after their official ceasefire.

The Spanish Civil War (1936-1939), pitting Nationalists against Republicans, was one of the most important conflicts of the twentieth century. Though the exact numbers are still a matter of debate, it is estimated that up to 800,000 people died during the war, out of a total population of 23.6 million in 1930 (Preston [2012]). Political repression was particularly severe, claiming almost 200,000 civilian victims: it is now estimated that

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about 140,000 people were killed by the Nationalist troops in the so-called "White Terror", while the "Red Terror" of the Republicans killed up to 50,000 people. Approximately 300,000 soldiers were killed during combat, and another 300,000 people died of hunger, bombings and related incidents, while 440,000 people were externally displaced. Yet, despite these staggering human losses and the historical importance of this conflict, there appears to be a dearth of empirical studies examining its potential long-term consequences.

The historical set-up in question offers important features as a social laboratory. More than 80 years have passed since the conflict ended in 1939, making it an appropriate scenario to study questions of cultural persistence and intergenerational transmission. Different from more recent and ongoing struggles, mostly occurring in developing countries, the Spanish Civil War occurred in an advanced Western democracy, with well-functioning institutions and a vibrant civil society. Due to the internecine nature of the conflict, inhabitants had to "live with the enemy", resulting in turn in thy neighbor actions that may have eroded trust in the long term. In particular, to carry out repression at a massive scale, authorities relied on collaborators, as individuals were often compelled to inform against their neighbors not to raise suspicions (Vico [1998]). Though in a very different context, the underlying mechanism hypothesized—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 Transatlantic slavery and by Lichter *et al.* [2020] for East German Stasi.

To gauge the intensity of conflict, we use geo-located data on mass graves. This data was initially compiled by the Spanish Ministry of Justice, and has only become available recently, after the passing of the Spanish Historical Memory Law in 2007.[1] To test our hypotheses, we use geographically disaggregated data on trust from Spain's Sociological Research Center (CIS, or *Centro de Investigaciones Sociológicas*) and voting records from 1977 to the present. We combine this data with additional economic, social, and geographic indicators from the Spanish National Institute of Statistics (INE) and other sources. In our specifications, we control for such individual and geographic characteristics, while netting out fixed effects at the regional (Autonomous Community) level.

Because the occurrence of war was presumably non-random, and potentially correlated with our outcome variable, we employ an empirical strategy based on military plans of combat. In particular, we use the initial plan of attack, devised by General Mola, for the

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

taking of Madrid. Here it is important to note that the war started as a military uprising against the Republican government. The insurgents, also called Nationalists, planned a takeover of the capital city of Madrid (in the geographical center of the country) starting from the southernmost point of the country, in the protectorate of Morocco, and other military divisions in the Spanish Peninsula. To reach Madrid, the rebel soldiers were constrained by the existing highway network, which we have digitized using historical maps. 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. Hence, we implement a "road not taken" type of identification strategy. Conditional on the initial plan of attack, we take deviations from these routes as plausibly exogenous shocks to the intensity of conflict (in the spirit of Greenstone *et al.* [2010]; Card and Dahl [2011]). To implement this empirical strategy, and to disentangle potential confounders, we further restrict the sample to places historically covered by the primary road network.

Overall, we find that the *type* of victimization matters in the long-term. First, our results show a slightly negative or negligible impact of all casualties (soldier and civilian) on generalized trust. This null effect becomes significantly *negative* when we focus on exhumed mass graves, our proxy for political violence against civilians, consistent with the mistrust hypothesis. The results are strongly present both in the OLS and the instrumental variables (IV) specifications. In our preferred IV specification, a one standard deviation increase in our measure of exhumed mass graves is associated with a 0.37 standard deviation decrease in generalized trust, a sizable magnitude.[2] Since exhumed mass graves combine conflict with exhumation, through a series of empirical tests, we find that our baseline results are *not* driven by the exhumation process itself. Instead, these mass graves proxy for historical political repression against civilians.

We further scrutinize the trust results by looking at trust on different types of institutions: those already present during the Civil War (such as the Army and the Civil Guard) and those related to the post-1975 democratic period (such as the Constitutional Court, the Ombudsman and the Parliament). We find negative and significant results for the former set only, suggesting that the effect is associated with the historical conflict, rather than of capturing more general trends. Overall, our cultural results indicate that civil conflict can have a significant negative impact in the long-run, through decreased trust.

To see whether the effects observed translate into politically relevant actions, we use

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[2]Our preferred measure of conflict is the number of corpses 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.

data from congressional and municipal elections, as well as referenda. For econometric identification, we focus on the region and Front of Aragon, which suffered disproportionately from the war. Nationalist and Republican troops were stationed there in a trench warfare that lasted almost two years, from 1936 to 1938. Hence, we can apply a Regression Discontinuity Design (RDD) to the two opposing sides of the border. This setting offers the key advantage that regional data contains information on which side caused the repression (Nationalist or Republican).[3] We find first that the boundary was effective, leading to political repression by the corresponding faction on their respective side of the border. We also confirm the trust in institutions results. More importantly, using municipal data for congressional elections (1977-2016), we find long-lasting effects on voting for the left and the right, again corresponding to the political repression implemented. The results are not only statistically significant, but also large in magnitude, in the order of ten percent of the vote share. Furthermore, they appear concentrated on moderate as opposed to extreme parties (cf. Tabellini [2010]), and extend to municipal elections.

To study potential mechanisms of transmission, we make use of a specialized survey on the Spanish Civil War, focusing on political participation and collective memory. Though more limited in size, the survey asks specific questions regarding this historical event. First, we find that people more affected by political violence have less contact with authorities and have lower levels of political engagement, proxied by participating in strike, attending a demonstration and signing a petition. Second, we also find that people more exposed to repression talk less about the Civil War, believe that it generated division, agree that its memory is very much alive, and prefer to leave the mass graves untouched.

Motivated by this evidence, to determine whether collective memory has been shaped by the state, we use data on Francoist streets 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. The results for the whole of Spain are corroborated by additional findings for the Aragon region. As in Williams [2019]; Ochsner and Roesel [2017], our results suggest that the state, has helped to reinforce and make more salient the collective memory of the Civil War. This is something we also find with Francoist newsreels about the war, using data from Aguilar [2008].

We contribute to several strands of the conflict literature, reviewed in the next section. First, we show that the type of victimization matters in explaining the impact of conflict on social capital. As the existing literature is ambiguous on this point, we contribute to

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[3]It provides the additional advantage of having detailed municipal data for pre-war elections, collated by Balcells [2011]. We use this data to show that there are no pre-trends in political outcomes.

the debate by showing that repression against civilians has a negative and long-lasting effect on trust. This is also the first paper in economics to look at the long-term impact of the Spanish Civil War, using newly available data on mass graves and modern econometric techniques. Lastly, we examine both the cultural and political consequences of conflict over a long time horizon, arguing that collective memory can provide a reinforcing mechanism of transmission for these enduring effects.

1.1. 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 to the study of civil wars, while calling explicitly for the need for more micro studies on the consequences of conflicts. Ray and Esteban [2017] reassessed this topic, focusing on the links between conflict and development. Departing from most of this literature, we focus here on conflict affecting an advanced Western economy: Spain.

The literature on conflict offers two opposing views on the economic and political impact of conflict in the short and long run. Researchers, focusing on Africa, 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. 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 and find that political violence against civilians can have a negative and enduring effect on trust.

Papers that have focused on trust have found mostly negative effects. Rohner *et al.* [2013a] find that conflict in Uganda decreased generalized trust and increases ethnic identity. Using experimental evidence from Tajikistan, Cassar *et al.* [2013], show that exposure to violence undermined trust and participation in market transactions. Alacevich and Zejcirovic [2020] also find that individuals living in high-violence areas in Bosnia and Herzegovina are less trusting and vote less. A natural question to ask is whether these findings are also present when longer time horizons are considered (as in Grosjean [2014]).

The literature on the long-run effects of conflict shows either negligible or even positive impacts on relevant economic variables. Davis and Weinstein [2002] document the strong

degree of persistence in geographic concentration of economic activity in Japan, which survived the nuclear bombings of Hiroshima and Nagasaki. In a similar vein, Miguel and Roland [2011] find no long-term impact on a series of development outcomes after the U.S. bombing of Vietnam. If anything, following Tilly's famous quip, some scholars have documented a positive impact of historical conflicts on future economic performance, through increased fiscal capacity (Dincecco and Prado [2012]). These findings are at odds with the negative relationship between income and conflict (Miguel *et al.* [2004]) and the large economic costs of war (Chiovelli *et al.* [2018]; Riaño and Valencia [2020]).

An emerging body of literature has revisited some of the initial findings, using modern econometric and identification techniques. Exploiting discontinuities in military strategy, Dell and Querubin [2018] show that U.S. bombing during the Vietnam War was counterproductive, increasing the support of the Communist insurgency. Feigenbaum *et al.* [2018] document the destruction of capital during the American Civil War and trace its protracted negative impact until 1920. Acemoglu *et al.* [2011] and Michalopoulos and Franck [2018] study the long-term consequences of the French Revolution, while Dell [2012] analyzes the effects of the Mexican Revolution on land distribution. Iwanowsky and Madestam [2017] examine the political consequences of the Khmer Rouge's genocide in Cambodia, and Lichter *et al.* [2020] show how the East German Stasi eroded trust. Perhaps the closest article to the present work 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. Here we focus on trust and employ both and IV and an RDD set-up when we analyze the cultural and political repercussions of conflict.

More broadly, this article is also related to the literature on long-term economic persistence, summarized by Nunn [2009, 2014, 2020] and Spolaore and Wacziarg [2013]. Here we focus on conflict as a potential source of long-term persistence. Theoretically, Acemoglu and Wolitzky [2014] show how mistrust and misinformation can generate cycles of conflict and Rohner *et al.* [2013a] link conflict to cycles of mistrust and trade. Empirically, Besley and Reynal-Querol [2014] linked prevalence of historical conflict to post-colonial wars, Michalopoulos and Papaioannou [2016] show how conflict emerged in partitioned ethnicities in Africa, while Arbatlı *et al.* [2020] look at its pre-historic roots.

There also exists a large and well-established literature in history and political science on the Spanish Civil War, described next. Authoritative historical accounts of the war include Thomas [2001], Beevor [1982, 2012] and Preston [1996, 2007, 2012]. More recently, La Parra-Pérez [2020], studies divisions within the military. In political science, Balcells [2011, 2012] examines victimization and distinguishes between direct and indirect violence

in the Spanish territories of Catalonia and Aragon, and Aguilar [1996, 2008] studies the collective memory established after the war. Oto-Peralías [2015] looks at political attitudes, and Rodon [2018] finds more support for left-leaning candidates after the war in the 1977 election. To the best of our knowledge, no paper in economics has looked at the long-term impact of the Spanish Civil War, one of the most important conflicts of the twentieth century. This study aims to fill this gap in the literature.

The rest of the paper is organized as follows. Section 2 provides the historical and institutional backgrounds on the Spanish Civil War. 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, IV results using military plans of attack, and RDD results using the Aragon Front. Section 6 contains the mechanisms of transmission, and Section 7 concludes.

2. Historical and Institutional Background

2.1. 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 general election by a narrow margin, on February 16, 1936. As a response, part of the military, with the support of right-wing forces (fascists, religious conservatives and monarchists), stationed a coup against the Republican government. The uprising was led by military commanders garrisoned around the country on July 18, 1936. The military coup, initially conceived to be a quick uprising, divided the armed forces and the Spanish territory fairly evenly between the loyalists to the Republican government (known as *Republicans*) and the rebel forces (also called *Nationalists*).

The coup was immediately supported by military units in the Spanish protectorate in Morocco (Ceuta and Melilla), most of the northern part of the country (except in the Basque country, Catalonia and some adjacent areas) and in southern cities such as Seville, Cordoba and Cadiz. However, the coup failed in important cities such as Madrid, Barcelona, Valencia and Bilbao (see Figure A-1). The Nationalists had the dedicated support of Fascist Italy and Nazi Germany, whereas the Republican government received the irregular help of the Soviet Union and Mexico. Stalin and Hitler turned the Spanish Civil War into a proxy battle and testing ground for the Second World War (1939-1945).[4]

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[4]Through the support of the International Brigades, military units set up by the Communist International to assist the Republican troops. The French novelist André Malraux, who fought during the war, describes the Aragon battlefront in his novel *L'Espoir* (Man's Hope), George Orwell fought in Zaragoza, described in *Homage to Catalonia* and Ernest Hemingway reported from Teruel. Hitler's Germany, in

The main goal of the Nationalists was taking over the capital of Madrid, located at the center of the country. To this end, they planned and launched a major offensive towards the city, which resisted the siege almost until the end of the war. During 1937, Nationalist troops took most of Spain's northern area,[5] and expanded their influence in the south (Figure A-1, top right panel). By the summer of 1938, the Nationalists managed to break the Aragon Front, detailed next, (Figure A-1, bottom left panel) and moved towards the French border, until they controlled the whole region of Catalonia (Figure A-1, bottom right panel). The war officially ended in April 1, 1939 after the last Republican forces surrendered in Alicante. General Franco—who became the leader of the military coup in the Autumn of 1936, after the death of the other leading generals—established a dictatorship that ruled over Spain from 1939 until his death in 1975.

2.2. The Aragon Front (1936-1938)

The Aragon Front (*Frente de Aragón*) was one of the most important battlefronts of the Spanish Civil War. Nationalist troops coming from the east and Republican troops coming from the west reached a stalemate, dividing the region of Aragon in half (Figures 1 and A-9). 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 . In terms of military strategy the Aragon Front was unique, serving as a transition from the trench warfare that characterized the First World War towards the total war of the Second.

The military coup mounted by the Nationalists, described above, was successful in the three main cities and provincial capitals of Aragon: Huesca, Teruel and Zarazoga. These cities are located following almost a vertical line that divides the region into two. This geographic fact determined the broad location of the front-line, since the Nationalists wanted to guard these main cities and their respective transportation connections. However, the exact location was defined in a rather "haphazard and involuntary" manner (Maldonado [2007]), marked by the immediate need to set defensive positions to stop the advancement of the Republican troops coming from Catalonia and Valencia.

Since both sides had similar resources, their military strategy was to maintain their defensive positions, with few and isolated attacks, which contributed to the stability of the front-line.[6] Some of the most relevant military offensive operations from the Republican

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turn, helped with airlifts, aerial bombing and armored vehicles.

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

[6]The Nationalist side was highly organized and had a unique military command, whereas the Republican troops were mainly formed by volunteers from different backgrounds—anarchists, communists, and libertarians—who shared an anti-military sentiment and where poorly equipped and organized.

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, Teruel in December 1937 and the famous Battle of the Ebro in 1938. Most of these ended in defeat for the Republicans.

In March 1938, General Franco decided to break the front and started the largest battle of the Civil War, known as the Aragon Offensive. With this military campaign, the Nationalists managed to overrun the Republican side of Aragon and arrived to the Mediterranean sea, isolating Catalonia from the remaining Republican territories (see Figure A-1, bottom left panel). After this decisive Nationalist victory, the war was all but lost for the Republican side. The Aragon Front had lasted for almost two years.

2.3. Political Repression

Political violence was particularly widespread during the war and its aftermath, representing roughly 25% of all the war-related deaths. The number of people killed during the Spanish Civil War can only be roughly estimated, but Table 1 summarizes the consensus figures. Preston [2012] and Prada [2010] estimate that the so-called "Red Terror" exerted by the Republican side killed approximately 50,000 people. It was mostly targeted towards Catholic clergy members and religious people, as well as the nobility, industrialists and conservatives. From the Nationalist side, the so-called "White Terror" killed about 140,000 people.[7] Nationalist repression mostly targeted loyalists to the Second Spanish Republic and the Popular Front, but also included intellectuals, homosexuals, socialists, Basque and Catalan nationalists.[8]

A nationally representative survey conducted by the Spanish Sociological Research Center (CIS) in 2008 depicts the extent of the conflict's severity in general and the repression against civilians in particular. 52.4% of the respondents reported having at least one family member or close person victimized as a consequence of the Civil War. Among those, 25% were killed in combat or bombing, and the same percentage were either imprisoned, murdered, disappeared or sentenced to death. Table A-1 summarizes these findings and further decomposes the type of victimization.

The bulk of the repression against civilians from both sides took place during the war and was mostly concentrated during the second half of 1936 (Figure A-4, left panel).

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[7]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.* [2019]; Klor *et al.* [2020]).

[8]For instance, the poet Federico García Lorca, whose words we quote in the epigraph, was assassinated by a firing squad and buried in an unmarked mass grave on August 18, 1936. His remains have not yet been found at the time of writing.

During the initial stages of the war, victims were typically killed without a trial and buried in an unmarked mass grave. Military trials were instituted by Franco's regime in 1939 and political persecution continued throughout the dictatorship. Repression exerted by the Republican side was mainly revolutionary and anticlerical, and also less organized.

The political persecution used by the Nationalists was institutionalized and carefully planned to eliminate, in the words of coup director General Mola, "without scruple or hesitation those who do not think as we do" (Iribarren [1937]). To carry out the repression at this massive scale, Francoist authorities relied on informers and collaborators. Individuals were often compelled to inform against their neighbors not to raise suspicions (Vico [1998]). The largest share of the repression took place in small municipalities with less than 4,000 inhabitants, often mixing personal grievances with political causes (Arnabat Mata [2013]). We hypothesize that this violent repression might have generated a culture of mistrust that persisted in the long run (as in Nunn and Wantchekon [2011]; Lichter *et al.* [2020]).

2.4. *Mass Graves Exhumations*

Scholars distinguish different periods of mass graves' exhumations (Ríos and Etxeberria [2016]). The first exhumations happened already during the conflict and its immediate aftermath and correspond to victims of the Republican repression.[9] The second period corresponds to the exhumations of mass graves that were transferred to the Valley of the Fallen (*Valle de los Caídos*), a mausoleum built by Franco to honor the fallen during the war. The transfer of the mass graves from all around the country lasted from 1958 and 1983, and there are at least 33,847 individuals now buried in the mausoleum. Among them, there are war casualties and victims of political violence from both sides. Recent research based on historical archives estimates that around 2/3 correspond mostly to Nationalist soldiers and some civilian victims of the Republican repression, and 1/3 of the corpses belong to Republican soldiers, together with some civilian victims of the Nationalist violence (Etxeberria and Solé [2019]).

The last 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 the Francoist repression dug up their remains to provide them with a "proper burial". This process was entirely carried out by the families and had no state involvement. The last and largest impulse started after the exhumation in 2000 of a mass grave in Priaranza del Bierzo

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

(León), the first one involving forensic archaeological methodology. This impulse reached a peak around 2010, decreasing a few years later (Figure A-4, right panel). Law 52/2007, known as the Historical Memory Law, provided some subsidies and published a protocol for exhumations. However, the government did not take full responsibility for the research, location and identification of victims and instead established a principle of collaboration between public authorities and private citizens.[10] Judges are generally neither present at the exhumations nor initiate judicial proceedings arguing that Civil War crimes are subject to the statue of limitations or fall under the Amnesty Law of 1977.[11]

3.   Data

3.1.   Data on Conflict: Mass Graves in Spain and the Aragon Region

To measure the intensity of conflict, we use the information recently released by the Spanish Ministry of Justice on the mass graves related to the Civil War and Franco's dictatorship. The map of mass graves started after the aforementioned Historical Memory Law, which recognized and broadened the rights of those who suffered violence during the Civil War and the dictatorship. Regional governments and several civil entities contributed to the creation of this map by sending information to the central government.[12] The information collected by the Ministry of Justice contains the geo-referenced location of the mass graves and some basic details about the burial places. We have complemented and updated this initial information using several sources.[13]

For each mass grave, we know what type of intervention has been carried out (Figures A-2 and A-3). There are four categories: fully or partially exhumed, not intervened,

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[10]Article 11 states that "the public administrations, withing their jurisdiction, will facilitate for families that so request it the work or 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 to victims' associations.

[11]This law, which is still in force, institutionalized the "pact of forgetting" by guaranteeing impunity for those who participated in crimes during the Civil War and Francoist dictatorship, freed political prisoners, and allowed those exiled to return.

[12]Article 12.2 establishes that the administration is responsible of creating and making publicly available a map of the entire national territory showing the areas 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.

[13]In particular, we complemented the information on mass graves exhumed until 2015 with additional mass graves found on the map accessible at the Ministry of Justice's website that were not included in the initial dataset, as well as with the information provided by *Aranzadi*, a scientific society devoted to research activities on this matter. We also complemented the information that was missing in the initial dataset by adding the burial and exhumation date, information on the cause of death, and death toll. For this purpose, we consulted the detailed information on the exhumed mass grave provided on the website (accessible by clicking on each individual grave) as well as searches for individual mass graves.

missing, and transferred to the Valley of the Fallen (which corresponds to the second period of exhumations described above). Table A-2 reports the number of graves for each category and Table A-3 the estimated corpses. As of 2015, there were 2,458 mass graves that contained 68,950 individuals.

Focusing on exhumed mass graves, 81% of them were exhumed after 2000 (see Figure A-4, right panel). The cause of most deaths is execution by firing squads (63.13%), followed by violent death by other than a firing squad (13%) and reprisal in the rearguard (9%, Table A-4). Most of these graves are located outside cemeteries (62%), typically alongside roads (Table A-5). The bulk of these graves (64%) were buried in 1936 after the first outbreak of violence (see Figure A-4, left panel). These facts largely correspond to the "White Terror", i.e. violence exerted by Francoist troops against pro-Republican civilians. These civilian victims were typically killed without a trial and buried in an unmarked mass grave, not uncommonly next to the roads the troops were marching on.[14]

Mass graves which have not been yet intervened are concentrated around key battles and fronts. For instance, 75% of them are located within a distance of 25 km to the front-line of Aragon. By and large, this category of mass graves contain the remains of soldiers who died during military combat or in military hospitals. Since many Nationalists soldiers were exhumed and transferred to the Valley of the Fallen during Franco's dictatorship, it is reasonable to expect that most of the remaining corpses correspond to Republican soldiers. Finally, the Ministry of Justice categorizes missing mass graves as those for which even though there is historical evidence showing its existence, current circumstances of the terrain prevent their exhumation—for instance, if a road has been built covering the site. This category represents less than 10% of the total mass graves and close to 5% of the estimated death toll.

The region of Aragon has a state-of-the-art historical memory project, partly due to the fact that the battlefront of Aagon was one of the key struggles of the entire war. We take advantage of this fact and use very detailed historical information on the conflict, which *crucially* allows us to identify the perpetrator of the civilian repression. We focus on mass graves due to repression; there are a total of 398 mass graves classified as Nationalist repression, 238 as Republican repression and 114 as combat deaths.[15] This new feature allows us to examine the political dimension of the conflict.

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[14]The bulk of the first wave of exhumations conducted during the war and its immediate aftermath are not included in our dataset.

[15]A total of 229 mass graves have been exhumed in the region.

3.2. Data on Trust

Data on trust at the individual level comes from multiple cross-sectional surveys conducted by the Spanish Sociological Research Center (CIS, *Centro de Investigaciones Sociológicas*). We select all surveys conducted during 1998 and 2015 which contain information on generalized trust (N=38,287). 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).

These surveys also contain information on trust on different institutions, such as the military, the Civil Guard (*Guardia Civil* in Spanish), the Church, the Constitutional Court, the Regional Parliament and the Ombudsman. The data also has other socio-demographic information at the individual level. These surveys have been partially anonymized to include information at the district level (and at the municipal level for region of Aragon), which we use for our analyses.[16] Figure A-5 shows the average generalized trust at the district level for our sample (1998-2015).

3.3. 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, following Franco's death in 1975. Our main dataset consists of general elections for the national parliament (Congress) in 1977, 1979, 1982, 1986, 1989, 1993, 1996, 2000, 2004, 2008, 2011 and 2016.[18] We complement this data with municipal elections for 1987, 1991, 1995, 1999, 2003, 2007 and 2011; as well as with data for two referenda conducted in 1986 and 2005. Raw data is provided at the municipal level and we limit our analysis to the Aragon region (containing the provinces of Huesca, Zaragoza and Teruel) given the availability of detailed historical voting data. We thus complement the modern electoral data with historical voting records at the local level available for the Aragon region from Balcells [2011].

We classify the voting behavior as supporting right-wing or left-wing parties.[19] Addi-

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[16]Judicial districts, *partidos judiciales* or simply 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: `http://www.infoelectoral.mir.es/infoelectoral/min/`

[18]Spain passed its last Constitution in 1978 by which it became a a representative democratic monarchy.

[19]We follow the categorization available at `http://www.historiaelectoral.com/calcul.html` and complement some parties manually.

tionally, we classify political parties as being moderate or extreme regarding their ideology, and we code a variable for so-called populist parties (i.e., Podemos and Vox, which ran for the first time in the 2016 elections). For referenda we analyze the votes in favor or against and also compute the turnout rate. The 1986 referendum was about the continuation of Spain in the North Atlantic Treaty Organization (NATO). The 2005 referendum asked citizens whether they approved the Treaty establishing a European Constitution.

3.4. Control Variables and Additional Datasets

To construct our IV, we rely on historical road maps and military plans of attack for the war. For our RD, we digitize historical maps depicting the Aragon Front and information on municipalities that lied on each side and within the front-line based on Maldonado [2007]. To explore mechanisms of transmission, we rely on a survey conducted by the Spanish Sociological Research Center (CIS), on the Civil War and Franco's Dictatorship, conducted in 2008 (CIS 2760). We further explore mechanisms related to collective memory by using street-level data on Francoist and religious symbols–kindly shared by Oto-Peralías [2018]–as well as data on newsreels about the war by Aguilar [1996].[20]

Aside from the main variables described, we use an extensive set of controls. These include ruggedness, elevation, area, index of caloric yield of the soil and land coverage, average temperature and standard deviation, distance to river and to coast, and land cover. Additionally, we control for modern roads, railroads, Roman roads and distances to the regional and provincial capitals. We also include a set of individual level controls, contained in the surveys and detailed in the next section. Table A-6 reports the sources of these control and additional variables.

4. Empirical Strategy

4.1. OLS Analysis

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

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

where y is generalized trust of individual i who lives in district d in survey year y, x are

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[20]The street data is based from the *2001 Electoral Census Street Map*, which contains a total of 730,082 streets of which 701,346 are left after data cleaning.

corpses in mass graves (total or by category) located in district d divided by 1930 district population. 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 the municipality size). We also include district-level controls such as population in 1930 and during the survey year, ruggedness, area, index of caloric yield of the soil, average temperature and standard deviation, distance to river and to coast, and land cover. Lastly, we include region (Autonomous Community) and survey year fixed effects.[21] We use robust standard errors and cluster them at the regional level for robustness.[22] OLS results are presented in Section 6.1.

4.2. Instrumental Variables Strategy

To deal with the potential endogeneity of conflict, we employ an Instrumental Variable strategy in which we instrument the intensity of conflict by the distance to the path taken by the Nationalist troops on their way to Madrid. The objective of the rebels when planning the coup was to advance to Madrid and take command of the Republican government (see Figures A-6 and 2). Since there are different routes to get to Madrid, we use as instrument the distance to the route actually taken by the Francoist troops in their advance to Madrid during the first months of the war, conditioning on having a primary road historically (Figures 3 and 4). As can be seen in the second figure, where troops passed there are more exhumed mass graves.

Since the routes taken might not be exogenous—i.e., they might have been chosen simply because Nationalists expected more support along those towns and villages—we further condition on distance to the initial military plans of attack (Figure 2). The identifying assumption is that, conditional on the initial plans of attack, the actual routes taken by the Francoist troops are allegedly random (cf. Feigenbaum *et al.* [2018]; Alix-Garcia *et al.* [2020]). In essence, our strategy can be understood as a "road not taken" identification strategy. Deviations from these plans due to unforeseen circumstances allow us to infer the causal impact of conflict on trust (as in Card and Dahl [2011]). We provide supporting historical and empirical evidence next.

General Mola, the director of the coup, had planned a centripetal movement of the troops from Valencia, Zaragoza, Burgos, Pamplona, Valladolid and the south of Spain towards the capital, Madrid. These military columns were supposed to march swiftly using

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[21]There are four different regional entities in Spain (from smaller to larger): municipalities, districts, provinces and Autonomous Communities.

[22]We also use (smaller) district clusters in the regressions for the Aragon region.

the main roads, which made geographic and tactical sense. He did not expect the Madrid and Barcelona garrison to support the coup, and was skeptical about Seville, Basque Country and Asturias (Martínez Reverte [2009]). General Goded, was unsuccessful in the insurrection of Barcelona, while contrary to Mola's expectations, the coup failed in Valencia, due the flaking of General González Carrasco, and was successful in Seville.[23]

Given these circumstances, General Franco, who was in charge of bringing the troops from North Africa to Madrid, took an unanticipated decision: instead of going through the Despeñaperros route, he took the only available alternative route through Badajoz. His fateful decision was motivated by the fact that since in Valencia the insurrection had failed, the troops would be too vulnerable in the narrow Despeñaperros passage. The Badajoz route offered the additional advantage of being close to the Portuguese border, whose dictatorship was willing to support the military rebels. This military tactical decision constitutes the main deviation from the initial military plan of attack.

Empirically, we can see in Figure A-7 that there is an insignificant relationship between the deviations from the Mola Plan (in kilometers) and the generalized trust variable (left panel). The same is true when plotting deviations against population in 1930 (right panel).[24] Section 6.2 contains the IV results.

4.3. Regression Discontinuity Design

As an alternative identification strategy, we employ a Regression Discontinuity Design along the Aragon Front. By zooming into this decisive area of the war, we gain in terms of data quality, though we sacrifice external validity. Crucially, we are able to distinguish which side (Nationalist or Republican) was responsible for the violence perpetrated. As was described in the Historical Background, the Aragon Front divided this region into two warring factions, following an almost vertical line (Figure 1). Thus, we compare outcomes to the west (Nationalist) and east (Republican) side of the line.

In particular, we run an RDD specification of the form

$$y_{ip} = \alpha + \beta d_{ip} + \delta f(lat, lon)_{ip} + \gamma_p + \epsilon_{ip} \tag{2}$$

where y is the outcome of interest (political repression, level of trust and voting results) for municipality i in province p. The running variable of interest is distance to the front d, in kilometers, which we calculate from the centroid of each municipality.[25] In our

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[23]Valencia actually became the Republican capital later on.

[24]We thank Nathan Nunn for suggesting such empirical tests.

[25]Specifically, we calculate the nearest distance from the centroid of each municipality in Aragon to the

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convention, distance to the front is positive for the Nationalist, and negative for the Republican side. Though it was argued before that the constitution of the front was largely haphazard, to be conservative, we drop municipalities located at the front and run robustness tests including them. We also include a function of latitude and longitude as a control. This enters linearly in the baseline specification and quadratically for robustness (no higher order terms are included, following Gelman and Imbens [2019]). As is standard, we also show that the two sides are balanced in terms of potentially relevant covariates. We also include fixed effects at the province level γ, to account for time invariant differences between the provinces of Huesca, Teruel and Zaragoza.[26]

In order to actually estimate this equation, we apply the optimal bandwidth selection algorithm proposed by Calonico *et al.* [2014], where the running variable is the distance to the front. We report the non-parametric results graphically with the corresponding local linear coefficients, along with their standard errors. Since we drop municipalities at the front-line, in effect, we estimate a Donut RD, as in Barreca *et al.* [2011]. In terms of actual outcomes, we first examine whether the front was binding, i.e. whether political repression was higher in the Nationalist and the Republican sides, respectively. We then look at indicators of trust, both generalized and in particular institutions. To exploit the set-up more fully, we analyze at the universe of voting results for congressional and municipal races, as described in Section 4.3. We present the empirical RDD results in Section 6.3, and the OLS and IV results next.

5. Empirical Results

5.1. OLS Results

We begin the empirical analysis by examining the relationship between our most general measure of historical conflict on generalized trust in modern times. Namely, we take the total number of corpses in all mass graves, following Equation 1. The result of this first empirical exercise can be seen in Table 2, Panel A. We observe a slightly negative coefficient in Column 1, without controls, and ultimately insignificant ones including them, in Columns 2 to 4. These non-conclusive results could be driven by endogeneity, measurement error, or heterogeneous effects for different types of mass graves.

When we focus on exhumed mass graves, in Panel B, results are negative and statis-

centroid of one of the 47 municipalities that constitute the front-line. When sub-municipality information is available (as in the case of geo-located mass graves and localities) we use those coordinates instead.

[26]Technically, this is equivalent in this setting as having line-segment fixed effects across the provincial borders.

tically significant across the board, with and without different sets of controls (Columns 1 to 4). 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 case, exhumed mass graves are proxying for political violence against civilians. Results for non-exhumed mass graves are reported in Table A-7 and reveal first a slightly negative and then a non-significant relationship with generalized trust. This is sensible as many of these mass graves are from combat deaths, which often involved soldiers from two different localities falling in a third, hindering any local transmission. Our results are also consistent with an informational story, whereby violence against civilians shifts people's priors about soldiers, more than regular combat deaths.[27] Altogether, it appears from the OLS results that political violence against civilians is associated with the unraveling of trust in the long run.

A related question is whether the results observed are due to the exhumation process itself. To investigate this possibility we look at a subset of municipalities for which we can obtain trust measures at different points in time. We construct an indicator variable that takes the value 1 for the post-exhumation years and zero before the first exhumation occurs. As in a differences-in-differences setting, we include district fixed effects and look at how generalized trust changes within the district once the mass grave is opened and exhumed.[28] As shown in Table 3, exhumations themselves do not seem to be changing trust levels, which appear (positive and) 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 confrontation, in Column 2. We obtain the same non-result when we restrict the sample to districts where an exhumation was carried out, in Columns 3 and 4. These findings suggest that more than the exhumation intervention itself, exhumed mass graves are capturing the prevalence of previous historical conflict, especially with respect to violence against civilians. The reassuring findings point towards the stability of the trust measure and hold promise for potential future exhumation efforts.

To further test the potential endogeneity of the exhumation process, we return to the history of mass graves exhumations. We focus on Priaranza del Bierzo, which was the first mass grave exhumed with modern techniques, in year 2000. We find that the proximity to this district has no impact on our measure of generalized trust, in Figure A-8. As before, it seems that the impact of the war on trust is not working through the exhumation processes themselves, which reveal insignificant results. Exhumed mass graves constitute

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[27] We thank Luigi Guiso for offering this interpretation.
[28] We are confined here to exhumations conducted after 1998, when our trust data starts.

instead important markers of historical political violence against civilians, which seem to have had long term consequences. We focus on other potential identification issues next.

5.2. *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. More realistically, exhumation processes aside, there could be other unobservable factors, such as class struggle, correlated with conflict and trust, which we are not able to control for directly. Because of these reasons, we employ instead an Instrumental Variables identification strategy, based on military plans of attack, the historical highway network, and the actual marching of military troops, as described in the Section 5.2.

Table 4, Panel A reports the first stage regression results, for distance to the path taken by the troops marching to Madrid, on our measure of exhumed mass graves. We exclude Madrid from these regressions. The farther away a district is from the takeover of Madrid, the less exhumed mass graves it has, in Column 1. This also holds when restricting the sample to districts with primary roads in Column 2. The relationship is still negatively significant, though decreases in magnitude, when controlling for the Mola Plan both in the full sample (Column 3) and the restricted sample (Column 4), our preferred specifications. The first stage is robust in all cases. We think that our instrument is capturing violence against civilians during the beginning of the the war, as described before, and test empirically later.

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 in the full and restricted samples, in Columns 1 and 2, and after controlling for the Mola plan in Columns 3 and 4. From Column 3, a one standard deviation increase in the corpses in exhumed mass graves is associated with a 0.37 standard deviation decrease in trust. These numbers are in line with the estimates in Nunn and Wantchekon [2011] and Rohner *et al.* [2013b]. Our findings also aligned with those found in the political science literature for the Chinese Cultural Revolution and the Chinese Famine (Booth *et al.* [2018]; Chen and Yang [2015]; Wang [2019]). Though not exactly comparable to the OLS results (we present a restricted OLS model in the Appendix Table A-8), the IV estimates are larger in magnitude than before. This might be due to the fact that the 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]).[29] In the present context, even though the war was widespread all over Spain, areas where troops passed, were disproportionately more affected.

We think that our instrument is particularly well suited to capture violence against civilians, which largely corresponds to bodies in exhumed mass graves. This is due to the swift nature of the taking of Madrid campaign, which produced most of the extrajudicial killings. Indeed, the crucial months of July to October of 1936, account for more than half of the graves in our sample (Figure A-4, left panel). Still, we explore the validity of our instrument for other mass graves, for which there is a weaker correspondence to civilian violence. We report these results in the Appendix, in Tables A-9 and A-10, for completeness. The first stage on all mass graves in Table A-9, Panel A is still negative and significant, though weaker than before, which is understandable. Accordingly, the second stage results, in Panel B, are also negatively significant, but smaller in magnitude. Lastly, we look at those mass graves transferred by Franco, which contain a mix of soldier and civilian victims from both warring sides. There, again, the first stage is somewhat weaker than for Exhumed mass graves (Table A-10, Panel A) and the second stage results are about half as large (Table A-10, Panel B). These additional results suggest that our instrument is better suited for capturing exhumed mass graves, as intended.

Table A-11 in the Appendix, presents further robustness checks. Column 1 looks at the effect in the South only, which captures the main deviations from the initial military plans, as described in Section 5.2. The coefficient is still negative and marginally significant. We also look at the effect measuring mass graves using other metrics. Both the coefficients for number of exhumed mass graves (as opposed to number of corpses) and an indicator for having an exhumed mass grave (extensive margin) are negative and strongly significant, in Columns 2 and 3, respectively. Lastly, we cluster the standard errors at the regional level, the largest geographic area, which reduces the significance to 10%.

We further investigate the effect on trust by looking at trust on institutions associated with the Civil War to a larger or lesser degree. We find, in Table 5, that the instrumented effect of exhumed mass graves is negative and significant on those institutions most closely associated with the conflict, such as the Army (Column 1) and the Civil Guard (Column 2). The coefficient for trust on the Church is of similar magnitude, but appears insignificant, in Column 3. Conversely, the effect on trust on institutions that are less associated with the war, and were established after the Democratic Transition of 1975, is negligible and statistically insignificant. This holds for the Constitutional Court,

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

the Ombudsman and Parliament, in Columns 4 to 6.[30] Altogether, the IV results point towards the detrimental effect of exhumed massed graves on generalized trust, and on institutions *more* associated with the struggle. We examine this interaction with political institutions in the next section.

5.3. Regression Discontinuity Results

To further grasp the long-term consequences of the Spanish Civil War, we continue the analysis by zooming into the region of Aragon (Figure A-9). The battlefront of Aragon was one of the key and most devastating struggles of the entire war. We focus both on trust measures, as before, as well as on political behavior. Though the sample is smaller, sacrificing external validity, this scenario offers several advantages. We use very detailed information on the mass graves in this territory that, *crucially* includes the perpetrator of the attacks, i.e., we know whether the repression was caused by the Nationalist or the Republican side. This new feature allows us to explore the political dimension of the conflict. Politically, the region is also interesting, working as a "swing" state, similar to Ohio in the United States, providing potentially relevant variation for the voting analysis.

For identification purposes, we use the stark division of the region between fronts dominated by the Nationalist and Republican armies, as described before (see Figure 1). There are a total of 47 municipalities at the front, 334 on the Nationalist and 349 on the Republican side, an almost even split. 57% of the municipalities have a mass grave. Econometrically, we employ a Regression Discontinuity Design. We conduct both a coarse partition of the state into the two warring fields as well as a more granular specification, using distance to the front as the running variable, following Calonico *et al.* [2014]. We follow the empirical specification in Equation 2. To start, we report in Figure A-10 manipulation tests including municipalities at the front-line (left panel) and excluding them (right panel), which show no apparent discontinuities.

We then check whether the front-line was binding. To this end we run a regression discontinuity specification for Republican and Nationalist repression on distance, as described in Section 5.3. Results can be found in Figure 5, at the left and the right, respectively. We find that where Republican troops were stationed, Republican repression is higher and the same holds true for Nationalist troops and Nationalist repression. In terms of magnitudes Republican repression jumps from almost zero to an average of 0.5,

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[30]Similar results for transferred mass graves are reported for completeness in the Appendix (Table A-12). Again, we find similar patterns, less trust on institutions associated with the Spanish Civil War, and no impact on those established later, after the Democratic Transition.

while Nationalist repression from 0.15 to around 0.8. The actual estimated magnitudes are -.75 and .45, and are significant at the 1% and 10% levels, respectively. Results are similar when we use instead measures of repression at the intensive margin, with number of mass graves (Figure A-11) and executions (Figure A-12). Overall, it appears that the front-line was indeed binding, with respect to these repression measures.

As is standard in RD designs, we also show balancedness with respect to an extensive set of covariates in Figure 6. Here we include pure geographic controls such as ruggedness, elevation, land coverage, municipal land area, and a caloric index based on the agricultural suitability of crops (Galor and Özak [2016]). We also include different sets of distances such as to the capital city of Zaragoza, to any of the provincial capitals (of Huesca, Teruel and Zaragoza), to the coast or other water bodies. Similarly, we use distance to Roman roads and a measure of modern road and railroad density. Essentially all of these measures appear smooth at the border.[31]

We proceed the RD analysis by looking at trust, as before. We use both generalized trust measures as well as in different institutions associated with the conflict, to a greater or lesser degree. The small number of observations is not suitable for a non-parametric Regression Discontinuity analysis using distance, which we conduct later with the voting data.[32] We then conduct a coarse RD analysis, where we code dummies for being on the Republican (or Nationalist) sides. Our baseline specification excludes municipalities at the front-line, but results are robust to including them.

Results using this coding can be seen in Table 6, for the Republican side (those for the Nationalist side are mirror images, so we omit them). We do not find, in Column 1, a significant effect on generalized trust for either side. This might be due to the high *level* of repression on both sides. We then decompose the trust results into those for different institutions associated or not with the war. Trust in the Army, the Civil Guard and the Church are all significantly lower on the Republican side (higher on the Nationalist one), and the differences are sizable. Trust in the Constitutional Court, the Ombudsman and the National Parliament are higher, significantly so in the last two cases, on the Republican side (and lower on the Nationalist side). These findings, for the different factions of the conflict, are consistent with those decomposing trust in Table 5.

We further explore the potential legacy of the war, by looking at *political* outcomes. We use disaggregated data on voting for the democratic period, from 1977-2016. Technically,

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

[32]Still, for completeness, we report non-parametric plots in Figure A-13. For the regression analysis, we pool all available observations at the district and municipality levels, and cluster the standard errors at the first (broader) level.

we need a large number of observations to have enough power to run non-parametric RDDs, which is not the case with the previous trust data. The idea is to see whether the cultural differences reported thus far have also translated into relevant political behavior. We report first the results for congressional elections, where we coded up parties as "left" or "right". Figure 7 summarizes the results. We see in the left 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 panel. The results are not only statistically significant, but also substantial in terms of magnitude, in the order of 10% of the vote share. In terms of turnout, we observe slightly more participation on the former Nationalist side of the border, by about 3% (in Figure A-14, left panel). We see the electoral results as the byproduct of a bundled occupation treatment, but we defer a more detailed discussion, after completing the electoral analysis.

We report the actual coefficients in Table 7. In our baseline specification, which excludes municipalities at the front, we find a negative coefficient for voting for the left of 0.07 and a positive of 0.08 for the right, in Column 1. The magnitudes are somewhat larger when we include all municipalities in Column 2, slightly exceeding 10%. They maintain their size and significance levels when we include latitude and longitude in Column 3, and province fixed effects in Column 4. Column 5 reports the coefficients for the full specification. Table A-13 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 year fixed effects, in Column 3, and taking municipal averages throughout the period, in Column 4.[33] The results maintain their sign, significance and approximate magnitudes throughout.

We further decompose the voting results, into extreme and moderate voting. To this end, we code the political ideology of parties as extreme left or right: largely Communist and Fascist. We do not find large or significant discontinuities for voting for extreme parties, in Figure A-15, Panels A and B.[34] For moderate parties, we code votes for the right and left minus the extremes. These largely correspond to votes for the PSOE (*Partido Socialista Obrero Español*) on the moderate left, and PP (*Partido Popular*) on the moderate right, the two main traditional political parties in Spain.[35] The results for these parties are more marked. More people support the moderate left in the former Republican side, and the moderate right in the former Nationalist side (Figure 8, Panels

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[33]Results are robust to reducing the sample to less than 50 kilometers from the front, not shown.

[34]We do not find significant differences either in voting for Populist parties (Podemos and VOX) or the Aragonese regionalist party PAR (*Partido Aragonés*), in Figures A-16 and A-17, respectively.

[35]Other parties include UCD, CDS, UPyD, PACMA and Ciudadanos.

A and B, respectively). The differences are statistically significant at the 1% level and are in the order of 8% of the vote. These results contrast those of Fontana *et al.* [2018] for Italy, where results are concentrated on extreme parties, at the expense of centrist ones.

We run various empirical tests to examine 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 where 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 this historical election for left votes (Figure 9, left panel). The coefficient is *minus* 1.5 percentage points, very small, with a standard error of 7.762. We also find no discontinuities in the number of people associated to the CNT, a major anarcho-syndicalist (leftist) labor union (in the right panel).

We do not find discontinuities either for a measure of political competition or for previous conflict (Figure A-21) from Balcells [2011]. 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 right before and after the war. We observe no discontinuities at the threshold for these variables (Figure A-22). The same is true during the return to democracy in 1975, using the 1970 and the 1981 Censuses (Figure A-23). Overall, it does not seem that results are driven by such demographic or pre-existing political trends.

We extend the voting analysis to municipal level elections, available from 1987-2011, starting one decade later. The coding here is more complex, as there are now more political parties at this level, 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 previously occupied Republican territories and more for the "right" where Nationalist troops were stationed. The estimated coefficients are reported in Table A-14. They are as large as 24% of the vote, in the first specification, and oscillate between 12-20% in remaining ones. The differences in turnout are in the order of 3% and only significant marginally (Figure A-14, right panel). The significant results are concentrated for votes for the left, while votes for the right now appear positive, but insignificant, across all specifications.

To complete the electoral analysis, we examine the 1986 and 2005 referenda results. The first one for continuing in NATO and the second for approving the EU Constitution. We find no differences in the first one, either in terms of participation (Figure A-19, left panel and Table A-15, Column 1 on Panel A) or actual results (Figure A-20, left panel and Table A-15, Column 1 on Panel B). This is not surprising, since most parties campaigned in favor

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of continuing in NATO. Something similar occurs for the 2005 referendum, where both major parties, the PP and PSOE campaigned in favor of passing the EU Constitution. We obtain similar results when we combine both years, as expected. The referenda findings appear consistent with the previous ones for moderate parties.

The RD results for Aragon provide another way to see the long shadow of the Spanish Civil War. Notably, here they transcend trust measures to include actual political behavior. There might be in Spain a process of what Acharya *et al.* [2020] term "behavioral path dependence" for the US South. As in Fontana *et al.* [2018] we find long-lasting results, despite the different historical settings. In both cases, it appears that the "winning" side received more political support down the road.[36] The turnout results suggest that exit from the democratic process could be another a mechanism at play for the side that lost the war historically (as in Iwanowsky and Madestam [2017]). Results might also be driven by political propaganda (as in to Gagliarducci *et al.* [2020]), explored next. They are in line with those for Stalin's credible political repression in Crimea and Ukraine (Lupu and Peisakhin [2017]; Rozenas *et al.* [2017]; Rozenas and Zhukov [2019]). Overall, the empirical results show the long-lasting (political and cultural) impact of civilian repression.

6. Mechanisms

6.1. Spanish Civil War Survey

To see whether the results for Aragon have validity for the rest of the country, we use a nationally representative survey on the Spanish Civil War, conducted by the CIS. We look at political participation, to see if indeed the war changed the way people interact with the political system. Though results are not well-identified econometrically, this seems to be the case in the OLS specifications. In Table 8 we see that people more affected by the conflict (proxied by exhumed mass graves) have less contact with authorities, are less likely to participate in a strike, attend a demonstration or sign a petition (in Columns 1 to 4, respectively). Results are consistent with the exit interpretation described above, and are at odds with those for Africa (cf. Bellows and Miguel [2009]).

Using the same specialized survey on the Civil War, we explore collective memory as a transmission mechanism. The survey asks participants specific questions on their view about the war and their recollection of it. It appears, from the results in Table 9 that people that live in places that experienced more repression have distinct opinions, behavior

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

and recollection about this important historical event. They talk less about it (in Column 1) and they think that this event generated division (Column 2). Additionally, they do not think that the memory of the war is alive among Spaniards (Column 3) and, lastly, they think that mass graves should be left alone (Column 4).

6.2. Francoist Streets

Motivated by these exploratory findings, we dig deeper into collective memory as a potential mechanism of transmission. To this end, we use data on street names for the whole of Spain.[37] This data provides a highly disaggregated measure of culture. The idea here is that the naming of streets contains relevant cultural information, as described more formally in Rose-Redwood *et al.* [2008]. For instance, religious sounding streets highly correlate with religiosity in Spain at the province level (Oto-Peralías [2018]). What the data allows, is to go beyond this existing level of disaggregation (50 observations) to generate relevant variation for the more than 8,000 municipalities in Spain.

For our purposes, we mainly use data on streets with names associated with Franco. Different from other places in Europe, it is telling that there are still municipalities with streets that commemorate his dictatorship, well into the twenty-first century.[38] As of 2001, "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. These range from General Franco Street and Square, names of other famous generals such as Mola and Yagüe, Falangist movements, and overtly fascist slogans.

In our analysis, we employ two measures: the total number of Francoist streets and the same measure divided over the total number of streets for a given municipality, multiplied by a 100. We plot non-parametric estimates (using a kernel-weighted local polynomial regression) of these measures against distance to the nearest exhumed mass grave, our preferred proxy for conflict. The results in Figure 10 are apparent. The farther away a municipality is from an exhumed mass grave, our preferred proxy for conflict, the lower the number of Francoist streets. This is true both in absolute (left panel) and relative terms (right panel).[39] Overall, there are more remaining Francoist streets in areas more affected by the war, suggesting a differential pattern of remembrance of this historical

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

[38]The permanence of these streets remains a contentious issue in Spain today, and even a matter of judicial litigation.

[39]Results also hold at the extensive margin, when using instead a dummy for the existence of a Francoist street, presented in Figure A-24, left panel.

event. Interestingly, we do not find the same pattern for an indicator of religiosity using this same street-level data, plotted in Figure A-24, right panel. The timing goes from the conflict to the naming of streets, though we cannot make further causal statements in this set-up.

We complete the analysis for the state of Aragon, using a coarse regression discontinuity design, as for the trust variables in Section 6.3. As before, we exclude municipalities at the front, so we only report coefficients for one of the sides. It appears that there are significantly more Francoist streets on the Nationalist side in Table 10. This holds true for the total number of Francoist streets in Column 1, as well as 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 streets, and we find no effect there either (Column 4). The same is true for the total number of streets, in Column 5. We do not find any significant results for municipalities at the front, not shown.[40] The results for Aragon are consistent with those for the whole country, and now show more streets commemorating the winning side on the former Nationalist block.

6.3. No-Do Newsreels about the War

Streets were not the only way in which Spaniards were constantly reminded about the war. For forty years they were blasted with political propaganda in the cinemas. The No-Do (short for *Noticiarios y Documentales* or "News and Documentaries") aired from 1942 until 1981, and was shown compulsorily before every movie. Following Aguilar [2008], we show that this Francoist production depicted numerous news about the Spanish Civil War, both in total and relative terms (in Figure A-25). War in this medium content peaked on the 25th anniversary of the conflict and was present up until the Democratic Transition in 1975.

Overall, our results on mechanisms suggest that collective memory is a potentially relevant channel through which the aftereffects of conflict are perpetuated. The government—through the naming of streets and political newsreels—constantly reminded the civic population about an important historical event. In this case, the memory about the war is slanted towards the winning (Nationalist) side of the struggle. As such, the findings can also be interpreted as a type of sustained political propaganda. Our findings resonate with the theoretical predictions about collective memory outlined by Dessi [2008] and speak to the literature on salience (Bordalo *et al.* [2012]). They are also consistent with the em-

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[40]Results are robust to including municipalities at the front, not reported.

pirical findings of Ochsner and Roesel [2017] for siege of Vienna and Williams [2019] for Confederate streets in the US South. The naming patterns of Spanish streets provide an interesting set-up to study important questions of collective memory and cultural transmission (as in Bisin and Verdier [2001]). Overall, collective memory provides a potential reinforcing mechanism for the baseline cultural and political results.

7. Conclusions

Our results show that the type of victimization matters, when it comes to the relationship between historical conflict and trust formation. We find no significant effects for our measure of total conflict on generalized trust. However, the effects are negative and sizable when we look at exhumed mass graves, which proxy for political violence against civilians. We also find negative effects on trust in institutions more associated with the Civil War than on those created after the Democratic Transition. The results are present both in the OLS and IV estimations—using military plans of attack and deviations from them— suggesting a more causal interpretation of the effect of conflict in creating a long-lasting culture of mistrust. We do not find that exhumations themselves have any (negative) effect on trust. Political violence against civilians can be reinterpreted then as a driver of mistrust, along with other geographic and historical determinants, espoused in the literature.

We further examine whether the self-reported survey results translate into more relevant political behavior. We find this to be the case indeed, for the region of Aragon, where we employ a RDD along the historical front-line. Areas formerly occupied by the Republican side vote significantly more for the center-left today, while those where Nationalist troops were stationed, do so for the (moderate) right. We find no significant results for extreme, populist or regionalist parties. We understand the historical occupation as a bundled treatment, suggesting a potential avenue for future research, aimed at disentangling its different components: repression, propaganda and coexistence with the soldiers. In the country as a whole, people seem to participate less politically in places more affected by political repression, reflecting another facet of erosion of civic capital, broadly understood.

Lastly, our results point towards collective memory of the Spanish Civil War as a mechanism of transmission. It is not only the war itself, but also how people portray and think about this historical event, which matters in the long run, along with intervening actions from relevant actors. Namely, the government, through the naming of streets and mass media, was able to promote a particular narrative of the conflict, in this case

through the lens of the winning (Nationalist) side. These actions feed back into citizen's perceptions of the historical confrontation. That such collective memory mechanisms matter calls for a more balanced reconstruction of the historical events. More broadly interpreted, our results suggest the salience of political propaganda.

Overall, we find that the Spanish Civil War had significant cultural and political aftereffects, generations after its official end in 1939. The persistent nature of the findings suggest the existence of inter-generational mechanisms of transmission, as the majority of those involved in the struggle are no longer alive. The enduring results are surprising for an advanced Western democracy, and expand our understanding of the multifaceted impact of conflict in times both present and past.

References

ACEMOGLU, D., CANTONI, D., JOHNSON, S. and ROBINSON, J. A. (2011). The Consequences of Radical Reform: The French Revolution. *American Economic Review*, **101** (7), 3286–3307.

— and WOLITZKY, A. (2014). Cycles of Conflict: An Economic Model. *American Economic Review*, **104** (4), 1350–67.

ACHARYA, A., BLACKWELL, M. and SEN, M. (2020). *Deep Roots*, vol. 6. Princeton University Press.

AGUILAR, P. (1996). Memoria y Olvido de la Guerra Civil Española.

— (2008). Políticas de la Memoria y Memorias de la Política.

ALACEVICH, C. and ZEJCIROVIC, D. (2020). Does Violence Against Civilians Depress Voter Turnout? Evidence from Bosnia and Herzegovina. *Journal of Comparative Economics*.

ALESINA, A. and LA FERRARA, E. (2002). Who Trusts Others? *Journal of Public Economics*, **85** (2), 207–234.

ALGAN, Y. and CAHUC, P. (2010). Inherited Trust and Growth. *American Economic Review*, **100** (5), 2060–2092.

ALIX-GARCIA, J., SCHECHTER, L., VALENCIA CAICEDO, F. and ZHU, S. J. (2020). Country of Women? Repercussions of the Triple Alliance War in Paraguay.

ARBATLI, C. E., ASHRAF, Q. H., GALOR, O. and KLEMP, M. (2020). Diversity and Conflict. *Econometrica*, **88** (2), 727–797.

ARNABAT MATA, R. (2013). La Represión: el ADN del Franquismo Español. *Cuadernos de Historia (Santiago)*, (39), 33–59.

BALCELLS, L. (2011). Continuation of Politics by Two Means: Direct and Indirect Violence in Civil War. *Journal of Conflict Resolution*, **55** (3), 397–422.

— (2012). The Consequences of Victimization on Political Identities: Evidence from Spain. *Politics & Society*, **40** (3), 311–347.

BARRECA, A. I., GULDI, M., LINDO, J. M. and WADDELL, G. R. (2011). Saving Babies? Revisiting the Effect of Very Low Birth Weight Classification. *The Quarterly Journal of Economics*, **126** (4), 2117–2123.

BAUER, M., BLATTMAN, C., CHYTILOVÁ, J., HENRICH, J., MIGUEL, E. and MITTS, T. (2016). Can War Foster Cooperation? *Journal of Economic Perspectives*, **30** (3), 249–74.

BAUTISTA, M. A., GONZÁLEZ, F., MARTINEZ, L. R., MUNOZ, P. and PREM, M. (2019). The Geography of Dictatorship and Support for Democracy. *University of Chicago, Becker Friedman Institute for Economics Working Paper*, (2019-105).

BECKER, S. O. (2016). Using Instrumental Variables to Establish Causality. *IZA World of Labor*, (250).

—, BOECKH, K., HAINZ, C. and WOESSMANN, L. (2016). The Empire is Dead, Long Live the Empire! Long-Run Persistence of Trust and Corruption in the Bureaucracy. *The Economic Journal*, **126** (590), 40–47.

BEEVOR, A. (1982). *The Spanish Civil War*. Penguin Books.

— (2012). *The Battle for Spain: The Spanish Civil War 1936-1939*. Hachette UK.

BELLOWS, J. and MIGUEL, E. (2009). War and Local Collective Action in Sierra Leone. *Journal of Public Economics*, **93** (11-12), 1144–1157.

BESLEY, T. (2019). State Capacity, Reciprocity, and the Social Contract.

— and REYNAL-QUEROL, M. (2014). The Legacy of Historical Conflict: Evidence from Africa. *American Political Science Review*, **108** (2), 319–336.

BISIN, A. and VERDIER, T. (2001). The Economics of Cultural Transmission and the Dynamics of Preferences. *Journal of Economic Theory*, **97** (2), 298–319.

BLATTMAN, C. (2009). From Violence to Voting: War and Political Participation in Uganda. *American Political Science Review*, **103** (2), 231–247.

— and MIGUEL, E. (2010). Civil War. *Journal of Economic Literature*, **48** (1), 3–57.

BOOTH, A. L., FAN, E., MENG, X. and ZHANG, D. (2018). The Intergenerational Behavioural Consequences of a Socio-Political Upheaval.

BORDALO, P., GENNAIOLI, N. and SHLEIFER, A. (2012). Salience Theory of Choice under Risk. *The Quarterly Journal of Economics*, **127** (3), 1243–1285.

BUGGLE, J. and DURANTE, R. (2017). Climate Risk, Cooperation, and the Co-Evolution of Culture and Institutions.

CALONICO, S., CATTANEO, M. D. and TITIUNIK, R. (2014). Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs. *Econometrica*, **82** (6), 2295–2326.

CARD, D. and DAHL, G. B. (2011). Family Violence and Football: The Effect of Unexpected Emotional Cues on Violent Behavior. *The Quarterly Journal of Economics*, **126** (1), 103–143.

CASSAR, A., GROSJEAN, P. and WHITT, S. (2013). Legacies of Violence: Trust and Market Development. *Journal of Economic Growth*, **18** (3), 285–318.

CATTANEO, M. D., JANSSON, M. and MA, X. (2019). Simple Local Polynomial Density Estimators. *Journal of the American Statistical Association*, pp. 1–7.

CHEN, Y. and YANG, D. (2015). Historical Traumas and the Roots of Political Distrust: Political Inference from the Great Chinese Famine. *Available at SSRN 2652587*.

CHIOVELLI, G., MICHALOPOULOS, S. and PAPAIOANNOU, E. (2018). *Landmines and Spatial Development*. Tech. rep., National Bureau of Economic Research.

COLL-HURTADO, A. (2012). Atlas de la Guerra Civil Española: La Sublevación. *Investigaciones Geográficas*, (79), 150–152.

COLLIER, P. *et al.* (2003). *Breaking the Conflict Trap: Civil War and Development Policy*. World Bank Publications.

DAVIS, D. R. and WEINSTEIN, D. E. (2002). Bones, Bombs, and Break Points: The Geography of Economic Activity. *American Economic Review*, **92** (5), 1269–1289.

DELL, M. (2012). Path Dependence in Development: Evidence from the Mexican Revolution. *Harvard University, mimeograph*.

— and QUERUBIN, P. (2018). Nation Building through Foreign Intervention: Evidence from Discontinuities in Military Strategies. *The Quarterly Journal of Economics*, **133** (2), 701–764.

DESSI, R. (2008). Collective Memory, Cultural Transmission, and Investments. *American Economic Review*, **98** (1), 534–60.

DINCECCO, M. and PRADO, M. (2012). Warfare, Fiscal Capacity, and Performance. *Journal of Economic Growth*, **17** (3), 171–203.

DUEÑAS, O. and SOLÉ, Q. (2014). El Juez Josep Maria Bertran de Quintana (1884-1960): Compromiso Político y Cementerios Clandestinos. *Hispania*, **74** (246), 151–176.

ETXEBERRIA, F. and SOLÉ, Q. (2019). Fosas Comunes de la Guerra Civil en el Siglo XXI: Antecedentes, Interdisciplinariedad y Legislación. *Historia Contemporánea, 2019, vol. 60, p. 401-438.*

FEARON, J. D. and LAITIN, D. D. (2003). Ethnicity, Insurgency, and Civil War. *American Political Science Review*, **97** (1), 75–90.

FEIGENBAUM, J., LEE, J. and MEZZANOTTI, F. (2018). Capital Destruction and Economic Growth: The Effects of Sherman's March, 1850-1920. *NBER Working Paper*, (w25392).

FONTANA, N., NANNICINI, T. and TABELLINI, G. (2018). Historical Roots of Political Extremism: The Effects of Nazi Occupation of Italy. *Available at SSRN 3091588*.

GAGLIARDUCCI, S., ONORATO, M. G., SOBBRIO, F. and TABELLINI, G. (2020). War of the Waves: Radio and Resistance during World War II. *American Economic Journal: Applied Economics*.

GALOR, O. and ÖZAK, Ö. (2016). The Agricultural Origins of Time Preference. *American Economic Review*, **106** (10), 3064–3103.

GELMAN, A. and IMBENS, G. (2019). Why High-Order Polynomials Should Not Be Used in Regression Discontinuity Designs. *Journal of Business & Economic Statistics*, **37** (3), 447–456.

GREENSTONE, M., HORNBECK, R. and MORETTI, E. (2010). Identifying Agglomeration Spillovers: Evidence from Winners and Losers of Large Plant Openings. *Journal of Political Economy*, **118** (3), 536–598.

GROSJEAN, P. (2014). Conflict and Social and Political Preferences: Evidence from World War II and Civil Conflict in 35 European Countries. *Comparative Economic Studies*, **56** (3), 424–451.

GUISO, L., SAPIENZA, P. and ZINGALES, L. (2016). Long-Term Persistence. *Journal of the European Economic Association*, **14** (6), 1401–1436.

IMBENS, G. W. and ANGRIST, J. D. (1994). Identification and Estimation of Local Average Treatment Effects. *Econometrica*, **62** (2), 467–475.

IRIBARREN, J. M. (1937). *Con el General Mola: Escenas y Aspectos Inéditos de la Guerra Civil*. Librería General.

Iwanowsky, M. and Madestam, A. (2017). *Surviving the Killing Fields: The Cultural and Political Heritage of the Khmer Rouge.* Tech. rep., working paper.

Klor, E. F., Saiegh, S. M. and Satyanath, S. (2020). Cronyism in State Violence: Evidence from Labor Repression During Argentina's Last Dictatorship. *Journal of the European Economic Association.*

Knack, S. and Keefer, P. (1997). Does Social Capital Have an Economic Payoff? A Cross-country Investigation. *The Quarterly Journal of Economics*, **112** (4), 1251–1288.

La Parra-Pérez, Á. (2020). For a Fistful of Pesetas? The Political Economy of the Army in a Nonconsolidated Democracy: the Second Spanish Republic and Civil War (1931–9). *The Economic History Review*, **73** (2), 565–594.

La Porta, R., Lopez-de Silanes, F., Shleifer, A. and Vishny, R. W. (1997). Trust in Large Organizations. *American Economic Review*, **87** (2), 333–338.

Lichter, A., Löffler, M. and Siegloch, S. (2020). The Long-Term Costs of Government Surveillance: Insights from Stasi Spying in East Germany. *Journal of the European Economic Association.*

Lupu, N. and Peisakhin, L. (2017). The Legacy of Political Violence across Generations. *American Journal of Political Science*, **61** (4), 836–851.

Maldonado, J. M. (2007). *El Frente de Aragón: La Guerra Civil en Aragón (1936-1938).* Mira Editores.

Martínez Reverte, J. (2009). El Arte de Matar. Cómo se Hizo la Guerra Civil Española.

Michalopoulos, S. and Franck, R. (2018). Emigration during the French Revolution: Consequences in the Short and Longue Durée.

— and Papaioannou, E. (2016). The Long-Run Effects of the Scramble for Africa. *American Economic Review*, **106** (7), 1802–48.

Miguel, E. and Roland, G. (2011). The Long-Run Impact of Bombing Vietnam. *Journal of Development Economics*, **96** (1), 1–15.

—, Satyanath, S. and Sergenti, E. (2004). Economic Shocks and Civil Conflict: An Instrumental Variables Approach. *Journal of Political Economy*, **112** (4), 725–753.

Nunn, N. (2009). The Importance of History for Economic Development. *Annual Review of Economics*, **1** (1), 65–92.

— (2014). Historical Development. In *Handbook of Economic Growth*, vol. 2, Elsevier, pp. 347–402.

— (2020). The Historical Roots of Economic Development. *Science*, **367** (6485).

— and Puga, D. (2012). Ruggedness: The Blessing of Bad Geography in Africa. *Review of Economics and Statistics*, **94** (1), 20–36.

—, Qian, N. and Wen, J. (2018). *Distrust and Political Turnover.* Tech. rep., National Bureau of Economic Research.

— and Wantchekon, L. (2011). The Slave Trade and the Origins of Mistrust in Africa. *American Economic Review*, **101** (7), 3221–52.

Ochsner, C. and Roesel, F. (2017). Activated History - The Case of the Turkish Sieges of Vienna.

Oto-Peralías, D. (2015). The Long-Term Effects of Political Violence on Political Attitudes: Evidence from the Spanish Civil War. *Kyklos*, **68** (3), 412–442.

— (2018). What Do Street Names Tell Us? The 'City-Text' as Socio-Cultural Data.

Journal of Economic Geography, **18** (1), 187–211.

PRADA, J. (2010). La España Masacrada. La Represión Franquista de Guerra y Posguerra.

PRESTON, P. (1996). *A Concise History of the Spanish Civil War*. Fontana Press.

— (2007). *The Spanish Civil War: Reaction, Revolution and Revenge*. WW Norton & Company.

— (2012). *The Spanish Holocaust: Inquisition and Extermination in Twentieth-Century Spain*. WW Norton & Company.

PUELL, F. and HUERTA, J. A. (2007). Atlas de la Guerra Civil Española. Antecedentes, Operaciones y Secuelas Militares (1931-1945). *Síntesis, Madrid*.

PUTNAM, R. D., LEONARDI, R. and NANETTI, R. Y. (1994). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton University Press.

RAY, D. and ESTEBAN, J. (2017). Conflict and Development. *Annual Review of Economics*, **9**, 263–293.

RIAÑO, J. F. and VALENCIA, F. (2020). Collateral Damage: The Legacy of the Secret War in Laos. *University of British Columbia, mimeograph*.

RÍOS, L. and ETXEBERRIA, F. (2016). The Spanish Civil War Forensic Labyrinth. In *Legacies of Violence in Contemporary Spain*, Routledge, pp. 62–86.

RODON, T. (2018). The Scars of Violence and Repression on Founding Elections: Evidence from the Spanish Civil War.

ROHNER, D., THOENIG, M. and ZILIBOTTI, F. (2013a). Seeds of Distrust: Conflict in Uganda. *Journal of Economic Growth*, **18** (3), 217–252.

—, — and — (2013b). War Signals: A Theory of Trade, Trust, and Conflict. *Review of Economic Studies*, **80** (3), 1114–1147.

ROSE-REDWOOD, R., ALDERMAN, D. and AZARYAHU, M. (2008). Collective Memory and the Politics of Urban Space: An Introduction. *GeoJournal*, **73** (3), 161–164.

ROZENAS, A., SCHUTTE, S. and ZHUKOV, Y. (2017). The Political Legacy of Violence: The Long-Term Impact of Stalin's Repression in Ukraine. *The Journal of Politics*, **79** (4), 1147–1161.

— and ZHUKOV, Y. M. (2019). Mass Repression and Political Loyalty: Evidence from Stalin's 'Terror by Hunger'. *American Political Science Review*, **113** (2), 569–583.

SPOLAORE, E. and WACZIARG, R. (2013). How Deep Are the Roots of Economic Development? *Journal of Economic Literature*, **51** (2), 325–69.

TABELLINI, G. (2010). Culture and Institutions: Economic Development in the Regions of Europe. *Journal of the European Economic Association*, **8** (4), 677–716.

THOMAS, H. (2001). *The Spanish Civil War*. Random House Digital, Inc.

VICO, P. G. (1998). Ideología y Represión: La Causa General. *Revista de Estudios Políticos*, (101).

VOORS, M. J., NILLESEN, E. E., VERWIMP, P., BULTE, E. H., LENSINK, R. and VAN SOEST, D. P. (2012). Violent Conflict and Behavior: A Field Experiment in Burundi. *American Economic Review*, **102** (2), 941–64.

WANG, Y. (2019). The Political Legacy of Violence during China's Cultural Revolution. *British Journal of Political Science*, pp. 1–25.

WILLIAMS, J. (2019). *Confederate Streets and Black-white Labor Market Differentials*. Tech. rep., Working Paper.

Figures and Tables

FIGURE 1: *The Aragon Front*
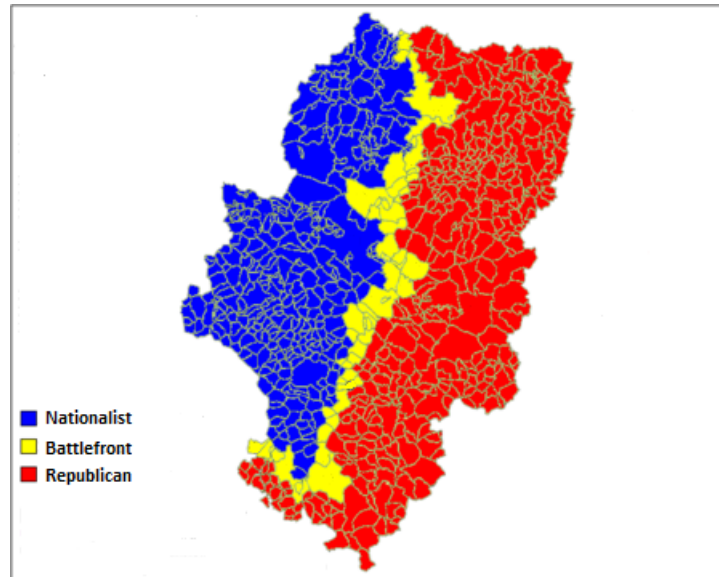
NOTES: Own elaboration from Maldonado [2007]. Municipalities depicted in blue, on the left side of the region, fell under the Nationalist side. Municipalities in red, on the right side, were on the Republican side. Municipalities in yellow, in the middle, correspond to the battlefront.

FIGURE 2: *General Mola's Plan using 1931 Roads*

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].

FIGURE 3: *The Taking of Madrid using 1931 Roads*
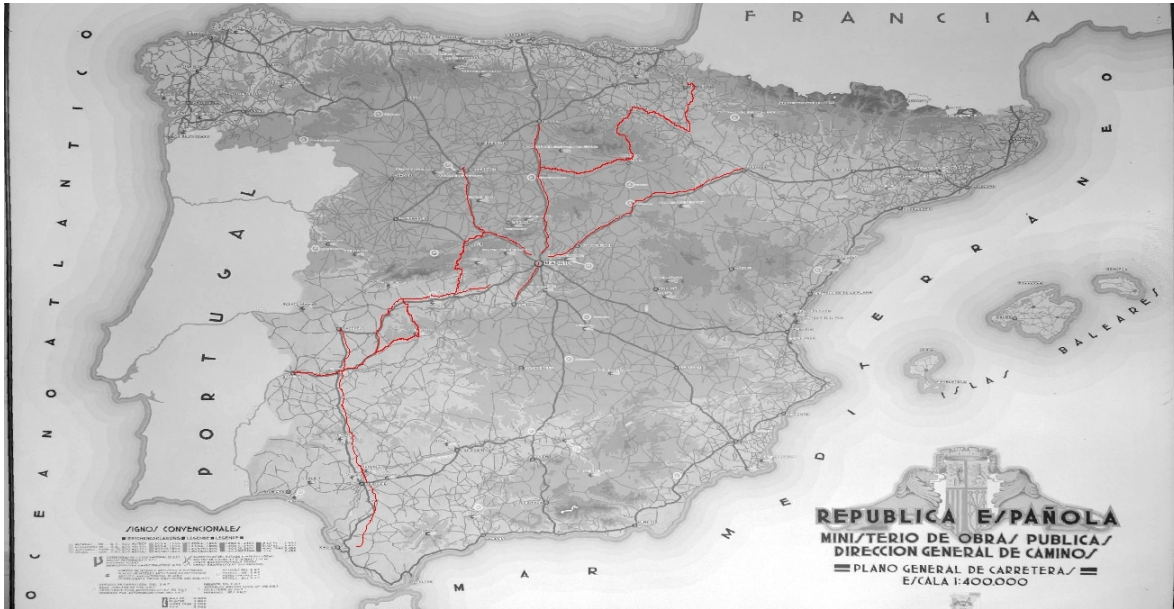
NOTES: The red lines denote the roads taken for the takeover of Madrid. Own elaboration based on the 1931 road network and information on the troops' movements from Coll-Hurtado [2012] and Puell and Huerta [2007].

FIGURE 4: *General Mola's Plan and the Taking of Madrid using 1931 Roads*
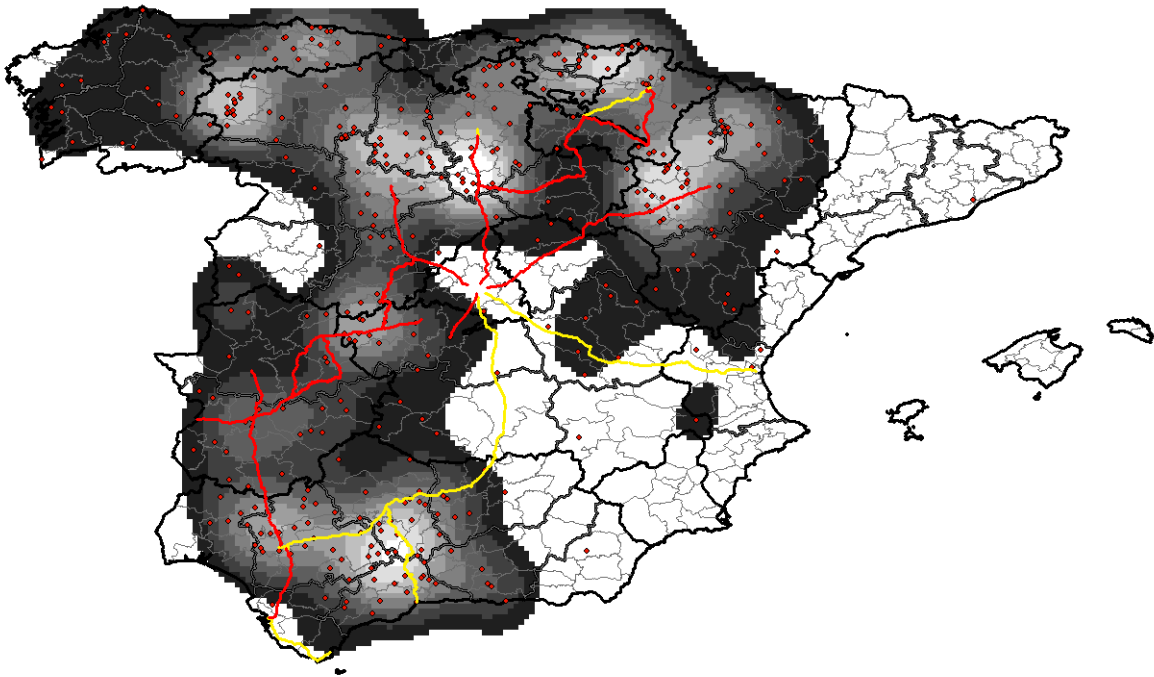
NOTES: The red lines denote the roads taken for the takeover of Madrid. The yellow lines depict the Mola plan and the red dots exhumed mass graves, with an underlying heat map in black. Own elaboration based on the 1931 road network, information on the troops' movements from Coll-Hurtado [2012] and Puell and Huerta [2007], and on exhumed mass graves from the Spanish Ministry of Justice.

FIGURE 5: *Political Repression in the Aragon Front*
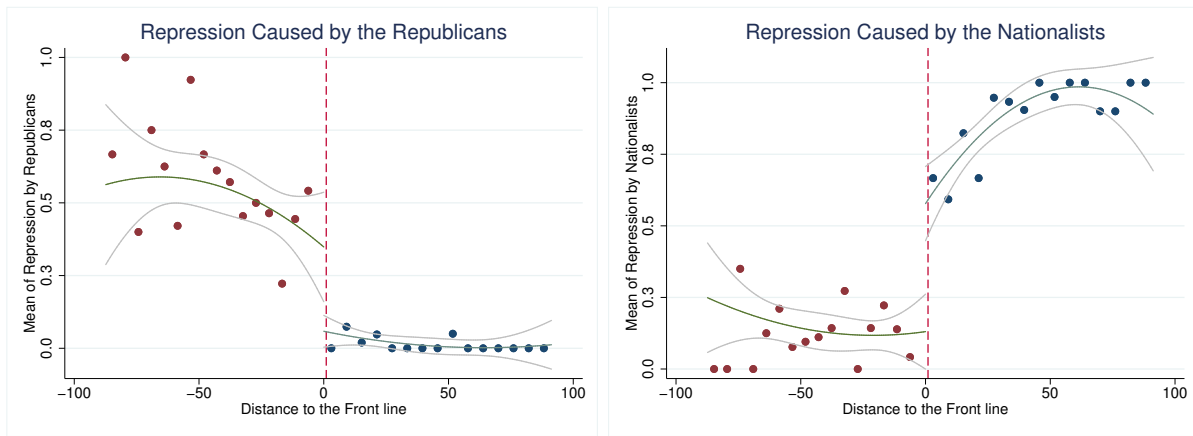
NOTES: Repression is measured as the presence of mass graves that are due to repression by the Republicans (left) or Nationalists (right) at a given distance. The dots show the mean of political repression conditional of the distance to the front. The lines are quadratic best fits, with confidence intervals. 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 front-line by using the geo-located information for the individual mass grave when existing or the municipality centroid when missing. The front-line is computed by using information on the centroid of all 47 municipalities that comprised the front-line. Negative values of distance correspond to the Republican side. RD coefficient (st.error) is -0.75*** (0.250) for the left panel and 0.45* (0.263) for the right panel, using `rdrobust` command. *** $p < 0.01$, * $p < 0.1$.

FIGURE 6: *Smoothness Tests in the Aragon Front*
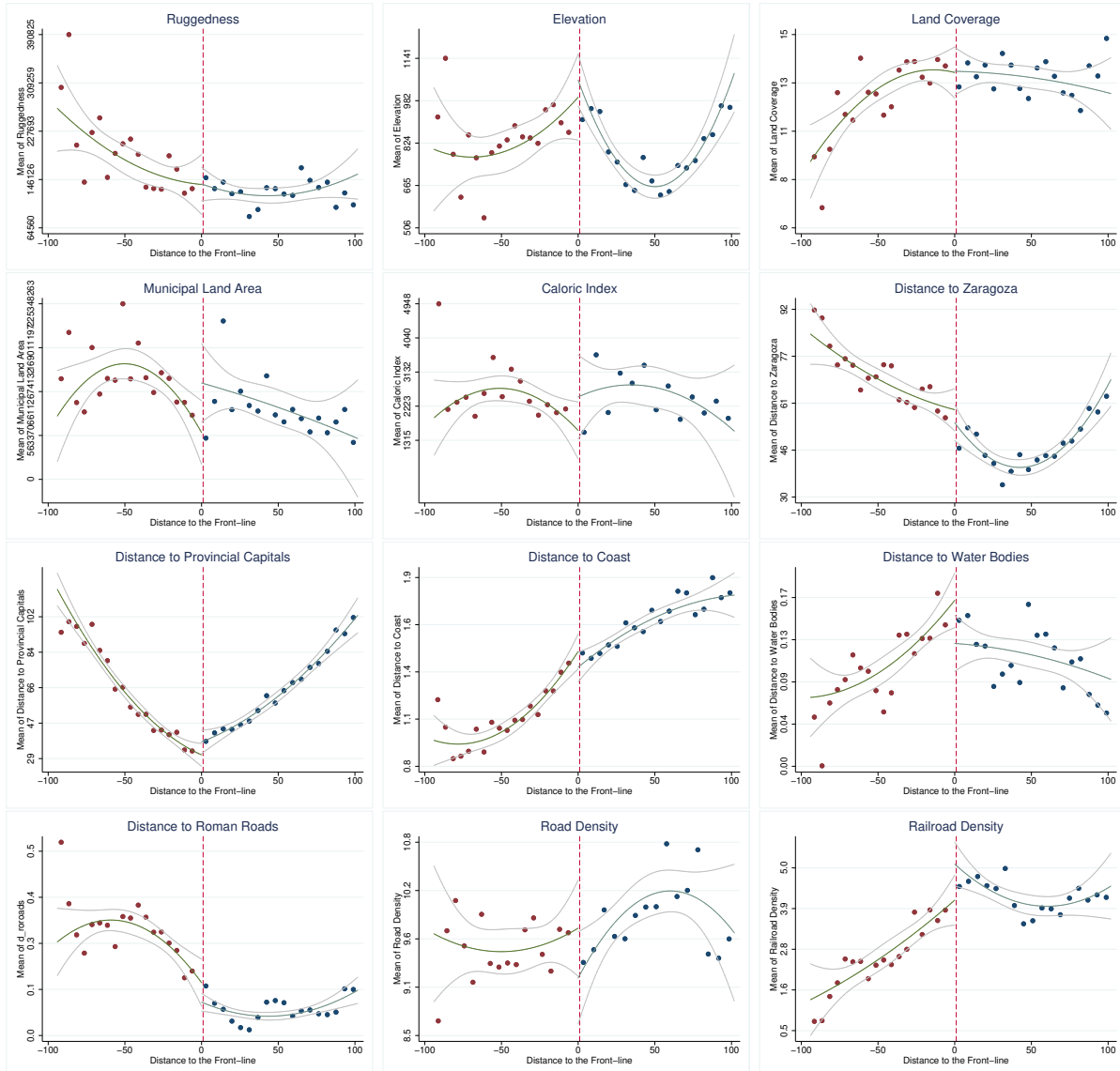
NOTES: The dots show the average ruggedness (33987, 65210), elevation (180.11, 194.74), land coverage (-1.58, 1.454), municipal land area (-46.72**, 22.66), caloric index (-1466.8*, 773.4), distance to Zaragoza (-0.07, 10.4), distance to provincial capitals (8.05, 11.65), distance to the sea (-0.07, 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 of the distance to the front-line. Negative values of distance correspond to the Republican side. RD coefficients and standard errors using `rdrobust` command are shown in parenthesis.** $p < 0.05$, * $p < 0.1$.

FIGURE 7: *Voting Results: Congressional Elections (1977-2016)*
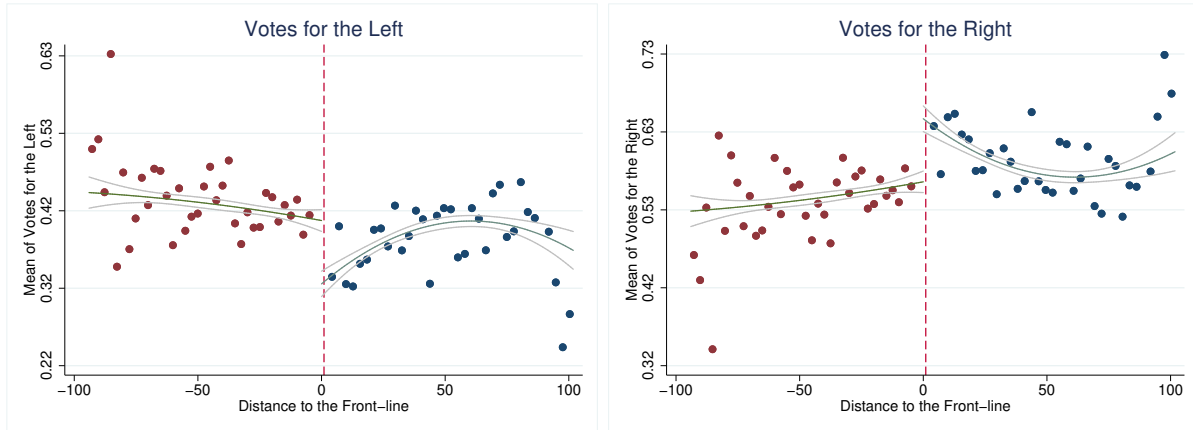
NOTES: The dots show the means of votes for left-wing (left panel) or right-wing parties (right panel) for the Spanish Parliament elections 1977-2016, conditional of the distance to the front-line. The lines are quadratic fits, with confidence intervals. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side. RD coefficients (st.error) are -0.074*** (0.0142) for the left and 0.077*** (0.0134) for the right, using `rdrobust` command. *** $p < 0.01$.

FIGURE 8: *Voting Results: Congressional Elections (1977-2016). Votes for Moderate Parties*
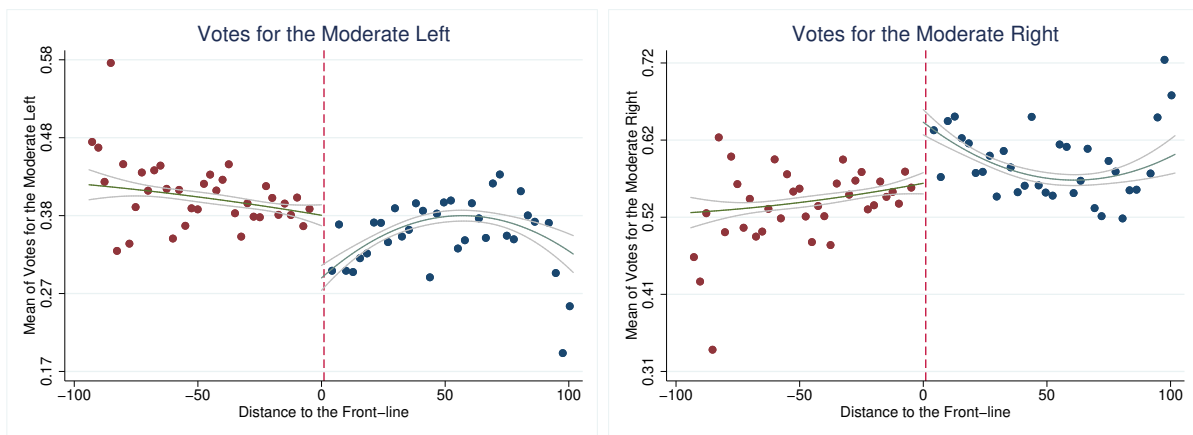
NOTES: The dots show the means of votes for moderate left-wing (left panel) or right-wing parties (right panel) for the Spanish Parliament elections 1977-2016, conditional of the distance to the front-line. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. RD coefficients (st. error) are -0.077*** (0.0138) for the left and 0.076*** (0.013) for the right, using `rdrobust` command. *** $p < 0.01$.

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FIGURE 9: *Pre-trends: 1936 Left Votes and CNT Union Membership*
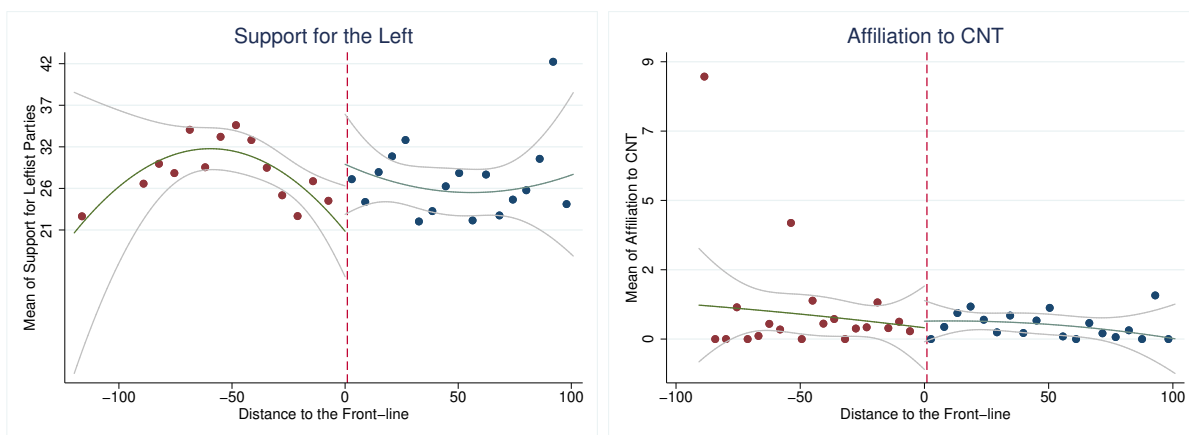
NOTES: The dots show the average votes for leftist parties in the 1936 elections (left) and the average affiliation rate to the anarcho-sindicalist union (CNT, *Comité Nacional de Trabajadores*) in 1936 (right), both at the locality level and conditional on the distance to the front-line. Data on the 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 coefficients (st.error) are -1.50 (7.762) (left) and -0.074 (0.4222) (right), using `rdrobust` command.

FIGURE 10: *Collective Memory: Francoist Streets and Mass Graves*
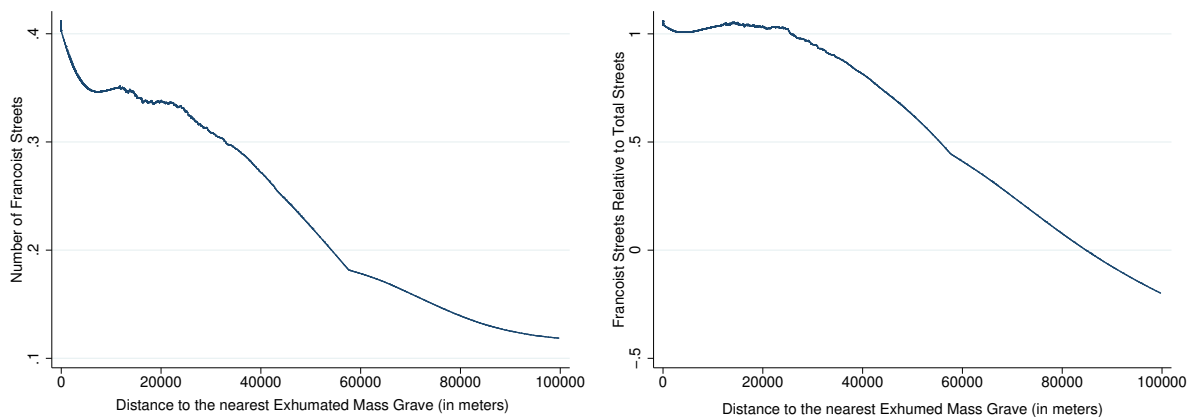
NOTES: The figures depict a Kernel-weighted linear regression of Francoist streets (left) and Francoist streets relative to total streets (right) on distance to the nearest exhumed mass grave (in meters) at the municipality level.

TABLE 1: *Victims of Spanish Civil War*

Killed in combat	300,000	Preston [2012]
Other deaths (bombing, hunger, etc.)	300,000	Preston [2012]
Externally displaced refugees	440,000	Preston [2012]
Repression by the Republicans ("Red Terror")	50,065	Prada [2010]
	49,272	Preston [2012]
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] and Preston [2012].

TABLE 2: *OLS Results on Generalized Trust: All Mass Graves*

	(1)	(2)	(3)	(4)
	Panel A: All Mass Graves			
All corpses/Population	-0.002***	-0.0008	-0.0004	-0.0004
	(0.0005)	(0.0005)	(0.0011)	(0.0010)
Adj-R^2	0.03	0.04	0.05	0.07
	Panel B: Exhumed Mass Graves			
Exhumed corpses/Population	-0.0073***	-0.0068***	-0.0237***	-0.0225***
	(0.0023)	(0.0023)	(0.0058)	(0.0057)
Adj-R^2	0.03	0.04	0.05	0.07
Region and year FE	Yes	Yes	Yes	Yes
Individual and district controls	No	Yes	Yes	Yes
Geographical controls	No	No	Yes	Yes
Education and employment controls	No	No	No	Yes
Observations	38,287	38,275	36,159	35,839
Mean dep. variable	4.86	4.86	4.85	4.85

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 corpses/Population* is measured as the total number of corpses in all types of mass graves in each district divided by the population that district had in 1930 and multiplied by 1,000. *Exhumed/Population* is measured as the exhumed number of corpses in the exhumed mass graves in each district divided by the population that district had in 1930 and multiplied by 1,000. All models include region and survey-year fixed effects. *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, average temperature and its standard deviation, distance to river and to coast, and landcover. *Education and employment controls* includes level of education and employment status of the individual. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 3: *Effects of Exhumation 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	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Restricted sample	No	No	Yes	Yes
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, survey-year fixed effects, 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 4: *IV Results: Exhumed Mass Graves*

	(1)	(2)	(3)	(4)
	Panel A: First-Stage Results			
Distance to the takeover of Madrid	-0.0081***	-0.0091***	-0.0047***	-0.0059***
	(0.00028)	(0.0003)	(0.0004)	(0.0004)
F-statistic	873.62	902.92	136.21	220.39
	Panel B: Second-Stage Results			
Exhumed corpses/Population	-0.098***	-0.088***	-0.203**	-0.187***
	(0.0333)	(0.0318)	(0.0863)	(0.0712)
Centered R^2	0.07	0.07	0.04	0.05
Region and Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Restricted to primary road	No	Yes	No	Yes
Mola's Plan control	No	No	Yes	Yes
Observations	29,531	27,372	29,531	27,372
Mean dep. variable	4.83	4.86	4.83	4.86

Notes: *Exhumed corpses/Population* is measured as the total (and updated) number of corpses exhumed in each district divided by the population that district had in 1930 and multiplied by 1,000. The instrument is the distance (in meters) to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking of Madrid. *Controls* include age-group, education and labor status of the individual fixed effects, current size of the municipality fixed effects, population in 1930 and in the survey year, area of the district, primary roads in 1931, ruggedness, mean temperature and its standard deviation, distance to river and to coast, an index of caloric yield of the soil, a landcover index, and distance to Madrid. *Mola's Plan control* measures the distance (in meters) to the primary road that existed in 1931 and that General Mola planned to use to take Madrid. Sample restricted to districts in the mainland, excluding Madrid. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 5: *Decomposing Trust: IV Results with Trust on Institutions. Exhumed Mass Graves*

	(1) Army	(2) Civil Guard	(3) Church	(4) Constit. Court	(5) Ombudsman	(6) Parliament
Exhumed corpses/Population	-0.39***	-0.25*	-0.26	-0.02	0.14	-0.03
	(0.15)	(0.13)	(0.18)	(0.11)	(0.14)	(0.08)
Observations	12,401	7,316	10,997	13,336	13,318	23,411
F-Statistic	58.06	69.35	52.04	81.43	60.89	139.34
Mean dep. variable	5.5	5.9	3.9	4.2	4.6	4.1

Notes: The dependent variable takes values from 0 to 10 (from lowest to highest trust) in the army in Column 1, in the Civil Guard in Column 2, in the Church in Column 3, in the Constitutional Court in Column 4, in the Ombudsman in Column 5 and in the National Parliament in Column 6, at the individual level. *Exhumed corpses/Population* is measured as the number of corpses exhumed in each district divided by the population that district had in 1930 and multiplied by 1,000. The instrument is the distance (in meters) to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking of Madrid. All models include region and year fixed effects. Controls include age-group, education and labor status of the individual fixed effects, current size of the municipality fixed effects, population in 1930 and in the survey year, area of the district, a measure of density in the primary roads network in 1931, ruggedness, mean temperature and its standard deviation, distance to river and to coast, an index of caloric yield of the soil and a landcover index. All models use Distance to Madrid as an instrument for mass graves, and control for Distance to Mola Plan (keeping all observations in the mainland, except Madrid). Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 6: *Trust Results for the Aragon Region*

	(1) Generalized	(2) Army	(3) Civil Guard	(4) Church	(5) Constit. Court	(6) Ombudsman	(7) Parliament
Republican side	-0.11	-0.75**	-1.05**	-1.11***	0.30	0.67*	0.75**
	(0.226)	(0.261)	(0.375)	(0.262)	(0.339)	(0.340)	(0.281)
Observations	683	600	575	584	655	652	683
R-squared	0.26	0.28	0.49	0.52	0.13	0.25	0.48
Mean dep. variable	5.4	6.1	6.3	4.1	4.4	4.9	3.9

Notes: The dependent variable measures the average at the municipal level of generalized trust in Column 1, trust in the army in Column 2, trust in the Civil Guard in Column 3, trust in the Church in Column 4, trust in the Constitutional Court in Column 5, trust in the Ombudsman in Column 6 and trust in the National Parliament in Column 7. *Republican side* is a dummy variable that takes the value 1 if the municipality fell under the Republican troops in the Aragon region and zero otherwise. Municipalities within the front-line are excluded. Controls include ruggedness, mean elevation, distance to modern roads, distance to Roman roads, land cover, municipal area, distance to water bodies and distance to rivers. Clustered standard errors at the district level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 7: *RD Results for the Aragon Front: Voting. Congressional Elections (1977-2016)*

	(1)	(2)	(3)	(4)	(5)
	Panel A: Votes for the Left				
RD coefficient	-0.074***	-0.105***	-0.094***	-0.102***	-0.105***
	(0.0142)	(0.0210)	(0.0187)	(0.0195)	(0.0182)
	Panel B: Votes for the Right				
RD coefficient	0.077***	0.107***	0.080***	0.086***	0.093***
	(0.0134)	(0.0213)	(0.0167)	(0.0187)	(0.0175)
Front-line municipalities	No	Yes	No	No	No
Latitude and Longitude controls	No	No	Yes	No	Yes
Province fixed effects	No	No	No	Yes	Yes
Original Number of Observations	8158	8722	8158	8158	8158

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

TABLE 8: *Mechanisms: Political Participation*

	Contact w/ Authorities	Participate in Strike	Attend Demonstration	Signed Petition
Exhumed/Population	-0.01**	-0.02***	-0.02***	-0.02***
	(0.004)	(0.005)	(0.005)	(0.006)
Observations	2,763	2,766	2,767	2,749
Region FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Mean dep. variable	2.8	2.6	2.5	2.4

Notes: The dependent variable takes values from 1 to 3 for Contact with Public Authorities and Participate in Strikes, Attend some Demonstration and Signed a Petition (in the last year, more than a year, never). A higher variable is associated with higher engagement. *Exhumed/Population* is measured as the number of corpses exhumed in each district divided by the population that district had in 1930 and multiplied by 1,000. *Controls* include age-group, education and labor status of the individual fixed effects, population in 1930 and in the survey year (2008), area of the district, a measure of density in the primary roads network in 1931, ruggedness, mean temperature and its standard deviation, distance to river and to coast, distance to Madrid, an index of caloric yield of the soil and a landcover index. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 9: *Collective Memory: Legacy of the Civil War*

	Talk about CW	Agree CW generated division	Agree memory CW alive	Leave Mass Graves
Exhumed/Population	-0.02**	0.02*	-0.03***	0.04***
	(0.01)	(0.009)	(0.009)	(0.01)
Observations	2,694	2,582	2,642	2,501
Region FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Mean dep. variable	3.0	2.1	1.8	1.7

Notes: The dependent variable takes values from 0 to 4 (a lot and never - talk about Civil War (CW)), or from 1 to 3 (agree and disagree - CW generated division, and Memory about CW is still alive among Spaniards); from 1 to 4 in Mass Graves (they should be identified and transferred, identified but not transferred, leave them). A higher value is associated with more talking and more agreeing. *Exhumed/Population* is measured as the number of corpses exhumed in each district divided by the population that district had in 1930 and multiplied by 1,000. *Controls* include age-group, education and labor status of the individual fixed effects, population in 1930 and in the survey year (2008), area of the district, a measure of density in the primary roads network in 1931, ruggedness, mean temperature and its standard deviation, distance to river and to coast, distance to Madrid, an index of caloric yield of the soil and a land cover index. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 10: *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	0.20***	0.82***	0.07**	-0.44	15.02
	(0.070)	(0.277)	(0.027)	(0.782)	(10.46)
Observations	682	682	682	677	682
R-squared	0.07	0.04	0.07	0.03	0.48
Front-line municip.	No	No	No	No	No
Geographic. controls	Yes	Yes	Yes	Yes	Yes
Mean dep. variable	0.21	0.79	0.11	14.2	34.53

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 front-line are excluded. Controls include ruggedness, mean elevation, distance to modern roads, distance to Roman roads, land cover, municipal area, distance to water bodies and distance to rivers. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Online Appendix

A-1   Additional Figures and Tables

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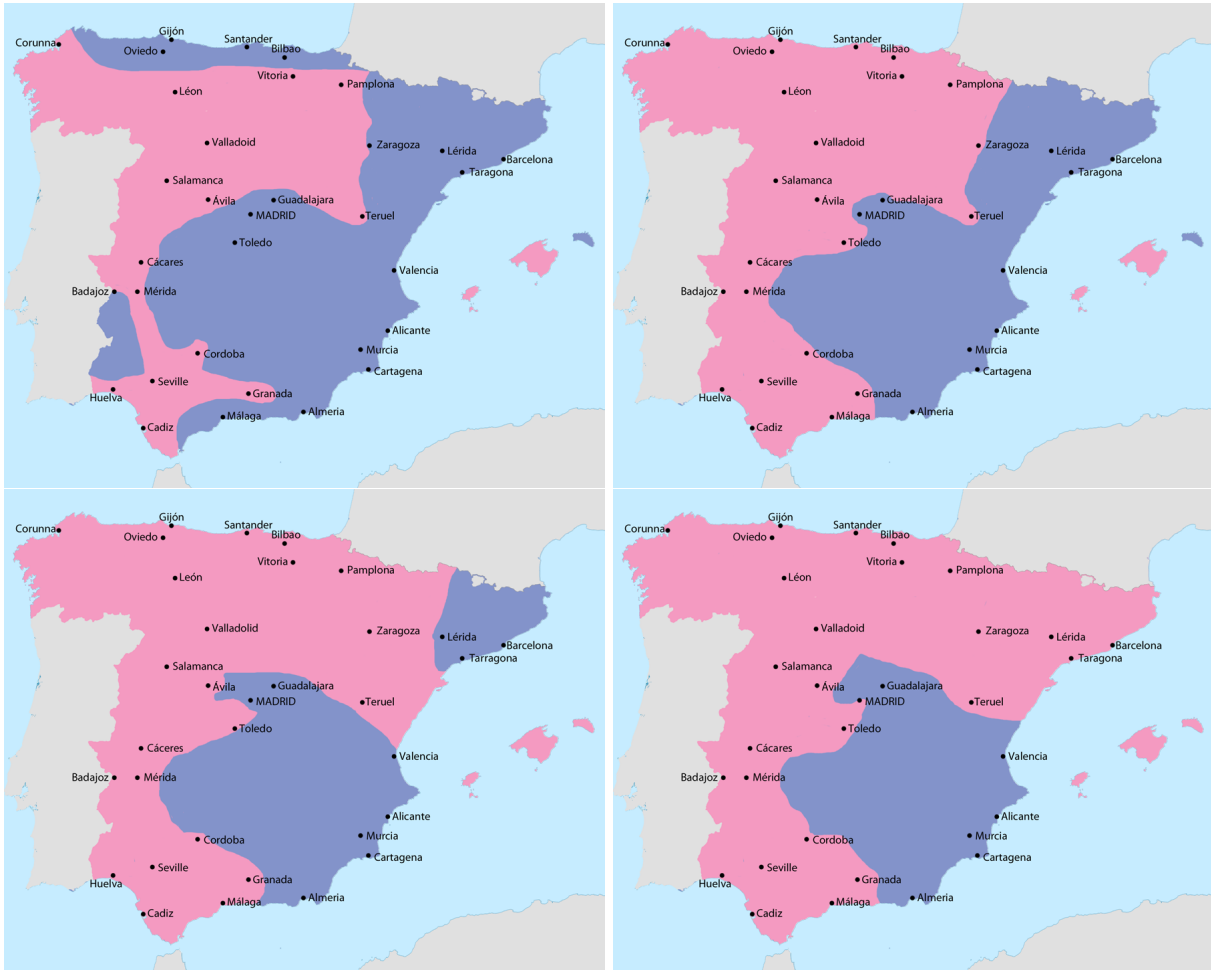
NOTES: The territory under the control of the Nationalists is shown in pink, and under the control of the Republicans in blue. Each figure shows the division of the Spanish territory in one specific date: September 1936 (top left), October 1937 (top right), July 1938 (bottom left) and February 1939 (bottom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

FIGURE A-2: *Map of Mass Graves. Spanish Ministry of Justice*
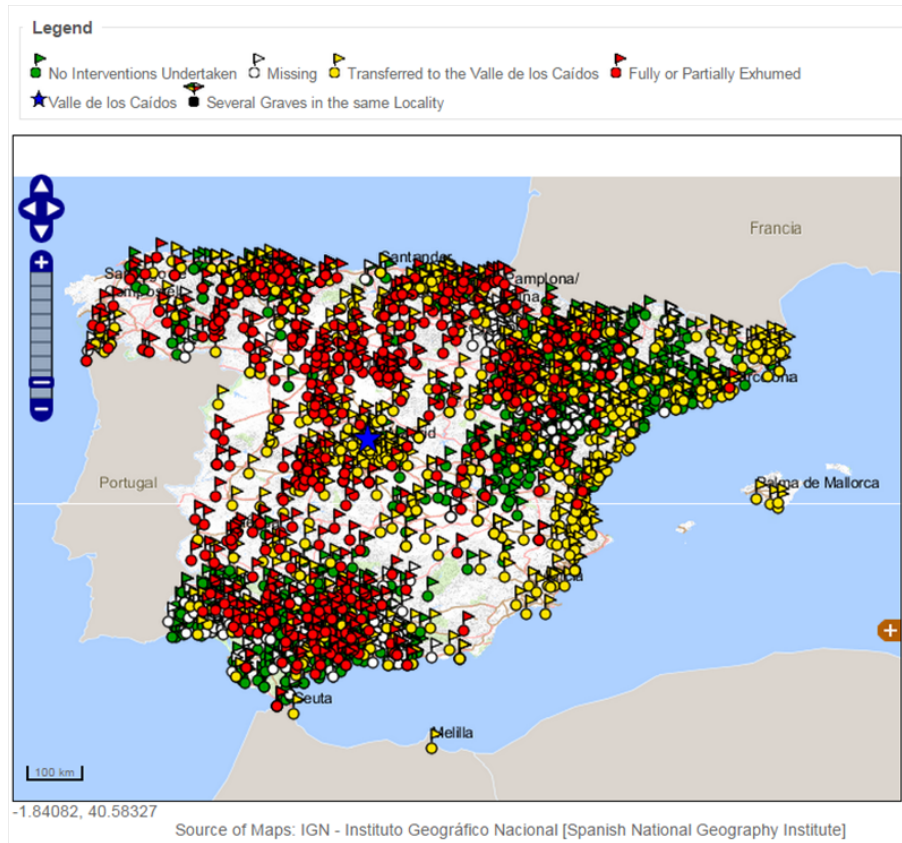
NOTES: Raw mass grave data from the Spanish Ministry of Justice.

FIGURE A-3: *Map of Mass Graves. Intensive Margin at the Municipal Level*
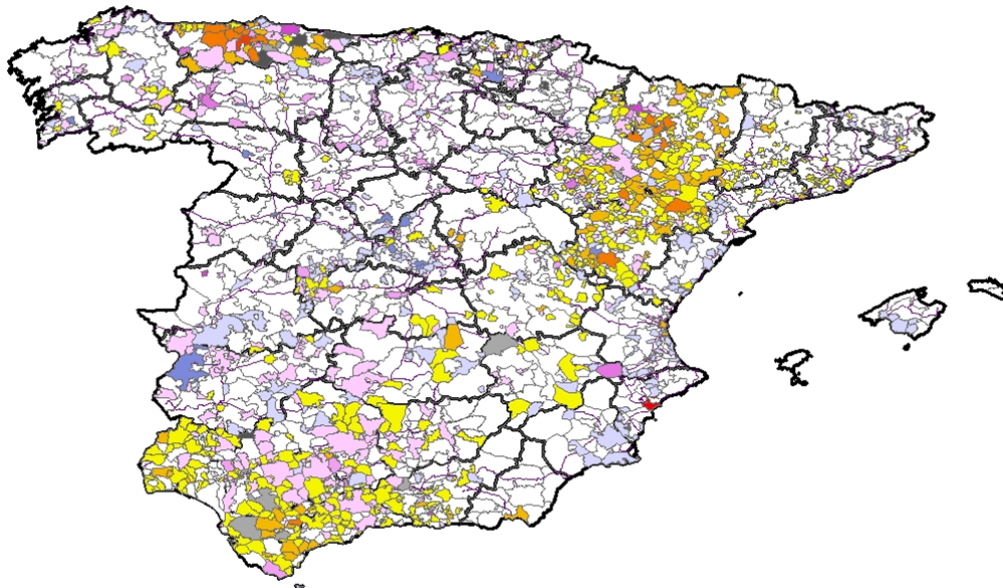
NOTES: Digitized information with different mass graves at the district level. Gray denotes disappeared, purple exhumed, yellow not intervened, and blue transferred. Intensity is denoted by color tones in their respective spectra.

FIGURE A-4: *Exhumed Mass Graves: Burial and Exhumation Year*
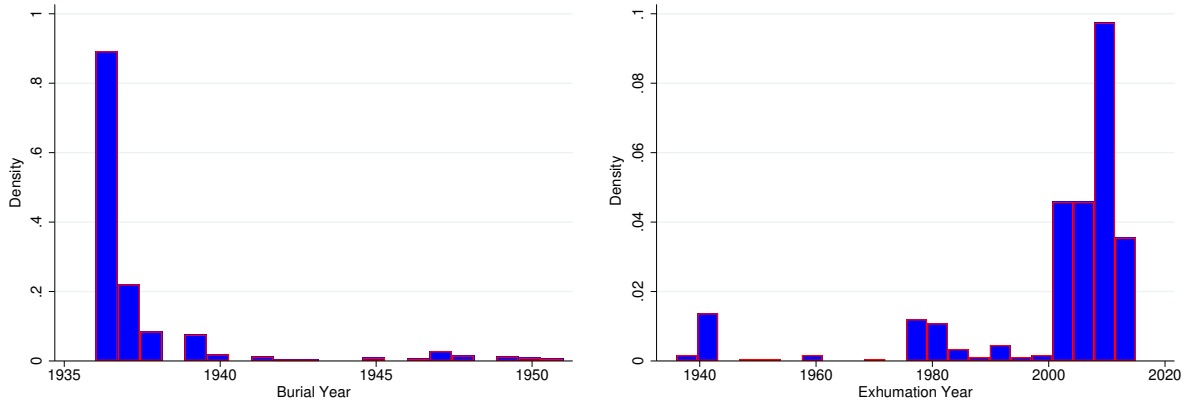
NOTES: These figures depict the histograms for the burial year (left panel) and exhumation year (right panel) for the exhumed mass graves in our sample. Additional information was extracted from the individual graves registry at the Ministry of Justice website and from internet searches on individual graves.

FIGURE A-5: *Generalized Trust in Spain (1998-2015)*
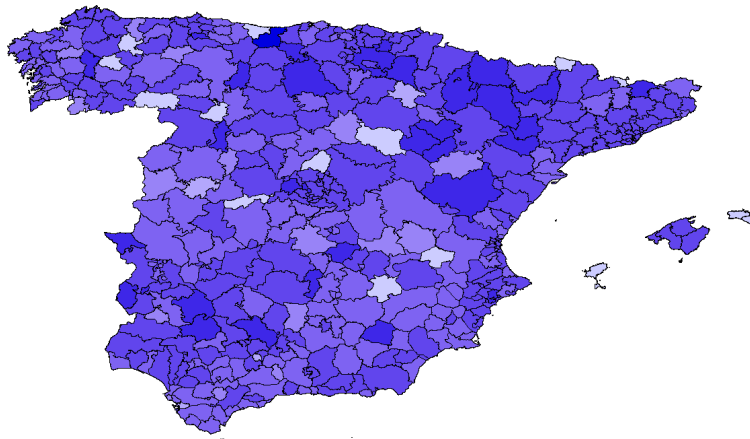
NOTES: Own elaboration from survey data (1998-2015). Districts in light grey are missing values. The mean trust is of 4.9 with a standard deviation of 2.19.

FIGURE A-6: *General Mola's Plan*
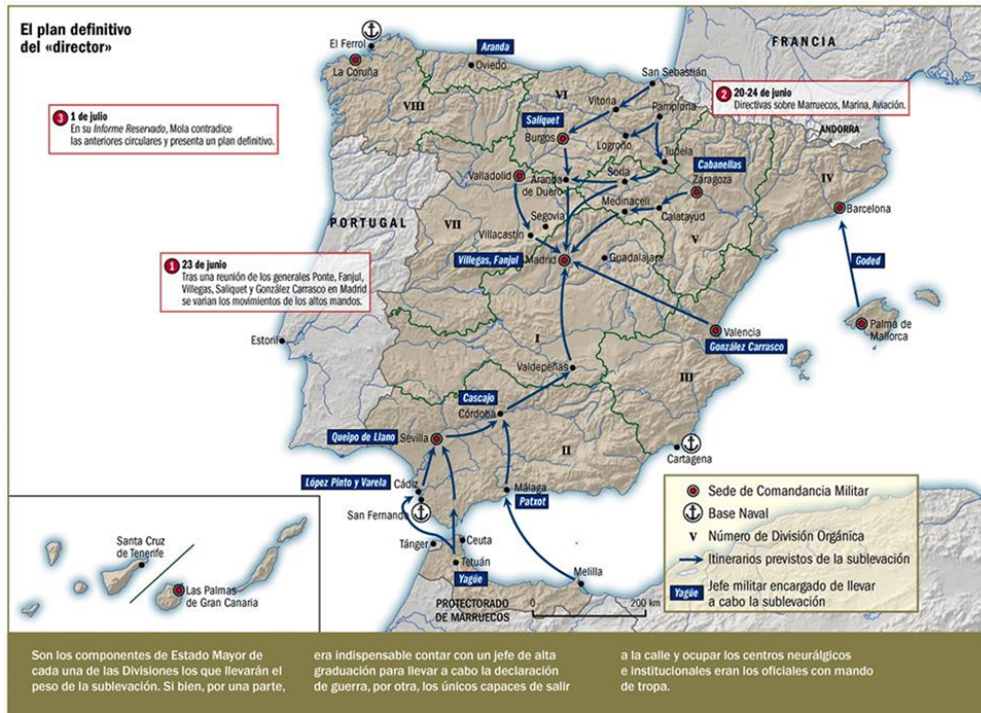

NOTES: Map taken from Coll-Hurtado [2012].

FIGURE A-7: *Deviations from Mola's Plan of Attack and Actual Routes Taken*
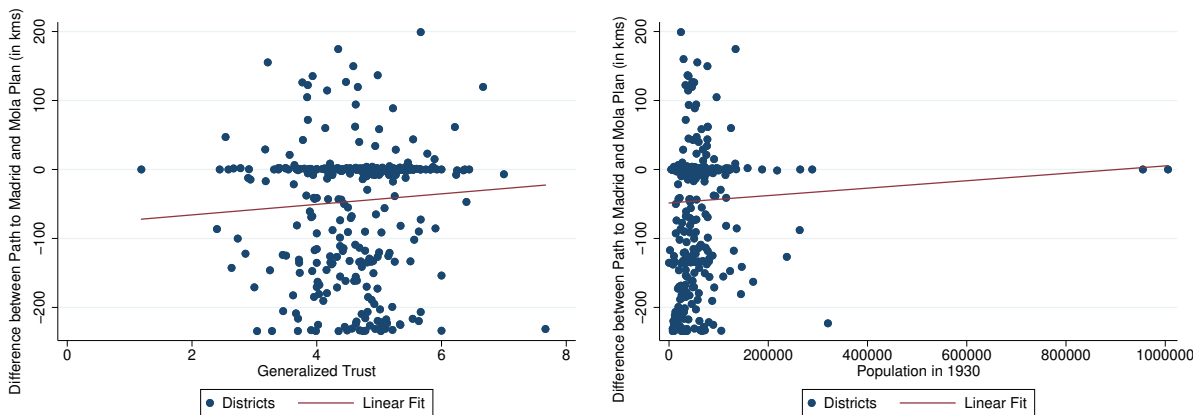
NOTES: The graphs plot the the difference (in kms) between the path to Madrid and Mola's initial plan of attack versus generalized trust (left panel) and population in 1930 at the district level (right panel). Linear fit coefficient 7.6 and standard error 5.7 for the left figure, and 0.00005 with corresponding standard error of 0.00006 for the right figure.

FIGURE A-8: *Generalized Trust and Distance to Priaranza del Bierzo*
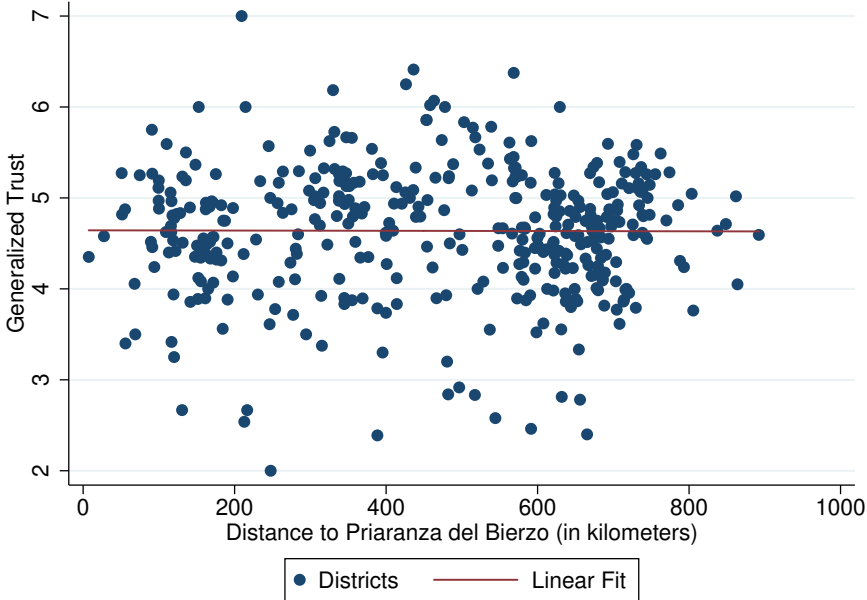
NOTES: The dots show the average generalized trust for each district. The x-axis shows the distance of each district to the Priaranza del Bierzo mass grave in kilometers. Correlation coefficient -.0000137 with standard error of .000162.

FIGURE A-9: *The Aragon Region*

NOTES: Map taken from https://commons.wikimedia.org/wiki/File:Aragon_in_Spain_(plus_Canarias).svg
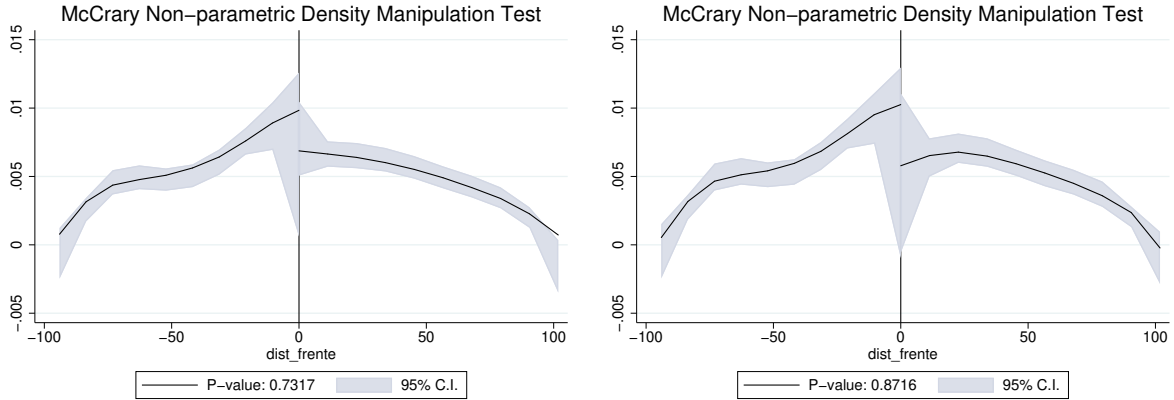
NOTES: Manipulation test using the local-polynomial density estimators proposed by Cattaneo *et al.* [2019], with the Stata command `rddensity`. The left panel includes all municipalities and the right panel excludes front-line municipalities. Negative values of distance correspond to the Republican side. We report p-values and 95% confidence intervals.

FIGURE A-11: *Political Repression in the Aragon Front. Intensive Margin with Number of Mass Graves*
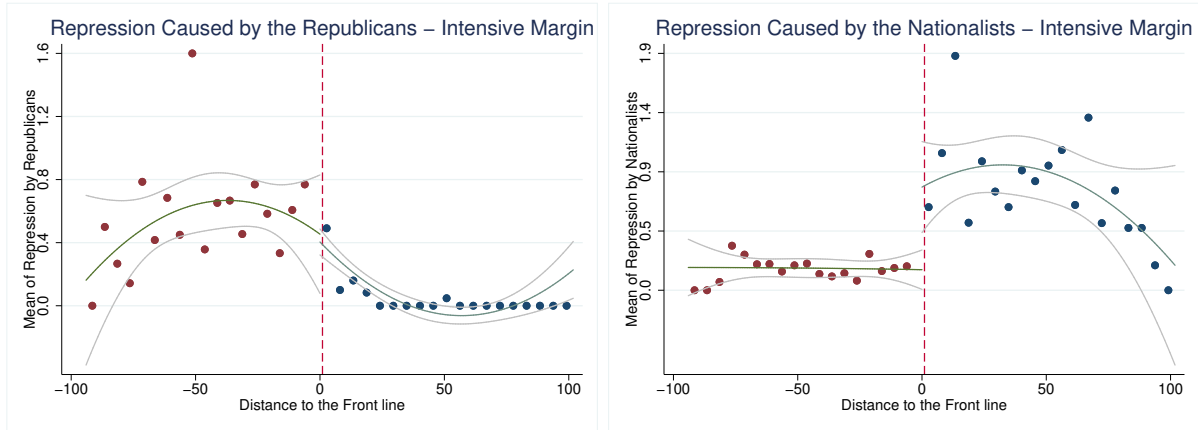

NOTES: Repression is measured as the total number of mass graves that are due to repression by the Republicans (left) or Nationalists (right) at a given distance, computed at the municipal level. The dots show the means of political repression conditional on the distance to the front. The lines are quadratic 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 front-line by using the municipality centroid. The front-line is computed by using information on the centroid of all 47 municipalities that comprised the front-line. Negative values of distance correspond to the Republican side. RD coefficient (st.error) is -0.50 (0.370) for the left panel and 0.56** (0.264) for the right panel, using `rdrobust` command. ** $p < 0.05$.

FIGURE A-12: *Political Repression in the Aragon Front. Intensive Margin with Executions (Direct Violence)*
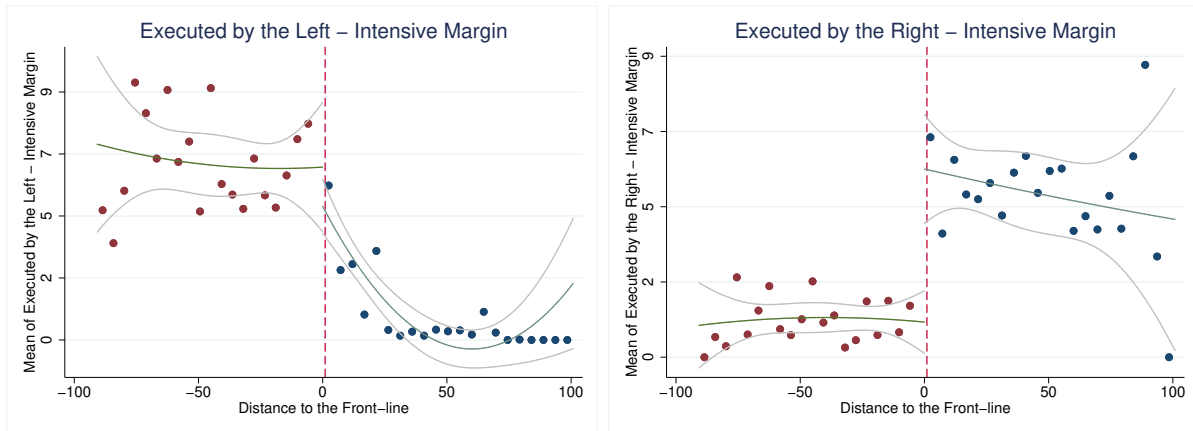

NOTES: Repression is measured as the total number of victims of direct violence killed by the Republicans (left) or Nationalists (right) at a given distance, computed at the locality level and divided by its population in 1936 and multiplied by a 1,000. Data on executions and population at the locality level comes from Balcells [2011]. The dots show the means of political repression conditional on the distance to the front. The lines are quadratic best fits, with confidence intervals. We compute distance to the front-line by using the municipality centroid. The front-line is computed by using information on the centroid of all 47 municipalities that comprised the front-line. Negative values of distance correspond to the Republican side. RD coefficient (st.error) is -3.32* (1.976) for the left panel and 5.36*** (1.705) for the right panel, using `rdrobust` command. * $p < 0.10$, *** $p < 0.01$.
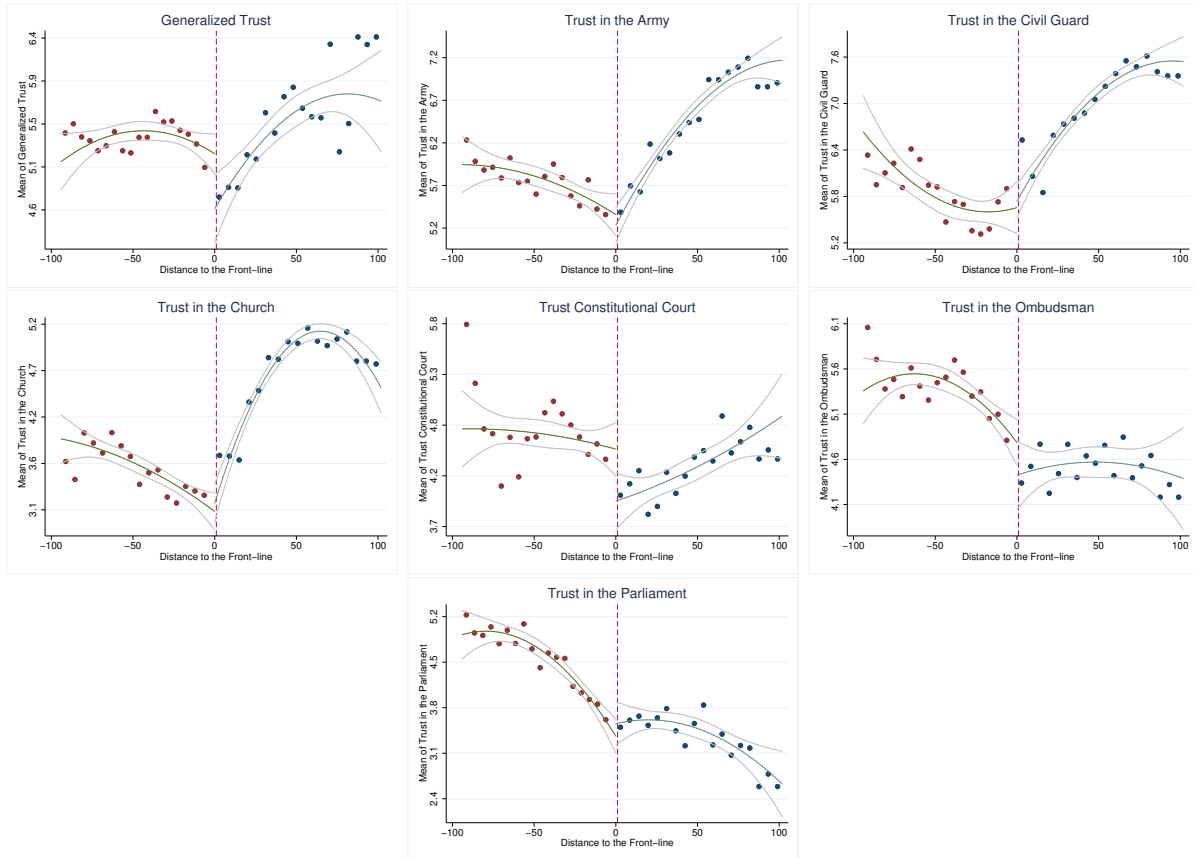
NOTES: Trust is measured at the municipal level. We combine trust information at the district and municipal level, when the last is available. The dots show the means of generalized trust or trust in different institutions conditional on the distance to the front. The lines are quadratic best fits, with confidence intervals. We compute distance to the front-line by using the municipality's centroid. The front-line is computed by using information on the centroid for all 47 municipalities that comprised the front-line. Negative values of distance correspond to the Republican side and positive to the Nationalist one.

FIGURE A-14: *Voting Results: Turnout in Congressional (1977-2016) and Municipal Elections (1987-2011)*
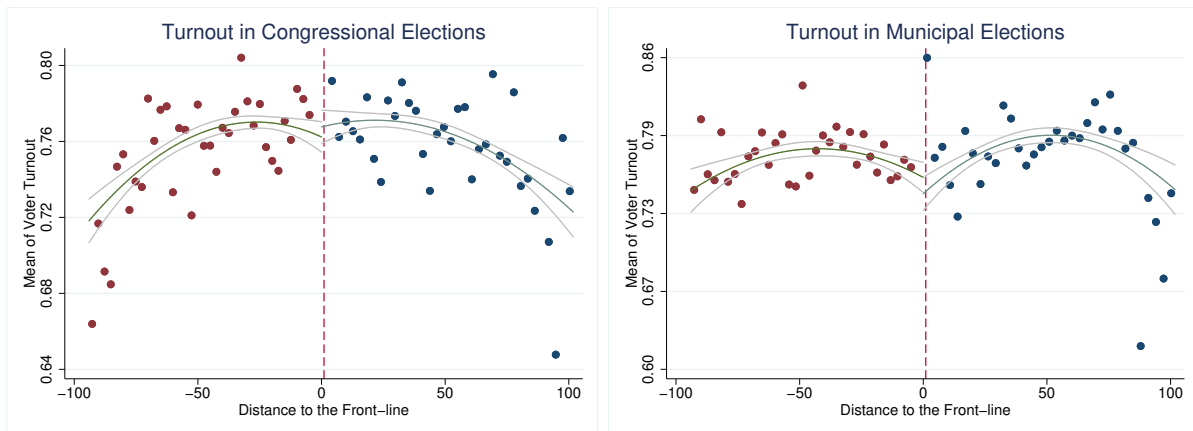
NOTES: The dots show the average turnout at the municipal level for all congressional (left) and municipal (right) elections, conditional on the distance to the front-line. The lines are quadratic fits, with confidence intervals. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side. RD coefficients (st.error) are 0.03** (0.013) for congressional elections and 0.03* (0.020) for municipal elections, using `rdrobust` command. ** $p < 0.05$, * $p < 0.1$.

FIGURE A-15: *Voting Results: Congressional Elections (1977-2016). Extreme Parties*
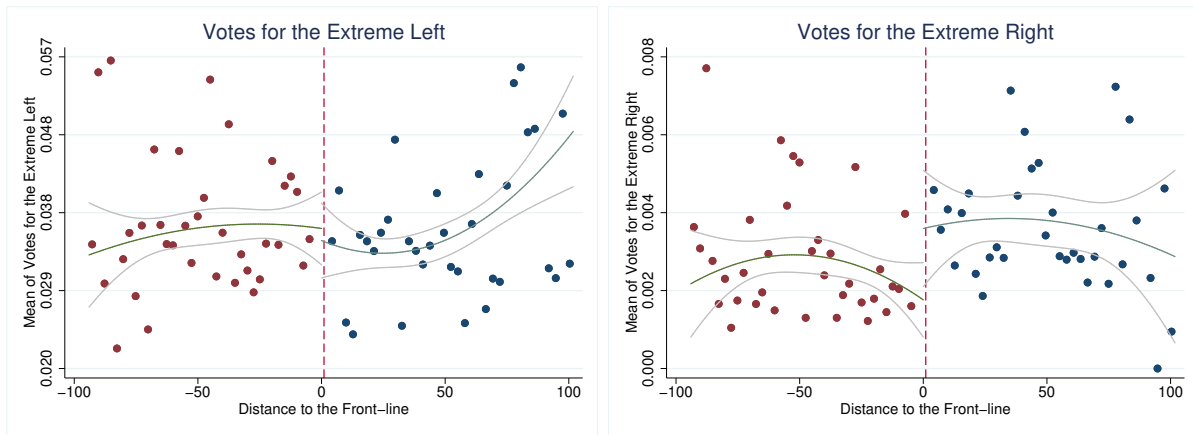
NOTES: The dots show the means of votes for extreme left-wing or right-wing parties for the Spanish Parliament elections 1977-2016, conditional on the distance to the front-line. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. RD coefficients (st. error) are 0.002 (0.009) for the left and 0.001 (0.003) for the right, using `rdrobust` command.

FIGURE A-16: *Voting Results: Congressional Elections 2016. Populist Parties*
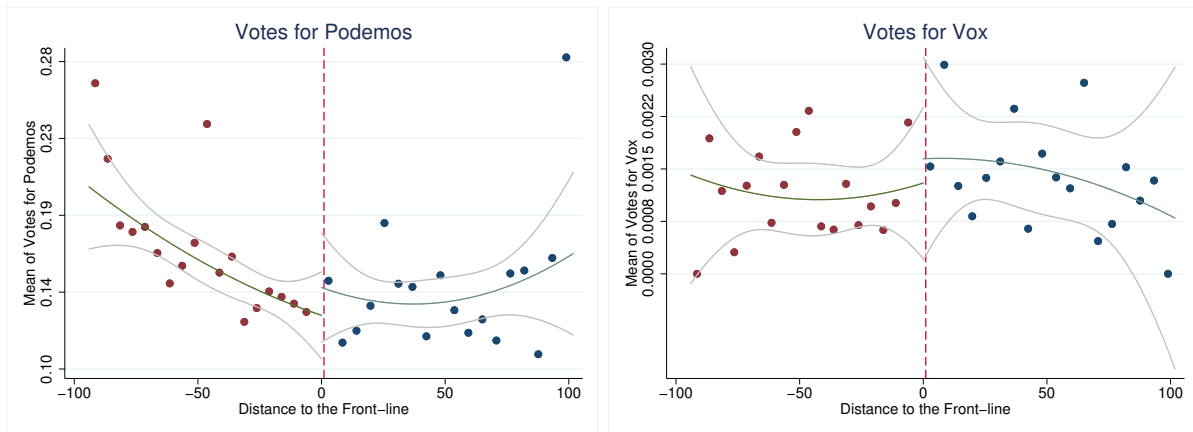
NOTES: The dots show the means of votes for populist left-wing or right-wing parties for the Spanish Parliament elections in 2016, conditional of the distance to the front. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. RD coefficients (st. error) are 0.03 (0.042) for the left and -0.0008 (0.0014) for the right, using `rdrobust` command.

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FIGURE A-17: *Voting Results: Congressional Elections (1977-2016). Regionalist Parties*
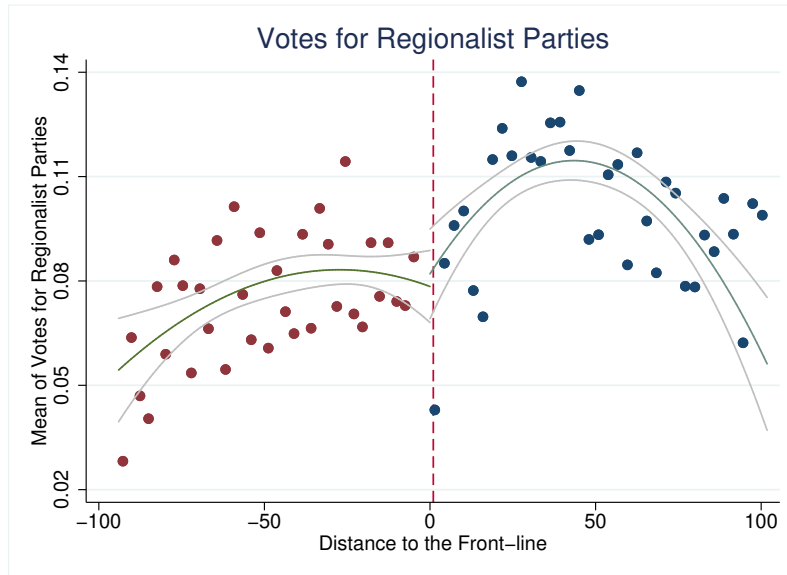
NOTES: The dots show the means of votes for regionalist parties for the Spanish Parliament elections 1977-2016, conditional of the distance to the front. The lines are quadratic best fits, with confidence intervals. Municipalities located within the front are excluded. RD coefficient (st. error) is 0.008 (0.014) using `rdrobust` command.

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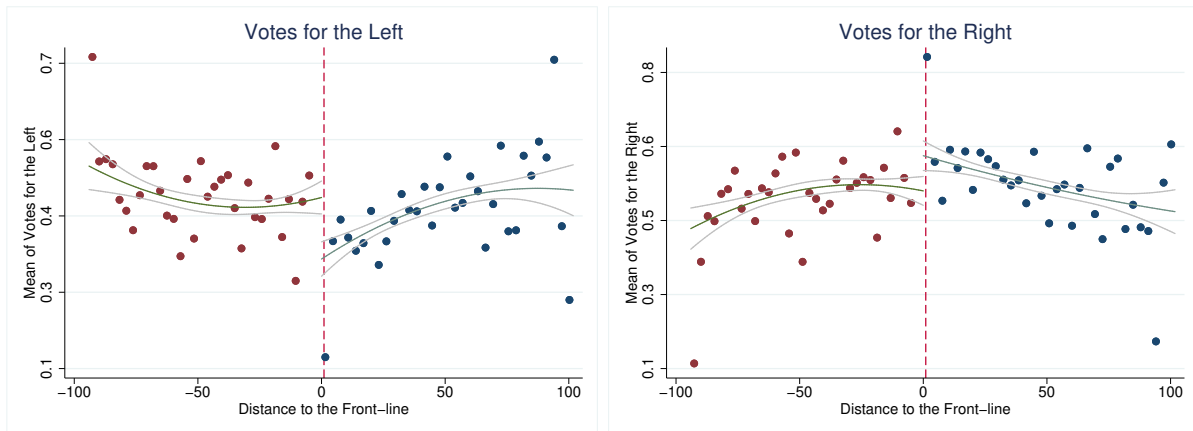

NOTES: The dots show the means of votes for left-wing or right-wing parties for municipal elections 1987-2011, conditional on the distance to the front-line. The lines are quadratic fits, with confidence intervals. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side. RD coefficients (st.error) are -0.24*** (0.055) for the left and 0.05 (0.038) for the right, using `rdrobust` command. *** $p < 0.01$.

FIGURE A-19: *Voting Results: Turnout in Referenda 1986 and 2005*
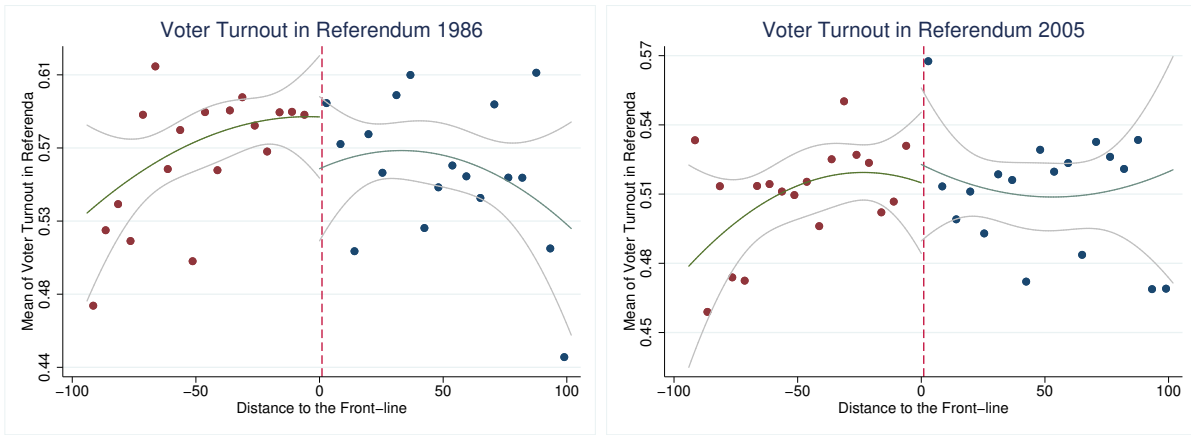
NOTES: The dots show the average turnout at the municipal level for two referenda held in 1986 (left) and 2005 (right), conditional on the distance to the front-line. The lines are quadratic fits, with confidence intervals. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side. RD coefficients (st.error) are -0.014 (0.0512) in 1986 (left) and 0.053 (0.0679) in 2005 (right), using `rdrobust` command.

FIGURE A-20: *Voting Results: Yes Votes in Referenda 1986 and 2005*
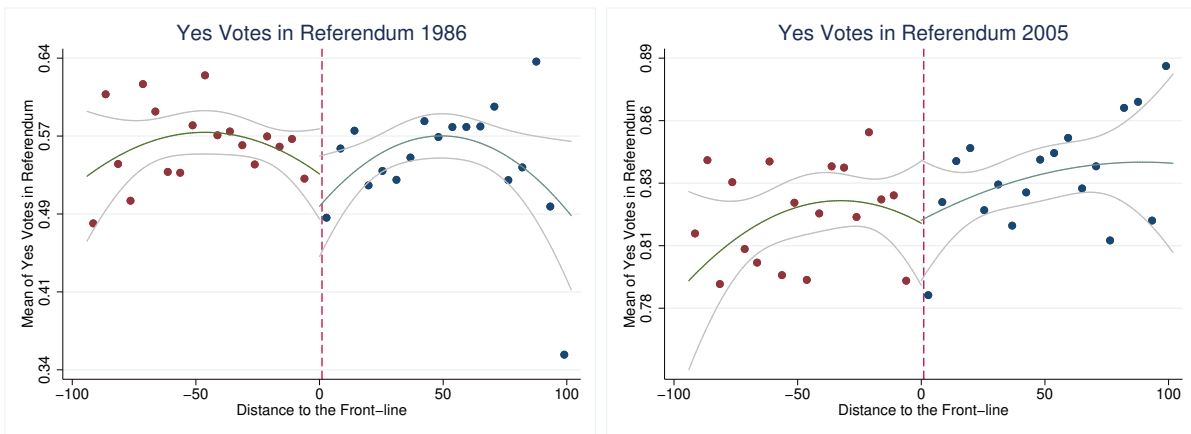
NOTES: The dots show the average turnout at the municipal level for two referenda held in 1986 (left) and 2005 (right), conditional on the distance to the front-line. The lines are quadratic fits, with confidence intervals. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side. RD coefficients (st.error) are -0.011 (0.0480) in 1986 (left) and -0.034 (0.0591) in 2005 (right), using `rdrobust` command.

FIGURE A-21: *Pre-trends. 1936 Balance of Power and Prewar Political Violence*
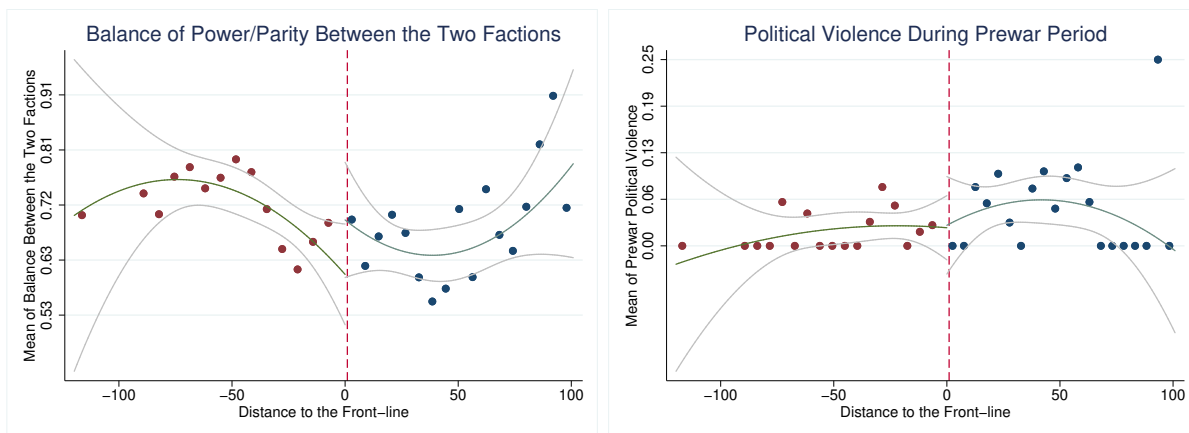
NOTES: The dots show the average of an index capturing the extent to which there is a balance of power or parity between the two factions—left and right—(left panel) and political violence during the prewar period (right panel), at the locality level and conditional on the distance to the front-line. Municipalities located within the front are excluded. Negative values of distance correspond to the Republican side. RD coefficients (st.error) are -0.65 (0.132) (left) and -0.060 (0.0417) (right), using `rdrobust` command.

FIGURE A-22: *Historical Population Data for Aragon at the Municipal Level Using 1930 and 1940 Censuses*
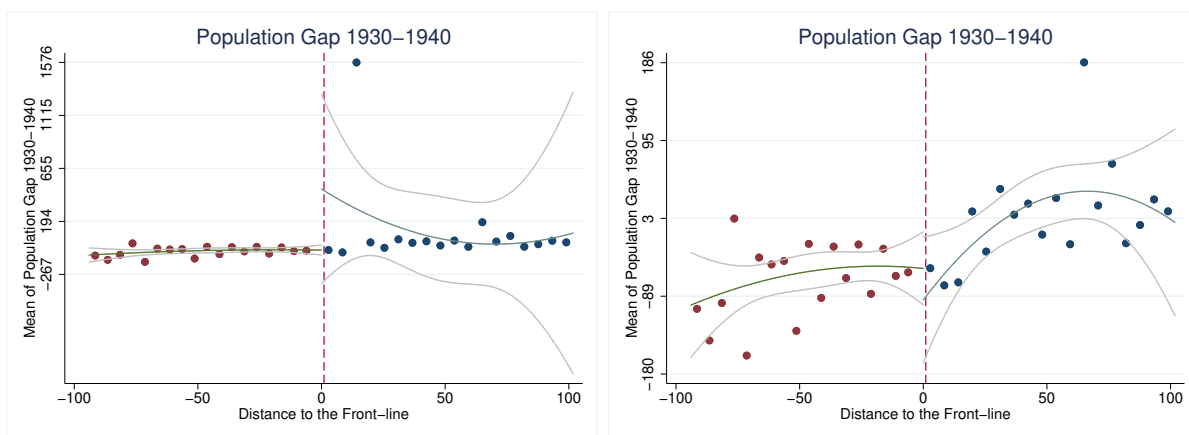
NOTES: The dots show the average of the difference between population in 1940 and in 1930 at the municipal level, conditional on the distance to the front-line. The left panel includes all municipalities (except the ones in the front-line) and the right panel additionally excludes Zaragoza, the capital 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 `rdrobust` command.

FIGURE A-23: *Historical Population Data for Aragon at the Municipal Level Using 1970 and 1981 Censuses*
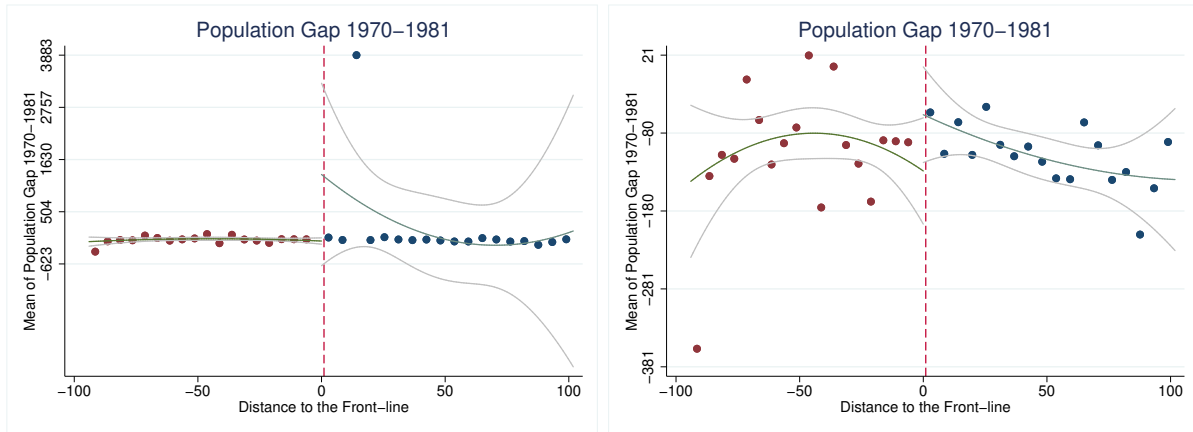
NOTES: The dots show the average of the difference between population in 1970 and in 1981 at the municipal level, conditional on the distance to the front-line. The left panel includes all municipalities (except the ones in the front-line) and the right panel additionally excludes Zaragoza, the capital 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 `rdrobust` command.

FIGURE A-24: *Collective Memory: Francoist / Religious Streets and Mass Graves*
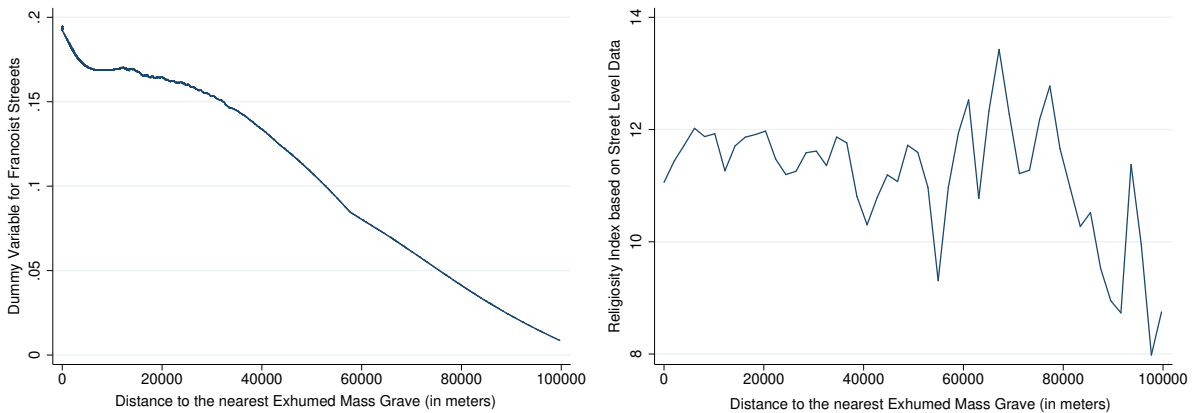
NOTES: The figure in the left panel depicts a Kernel-weighted linear regression of a dummy for Francoist streets on distance to the nearest exhumed mass grave (in meters) at the municipality level. The figure in the right panel depicts a Kernel-weighted local polynomial regression of an index for religious 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.

FIGURE A-25: *Collective Memory: No-Do Newsreels about the War*
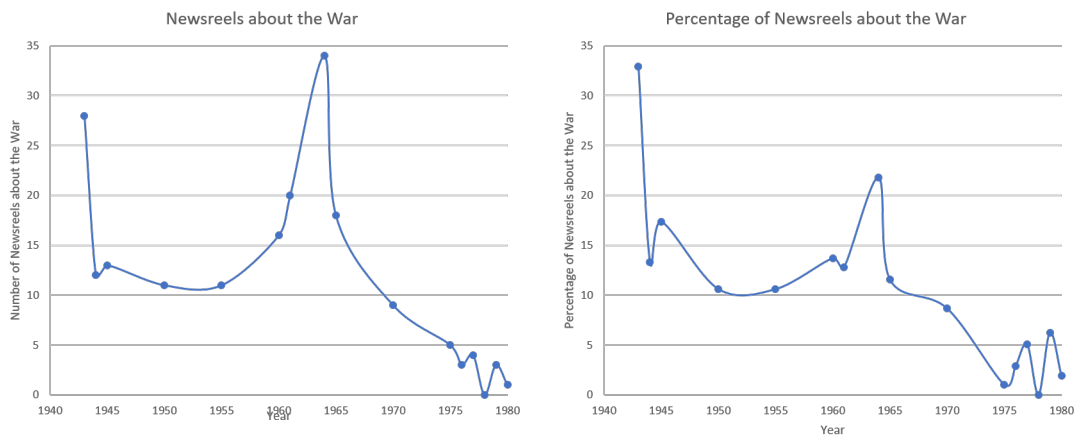
NOTES: The figure in the left panel depicts the number of newsreels about the war from 1943 to 1980. The figure on the left panel depicts the same figure over the total number of newsreels over the same time period. Information comes from Aguilar [1996].

TABLE A-1: *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-2: *Mass Graves*

Type	Number	%
No Interventions Undertaken	1,176	47.84
Fully or Partially Exhumed	540	21.97
Transferred to the Valley of the Fallen	499	20.30
Missing	242	9.85
Valley of the Fallen	1	0.04
Total graves	2,458	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-3: *Mass Graves: Death Toll*

Type	Number	%
Transferred to the Valley of the Fallen	33,839	49.08
No Interventions Undertaken	15,535	22.53
Fully or Partially Exhumed	14,977	21.72
Missing	4,261	6.18
Valley of the Fallen	338	0.49
Total dead	68,950	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: *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-5: *Exhumed Graves: Location*

	Number	%
Cementery	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-6: *Control Variables. Sources of Information*

Variables	Sources
1931 road network	Ministry of Public Infrastructure
Military plans for the coup and troops' movements during the war	Coll-Hurtado [2012]; Puell and Huerta [2007]
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`
Roman roads	Blackwood, Carol. (2017). GB Roman Roads, [Dataset]. EDINA

TABLE A-7: *OLS Results on Generalized Trust: Non-Exhumed Mass Graves*

	(1)	(2)	(3)	(4)
Non-Exhumed corpses/Population	-0.0013***	-0.0004	0.0003	0.0002
	(0.0005)	(0.0005)	(0.0011)	(0.0010)
Observations	38,287	38,275	36,159	35,839
Adj-R^2	0.03	0.04	0.05	0.07
Region and year FE	Yes	Yes	Yes	Yes
Individual and district controls	No	Yes	Yes	Yes
Geographic controls	No	No	Yes	Yes
Education and employment controls	No	No	No	Yes
Mean dep. variable	4.86	4.86	4.85	4.85

Notes: *Non-Exhumed corpses/Population* is measured as the number of corpses in all types of mass graves minus the number of corpses in the exhumed mass graves in each district divided by the population that district had in 1930 and multiplied by 1,000. *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, average temperature and its standard deviation, distance to river and to coast, and landcover. *Education and employment controls* includes level of education and employment status of the individual. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-8: *OLS Results on Generalized Trust: Exhumed Mass Graves, Restricted (IV) Sample*

	(1)	(2)	(3)	(4)	(5)
Exhumed corpses/Population	-0.0071***	-0.0070***	-0.0203***	-0.0191***	-0.0179***
	(0.0023)	(0.0023)	(0.0059)	(0.0058)	(0.0059)
Observations	31,061	31,054	29,771	29,531	29,531
Adj-R^2	0.03	0.05	0.05	0.07	0.07
Region and year FE	Yes	Yes	Yes	Yes	Yes
Individual and district controls	No	Yes	Yes	Yes	Yes
Geographic controls	No	No	Yes	Yes	Yes
Education and employment control	No	No	No	Yes	Yes
IV controls	No	No	No	No	Yes
Mean dep. variable	4.83	4.83	4.83	4.83	4.83

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. *Exhumed corpses/Population* is measured as the exhumed number of corpses in the exhumed mass graves in each district divided by the population that district had in 1930 and multiplied by 1,000. This sample excludes Canary and Balearic Islands as well as the province of Madrid. *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. *Geographic controls* includes an index of caloric yield of the soil, ruggedness, average temperature and its standard deviation, distance to river and to coast, and landcover. *Education and employment control* includes level of education and employment status of the individual. *IV controls* includes distance to Madrid, distance to the Mola Plan and to the taking of Madrid. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-9: *IV Results: All Mass Graves*

	(1)	(2)	(3)	(4)
	Panel A: First-Stage Results			
Distance to the takeover Madrid	-0.015***	-0.016***	-0.014***	-0.015***
	(0.0011)	(0.0011)	(0.0011)	(0.0012)
F statistic	206.35	202.42	149.51	152.21
	Panel B: Second-Stage Results			
All corpses/Population	-0.053***	-0.051***	-0.070**	-0.075***
	(0.0181)	(0.0184)	(0.030)	(0.029)
Observations	29,531	27,372	29,531	27,372
Centered	0.07	0.07	0.06	0.06
Region and Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Restricted to primary road	No	Yes	No	Yes
Mola's Plan control	No	No	Yes	Yes
Mean dep. variable	4.83	4.86	4.83	4.86

Notes: *All corpses/Population* is measured as the total number of corpses in all types of mass graves in each district divided by the population that district had in 1930 and multiplied by 1,000. The instrument is the distance (in meters) to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking of Madrid. *Controls* include age-group, education and labor status of the individual fixed effects, current size of the municipality fixed effects, population in 1930 and in the survey year, area of the district, primary roads in 1931, ruggedness, mean temperature and its standard deviation, distance to river and to coast, an index of caloric yield of the soil, a landcover index, distance to Madrid. *Mola's Plan control* measures the distance (in meters) to the primary road that existed in 1931 and that General Mola planned to use to take Madrid. Sample restricted to districts in the mainland, without Madrid. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-10: *IV Results: Mass Graves Transferred to the Valley of the Fallen*

	(1)	(2)	(3)	(4)
	Panel A: First-Stage Results			
Distance to the takeover of Madrid	-0.0079***	-0.008***	-0.0090***	-0.0096***
	(0.0010)	(0.0010)	(0.0008)	(0.0009)
F statistic	67.75	64.19	117.57	118.85
	Panel B: Second-Stage Results			
Transferred corpses/Population	-0.102***	-0.100***	-0.106**	-0.115***
	(0.0363)	(0.0380)	(0.0456)	(0.0449)
Observations	29,531	27,372	29,531	27,372
Centered R^2	0.05	0.05	0.05	0.05
Region and Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Restricted to primary road	No	Yes	No	Yes
Mola's Plan control	No	No	Yes	Yes
Mean dep. variable	4.83	4.86	4.83	4.86

Notes: *Transferred corpses/Population* is measured as the total number of corpses in the mass graves that were transferred to the Valley of the Fallen in each district divided by the population that district had in 1930 and multiplied by 1,000. The instrument is the distance (in meters) to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking of Madrid. *Controls* include age-group, education and labor status of the individual fixed effects, current size of the municipality fixed effects, population in 1930 and in the survey year, area of the district, primary roads in 1931, ruggedness, mean temperature and its standard deviation, distance to river and to coast, an index of caloric yield of the soil, a landcover index, distance to Madrid. *Mola's Plan control* measures the distance (in meters) to the primary road that existed in 1931 and that General Mola planned to use to take Madrid. Sample restricted to districts in the mainland, without Madrid. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-11: *IV Results: Exhumed Mass Graves, Robustness*

	(1)	(2)	(3)	(4)
	Panel A: First-Stage Results			
Distance to the takeover of Madrid	-0.013***	-0.007***	-0.0017***	-0.0017***
	(0.0006)	(0.0004)	(0.0001)	(0.0005)
F-statistic	466.77	388.9	493.14	13.39
	Panel B: Second-Stage Results			
Exhumed	-0.063*	-0.128**	-0.529**	-0.529*
	(0.0365)	(0.0567)	(0.2341)	(0.2895)
Centered R^2	0.06	0.06	0.07	0.07
Region and Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
South only	Yes	No	No	No
Extensive Margin	No	Yes	No	No
Extensive (binary)	No	No	Yes	No
Cluster(region)	No	No	No	Yes
Observations	13,826	29,587	29,587	29,587
Mean dependent variable	4.65	4.83	4.83	4.83

Notes: *Exhumed* is measured as the number of corpses exhumed in each district divided by the population that district had in 1930 and multiplied by 1,000 in Column 1. In Column 2 we use the total number of exhumed mass graves in each district. In Columns 3 and 4 we use a binary variable that takes the value 1 if in the district there is at least one exhumed mass grave and 0 otherwise. The instrument is the distance (in meters) to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking of Madrid. *Controls* include age-group, education and labor status of the individual fixed effects, current size of the municipality fixed effects, population in 1930 and in the survey year, area of the district, primary roads in 1931, ruggedness, mean temperature and its standard deviation, distance to river and to coast, an index of caloric yield of the soil, a landcover index, and distance to Madrid. We further control by the *Mola's Plan*, that measures the distance (in meters) to the primary road that existed in 1931 and that General Mola planned to use to take Madrid. Sample restricted to districts in the mainland, without Madrid. Column 1 restricts the sample to individuals living in provinces in the southern half of mainland Spain. Robust standard errors in Columns 1, 2 and 3, and clustered at the Region level in Column 4, in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-12: *Decomposing Trust: IV Results with Trust on Institutions. Mass Graves Transferred to the Valley of the Fallen*

	Army	Civil Guard	Church	Constit. Court	Ombudsman	Parliament
Transferred Corpses/Population	-0.46**	-0.66*	-0.34	-0.02	0.17	-0.02
	(0.18)	(0.39)	(0.25)	(0.12)	(0.17)	(0.05)
Observations	12,401	7,316	10,997	13,336	13,318	23,411
F-Statistic	35.31	8.90	23.28	53.94	36.18	77.87
Mean dep. variable	5.5	5.9	3.9	4.2	4.6	4.1

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. *Transferred Corpses/Population* is measured as the number of corpses in mass graves transferred to the Valley of the Fallen in each district divided by the population that district had in 1930 and multiplied by 1,000. The instrument is the distance (in meters) to the primary road that existed in 1931 that was taken in the advancement of the Francoist troops in the taking of Madrid. All models include region and survey-year fixed effects. Controls include age-group, education and labor status of the individual fixed effects, current size of the municipality fixed effects, population in 1930 and in the survey year, area of the district, a measure of density in the primary roads network in 1931, ruggedness, mean temperature and its standard deviation, distance to river and to coast, an index of caloric yield of the soil and a landcover index. All models use Distance to Madrid as an instrument for mass graves, and control for Distance to Mola Plan (keeping all mainland observations, except Madrid). Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-13: *RD Results: Voting. Congressional Elections (1977-2016). Robustness Tests*

	(1)	(2)	(3)	(4)
	Panel A: Votes for the Left			
RD coefficient	-0.076***	-0.088***	-0.073***	-0.081*
	(0.0129)	(0.0190)	(0.0131)	(0.0418)
	Panel B: Votes for the Right			
RD coefficient	0.075***	0.080***	0.071***	0.081**
	(0.0133)	(0.0185)	(0.0133)	(0.0416)
Excludes Zaragoza	Yes	No	No	No
Add. Latitude and Longitude controls	No	Yes	No	No
Year fixed effects	No	No	Yes	No
Average municipality	No	No	No	Yes
Original Number of Observations	8146	8158	8158	684

Notes: All models exclude front-line 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 (1977-2016). Coefficients display the difference among mean on the right and the left side of the Aragon Front. Conventional standard errors are displayed in parenthesis. All estimations are local RD using `rdrobust` command. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A-14: *RD Results: Voting. Municipal Elections (1987-2011)*

	(1)	(2)	(3)	(4)
	Panel A: Votes for the Left			
RD coefficient	-0.243***	-0.201***	-0.126***	-0.169***
	(0.0550)	(0.0405)	(0.0387)	(0.0448)
	Panel B: Votes for the Right			
RD coefficient	0.048	0.027	0.045	0.038
	(0.0377)	(0.0323)	(0.0355)	(0.0352)
Front-line municipalities	No	Yes	No	No
Latitude and Longitude controls	No	No	Yes	No
Province fixed effects	No	No	No	Yes
Original Number of Observations	4759	5088	4759	4759

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

TABLE A-15: *RD Results: Referenda 1986, 2005 and Both*

	1986	2005	Both
	Panel A: Turnout		
RD coefficient	-0.014	0.053	0.056
	(0.051)	(0.068)	(0.045)
	Panel B: Yes Votes		
RD coefficient	-0.011	-0.034	-0.023
	(0.048)	(0.059)	(0.062)
Original Number of Observations	680	683	1363

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