The State Made War, and War Made the Rebels: WWI Mortality and Irish Independence

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Abstract

Can the human costs of fighting for a state spur later participation in rebellion against it? We study this question in Ireland, where communities sent men to fight for Britain in World War I and soon after supplied rebels in the War of Independence. We instrument local WWI death rates using a shift-share instrument based on regiment-level mortality shocks and find that a one-standard-deviation increase in the WWI death rate raises the rebel rate by about 1.4 additional rebels per 100 inhabitants, relative to a sample mean of 1.5. The increase in rebel participation is stronger in what became the Irish Free State than in Northern Ireland, suggesting that pre-existing political divisions influenced responses to wartime losses. We find little evidence that the effect is driven by returning servicemen joining the rebellion. An event-study analysis of children's given names reveals WWI mortality led to a shift towards Irish and away from British cultural identity.

Keywords: Identity; First World War; Ireland; Irish Republican Army

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1. Introduction

Wars can destabilize states not only by exposing them to external threats but also by undermining their ability to contain internal dissent. The human and material losses associated with large-scale conflicts may generate grievances against the authorities responsible for the war effort, particularly when these costs are unevenly distributed across communities. Such grievances may strengthen opposition to the existing regime and increase individuals' willingness to participate in insurgent activity. External wars can thus fuel internal conflict by expanding the pool of potential recruits for rebel movements, potentially at a time when the state's capacity to suppress rebellion is already strained.

We evaluate this hypothesis empirically, by looking at the case of Ireland between 1914 and 1922. Irish communities fought alongside Britain in the Great War and, shortly after the Armistice, entered the Irish War of Independence (IWI). We exploit spatial variation in wartime deaths across districts and ask whether communities that bore heavier losses during WWI supplied more rebels and more material support for the republican cause. Ireland is a particularly informative setting to study this question. Roughly 210,000 men from the island had served width British forces (Jeffery, 2000) in WWI – the largest military mobilisation in Irish history – and the short interval between wartime exposure and the onset of rebellion means the acute costs of WWI were still salient at the time of the separatist uprising. In addition, the availability of disaggregated data on WWI deaths and support for the Irish nationalist uprising enables us to devise a strategy that can separately identify the effect of grievances from the strategic opportunity generated by the British reluctance to fight in another protracted conflict. Finally, because fighting took place abroad, we can isolate the political consequences of wartime human losses from the direct destruction of domestic physical capital.

To document these effects, we assemble a district-level dataset covering the whole of Ireland: over 3,000 electoral districts with WWI mobilisation and mortality from Commonwealth War Graves Commission fatality records and British Army service records ("Burnt" and "Unburnt"), geolocated to 1911 boundaries; rebel participation from Military Service Pensions Collection (MSPC) pension and medal applications; contemporaneous donations to the Irish National Aid Association (INAA) and geolocated IRA brigade attacks; and pre-war demographic, economic, and cultural covariates from the 1911 census.

Our empirical analysis is centred on estimating how WWI deaths affect three local outcomes related to support for Irish Nationalist forces: i) rebel mobilization during the Irish War of Independence (our main variable of interest), ii) donations to the Irish National Aid Association in 1917–18, and iii) intensity of brigade action. All outcomes are measured at the district-level. We begin by estimating a linear regression of district rebel rates on pre-1916 WWI death rates, controlling for mobilisation, population, several pre-determined covariates and constituency fixed effects.[1] One problem with conventional OLS estimates in

[1]We restrict attention to WWI deaths taking before the Easter Rising of April 1916, so that the main explanatory variable is predetermined before all our outcomes. As a result, WWI deaths in our regression are predetermined relative to the political clash that arguably initiated the violent movement towards Irish inde-

this context is that enlistment and wartime assignment may correlate with unobservables such as attachment to British identity or attitudes towards risk. We therefore instrument the death rate with a measure of predicted deaths, constructed as a shift-share instrument that combines regiment-level mortality with each district's distribution of pre-1916 recruits across regiments (Carozzi, Pinchbeck and Repetto, 2026). The identifying assumption is that, conditional on mobilisation and district characteristics, regiment-level death rates reflect deployment choices and the fortunes of war rather than local determinants of separatist activity.

We find that WWI mortality substantially increased communities' supply of rebels. In our preferred specification, a one-standard-deviation increase in the death rate raises the rebel rate by about 0.22 standard deviations under OLS and 0.72 under IV. These estimates imply roughly 0.4 and 1.4 additional rebels per 100 inhabitants, respectively, relative to a mean of 1.5. The same pattern appears for donations in to the Irish National Aid Association in 1917–18. This association was set up to support the families of those killed or imprisoned in the Easter Rising. Instrumental variables estimates imply that a one-standard-deviation increase in the death rate raises expected donations by about 128 percent. Brigade-attack counts, which record where operations occurred rather than where rebels lived, show no robust effect once baseline controls are included.

We next examine geographic and cultural heterogeneity. The mortality–rebellion relationship is weaker in Ulster and Northern Ireland, and the negative regional interactions remain significant after adding constituency fixed effects. Continuous cultural interactions are positive in OLS. In the reduced form, interactions with Catholic share and Irishness Name Scores are positive and significant without geographic fixed effects, but become smaller and statistically inconclusive after those controls are added. We therefore distinguish the relatively clear regional pattern from the more qualified evidence on the cultural characteristics underlying it.

We then turn to cultural responses in the affected communities, measured through children's names. A name is a deliberate parental choice and can therefore serve as a revealed-preference proxy for the identity parents transmit to their children and signal to their community (Fryer and Levitt, 2004; Abramitzky, Boustan and Eriksson, 2020; Fouka, 2020). Comparing birth cohorts within districts in the 1926 census, we find that children born from 1919 onwards in districts that experienced pre-1916 wartime deaths received more culturally Irish names and were less likely to receive a British royal name, relative to children in districts without such deaths.

Results are robust to measuring rebel mobilisation in alternative ways, such as pensions only, medals only, or awarded claims only. By contrast, we find that pre-1916 mortality does not predict Easter Rising participation. This null effect is consistent with the historical record of the Rising as a small, long-planned action by an already organised minority rather than a broad popular uprising. It also suggests that wartime losses did not spark the 1916

pendence.

insurrection, but instead were instrumental in building up support for the later mobilisation of 1919–21.

A natural alternative mechanism to grievances is that mortality raises rebel supply through returning servicemen, who brought back military training and experience that could be reused in the struggle for independence. Linking census records to war and rebel files, we find that the two populations have very little overlap – among unique matches, only 86 men appear in both sources. Once we control for name frequency, WWI veterans were no more likely to become rebels, with estimates precise enough to rule out effects larger than 2 percent of a standard deviation. That evidence runs against a channel operating through veterans' own participation and is consistent with a grievance interpretation, though it does not allow us to rule out the possibility that veterans trained or organised others.

Our paper contributes to the literature on the determinants of rebellion and civil conflict. Prior work emphasises economic incentives (Collier, 2000), ethnic cleavages (Montalvo and Reynal-Querol, 2005; Guarnieri, 2025), grievances (Cederman, Weidmann and Gleditsch, 2011), and social or community motivations for joining armed groups (Marchais et al., 2024).[2] Related work on Ireland links the Famine to later rebel mobilisation in the War of Independence (Henn and Huff, 2024; Narciso and Severgnini, 2023)—the same conflict outcome, but a different historical shock. Our contribution is to show that wartime mortality among men who fought for Britain raised the subsequent local supply of rebel effort against British rule, using unusually detailed individual-level records of rebels together with micro-geographic variation and an instrument for mortality.

We also contribute to research on how war deaths reshape postwar politics (Acemoglu et al., 2022; Juan et al., 2024; Carozzi, Pinchbeck and Repetto, 2026; Yi, 2023). Closest in design, Carozzi, Pinchbeck and Repetto (2026) show that British communities that lost more men in WWI later displayed stronger civic capital and combat motivation in WWII. However, whereas in their setting wartime deaths strengthened attachment to the British state, we find the opposite political sign in Ireland, where mortality raised communities to rebel against British rule. The negative regional interactions are consistent with that interpretation, although the sensitivity of continuous cultural reduced forms to geographic controls limits how precisely we can attribute the regional pattern to Irish identity. Work on secessionism emphasises identity as a driver of independentist demand (Desmet, Ortín and Özak, 2025; Cederman, Rüegger and Schvitz, 2022); we examine how regional and cultural differences condition communities' responses to wartime losses. Related work links wartime service under empire to later demands for statehood (Yi, 2023). Finally, relative to work linking war deaths to voting or party radicalisation (Acemoglu et al., 2022; Juan et al., 2024), our contribution is to study the most extreme form of regime disapproval–armed rebellion–and to separate grievance from the capacity channel of returning veterans.

Taken together, the evidence indicates that the human costs of fighting for the empire raised the local supply of rebellion, with a weaker response in Ulster and Northern Ire-

[2]See also Blattman and Miguel (2010) for a review.

land. Cultural heterogeneity and subsequent naming choices are consistent with an identity-related grievance interpretation, but the continuous cultural reduced forms are sensitive to geographic controls. Empires may make war, and wartime losses can in turn contribute to rebellion against imperial rule.

2. Background

2.1. The British Empire and Ireland before WWI

British authority in Ireland had its origin in the 12th-century Anglo-Norman invasion. Over the next four centuries, England expanded its territorial control over the island, until culminating in the conquest of Ireland in 1603, after the Nine Years War. The island would remain under English, then British, control until the early twentieth century.[3] Throughout the period, Ireland saw several uprisings against British rule. After the Irish rising of 1641, the Cromwellian conquest led to significant confiscation of property from both Catholic landed owners and the Catholic Church. One of the last Irish rebellions before WWI was a small-scale, failed uprising known as the Young Ireland Rebellion, which took place in 1848 during the time of the Irish famine.

From the 1880s onwards, there was a resurgence of Irish nationalism. During the "Celtic Revival", there was a renewed interest in the languages, myths, folklore, art, and traditions defining Irish identity, often set in contrast to those of British culture (Conchubhair, 2018). Instead of independence, most Irish nationalists focused their efforts on achieving Home Rule, which would entail a limited form of self-government. This movement was led by the Irish Parliamentary Party, which sat in the Westminster Parliament and had secured the passing the 1914 Home Rule Act before WWI. Home Rule would give Ireland its own parliament, responsible for domestic affairs, while keeping the country under the British Crown.

Many in Ireland had supported Home Rule by voting for the Irish Parliamentary Party – under John Redmond's leadership – which held 74 out of 103 Irish seats in the British Parliament. Support was not universal, though: the Unionist Party, particularly strong in the north-east of Ireland, opposed Home Rule and organized mass resistance, forming the Ulster Volunteers in 1912 to oppose its implementation, by force if necessary. In turn, Nationalists created the Irish Volunteers on the next year to defend it. This divide between Nationalists and Unionists was as much religious as political. Catholics, about three-quarters of the island's population, were overwhelmingly Nationalist, while Protestants – concentrated in the north-eastern province of Ulster – were predominantly Unionist. By 1914, Ireland was on the brink of civil war.

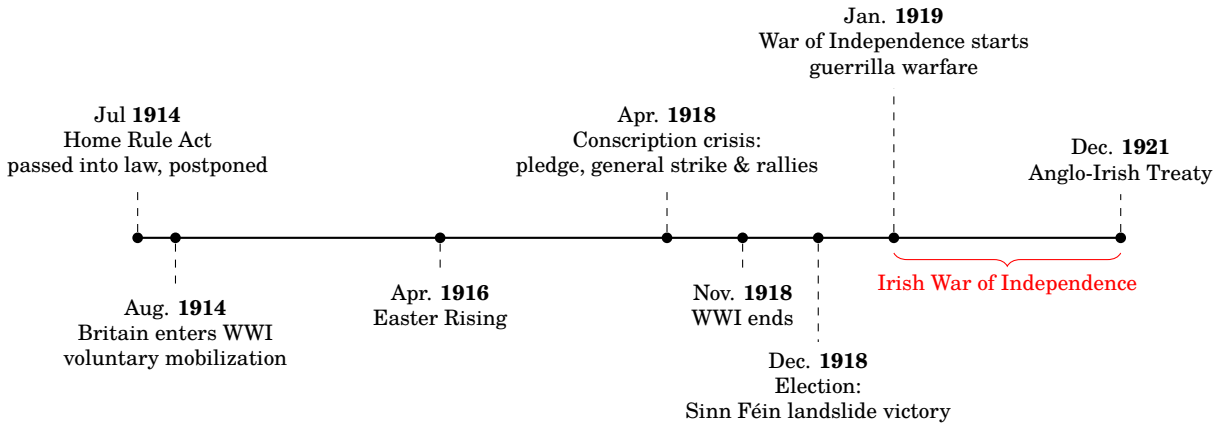
2.2. Outbreak of WW1 and Mobilization

The outbreak of WWI in 1914 swiftly altered the political landscape in Ireland. The British government postponed the introduction of Home Rule and called on both Unionists

[3] Ireland became formally part of the United Kingdom with the 1801 Act of Union, which resulted in the abolition of the separate Irish Parliament.

FIGURE 1

TIMELINE OF KEY EVENTS, 1914-1921



and Nationalists to join the war effort voluntarily. John Redmond urged the Irish Volunteers to enlist in the British Army, as did Unionist leaders. Many Irishmen set aside political differences to support the war, although a small group of Nationalists opposed it vehemently. On the one hand, the great majority of the roughly 190,000 Irish Volunteers sided with Redmond and renamed themselves the National Volunteers, endorsing enlistment. On the other, a small minority – fewer than one in ten men – opposed enlistment vehemently, and kept the name Irish Volunteers (Fitzpatrick, 2015).

The split between National Volunteers and Unionists shaped war recruitment: Ulster Protestants joined the ranks of the 36th (Ulster) Division and Catholics typically joined one of the southern Irish divisions. Unionists were motivated by loyalty to Great Britain and hoped this loyalty would strengthen their case for keeping Ireland within the United Kingdom and avoid Home Rule. Instead, nationalists had been motivated by early war rhetoric around "the rights of small nations" and support for Catholic Belgium, whose people had suffered considerably under German aggression. On both sides, WWI volunteers believed that military service was in Ireland's best interests.[4] Alongside these political convictions were motivations unrelated to politics, including camaraderie, adventure, duty, security, and economic considerations. Finally, many Irish who volunteered to fight with the British in WWI were career soldiers already in service. Over the course of the war, roughly 210,000 men from Ireland served in the British forces (Jeffery, 2000). The WWI death toll is debated: the 49,400 recorded in *Ireland's Memorial Records* is now widely regarded as too high, and academic estimates range from about 25,000 to 35,000 (Grayson, 2014).

2.3. The Easter Rising and its aftermath

Figure 1 provides a timeline of key events leading up to the Irish revolution. While the war in France and Belgium absorbed British attention, a small group of nationalists saw an

[4]Among Nationalists, this conviction is captured by Major Willie Redmond, MP, who wrote in his will that "in joining the Irish Brigade and going to France I sincerely believed, as all the Irish soldiers do, that I was doing my best for the welfare of Ireland" (Denman, 1995).

opportunity to strike for full independence. At Easter 1916, Irish rebel forces seized prominent buildings in Dublin and proclaimed an Irish Republic. Most rebels taking part in the uprising were part of the minority of anti-war Irish Volunteers mentioned in the previous section.[5] The rising was meant to spark a nationwide rebellion, but poor coordination within the rebel forces left the fighting largely confined to Dublin. Limited support from the broader public, severe equipment shortages and the arrival of British artillery, meant that the initial success of the uprising in taking part of the Irish capital progressively turned into a comprehensive defeat. The remaining rebels fighting in Dublin surrendered by the 30th of April.

The British authorities responded harshly to the uprising, arresting thousands of prisoners and executing several leaders over the following weeks. The drawn-out executions and mass imprisonments soon began to shift a public sentiment that had initially been largely unsympathetic towards the rebels. Open protest against British rule was banned or restricted, but gatherings at Catholic mass offered a way to express support without breaking the law. Internment also proved counterproductive for Britain: at Frongoch in north Wales, where some 1,800 men were held, prisoners organized, built networks, and debated republican ideas so freely that the camp became known as a "university of revolution" and helped form a cadre of future independence leaders, among them Michael Collins (Crowley et al., 2017). As pressure mounted, the government released prisoners gradually through late 1916 and 1917, and many returned home to be welcomed as heroes, the Rising now seen as an act of sacrifice for national freedom.

2.4. Conscription and the turn against the war

The heavy toll suffered by the British Army throughout WWI meant that the British government considered several times whether to extend conscription to Ireland between 1916 and 1918 (conscription in Great Britain was introduced in January 1916). Opposition to conscription was widespread across the Irish population, though. Arguably, it was this opposition to conscription which prevented its introduction.[6] Sinn Féin turned fear of conscription it to its advantage. Destenay (2022) documents repeated "conscription scares" during the war and reports that many young men backed Sinn Féin partly out of fear of conscription and aversion to military service. The party also turned participation in the war against its rivals, portraying the Irish Parliamentary Party as complicit in Irish deaths through its earlier support for voluntary enlistment. Some propaganda made the point visually: Figure 2(A) reproduces a postcard in which skeletons of Irish soldiers reach toward Redmond's recruitment poster.

[5]The uprising itself was an initiative of a revolutionary cell existing largely within the Irish Volunteers, the Irish Republican Brotherhood.

[6]Redmond and the Irish Parliamentary Party supported Irish participation in the British Army but strongly opposed conscription throughout the war. Bonar Law, a cabinet minister with the British government, when explaining the reasons for the exclusion of Ireland from conscription, stated: "In these Islands we have enough to do – quite enough, perhaps more than enough – in fighting our enemies. There will be time enough later to fight each other" (Bonar Law, Andrew, 1916). Wheatley (2005) discusses significant fears of conscription as early as 1914.

FIGURE 2

SINN FÉIN PROPAGANDA AND ANTI-CONSCRIPTION PLEDGE



(A) ANTI-RECRUITMENT PROPAGANDA



(B) ANTI-CONSCRIPTION PLEDGE

When the British government finally attempted to extend conscription to Ireland through the Military Service Act of April 1918, opposition was immediate and overwhelming, and the crisis became a turning point that united nationalists behind the goal of an Irish Republic rather than Home Rule (Fitzpatrick, 2015). Backed by the Catholic Church and the trade unions, a mass campaign of pledges (see Panel B of Figure 2), protests, and strikes forced the government to abandon the plan – but the episode had already consolidated nationalist opinion against Britain. Thus, Irish nationalist political activism was, to a significant degree, directed at opposition to Irish participation in the war, and conscription in particular by late 1918. WWI ended with the Armistice between Germany and the Allied powers on the 11th of November 1918.

2.5. The Politics of the WWI Dead

The meaning of Ireland's war dead was never politically neutral, and over the course of the war Irish nationalists progressively turned mounting Irish casualties into a resource for their cause. Early in the conflict, nationalist propaganda often mocked the men who had enlisted; but as casualties grew through 1915, its tone shifted decisively from derision to pity and sorrow, so that the public could oppose the war without disrespecting the men who fought. This separation of the soldiers from the cause they served proved politically useful, as it allowed nationalists to channel grief over the dead into hostility toward the British war effort rather than toward the volunteers themselves.

Nationalists actively exploited the rising death toll, which was "relentlessly catalogued [...], erring on the side of blood rather than caution", so that "the actual deaths were used in propaganda to advance the nationalist cause" (Novick, 2001, pp. 52, 60). A recurring theme

was the perception that Irishmen were being sacrificed disproportionately: anger at unequal casualty rates between Irish and British regiments, the heavily Irish losses at Gallipoli, and the sense that Irish regiments were ignored in dispatches were widespread in the nationalist press.

The Easter Rising affected this discourse but did not create it. Rather, it served as "a moment of intensification – a fulcrum upon which public opinion pivoted and propaganda grew far more focused" against Britain and pro-war Irish opinion (Novick, 2001, pp. 18, 65). By 1918, this reframing of the war and its dead had helped move public sentiment toward a party that allowed people to oppose the war, contributing to the Sinn Féin landslide of December 1918. This wartime politicization of the dead supports the grievance channel that we take to the data in the following.

WWI deaths may have influenced attitudes towards rebellion through (at least) two mechanisms. The first is grievance: communities that lost men may have resented Britain as a result of that loss. This explains why WWI deaths were used by the Irish nationalists as a propaganda tool and a rallying point in their mobilization efforts. The second channel operates by increasing the symbolic and emotional connection between the acquaintances of dead servicemen with the British Army and the United Kingdom. This mechanism relates to the processes of commemoration and remembrance discussed in Carozzi, Pinchbeck and Repetto (2026) and would discourage rebel support and participation. Note that the relative strength of both of these opposing mechanisms – grievance and commemoration – may be very different depending on the identity, religious and cultural attributes of the community affected by war deaths.

3. Data and descriptives

3.1. Main data sources

The main dataset used in our analysis is a cross-section at the electoral-district level covering all of Ireland. Each electoral district corresponds to a district electoral division (DED) in the 1911 census readily available from IPUMS (Minnesota Population Center, 2023); we refer to these units as *districts* throughout. We harmonize that list to the Central Statistics Office map by grouping districts that share a name apart from a prefix or suffix such as North/South or Lower/Upper, and by grouping districts within Dublin and Belfast.[7] The regression sample used covers 3,280 districts containing population as recorded in the 1911 census, with all 3,280 retained under the full baseline controls. Appendix Table A.1 records how each source file is reduced to that sample.

Rebel participation is measured from pension and service-medal applications in the Military Service Pensions Collection.[8] We use 18,499 pension applications by veterans and their dependants and 47,329 service-medal applications. Dependants could apply, so a record may refer to a rebel who died or to a survivor. Claims were filed years after the fighting, often

[7] The original source contains 3,672 DEDs, which we aggregate to 3,294 districts in our harmonized map.

[8] The source has been used in previous research (Huff, 2024; Henn and Huff, 2024; Narciso and Severgnini, 2023).

decades later, and the rebel rate measures later recognition of service rather than a contemporaneous roster of 1919–21 participants. We place 64,639 of the 65,828 applications in a district. Appendix A.3 describes the files, the overlap between pensions and medals, and the address rule.

Donations to the Irish National Aid Association provide a contemporaneous measure of support.[9] Our measure is the number of donations in the district. Brigade activity reports record ambushes, attacks, and destructions between 1 April 1920 and 11 July 1921. They locate the operation, and they do not cover the universe of IRA activity. We place 6,116 of 6,765 events in a district.

War deaths come from the Commonwealth War Graves Commission. We place 30,633 Irish dead in a district, and a further 1,368 records are coded only as Ireland. The district panel contains 30,545 deaths, close to the commonly cited total of about 30,000 (Gallagher, 2023). The treatment uses deaths in 1914 and 1915. Appendix A.4 describes how addresses are extracted and how a district is assigned.

Mobilisation is measured from surviving British Army service records: the burnt WO 363 series, obtained from Ancestry, and the unburnt WO 364 series, collected by Henn and Huff (2024).[10] We place 71,908 men in a district. That figure is well below conventional estimates of Irish enlistment in the British forces (around 210,000; Jeffery 2000), because of the incomplete survival of the service records and because not every Irish address can be placed at the district level. Mobilisation and death rates therefore measure variation among geolocated soldiers rather than the universe of Irish recruits. Appendix A.5 describes the geocoding.

Most pre-war demographic, economic, and cultural measures come from the 1911 census and the Central Statistics Office's valuations of houses and land. These include population, population density, the male ratio, literacy, the share of Catholics, the share of Irish speakers, and an Irishness Name Score. We also collect data on the locations of Gaelic League branches and military barracks used under British rule, which we describe in Appendix A.7. Appendix A.8 defines the name score and describes the 1926 census used in the naming analysis.

3.2. Descriptive statistics

Descriptive statistics can be found in Table 1. The average district has about 1,320 inhabitants, with a density of 56 inhabitants per square km. The rebel rate, defined as the number of rebels who participated in the War of Independence per 100 inhabitants, is 1.50. Regarding the WWI effort, districts have on average a mobilization rate of 0.54% and a death rate of 0.09%, numbers that are much lower than the corresponding ones for Britain. Supplementary outcomes are sparse and skewed: districts record on average 4.3 INAA donations (with about three quarters recording none), and 1.9 geolocated brigade attacks (0.20 per 100 inhabitants). The spatial variation we use is illustrated in Figure 3, where one can see that

[9] The lists of contributors were published in the nationalist press, mostly in 1917 and 1918 (Hargaden, 2022).

[10] About two thirds of the original WWI service records were destroyed or damaged in a bombing raid on the War Office in London in 1940.

both the WWI death rate and the WWI mobilization rate are not clustered in certain areas. On the other hand, the higher IWI rebel rates tend to be in what is today the Republic of Ireland. It is in this area that one also finds a higher share of Catholics and individuals with Irish names, as shown in Figure 4. Our two supplementary outcomes—INAA donations and geolocated brigade attacks—also tend to be higher in the south and west; we map them in Appendix Figure B.5.

TABLE 1
DESCRIPTIVE STATISTICS

	Mean	Std. dev.	Min	Max
A. Economic and demographic characteristics				
Population	1,318.31	10017.00	68	404901
Density (km2)	56.37	217.29	1.91	7069.66
Total value of houses and land (1000 GBP)	4.68	36.21	0.00	1510.27
N. houses p.c.	0.23	0.04	0.06	0.92
Literacy rate	0.75	0.07	0.14	0.92
B. Military and cultural characteristics				
Share of catholics	0.83	0.24	0.00	1.00
Share of Irish speakers	0.16	0.22	0.00	0.96
Avg. Irishness Name Score	68.90	5.78	48.08	80.44
Gaelic League branch	0.12	0.33	0.00	1.00
Male ratio	0.52	0.03	0.41	0.79
Any active barrack	0.02	0.15	0.00	1.00
Avg. distance to barrack	17.31	10.18	0.00	65.60
C. WWI and War of Independence				
N. rebels p.c. (x100)	1.50	1.95	0.00	29.89
N. INAA donations	4.30	19.47	0.00	520.00
INAA donations p.c. (x100)	0.51	1.81	0.00	43.68
N. IRA attacks	1.86	6.15	0.00	268.00
N. IRA attacks p.c. (x100)	0.20	0.28	0.00	2.78
N. mobilised p.c. (x100)	0.54	0.80	0.00	4.47
N. deaths WWI p.c (x100).	0.08	0.15	0.00	0.74
Observations	3280			

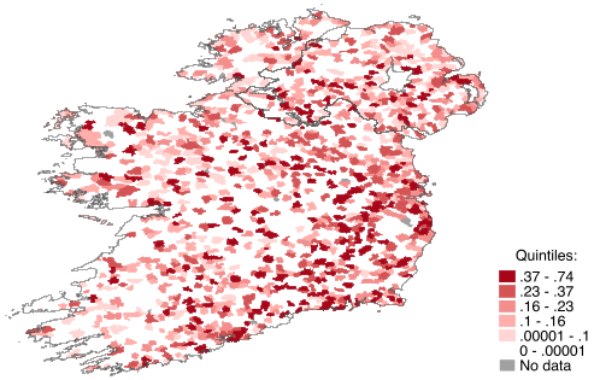
Notes: Descriptive statistics for 3,280 districts in the analysis sample. Panel A reports economic and demographic characteristics, drawn from the 1911 Census and the 1911 CSO land-and-buildings valuation: population and population density (inhabitants per km^2); the total value of houses and land (in thousands of GBP) and the number of houses per capita; and the literacy rate (share of residents recorded as literate). Panel B reports military and cultural characteristics: the share of Catholics, the share of Irish speakers, and the male ratio (men as a share of the population), all from the 1911 Census; the average Irishness Name Score (constructed as described in Appendix A.8); an indicator for the presence of a Gaelic League branch in the district; and two measures of British military presence, an indicator for any active barracks in the district and the average distance (in km) to the nearest barracks. Panel C reports the conflict variables: the number of War of Independence rebels per 100 inhabitants; INAA donations (count and monetary value per 100 inhabitants); geolocated IRA brigade attacks (count and per 100 inhabitants); and WWI mobilization and WWI deaths, each measured per 100 inhabitants. Variables labelled "(x100)" are expressed per hundred inhabitants.

4. Empirical strategy

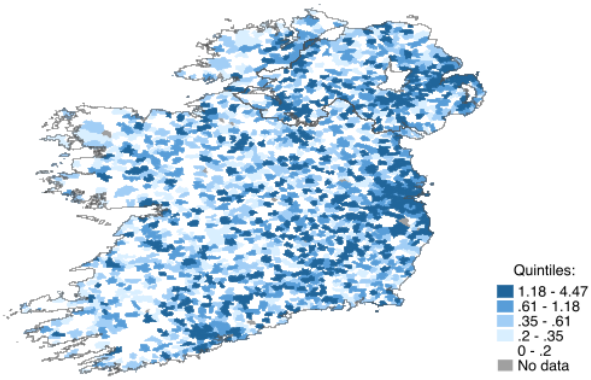
Our main specification is the following linear model

$$y_i = \alpha + \beta death\ rate_i + \gamma' W_{it} + FE + \epsilon_i, \tag{1}$$

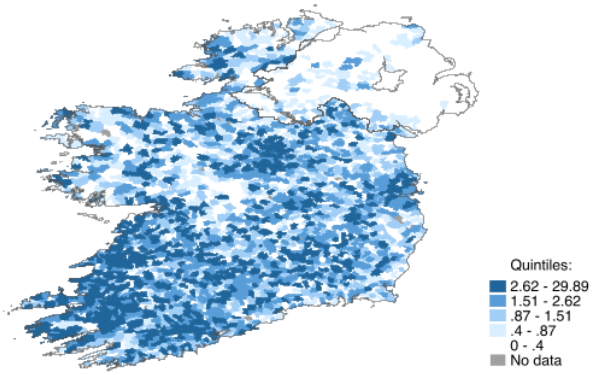
Figure 3
Rebels in IWI and dead and mobilized in WWI



(a) WWI Death rate %



(b) WWI mobilisation rate %



(c) IWI rebel rate %

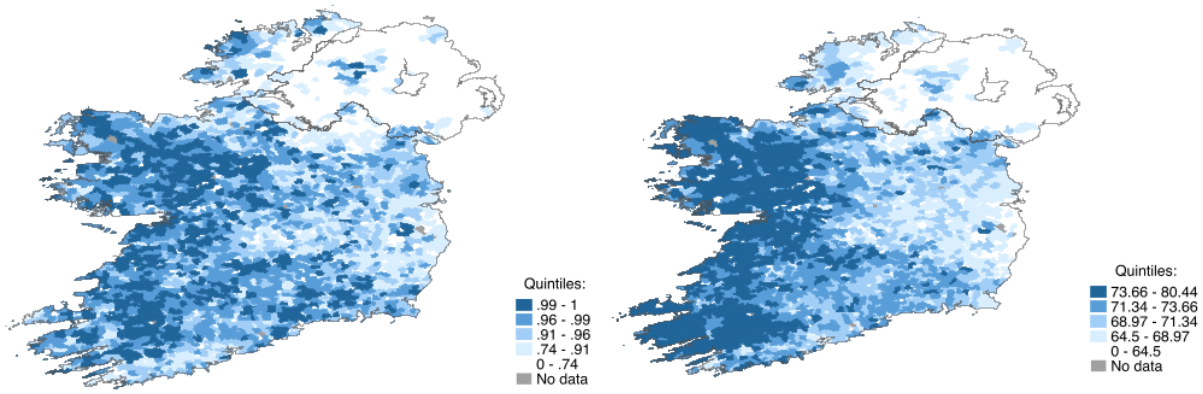
Notes: Historical electoral districts in Ireland and Northern Ireland. Panel A shows the death rate, i.e., the ratio between the number of soldiers killed in WWI (in 1914–1915) originating in each district and the total district population in 1911. Panel B shows the WWI mobilisation rate (in 1914–1915), defined as the number of soldiers mobilized in each district over the total district population in 1911. Panel C shows the rebel rate, defined as the number of rebels originating in each district over the total district population in 1911.

where y_i is an outcome of interest, for example the rebel rate from district i during the Irish War of Independence, or IRA attacks taking place there over the course of the war. Our main treatment variable, $death\ rate_i$, is defined as the number of WWI fatalities from district i over 1911 population, while W_{it} is a vector of controls which include (log) population in 1911, WWI mobilisation rate (defined as number of mobilised over population) and a battery of socio-economic controls.[11] At times, we include fixed effects at the level of electoral constituency, of which there were 78. All variables are standardized so β is to be interpreted

[11]These are houses per capita, the literacy rate, the shares of Catholics and Irish speakers, the male ratio, a score for the average "Irishness" of first names, the share of individuals with an Irish name, a dummy for having an active barrack in the district, and the distance to the closest of such barracks.

Figure 4

Share of Catholics and children with Irish names



(a) Share of Catholics (b) Irishness names score

Notes: Historical electoral districts in Ireland and Northern Ireland. Panel A shows the share of Catholics in each district (1911 Census). Panel B shows the average Irishness Name Score.

as the effect of a one standard deviation increase on our outcomes of interest. Before standardisation, we winsorise the top 1% of the WWI death rate, the predicted death rate (the instrument), and the mobilisation rate.[12]

We focus on deaths rather than enlistment for two reasons. First, the political shock ran through the dead: men who served and returned safely could even strengthen ties to Britain, so it was mortality, not service as such, that supplied nationalists with both grievance and symbol (Section 2). Second, enlistment itself was driven by economics, religion, and politics, making it endogenous to the outcomes we study. We therefore hold the mobilisation rate fixed in W_{it} and identify the effect of deaths from differential mortality among the men sent, isolated by our instrument from local conditions.

Throughout, our treatment is the *pre-1916* death rate, i.e. WWI fatalities occurring before the Easter Rising of April 1916. This restriction is motivated by the timing of the rebellion: the Rising was the first act of armed insurrection, and participation in it is itself one of the outcomes we study; deaths from mid-1916 onward are therefore contemporaneous with (or subsequent to) the uprising we study. These deaths could also plausibly be endogenous to it: once the independence movement gathered pace – through the growth of Sinn Féin, the reorganization of the Volunteers into the IRA, and the 1918 conscription crisis – who enlisted (and hence who died) was itself influenced by this rise in nationalist sentiment. Limiting the treatment to 1914–1915 deaths avoids this simultaneity and isolates war exposure that is pre-determined with respect to the political rupture. Appendix Figure B.1 documents the underlying enlistment pattern: voluntary mobilisation fell sharply after 1915 in both Northern Ireland and the rest of Ireland. We nonetheless show that our results are robust

[12]The winsorisation is applied to remove some outliers that are generated by noisy geolocation in generally small districts. We do not winsorise census shares, wealth, or outcome rates.

to using deaths over the entire war (1914–1918) in Appendix Table B.4.

Notwithstanding the inclusion of a fairly rich set of controls, WWI mortality may still be endogenous in the equation above if, for instance, areas with a longer tradition of willingness to fight or with a larger share of anti-British population are more likely to send individuals to fight and possibly die in combat, and these areas are at the same time more likely to give birth to future Irish rebels. To address this possible endogeneity problem, we propose an instrumental-variable strategy below.

4.1. Instrumental-variable strategy

We instrument the pre-1916 WWI death rate with the predicted death rate, constructed using regiment-level mortality rates and the shares of pre-1916 mobilised soldiers from each district i to each regiment j (Carozzi, Pinchbeck and Repetto, 2026). This instrument leverages the idea that regiment-level mortality should be unrelated to local unobservable characteristics that affect participation in rebel activities during the War of Independence. Specifically, the corresponding first-stage equation is

$$death\ rate_i = \pi_0 + \pi_1 death\ rate_i^{pred} + \pi_2' W_{it} + FE + e_i, \tag{2}$$

where $death\ \ rate_i^{pred} = d_i^{pred}/\text{population}_i^{1911}$, and the predicted number of deaths d_i^{pred} is obtained as:

$$d_i^{pred} = \sum_{j=1}^{J} m_i \alpha_{ij} \delta_{ij}, \tag{3}$$

where m_i is pre-1916 mobilisation from district i, α_{ij} is the share of district i's pre-1916 recruits serving in regiment j, and δ_{ij} is a leave-one-out mortality rate for regiment j with respect to district i that excludes district i's deaths and mobilisation from regiment j's totals, so the rate used to predict deaths in district i is not mechanically tied to district i's own war losses.

To validate our instrument, we conduct two balancing checks. First, in Appendix Figure B.2 we report regressions of several pre-determined covariates on the WWI death rate and on the predicted death rate (the instrument), at both the district level (Panel A) and the regiment-shock level (Panel B).[13] At the district level, denser and richer areas are more likely to contribute to the war effort (as well as areas with an active military barracks). At the same time, communities with more Catholics, Irish speakers, or with more inhabitants with Irish names have lower mortality. Because participation in the Great War in Ireland

[13]Panel B follows Borusyak, Hull and Jaravel (2022) and aggregates district characteristics to the regiment level using exposure shares α_{ij} and the `ssaggregate` command. Under their framework, shift-share identification also requires sufficiently many and sufficiently dispersed shocks (Assumption 2). Following Carozzi, Pinchbeck and Repetto (2026), we report the inverse of the Herfindahl index of average regiment exposure, $1/\sum_j s_j^2$, as an effective sample size. In our data this equals about 20 (based on 76 regiments), compared with 138 in the English case studied by Carozzi, Pinchbeck and Repetto (2026). Borusyak, Hull and Jaravel (2022) treat this statistic as a diagnostic for whether shock-level variation is concentrated in a few regiments; in their simulations, an effective sample size of about 20 is a borderline but still satisfactory case, with performance deteriorating closer to 10. This is relevant for the validity of the shift-share IV itself, not only for Panel B; we return to this below.

was always limited to volunteers, these results may reflect a lower propensity to serve and take risks by those who were ethnically Irish and, at the same time, a stronger participation in the war effort by the Northern Irish.

In Panel A, the blue markers report the same regressions using the predicted death rate instead. Compared with observed deaths, the instrument is much less correlated with pre-determined covariates. Coefficients on cultural and military variables are small and statistically insignificant. Population density remains positively related to the instrument, but the coefficient is modest in magnitude. Coefficients on additional socioeconomic variables are small and statistically insignificant. We therefore read Panel A as supportive evidence for exogeneity. Panel B reports the corresponding shock-level balancing test on δ_{ij} (BHJ Assumption 1). Because of the relatively small number of effective shocks in Ireland, this test is more demanding and noisier than the district-level one. However, results are also consistent with shocks being exogenous.

As a second check, we complement the balancing checks described above with an individual-level analysis. To implement this check, we first match Irish men mobilized during WWI with records from the 1911 Irish Census.[14] Using this sample, we estimate univariate regressions of individual cultural, socio-economic and demographic characteristics on the full regiment mortality rate δ_j (not the leave-one-out δ_{ij} used in the shift-share). Estimates are reported in Appendix Figure A.1. Most coefficients are close to zero and statistically insignificant. Literacy and local population density show small but significant correlations with regimental death rates. Taken together, this suggests limited sorting into high-risk regiments on observable traits, rather than systematic selection on the ethnic or political characteristics most relevant for rebellion.

One potential limitation of this strategy relates to the potential role of returning battle-hardened WWI veterans in the Irish War of Independence. If men exposed to high-mortality battalions brought home combat training, organizational skills, and networks useful for armed struggle (Jha and Wilkinson, 2012), this could constitute an exclusion restriction violation in our context. We provide complementary evidence addressing this specific issue in Section 6.1.

5. Results

5.1. Rebel participation: pension and medal applications

Our primary measure of rebel participation is the rebel rate, defined as the per-capita number of individuals from a district who took part in the War of Independence. These individuals are identified from MSPC pension and service-medal applications (Section 3). Table 2 reports OLS (Panel A), reduced-form (Panel B), and IV (Panel C) estimates of eq. (1) as controls are added. In the preferred full specification (column 3), the OLS coefficient is

[14] Matching is carried out using full name, year of birth and county of residence information and the Abramitzky, Boustan, Eriksson (ABE) method for census matches (Abramitzky et al., 2021). This allows us to identify WWI veterans in the census. See Appendix A.9 for more details.

0.220, the reduced-form coefficient is 0.143, and the IV coefficient is 0.722. A one-standard-deviation increase in pre-1916 mortality therefore raises the rebel rate by about 0.22 standard deviations under OLS and 0.72 under IV, or approximately 0.4 and 1.4 additional rebels per 100 inhabitants, respectively, relative to a sample mean of 1.5. Rescaling by the standard deviations of the rebel and death rates gives about 2.8 additional recorded applications per additional death under OLS (95% Wald interval 1.8 to 3.8), and 9.1 under IV (1.4 to 16.8).

TABLE 2
EFFECT OF WWI DEATH RATES ON REBEL RATE

	(1) Rebel rate	(2) Rebel rate	(3) Rebel rate
Panel A. OLS			
Death rate	0.251***	0.243***	0.220***
	(0.039)	(0.045)	(0.041)
Panel B. Reduced form			
Death rate^{pred}	0.148**	0.138**	0.143**
	(0.065)	(0.067)	(0.062)
Panel C. IV			
Death rate	0.637**	0.677**	0.722**
	(0.262)	(0.306)	(0.312)
Observations	3,280	3,280	3,280
First-stage coeff.	0.233	0.204	0.198
	(0.063)	(0.057)	(0.056)
Kleibergen–Paap stat.	13.731	12.642	12.479
Constituency FE	Yes	Yes	Yes
Population	No	Yes	Yes
Full ctrls.	No	No	Yes

Notes: Panel A reports OLS, Panel B reduced-form, and Panel C IV estimates for the standardized rebel rate. All columns include pre-1916 mobilisation and constituency fixed effects. Column (2) adds log population; column (3) adds the full baseline controls. In column (3), the OLS and IV coefficients imply about 0.4 and 1.4 additional applications per 100 inhabitants per one-standard-deviation increase in the death rate. The sample mean and standard deviation of the rebel rate are 1.50 and 1.95 per 100 inhabitants; the death-rate standard deviation is 0.155 per 100 inhabitants. The per-death rescaling is $\hat{\beta}\,\mathrm{SD}(y)/\mathrm{SD}(death\ rate)$; the reported Wald intervals hold these standard deviations fixed. The first-stage coefficient and Kleibergen–Paap statistic refer to Panel C. The column-(3) OLS R^2 is 0.358. Standard errors clustered by constituency are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%.

The IV estimates are roughly three times as large as the OLS estimates. Observed district death rates are measured with error because of incomplete CWGC placement, imperfect linkage to home districts, and residual geocoding noise, all of which can attenuate OLS estimates. The shift-share instrument, built from leave-one-out regiment mortality and predetermined mobilisation shares, is one way to address measurement error and thus limit

attenuation bias. Another reason is that IV recovers a local average treatment effect for districts whose mortality is shifted by regiment-level shocks, hence the sample of compliers can differ from the one used by OLS.[15] Importantly, OLS remains positive and statistically significant in every column of Table 2, and the IV–OLS gap is stable across the specifications. A final note on our first-stage strength: the Kleibergen–Paap statistic ranges from 12.5 to 13.7. We treat this as a modest first stage rather than relying on a single strength threshold. In light of the relatively limited strength of the first stage and the moderate number of effective regiment shocks (Section 4.1), Appendix Table B.8 reports an Anderson–Rubin confidence set for the preferred IV estimate, and Appendix Figure B.3 shows that the estimate remains positive when any single regiment is dropped from the instrument.

We interpret the effect as working mainly through grievance rather than through veterans' own participation as rebels: communities that bore heavier losses had more reason to resent British rule, and nationalist discourse (Section 2) gave wartime death a political meaning. The regional interactions are consistent with an uneven response across political and cultural contexts, while the continuous cultural reduced forms provide more qualified evidence. Consistent with this reading, we show in Section 6.1 that WWI veterans were not disproportionately likely to become rebels. The effect is generally robust to alternative definitions of the rebel rate, such as using only pension applications, only service-medal applications, or only those effectively awarded, as reported in Appendix Table B.1. One exception is participation in the Easter Rising, for which we find no relationship with the death rate (Appendix Table B.1, column 4). This result is not surprising because Easter Rising participation is an order of magnitude smaller than War of Independence mobilisation in our data (about 2,600 MSPC records, roughly 4% of all applications) and most concentrated in Dublin. Participants in the Rising were mainly members of the Irish Volunteers and the Irish Citizen Army, organisations formed before the war from an already committed nationalist minority.

5.2. Other forms of republican support

As an independent measure of support for the republican cause, we use donations to the Irish National Aid Association (INAA).[16] Unlike the rebel rate, which is built from pension and service-medal applications filed years later, the donation data are contemporaneous records of money given in 1917 and 1918, and so are free of the self-reporting and survivorship concerns that could affect application-based measures.

Table 3 reports Poisson pseudo-maximum-likelihood (PPML) estimates for the number of donations in a district. This specification accommodates the count outcome and its many zeros: about three quarters of districts record no donations. In the full specification (column 3), the IV-Poisson coefficient of 0.826 implies that a one-standard-deviation increase in the WWI death rate raises expected donations by about 128%; the Poisson coefficient of

[15] IV exceeding OLS is common in related conflict and mobilisation designs, see, e.g., Carozzi, Pinchbeck and Repetto 2026 and Rozenas, Talibova and Zhukov 2022.

[16] The INAA, together with the Irish Volunteers' Dependants' Fund (the two merged in 1916), was set up after the Easter Rising to support the families of rebels who had been killed or imprisoned. Donating was voluntary and, at the time, potentially risky, so contributions should reflect individual support for the independentist cause.

0.344 implies an increase of about 41%. Both are significant at the 1% level. The positive association in a contemporaneous behavioural measure supports the interpretation that the application-based results reflect increased support for independence, while not eliminating every source of recording or selection bias.[17]

TABLE 3
EFFECT OF WWI DEATH RATES ON INAA DONATIONS

	(1) N. Donations	(2) N. Donations	(3) N. Donations
Panel A. Poisson			
Death rate	0.494***	0.359***	0.344***
	(0.074)	(0.065)	(0.053)
Panel B. Reduced form			
Death rate^{pred}	0.534***	0.368***	0.329***
	(0.080)	(0.113)	(0.118)
Panel C. IV Poisson			
Death rate	1.112***	0.814***	0.826***
	(0.309)	(0.232)	(0.226)
Observations	3,280	3,280	3,280
First-stage coeff.	0.233	0.204	0.198
	(0.063)	(0.057)	(0.056)
Kleibergen–Paap stat.	13.731	12.642	12.479
Dep. var mean	4.303	4.303	4.303
Constituency FE	Yes	Yes	Yes
Population	No	Yes	Yes
Full ctrls.	No	No	Yes

Notes: Panel A reports Poisson estimates, Panel B reduced-form estimates (number of donations on the predicted death rate), and Panel C IV-Poisson estimates of the effect of the WWI death rate on the number of donations. The death rate and predicted death rate are standardized; coefficients on the death rate are semi-elasticities (a coefficient of β implies a $100 \times (e^{\beta} - 1)\%$ change in expected donations per one-standard-deviation increase in the death rate). All specifications include the pre-1916 mobilisation rate and constituency FE. Column 2 adds population, and column 3 adds the full set of baseline controls. The first-stage row reports the coefficient on the instrument from the corresponding linear first-stage regression, while the Kleibergen–Paap statistic is obtained from the corresponding linear IV specification estimated on the IV-Poisson estimation sample (Panel C only). Standard errors are clustered at the constituency level. *, **, and *** represent 10%, 5%, and 1% significance levels, respectively.

[17] Appendix Table B.2 reports linear IV and OLS estimates for alternative donation measures, including per-capita counts and monetary amounts.

IRA brigade activity. As a third outcome, we examine whether WWI mortality predicts the number of IRA brigade attacks geolocated to each district (Appendix Tables B.9 and B.10).[18] We find no robust effect in our preferred specifications: once population and baseline controls are included, IV and OLS point estimates are small and statistically insignificant. This null effect is reasonable, as brigade reports record the location of the attack, which often reflects operational targeting of barracks, roads, or other military assets rather than where rebels lived. Operations were frequently mobile and could be carried out in areas with few residents. Pension applications and INAA donations, by contrast, measure resident-based mobilization and support.

5.3. Geographic and cultural heterogeneity

The historical account in Section 2 suggests that wartime losses could have different political consequences across communities depending on their attachment to Britain. We examine this possibility first through regional comparisons and then through using interactions with several measures of pre-war Irish identity. In these analyses, we report OLS and reduced-form estimates, holding the full baseline control set fixed and comparing specifications without and with constituency fixed effects. Mobilisation is also interacted with each moderator in each regression.[19]

Regional differences. In Table 4 we add to our baseline model an interaction with Ulster (columns 1–2) and Northern Ireland (columns 3–4), with and without constituency fixed effects.[20] The regional interaction estimates are negative in both OLS (Panel A) and reduced-form specifications (Panel B) and remain statistically significant when constituency fixed effects are added. The size of the interaction coefficients indicates that mortality affects rebel participation only outside these regions, while the implied effect within Northern Ireland is close to zero. Figure 5 maps the county-by-county OLS estimates and shows that effects are concentrated outside Northern Ireland and stronger in the west, areas with a larger share of catholics and Irish-speaking residents (see Figure 4).[21] Overall, these results show large regional differences in the response to wartime losses. Whether these differences are due to cultural or institutional features of those regions will be explored next.[22]

Continuous measures of Irish identity. We next interact mortality with different proxies for Irish identity, broadly defined. We consider the Catholic share, the Irish-speaking share and the average Irishness Name Score measured before the war. We also use an identity mean

[18] These data, gathered from digitising the Brigades Activity Reports, document military engagements, attacks on British army barracks or military forces, ambushes, and related activities.

[19] We use reduced forms because a fully interacted IV model would require a separate first stage for the mortality interaction as well as for mortality itself.

[20] All regressions include the regional indicator, the mobilisation rate and its regional interaction, log population, and the full baseline census and barracks controls; regional indicators that are absorbed by the fixed effects are omitted automatically.

[21] Appendix Figure B.4 reports the corresponding estimates and confidence intervals.

[22] Appendix Table B.3 extends the Northern Ireland comparison to donations and brigade activity. Donations show a positive mortality association but no precisely estimated Northern Ireland interaction; brigade activity provides no robust positive association.

Table 4

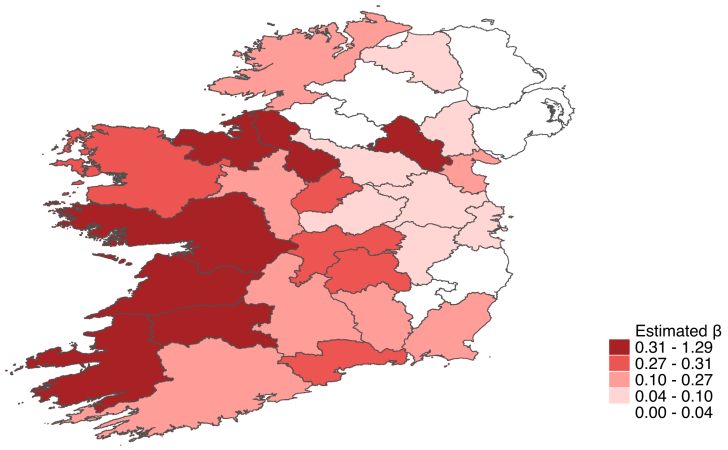
WWI mortality and rebel participation: regional heterogeneity

	Ulster		N. Ireland	
	(1)	(2)	(3)	(4)
Panel A. OLS				
D. rate	0.254***	0.265***	0.254***	0.266***
	(0.051)	(0.048)	(0.048)	(0.045)
D. rate × region	-0.170***	-0.191***	-0.238***	-0.262***
	(0.056)	(0.055)	(0.045)	(0.043)
Panel B. Red. form				
D. rate^{pred}	0.245***	0.198***	0.234***	0.189***
	(0.081)	(0.072)	(0.077)	(0.069)
D. rate^{pred} × region	-0.301***	-0.230***	-0.211**	-0.188**
	(0.093)	(0.081)	(0.084)	(0.076)
Const. FE	No	Yes	No	Yes
Log pop.	Yes	Yes	Yes	Yes
Mobil.	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Obs.	3,280	3,280	3,280	3,280

Notes: Dependent variable: standardized rebel rate. Panel A: standardized pre-1916 death rate; Panel B: standardized predicted death rate (original instrument). Columns (1)–(2) interact with Ulster; (3)–(4) with Northern Ireland. All regressions include the regional main effect where identified, pre-1916 mobilisation and its regional interaction, log population, and the full baseline census and barracks controls. Constituency FE in columns (2) and (4). SEs clustered by constituency (78) in parentheses. *** 1%, ** 5%, * 10%.

Figure 5

Estimated effect by county



Notes: County-level OLS estimates of eq. (1) (standardized rebel rate on standardized pre-1916 death rate), run separately for each county with mobilization, (log) population, and the full baseline census and barracks controls. Shading groups counties by quintiles of the estimated β.

index constructed as the simple mean of the standardized Catholic share, Irish-speaking share and share of individuals with an Irish name. Each cultural measure enters a separate regression, where we also include the mobilisation rate interacted with the cultural measure and the usual controls.

Table 5 reports results, first without constituency fixed effects and then with them, both for OLS (Panel A) and reduced-form (Panel B) specifications.[23]

The OLS interactions are positive for all four measures, large, and generally precisely estimated, suggesting that Irish identity was a significant factor in amplifying the response to wartime losses. These communities thus appear to have been more receptive to the republican cause's propaganda and mobilisation efforts, either because they were home to more individuals who could be recruited by the rebel cause, or because inhabitants of these communities were more receptive to the nationalist discourse of the war. However, while these results suggest a response along identity lines, the Irish identity measures we use could also capture other confounding factors, such as economic conditions or social cohesion. Evidence against this interpretation is provided in Table 8, which shows interactions between our instrument and several economic controls yields insignificant coefficients.

The reduced forms results, reported in Panel B, provide weaker evidence, with estimates being all positive and of similar relative magnitued as the OLS results, but often imprecisely estimated.

Prewar US networks. Rebel movements often rely on networks of kin, friends, and acquaintances for recruitment, financing, and coordination (Weinstein, 2007; Staniland, 2014; Hart, 2003). Ties to the Irish US diaspora can be important as a source of money and political support abroad (Collier and Hoeffler, 2004). Irish migrants in the United States were a particularly influential constituency in this period, aiding nationalist organisations by collecting funds and providing visibility for the independence movement (Kenny, 2000). Table 6 examines whether the mortality response varies with prewar US connections, using the surname-based network index of Connor (2019).[24] The OLS interaction between mortality and the US-network index is positive with and without constituency fixed effects. The reduced-form interaction is positive and significant without constituency fixed effects (0.189, standard error 0.076), but is about one-third smaller and imprecisely estimated with them. These patterns are consistent with a role for diaspora networks, in line with the historical account that Irish America raised substantial funds and political support for the independence movement (Kenny, 2000; Carroll, 2002).

[23] Full coefficients, including the Irish-name share and PC1 alternatives, are reported in Appendix Tables B.5 and B.6.

[24] The source-area index is available at the Poor Law Union level and is mapped to our districts using 1911 population weights. It measures network connections rather than observed remittances or a local emigration rate. Both specifications include the full baseline control set, the network main effect, and the mobilisation–network interaction.

TABLE 5

WWI MORTALITY AND REBEL PARTICIPATION: CONTINUOUS CULTURAL INTERACTIONS

	Catholic share		Irish-speaking share		Irishness name score		Identity mean index	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A. OLS								
D. rate	0.224***	0.224***	0.237***	0.242***	0.250***	0.252***	0.241***	0.244***
	(0.043)	(0.040)	(0.052)	(0.048)	(0.047)	(0.043)	(0.047)	(0.043)
D. rate × cult.	0.105***	0.115***	0.092	0.123**	0.126***	0.136***	0.181***	0.199***
	(0.021)	(0.020)	(0.062)	(0.058)	(0.031)	(0.029)	(0.050)	(0.044)
Panel B. Red. form								
D. rate^{pred}	0.170**	0.148**	0.158**	0.132*	0.176**	0.149**	0.176**	0.149**
	(0.066)	(0.059)	(0.077)	(0.070)	(0.068)	(0.062)	(0.069)	(0.062)
D. rate^{pred} × cult.	0.091**	0.051	0.064	0.039	0.108*	0.054	0.137	0.087
	(0.040)	(0.035)	(0.093)	(0.090)	(0.061)	(0.053)	(0.097)	(0.092)
Const. FE	No	Yes	No	Yes	No	Yes	No	Yes
Log pop.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mobil.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	3,280	3,280	3,280	3,280	3,280	3,280	3,280	3,280

Notes: Each column is a separate regression of the standardized rebel rate. Panel A interacts the standardized pre-1916 death rate with the indicated cultural measure; Panel B uses the standardized predicted death rate. All regressions include the mortality main effect, pre-1916 mobilisation and its cultural interaction, log population and the full baseline census and barracks controls. Column pairs (1)–(2), (3)–(4), (5)–(6) and (7)–(8) use Catholic share, Irish-speaking share, Irishness Name Score and the identity mean index. Individual cultural proxies are standardized; the identity mean index averages the standardized Catholic, Irish-speaking and Irish-name shares. SEs clustered by constituency (78) in parentheses. *** 1%, ** 5%, * 10%.

6. Alternative Explanations

6.1. Returning servicemen

Our IV strategy relies on using the assignment of servicemen to regiments experiencing different death rates during WWI. Excludability of the instrument requires that predicted WWI mortality does not affect rebellion via channels other than local deaths in WWI. This assumption would be violated if a higher mortality also led to more returning WWI veterans, and if these veterans were disproportionately likely to mobilize as rebels during the Irish War of Independence.

To address this concern, we link Ancestry (WWI) and MSPC (rebel) records to the 1911 Irish Census using a modified Abramitzky–Boustan–Eriksson (ABE) procedure and ask whether the same men appear in both conflicts. Within unique matches, only 86 men appear in both datasets. While imperfect matching implies that the true overlap is higher, this already suggests that WWI veterans were a modest share of rebel forces.[25] We then estimate, on the census male sample,

[25]There were some notable cases of British Army veterans joining the IRA. For example, Tom Barry served with the British Royal Field Artillery and would later become commander of the IRA's 3rd Cork Brigade. Martin Doyle fought with the Royal Munster Fusiliers during WWI, obtaining the Victoria Cross for his actions on the Western Front in September 1918. He went on to join the IRA in 1920, where he mainly served in intelligence roles.

TABLE 6

WWI MORTALITY AND REBEL PARTICIPATION: PREWAR US NETWORKS

	Prewar US network	
	(1)	(2)
Panel A. OLS		
Death rate	0.283***	0.277***
	(0.054)	(0.049)
Death rate × network	0.190***	0.194***
	(0.061)	(0.054)
Panel B. Red. form		
Death rate^{pred}	0.140**	0.124**
	(0.060)	(0.057)
Death rate^{pred} × network	0.189**	0.112
	(0.076)	(0.073)
Const. FE	No	Yes
Log pop.	Yes	Yes
Mobil. controls	Yes	Yes
Other controls	Yes	Yes
Obs.	3,251	3,251

Notes: Dependent variable: standardized rebel rate. Panel A: pre-1916 death rate; Panel B: predicted death rate. Both columns include the US-network index, pre-1916 mobilisation and its network interaction, log population and baseline controls. Column (2) adds constituency FE. Network index standardized across 158 source areas and mapped with 1911 population weights; unresolved districts excluded. SEs two-way clustered by connected source-area family (154) and constituency (78). *** 1%, ** 5%, * 10%.

$$\text{MSPC}_c = \phi_0 + \phi \text{Ancestry}_c + \Theta_1' F_c + \Theta_2' X_c + \varepsilon_c \tag{4}$$

where MSPC_c and Ancestry_c are unique-match indicators or fractional match weights, F_c controls for name-cell frequency (to absorb mechanical positive bias from common names), and X_c includes pre-determined census covariates (age, religion, marital status, and occupation). Details of the matching algorithm, match rates, and the construction of F_c are in Appendix A.9.

Estimates of ϕ are reported in Table 7. In Panel A, Ancestry_c and MSPC_c are indicators equal to one if census man c has a unique link to the Ancestry or MSPC file, respectively. The association is positive when we do not control for the frequency of observations within cells, but once we include these controls the estimates are tightly centered on zero across specifications. For example, the estimate in column 3 allows us to rule out effects of 2% of a standard deviation in the outcome. Precisely estimated zeroes are also obtained when focusing on individuals that are unique in either name-year of birth or name-year of birth-county. Panel B replaces the indicators with fractional match weights and also yields tightly estimated zeroes. In sum, there is no evidence that WWI veterans were more likely to mobilize as rebels themselves, which provides some support for the instrument's exclusion restriction and is consistent with a grievance reading – the political mobilisation of loss discussed

in Section 2. It should be noticed, however, that these estimates do not speak to whether veterans trained or organised others who later rebelled.

TABLE 7
WWI VETERANS AND REBEL MOBILISATION

	(1)	(2)	(3)	(4)
Panel A. Unique-match indicators				
	Rebel (dummy)			
WWI veteran (dummy)	0.0010**	0.0001	0.0002	0.0002
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Dep. var. mean	0.004	0.004	0.004	0.005
Obs.	1,557,129	1,557,129	1,557,129	1,263,572
Panel B. Fractional match weights				
	Rebel (weight)			
WWI veteran (weight)	−0.0002	−0.0006*	0.0004	0.0005
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Dep. var. mean	0.007	0.007	0.007	0.007
Frequency controls	No	Yes	Yes	No
Census controls	No	No	Yes	No
Sample	Full	Full	Full	Unique
Obs.	1,557,129	1,557,129	1,557,129	1,263,572

Notes: OLS estimates of eq. (4) on males in the 1911 census aged 5–51. Dependent variable: individual MSPC match indicator; regressor: individual Ancestry match indicator. Panel A: unique-match indicators; Panel B: fractional match weights. Frequency controls are name-cell uniqueness and inverse-frequency terms; census controls are age, religion, marital status and occupation. Column (4) restricts to individuals unique within a name–year-of-birth or name–year-of-birth–county cell. SEs clustered by district. *** 1%, ** 5%, * 10%.

6.2. Measurement and timing

A separate threat is that the MSPC-based rebel rate measures later recognition of service rather than a contemporaneous measure participants in the 1919–21 war. Pensions and medals were claimed years after the fighting, so differences in propensity to report, survivorship, or address recording conventions could in principle correlate with wartime losses. Three pieces of evidence limit this concern. First, the same positive association appears for INAA donations in 1917–18 (Table 3), a contemporaneous, resident-based measure that does not rely on retrospective applications. Second, results are robust to alternative MSPC constructions, such as using pensions only, medals only, or awarded claims only (Appendix Table B.1). Third, brigade-attack counts, which record where operations occurred rather than where rebels lived, show no robust effect once baseline controls are included. If the MSPC results mechanically captured denser documentation of rebel activity in high-mortality districts, we would expect a similar association for recorded brigade operations. However, we do not observe that.

Timing confounds are the other main measurement-adjacent concern. Wartime deaths could proxy for earlier radicalisation that later produced both Rising and War of Indepen-

dence participation, or for the 1918 conscription crisis. We address this by restricting treatment to pre-1916 fatalities (Section 4), which are predetermined relative to the Rising and to the subsequent nationalist surge. Consistent with that timing, pre-1916 mortality does not predict Easter Rising participation in our data (Appendix Table B.1, column 4): Rising records are sparse, Dublin-concentrated, and drawn from an already committed pre-war nationalist minority. Patterns using all 1914–18 deaths remain concentrated outside Ulster and Northern Ireland (Table B.4), but our preferred estimates stay with the pre-Rising window.

A final note is due regarding measurement error and data quality. Incomplete geolocation of mobilisation and death records, and differential wartime or post-war migration out of high-loss districts, could still attenuate or bias our estimates. These remain open issues that, although common when dealing with historical data, must be kept in mind when interpreting the results.

6.3. Other channels

A concern regarding our heterogeneity results is that cultural heterogeneity or access to diaspora networks merely reflect correlated socioeconomic conditions. Our preferred specifications control for pre-war census characteristics and barracks. We now evaluate separately whether mortality slopes vary with socioeconomic conditions. These comparisons allow us to test the degree to which heterogeneity results in the previous sections can be explained by pre-war socioeconomic proxies.

Table 8 jointly interacts mortality with houses per capita, log valuation per capita and log population density in columns. Columns correspond to specifications without and with constituency fixed effects. Panel A reports OLS and Panel B reports reduced forms. All columns use the same 3,251 mapped districts and clustering at constituency level.

Interaction terms in panel A indicate that part of the heterogeneity results in the baseline OLS specification above may be explained by heterogeneity by location socio-economic characteristics. In panel B, however, we see this is not the case for the reduced-form interactions. None of the of the interactions between predicted death rates and socio-economic characteristics is significant at conventional levels.

7. WWI mortality and naming conventions over time

If wartime losses deepened cultural cleavages and increased the likelihood of rebellion, it is possible that these shifts in attitudes and practices show up not only in political mobilisation but also in the transmission of identity within households. Naming choices provide a useful proxy for vertical cultural transmission, as parents' decisions about their children's names can reflect their cultural norms and preferences. We use two measures to assess this.[26] First, we use the Cultural Name Score (CNS) defined in Appendix A.8, which measures how distinctive an individual's name is of a particular cultural group, and examine

[26] Because the census covers only the Free State, Northern Ireland is excluded from this exercise.

TABLE 8

WWI MORTALITY AND REBEL PARTICIPATION: PREWAR SOCIOECONOMIC CONDITIONS

	Economic measures	
	(1)	(2)
Panel A. OLS		
D. rate	0.260***	0.268***
	(0.045)	(0.043)
D. rate × Houses p/c	0.059	0.023
	(0.066)	(0.061)
D. rate × Valuation	-0.168***	-0.154***
	(0.060)	(0.054)
D. rate × Log density	-0.088***	-0.086***
	(0.032)	(0.030)
D. rate × Literacy	0.112**	0.097**
	(0.044)	(0.043)
Panel B. Red. form		
D. rate^{pred}	0.165**	0.133**
	(0.073)	(0.063)
D. rate^{pred} × Houses p/c	0.168	0.179
	(0.192)	(0.162)
D. rate^{pred} × Valuation	-0.100	-0.074
	(0.094)	(0.083)
D. rate^{pred} × Log density	-0.004	-0.029
	(0.049)	(0.045)
D. rate^{pred} × Literacy	0.005	0.001
	(0.064)	(0.056)
Const. FE	No	Yes
Log pop.	Yes	Yes
Mobil.	Yes	Yes
Controls	Yes	Yes
Obs.	3,279	3,279

Notes: Dependent variable: standardized rebel rate. Panel A uses the standardized pre-1916 death rate; Panel B uses the standardized predicted death rate. Mortality is interacted jointly with 1911 houses per capita, log property valuation per capita, log population density and literacy per capita. All regressions include mortality itself, pre-1916 mobilisation alone and interacted with the same four measures, log population, moderator main effects and the full baseline census and barracks controls. Cultural variables remain in the baseline controls, with no cultural or US-network interaction. Column (2) adds constituency fixed effects. Both columns and panels use the same complete-case sample, with no restriction based on US-network coverage. All standardization precedes this restriction. SEs clustered by constituency (78) in parentheses. *** 1%, ** 5%, * 10%.

whether districts that suffered heavier WWI mortality subsequently gave children more culturally Irish names. Second, we use whether a child receives a British royal name as a proxy for British national attachment.[27]

Our main design compares naming patterns across birth cohorts within the same district. Specifically, we estimate the event-study specification

$$\mathrm{Y}_{ijt} = \alpha_i + \gamma_t + \sum_{c \neq c_0} \beta_c \big(\text{AnyDead}_i \times \mathbb{1}\{t \in c\}\big) + \sum_{c \neq c_0} \delta_c \big(\text{AnyMob}_i \times \mathbb{1}\{t \in c\}\big) + \varepsilon_{ijt}, \quad (5)$$

where Y_{ijt} is either the Cultural Name Score or an indicator for having a royal name for individual j born in year t in district i, α_i and γ_t are district and birth-year fixed effects, AnyDead_i indicates any pre-1916 WWI death in district i, and c indexes four-year birth cohorts. The omitted reference cohort is c_0 =1911–1914. Analogous cohort interactions with an indicator for any pre-1916 mobilisation (AnyMob_i) control for differential naming trends related to wartime enlistment. Alternative designs either replace district fixed effects with sibling fixed effects or replace AnyDead_i with an indicator for any predicted death, i.e., a binary version of our instrument.[28] Our main analysis focuses on boys' names.

Figure 6 reports the estimates of β_c from eq. (5), as well as the alternative designs. Coefficients are close to zero and statistically insignificant for cohorts born before and during the war, including the late-war cohort ending in 1918. By contrast, for cohorts born from 1919 onwards, Cultural Name Scores increase modestly in districts that experienced wartime deaths, while the probability of receiving a British royal name declines. Both effects persist through the end of the sample. For boys born between 1923 and 1926, the estimated differential increase in the Cultural Name Score is approximately 1 point relative to the 1911–1914 reference cohort, corresponding to about 1.5 percent of the unconditional mean. The estimated differential decline in the probability of receiving a British royal name is around 2 percentage points, compared to an unconditional mean of about 33 percent.

Results from the corresponding static difference-in-differences specifications are reported in Appendix Tables B.11 and B.12. Column (1) reports the effects without including interactions between the post-1916 indicator and an indicator for any pre-1916 mobilisation, while column (2) corresponds to a static difference-in-differences version of Equation 5. Column (3) instead interacts the post-1916 indicator with population deciles, and column (4) includes both sets of interactions. The estimated effects are attenuated when population is taken into account, but generally remain statistically significant at conventional levels, except for the Cultural Name Score with sibling fixed effects.

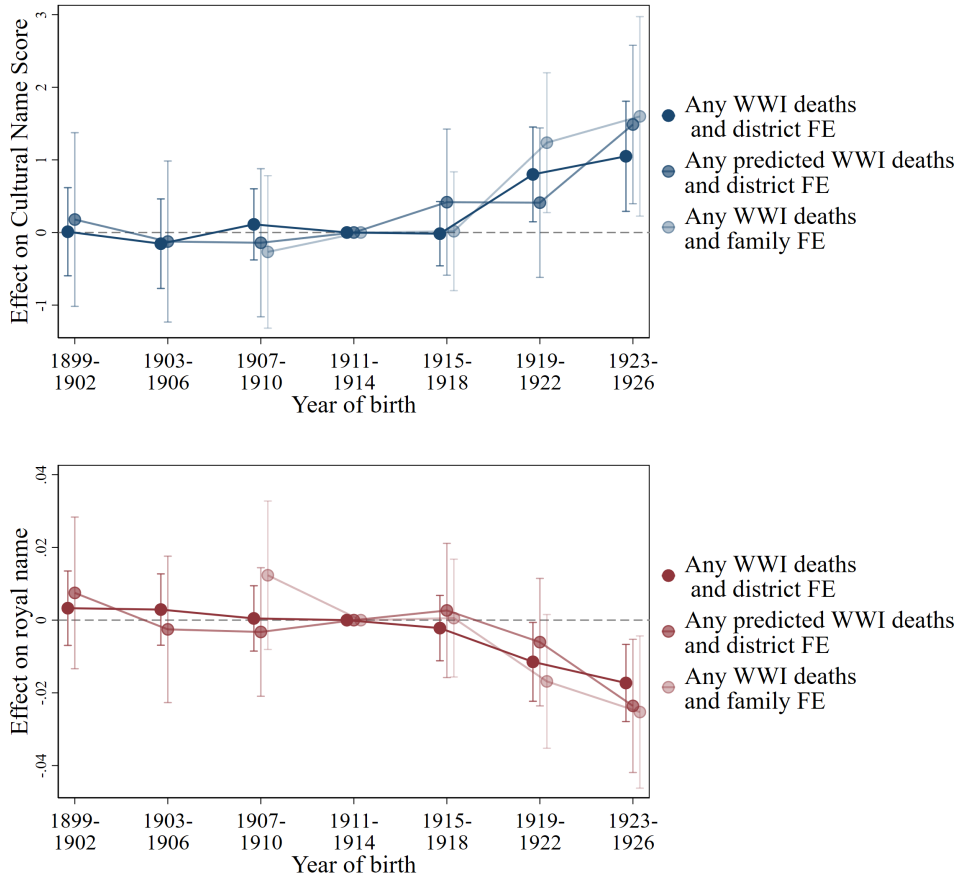
Our main analysis focuses on boys, but Appendix Tables B.13 and B.14 report the results for both boys and girls. The effects on the Cultural Name Score are similar, if anything

[27] We use the names by which children of British monarchs were commonly known between 1553 and 1911. We begin in 1553, when Mary I ascended the throne and initiated the restoration of Catholicism in England.

[28] The sibling fixed effects are implemented by restricting the sample to children and using household fixed effects. We further restrict this sample to individuals who are 19 years old or younger when including sibling fixed effects.

Figure 6

WWI Deaths and naming patterns by birth cohort



Notes: Event-study coefficients from regressions of individual naming outcomes on fixed effects and interactions between an indicator for any pre-1916 WWI death in the district and four-year birth-cohort indicators. Three specifications are shown: (1) a dummy for actual deaths with district and birth-year fixed effects, (2) a dummy for predicted deaths with district and birth-year fixed effects, and (3) a dummy for actual deaths with household and birth-year fixed effects. All specifications include analogous cohort interactions with an indicator for any pre-1916 mobilisation. The omitted reference cohort is 1911–1914. The sample consists of males in the 1926 Irish Free State census, born 1899–1926 in the district fixed-effects specifications and 1907–1926 in the household fixed-effects specification, which is restricted to individuals coded as children in the household. Standard errors are clustered at the district level.

stronger, when girls are included. In this sample, the estimates with sibling fixed effects are also statistically significant across all specifications. For royal names, however, the effects tend to be smaller, and the results are no longer robust to including sibling fixed effects.

Taken together, these results suggest that the cultural consequences of WWI mortality persisted after the fighting. Communities that lost more men participated more in the struggle for independence and subsequently gave their children names more distinctive of Irish-speaking and Catholic households and names that were less likely to be shared with British royalty. The naming evidence is consistent with a grievance interpretation and complements the regional heterogeneity results.

8. Conclusions

Focusing on Ireland during World War I and the Anglo-Irish War, we find evidence that local wartime mortality among those who fought alongside the imperial power raised subsequent support for secessionist rebellion. Regional interactions indicate a weaker response in Ulster and Northern Ireland. Continuous cultural interactions are positive in OLS, but their reduced forms are sensitive to geographic controls. The findings are consistent with a role for cultural and political cleavages in the response to wartime losses, while leaving the precise mechanism open.

A key implication is that the experience of war can have different consequences for different actors within the same side. In the United Kingdom, the losses of World War I gave rise to one of the country's most recognizable symbols — the Remembrance poppy — as well as secular rituals of memory and sacrifice. In Ireland, participation in what was arguably the largest war in the nation's history was associated with increased mobilisation and rebellion against Britain. Whether a similar grievance channel operated in other imperial peripheries after the world wars is an open question; the Irish evidence points to a grievance interpretation while showing that the regional pattern is more firmly established than its attribution to particular cultural characteristics.

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Online Appendix

A. Data

A.1. From records to the district sample

The district dataset is assembled from separate person-level and event-level files. Table A.1 reports the count at each step. Two features of that accounting matter for the measures in the text. The 65,828 rebel applications are the sum of 18,499 pension records and 47,329 medal file references: no file reference appears in both series. A successful pension claim was also awarded a medal, so the same person can contribute one record to each series, and 65,828 is a count of applications rather than of people. Of the 32,001 Irish casualty records kept after the location rules, 30,633 are placed in a district and 1,368 are coded only as Ireland.

A.2. District harmonization

The starting point is the list of district electoral divisions in the 1911 census for Ireland and Northern Ireland. We first adapt that list to the Central Statistics Office map, so that soldiers and rebels can be placed on a common geography. We then group districts that share a name but are separated by a prefix or suffix such as North/South, East/West, or Lower/Upper, and we group districts within Dublin and Belfast. The grouping reduces geolocation error from compass-point and city addresses that do not identify a single division. Table A.1 reports the census list (3,660 divisions), the map list (3,673 divisions), and the harmonized map (3,294 districts).

A.3. Rebel applications

Digitisation of the Military Service Pensions Archive is ongoing. The Archive holds roughly 250,000–280,000 files on injury, disability, military service, and dependency, covering more than 80,000 participants in the independence movement and their dependents; individual cases often comprise several files (Military Archives, n.d.). As of 29 May 2024, 84,100 files had been released online. The rebel rate uses the released pension series (18,499 records) and the service-medal series (47,329 records). The Military Archives describe a medal series of 47,554 applicants. The digitized extract contains 53,160 rows, because some applications list more than one address, and 47,329 file references once each reference is kept once.

An applicant who was granted a pension was also awarded a medal, so the same person can hold a record in each series. The two series do not share file references: none of the 18,499 pension references appears in the medal file. The combined count of 65,828 is therefore a count of applications. The district total sums the two series.

Each application records whether it was accepted, whether it relates to the Easter Rising or the Irish War of Independence, and a birthplace or residence. Where several addresses are listed, we use the first. Manual checks indicate that the first address is usually the oldest, and most applications list only one. We cannot always tell whether the address belongs to the rebel or to a dependant. Addresses are geocoded with the Google API. This places 64,639 applications in a district, of which 64,242 fall in the regression sample.

TABLE A.1

FROM SOURCE FILES TO THE DISTRICT SAMPLE

Series	Step	Count
Districts	1911 census district electoral divisions	3,660
	Map district electoral divisions	3,673
	Harmonized districts	3,294
	Regression sample	3,280
	Regression sample, full controls	3,280
Rebel applications	Pension records	18,499
	Medal scrape, rows	53,160
	Medal file references	47,329
	Pension and medal records combined	65,828
	Placed in a district	64,639
	In the district panel	64,242
War deaths	CWGC casualty file	796,601
	Irish extract	33,688
	Kept after the location rules	32,001
	Placed in a district	30,633
	Coded only as Ireland	1,368
	In the district panel	30,545
	Pre-1916 deaths placed in a district	8,533
	Pre-1916 deaths in the district panel	8,504
Mobilisation	Burnt and unburnt service records	2,892,807
	Irish geolocated rows	79,699
	People	76,236
	Coded only as Ireland	4,328
	Placed in a district	71,908
Donations	Published entries	22,769
	With a place specific enough to geocode	15,913
	Placed in a district	14,117
	In the district panel	14,097
Brigade attacks	Activity reports	6,765
	Placed in a district	6,116
	In the district panel	6,105

Notes: The medal scrape contains more rows than file references because some applications list more than one address. The Military Archives describe a medal series of 47,554 applicants; the digitized extract contains 47,329 file references. Pre-1916 deaths are those recorded in 1914 or 1915. Irish service-record rows are collapsed to one person before the district match. Of the 22,769 donation entries, 4,793 have neither a city nor a county, 1,682 have a county only, and 381 are in Britain or abroad. The district panel is the set of 3,280 districts in the regression sample.

Following the establishment of the Irish Free State, former rebels were formally recognised as soldiers, and the Dáil introduced military pensions for them and their dependents, covering death, wounds, disabilities, and active service. Eligibility was expanded in 1924, 1934, and 1949. Service medals for participation in Easter Week (1941) and in the War of Independence (1942) widened the set of recognised veterans further.

A.4. War deaths

The Commonwealth War Graves Commission file contains 796,601 casualty records. Birthplace and residence are often missing as separate fields and appear instead in a free-text "additional information" string, which may also list service history, awards, or previous education. We extract addresses from that string with OpenAI's GPT-4o-mini API. The model was instructed to act as a "helpful assistant" and given a structured prompt to:

- Extract all addresses and/or locations from the text.
- Return all distinct birthplaces or residences (separated by ; if more than one).
- Preserve full location strings without splitting components of the same address.
- Return "" if no location or address is found.
- Provide no extra text, numbering, or formatting changes.
- Ignore locations related to battles, military service, awards, or education.

Soldiers likely to be from Ireland are identified by searching the extracted locations and the Forces War Records birthplace and residence fields for Irish counties, major cities, electoral district names, and the word "Ireland." The Irish extract contains 33,688 records. A substantial share lack usable additional information and are linked through the Forces War Records fields instead. Geocoded locations are assigned in order of priority: additional-information locations first, then Forces War Records birthplace, then Forces War Records residence. A location that is only a county, or is otherwise too coarse for a district, is not assigned to one. Of the 32,001 records kept after these rules, 30,633 are placed in a district and 1,368 are coded only as Ireland. The district panel contains 30,545 deaths. Deaths in 1914 and 1915 account for 8,533 of the men placed in a district and 8,504 deaths in the panel.

A.5. Mobilisation

Service records come from two National Archives series. WO 363, the burnt documents, is the portion of the First World War service records that survived the 1940 bombing of the War Office; we use the Ancestry digitisation. WO 364, the unburnt documents, was collected by Henn and Huff (2024). The combined file contains 2,892,807 records. Birthplace and residence are geocoded with the Google API, OpenCage, HERE, and a direct string match to the district list. When the methods disagree, the Google API assignment is kept.

The Irish geolocated extract contains 79,699 rows. Collapsing those rows to one person, using the earliest document when a man has more than one, leaves 76,236 people. Of these, 4,328 are coded only as Ireland. The other 71,908 match a district on the harmonized map.

A.6. Donations and brigade attacks

Donation records are the published lists of contributors to the Irish National Aid Association (Hargaden, 2022). Each entry records a place and an amount. Of the 22,769 entries, 4,793 have neither a city nor a county, 1,682 have a county only, and 381 are in Britain or abroad. The remaining 15,913 are geocoded with the Google API and by direct string match

to the district list. This places 14,117 donations in a district, of which 14,097 fall in the regression sample. The outcome used in the text is the number of donations.

Brigade activity reports cover ambushes, killings, engagements, and destructions, mainly from 1 April 1920 to 11 July 1921. The reports locate the event. We assign a district with the Google API, a direct string match, and manual coding. OpenCage-only locations enter the district counts only after independent review against historical place references and district boundaries. This places 6,116 of the 6,765 events. The regression sample contains 6,105 of them.

A.7. Other data sources: Gaelic League and British barracks

The Gaelic League indicator is built from a register of branches held by the University of Galway, which records locations and establishment dates. We transcribe the register with an AI-assisted extraction and geocode the branches with the Google Maps API.

We use data from the Army Barracks of Ireland project which documents the locations of permanent army barracks established in Ireland between 1690 and 1921. These barracks housed troops under British rule and provide a measure of historical British military presence across Ireland.

A.8. Measuring culture using names in the 1911 and 1926 censuses

Names given to children provide a revealed-preference measure of cultural identity. We construct two naming measures intended to capture Irish culture, based on the widely used name score developed by Fryer and Levitt (2004). Following Fouka and Serlin (2024), who also uses British census data (which at the time included Ireland), we preprocess names using Metaphone encoding to standardise spelling variations.

The first name measure is the Irishness Name Score, calculated using the 1911 census, which captures how distinctively Irish a name is relative to English. Here, Metaphone codes with frequencies at or below the 0.5th percentile within each country are dropped to avoid outliers caused by spelling mistakes.

The score ranges from 0 to 100, with values above 50 indicating that a name is more distinctively Irish than English. The score is calculated for each name and then aggregated to the district level by taking the average across individuals.

Our cultural clusters are defined by individuals born in Ireland and England. For each name, we calculate the score as follows:

$$\text{Irishness Name Score}_{\text{name}} = 100 \times \frac{P(\text{name} \mid \text{Ireland})}{P(\text{name} \mid \text{Ireland}) + P(\text{name} \mid \text{England})}, \tag{A.1}$$

This score is unaffected by the proportion of the total population represented by each group and by the overall frequency of a given name.

For the 1926 analysis, we cannot construct the same score, as the Free State census does not include an English comparison population in the same way. Instead, we compute an analogous within-Ireland Cultural Name Score that compares name frequencies in Irish-speaking or Catholic households with those in households that are neither. Higher values indicate names that are more distinctive of the Irish-speaking/Catholic cultural cluster. We

also construct a Catholic-only score, comparing Catholic and non-Catholic households, as a robustness check. As these data are used at the individual level to study changes over time, we construct the score using a rolling window, calculating the score for each birth year using that birth year and the preceding 19 years. This is intended to capture which names were considered distinctive around the time of naming. Moreover, we only calculate scores for Metaphone codes shared by at least five individuals.

Finally, we construct an indicator for whether a child receives a British royal name as an additional proxy for attachment to British identity. We use the names by which children of British monarchs were commonly known between 1553 and 1911. We begin in 1553, when Mary I ascended the throne and initiated the restoration of Catholicism in England.

The 1926 census covers the Irish Free State and not Northern Ireland. District boundaries changed between 1911 and 1926, so the two censuses are aggregated to the smallest units that can be identified in both. The 1926 boundaries are those reconstructed by the Central Statistics Office. The Office describes them as a best-effort determination, because the historical boundary changes cannot always be recovered.

A.9. Census matching

This appendix documents the individual record linkage used for the regiment-level balancing check in Figure A.1 and for the veterans exclusion test in Section 6.1 and Table 7. Both applications follow a modified Abramitzky–Boustan–Eriksson (ABE) procedure (Abramitzky, Boustan and Eriksson, 2012; Abramitzky et al., 2021).[29]

Algorithm. We standardise names and encode surnames phonetically (NYSIIS), then match in two rounds. The narrow (strict) round requires agreement on phonetic surname, year of birth (within a ± 2 window), and county of residence as recorded on the source file (`co_name`).[30] Remaining unmatched records enter a broad (relaxed) round that drops the county requirement and uses a stricter string-similarity threshold. Candidate pairs are scored with Jaro–Winkler similarity. Unique best matches in both directions are retained as unique matches; when several census men remain plausible for a given source record, we assign fractional match weights (e.g. weight $1/2$ to each of two equally good candidates).[31]

Match rates. Table A.2 summarises linkage yields from the current match files. Unique match rates are 28.0% for Ancestry (relative to Irish-geolocated mobilisation records) and 36.3% for MSPC (relative to pension/award records with year of birth). MSPC records without year of birth cannot enter the algorithm; among those with year of birth, the remainder are either ambiguous matches or unmatched.

[29] Further details on the ABE method and its application to the US Census are available from the Census Linking Project (`https://censuslinkingproject.org/`).

[30] Earlier draft text sometimes referred to "county of birth"; the blocking variable is the county attached to the Ancestry or MSPC record after cleaning/geolocation, which we treat as county of residence.

[31] For example, Arthur Murphy, born in 1879, is recorded in our Ancestry data as having fought in WWI with the Royal Dublin Fusiliers. There were two Arthur Murphys in the Irish Census with that year of birth. Each of these receives a fractional weight of 1/2 under the fractional algorithm.

Table A.2
ABE census match rates

	Ancestry (WWI)	MSPC (rebels)
Unique matches	22,320	5,995
Unique match rate	28.0%	38.6%
Ambiguous source records	34,549	5,060
Census men in ambiguous cells	227,488	75,601

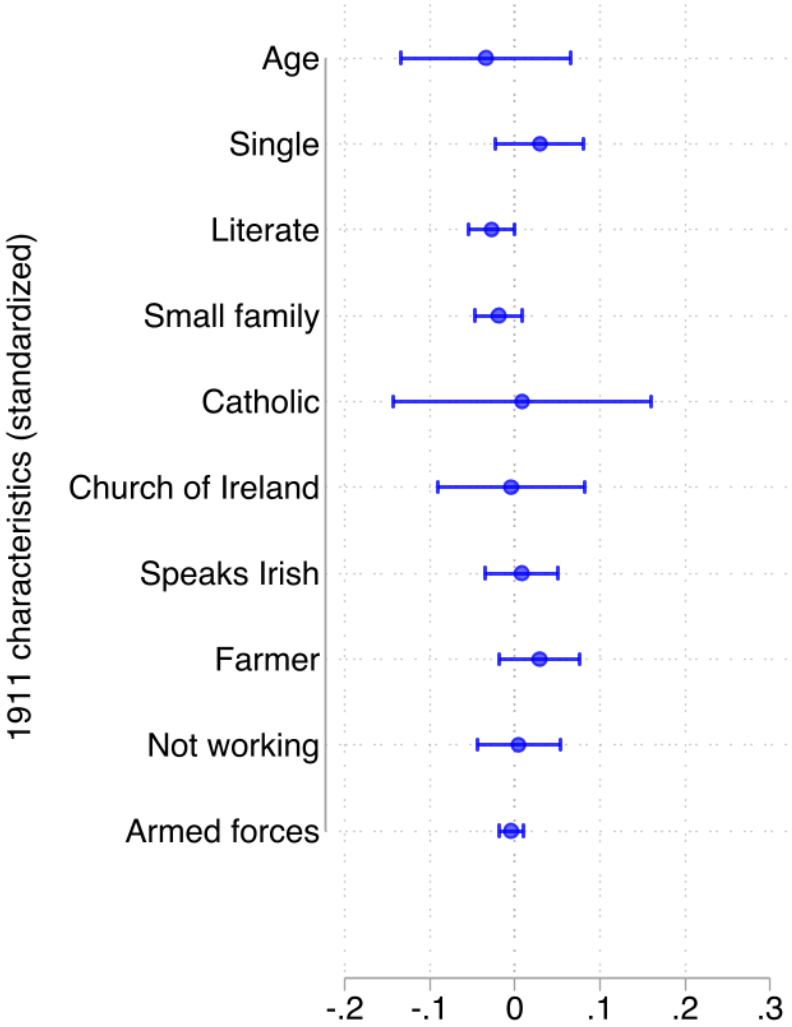
Notes: Counts from the current Ancestry–census and MSPC–census probabilistic match files. Unique matches are source records with match weight 1. Unique match rates use as denominators Irish-geolocated Ancestry records and MSPC pension/award records with non-missing year of birth, respectively. Ambiguous source records have weight in $(0, 1)$; the census-side count is the number of distinct census men in those cells.

Application A: regiment balancing. For Figure A.1, we retain unique Ancestry–census matches and regress standardized 1911 census characteristics on the full regiment mortality rate δ_j (not the leave-one-out δ_{ij} used in the shift-share), restricting to regiments with at least 50 mobilised soldiers.

Application B: veterans exclusion. For Table 7, we place both Ancestry and MSPC indicators on the 1911 census male sample (ages 5–51) and estimate eq. (4). Panel A uses unique-match dummies; Panel B uses fractional weights. The vector F_c comprises four name-cell frequency controls: indicators for uniqueness within name–year-of-birth and name–year-of-birth–county cells, and the inverse frequency of records in each cell. These absorb mechanical correlation between common names and match indicators. X_c includes age, religion, marital status, and occupation dummies.

FIGURE A.1

BALANCING CHECK II: INDIVIDUAL CHARACTERISTICS AND REGIMENTAL DEATH RATES



Notes: OLS estimates from univariate regressions of standardized 1911 census characteristics on standardized regimental death rate δ_j. Sample: unique ABE matches between mobilised soldiers (Ancestry) and the 1911 census; regiments with at least 50 mobilised soldiers. 95% confidence intervals; standard errors clustered at the regiment level.

B. Additional Results

TABLE B.1

EFFECT OF WWI DEATH RATES ON ALTERNATIVE MEASURES OF REBEL RATE

	(1) Pensions	(2) Medals	(3) Awarded	(4) Easter Rising
Panel A. IV Estimates				
Death rate	0.648*	0.659**	0.711**	0.428
	(0.390)	(0.265)	(0.307)	(0.468)
Mobilis. rate	-0.085	-0.083	-0.100	-0.136
	(0.145)	(0.103)	(0.118)	(0.165)
Observations	3280	3280	3280	3280
R-squared	0.12	0.23	0.19	0.04
First-stage F-stat.	12.48	12.48	12.48	12.48
Panel B. OLS Estimates				
Death rate	0.190***	0.204***	0.215***	0.069
	(0.048)	(0.037)	(0.043)	(0.068)
Mobilis. rate	0.096***	0.097***	0.096***	0.005
	(0.022)	(0.022)	(0.022)	(0.010)
Observations	3280	3280	3280	3280
R-squared	0.25	0.35	0.34	0.12
FE	Yes	Yes	Yes	Yes
Pop controls	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes

Notes: IV (panel A) and OLS (panel B) estimates of the effect of the WWI death rate before the Easter Rising on various measures of rebel activity. *Pensions* denotes the rate of MSPC pension applications; *Medals* denotes the rate of MSPC medal applications; *Awarded* denotes the rate of individuals awarded either a pension or a medal; and *Easter Rising* denotes the rate of individuals with any data on an application or award related to the Easter Rising. All specifications control for constituency fixed effects, mobilization rate and the full set of controls. Standard errors are clustered at the constituency level. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table B.2

Effect of WWI death rates on alternative measures of INAA donations

	(1) Nr p/c	(2) Nr	(3) £ p/c	(4) £	(5) ln(1+£)	(6) IHS £
Panel A. IV Estimates						
Death rate	0.008	15.508**	0.447	17.804**	0.638**	0.723**
	(0.006)	(7.025)	(0.308)	(7.912)	(0.262)	(0.301)
Mobilis. rate	-0.001	-4.876*	-0.043	-6.220**	-0.039	-0.028
	(0.002)	(2.693)	(0.108)	(3.148)	(0.111)	(0.128)
Observations	3280	3280	3280	3280	3280	3280
R-squared	0.07	-0.06	0.08	0.09	0.27	0.28
First-stage F-stat.	12.48	12.48	12.48	12.48	12.48	12.48
Panel B. OLS Estimates						
Death rate	0.002***	1.714**	0.145***	1.787	0.219***	0.260***
	(0.001)	(0.820)	(0.031)	(1.653)	(0.030)	(0.035)
Mobilis. rate	0.001**	0.577	0.076***	0.112	0.127***	0.155***
	(0.000)	(0.492)	(0.022)	(0.666)	(0.028)	(0.033)
Observations	3280	3280	3280	3280	3280	3280
R-squared	0.13	0.24	0.13	0.25	0.34	0.33
FE	Yes	Yes	Yes	Yes	Yes	Yes
Pop controls	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: IV (Panel A) and OLS (Panel B) estimates of the effect of the WWI death rate before 1916 on alternative measures of INAA donations (full specification throughout). Outcomes include donation counts and amounts in levels and per capita, and log and inverse hyperbolic sine transformations of amounts. The main text reports PPML for the donation count (Table 3). All specifications control for constituency fixed effects, mobilization rate, and the full set of controls. Standard errors are clustered at the constituency level. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table B.3

INAA donations and brigade attacks: heterogeneity by Northern Ireland

	(1) N. donations	(2) N. donations	(3) N. donations	(4) N. donations
Panel A. N. donations				
Death rate	0.344***	0.330***		
	(0.053)	(0.053)		
Death rate × NI		0.145		
		(0.109)		
Death rate^{pred}			0.329***	0.333***
			(0.118)	(0.126)
Death rate^{pred} × NI				-0.070
				(0.377)
Observations	3280	3280	3280	3280
Panel B. Brigade activity (n. attacks)				
Death rate	-0.032	-0.029		
	(0.052)	(0.054)		
Death rate × NI		-0.013		
		(0.039)		
Death rate^{pred}			0.021	0.038
			(0.024)	(0.026)
Death rate^{pred} × NI				-0.090
				(0.063)
Observations	3280	3280	3280	3280

Notes: Panel A reports Poisson quasi-maximum-likelihood estimates (cols. 1–2) and reduced-form Poisson estimates (cols. 3–4) for the district-level count of INAA donations, matching the main specification in Table 3. Column (2) adds an interaction of the death rate with a Northern Ireland (NI) indicator; columns (3)–(4) replace the death rate with the predicted death rate (shift-share instrument) and, in column (4), its interaction with NI. Coefficients on the death rate are semi-elasticities with respect to the standardized death rate. Panel B reports OLS (cols. 1–2) and reduced-form (cols. 3–4) estimates for standardized district-level brigade attack counts. All specifications include constituency fixed effects, the pre-1916 mobilization rate (alone and, in columns (2) and (4), interacted with the NI indicator), $\ln(\text{population})$, and the full set of controls. Standard errors are clustered at the constituency level. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

TABLE B.4

REGIONAL HETEROGENEITY USING WWI MORTALITY OVER 1914–1918

	Ulster		Northern Ireland	
	(1)	(2)	(3)	(4)
Panel A. OLS				
Death rate	0.337***	0.379***	0.332***	0.370***
	(0.058)	(0.058)	(0.053)	(0.052)
Death rate × region	-0.254***	-0.311***	-0.315***	-0.356***
	(0.059)	(0.059)	(0.049)	(0.049)
Panel B. Reduced form				
Death rate^{pred}	0.204**	0.189**	0.162**	0.153**
	(0.083)	(0.075)	(0.072)	(0.066)
Death rate^{pred} × region	-0.243**	-0.208**	-0.136*	-0.150**
	(0.094)	(0.082)	(0.076)	(0.069)
Constituency FE	No	Yes	No	Yes
Log population	Yes	Yes	Yes	Yes
Mobilisation controls	Yes	Yes	Yes	Yes
Other controls	Yes	Yes	Yes	Yes
Observations	3,280	3,280	3,280	3,280

Notes: This treatment-window check repeats Table 4 using the standardized 1914–1918 death rate in Panel A and its original predicted counterpart in Panel B. Mobilisation is the corresponding all-war rate, included alone and interacted with the regional indicator. All regressions include log population, the full baseline census and barracks controls, and the regional main effect where identified; columns (2) and (4) add constituency fixed effects. Standard errors clustered by constituency (78 clusters) are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%.

Table B.5

Continuous cultural heterogeneity: full coefficients without constituency fixed effects

	(1) Catholic share	(2) Irish-speaking share	(3) Irishness name score	(4) Identity mean index	(5) Irish-name share	(6) Identity PC1
Panel A. OLS						
Death rate	0.224***	0.237***	0.250***	0.241***	0.244***	0.242***
	(0.043)	(0.052)	(0.047)	(0.047)	(0.045)	(0.047)
Death rate × culture	0.105***	0.092	0.126***	0.181***	0.173***	0.087***
	(0.021)	(0.062)	(0.031)	(0.050)	(0.049)	(0.022)
Cultural measure	0.162***	0.172***	0.301***		-0.071	
	(0.049)	(0.052)	(0.073)		(0.068)	
Mobilisation rate	0.174***	0.212***	0.197***	0.195***	0.178***	0.199***
	(0.026)	(0.031)	(0.030)	(0.028)	(0.028)	(0.029)
Mobilisation × culture	0.045***	0.160***	0.066***	0.089***	0.046**	0.050***
	(0.015)	(0.056)	(0.022)	(0.027)	(0.023)	(0.015)
Log population	0.090**	0.082**	0.094**	0.094**	0.102***	0.091**
	(0.038)	(0.036)	(0.038)	(0.036)	(0.035)	(0.037)
Panel B. Reduced form						
Death rate^{pred}	0.170**	0.158**	0.176**	0.176**	0.178**	0.175**
	(0.066)	(0.077)	(0.068)	(0.069)	(0.070)	(0.068)
Death rate^{pred} × culture	0.091**	0.064	0.108*	0.137	0.122	0.073
	(0.040)	(0.093)	(0.061)	(0.097)	(0.095)	(0.045)
Cultural measure	0.212***	0.175***	0.269***		-0.102	
	(0.045)	(0.048)	(0.070)		(0.065)	
Mobilisation rate	0.119**	0.171**	0.147**	0.143**	0.125**	0.148**
	(0.052)	(0.077)	(0.059)	(0.059)	(0.056)	(0.059)
Mobilisation × culture	0.019	0.149	0.032	0.059	0.024	0.029
	(0.037)	(0.110)	(0.058)	(0.088)	(0.073)	(0.043)
Log population	0.135***	0.133***	0.140***	0.139***	0.145***	0.137***
	(0.034)	(0.032)	(0.034)	(0.033)	(0.033)	(0.033)
Constituency FE	No	No	No	No	No	No
Log population	Yes	Yes	Yes	Yes	Yes	Yes
Mobilisation controls	Yes	Yes	Yes	Yes	Yes	Yes
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,280	3,280	3,280	3,280	3,280	3,280

Notes: Each column is a separate regression within each panel. The dependent variable is the standardized rebel rate. Panel A uses actual pre-1916 mortality and Panel B its original predicted counterpart; both are standardized over the full sample. Catholic share, Irish-speaking share, average Irishness Name Score and Irish-name share are standardized separately. The mean index averages the standardized Catholic, Irish-speaking and Irish-name shares. PC1 is the first correlation-PCA component of Catholic share, Irish-speaking share and average Irishness Name Score. The mean index and PC1 are not standardized again after construction. Mobilisation and its cultural interaction, log population and the full baseline census and barracks controls are included throughout. Individual cultural main effects enter once. The mean-index and PC1 levels are absorbed by their component controls and are therefore not separately reported. Standard errors clustered by constituency (78 clusters) are in parentheses. Stars use unadjusted p-values: *** 1%, ** 5%, * 10%.

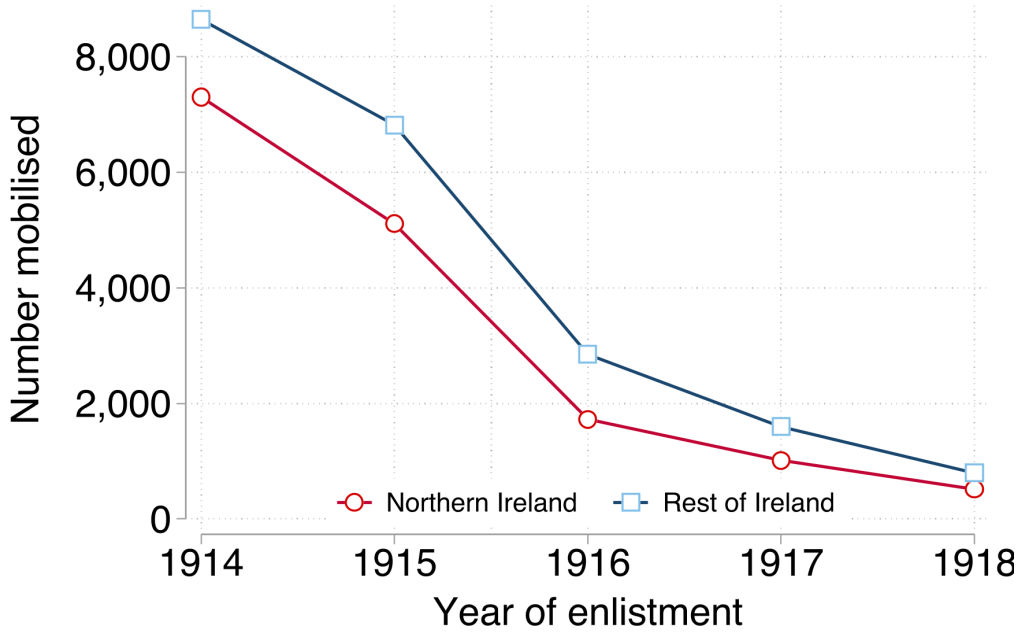
Table B.6

Continuous cultural heterogeneity: full coefficients with constituency fixed effects

	(1) Catholic share	(2) Irish-speaking share	(3) Irishness name score	(4) Identity mean index	(5) Irish-name share	(6) Identity PC1
Panel A. OLS						
Death rate	0.224***	0.242***	0.252***	0.244***	0.243***	0.245***
	(0.040)	(0.048)	(0.043)	(0.043)	(0.042)	(0.043)
Death rate × culture	0.115***	0.123**	0.136***	0.199***	0.171***	0.098***
	(0.020)	(0.058)	(0.029)	(0.044)	(0.042)	(0.020)
Cultural measure	0.228***	0.118**	-0.220***		0.125**	
	(0.050)	(0.053)	(0.067)		(0.062)	
Mobilisation rate	0.138***	0.162***	0.160***	0.155***	0.141***	0.160***
	(0.022)	(0.029)	(0.026)	(0.024)	(0.023)	(0.025)
Mobilisation × culture	0.040***	0.126**	0.066***	0.075***	0.044**	0.045***
	(0.014)	(0.051)	(0.020)	(0.023)	(0.018)	(0.015)
Log population	0.133***	0.129***	0.136***	0.137***	0.145***	0.133***
	(0.035)	(0.032)	(0.034)	(0.033)	(0.033)	(0.033)
Panel B. Reduced form						
Death rate^{pred}	0.148**	0.132*	0.149**	0.149**	0.152**	0.148**
	(0.059)	(0.070)	(0.062)	(0.062)	(0.062)	(0.061)
Death rate^{pred} × culture	0.051	0.039	0.054	0.087	0.094	0.038
	(0.035)	(0.090)	(0.053)	(0.092)	(0.087)	(0.040)
Cultural measure	0.244***	0.091	-0.258***		0.099	
	(0.051)	(0.059)	(0.074)		(0.061)	
Mobilisation rate	0.095**	0.145**	0.130**	0.122**	0.103**	0.128**
	(0.047)	(0.071)	(0.053)	(0.052)	(0.048)	(0.053)
Mobilisation × culture	0.054*	0.157	0.086*	0.098	0.044	0.061
	(0.032)	(0.104)	(0.050)	(0.083)	(0.068)	(0.039)
Log population	0.195***	0.194***	0.199***	0.198***	0.204***	0.196***
	(0.032)	(0.030)	(0.032)	(0.031)	(0.032)	(0.032)
Constituency FE	Yes	Yes	Yes	Yes	Yes	Yes
Log population	Yes	Yes	Yes	Yes	Yes	Yes
Mobilisation controls	Yes	Yes	Yes	Yes	Yes	Yes
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,280	3,280	3,280	3,280	3,280	3,280

Notes: Each column is a separate regression within each panel. The dependent variable is the standardized rebel rate. Panel A uses actual pre-1916 mortality and Panel B its original predicted counterpart; both are standardized over the full sample. Catholic share, Irish-speaking share, average Irishness Name Score and Irish-name share are standardized separately. The mean index averages the standardized Catholic, Irish-speaking and Irish-name shares. PC1 is the first correlation-PCA component of Catholic share, Irish-speaking share and average Irishness Name Score. The mean index and PC1 are not standardized again after construction. Mobilisation and its cultural interaction, log population and the full baseline census and barracks controls are included throughout. Individual cultural main effects enter once. The mean-index and PC1 levels are absorbed by their component controls and are therefore not separately reported. Standard errors clustered by constituency (78 clusters) are in parentheses. Stars use unadjusted p-values: *** 1%, ** 5%, * 10%.

FIGURE B.1
WWI MOBILISATION BY YEAR OF ENLISTMENT, NORTHERN IRELAND AND THE REST OF IRELAND



Notes: Number of Ancestry-mobilised soldiers by year of enlistment (1914–1918), summed across districts in the analysis sample and split between Northern Ireland (six counties) and the rest of Ireland. The vertical dotted line marks the Easter Rising (April 1916).

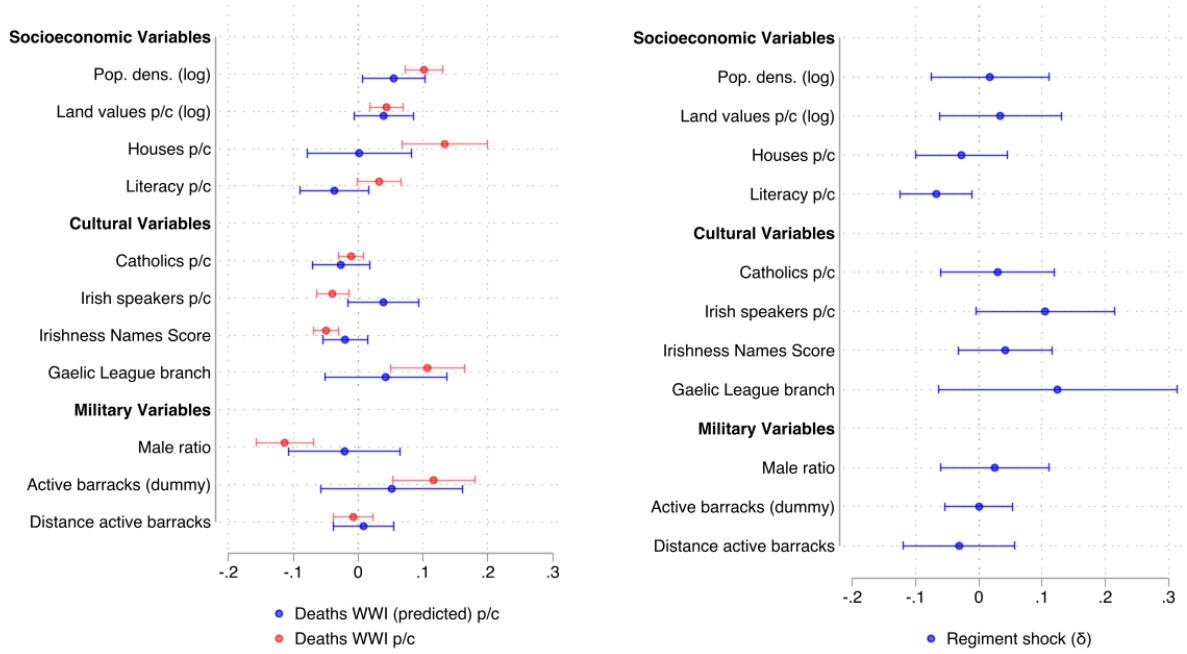
TABLE B.7
INSTRUMENTAL VARIABLE FIRST-STAGE ESTIMATES

	(1) Death rate	(2) Death rate	(3) Death rate	(4) Death rate
Death rate^{pred}	0.200***	0.233***	0.204***	0.198***
	(0.061)	(0.063)	(0.057)	(0.056)
Mobilis. rate	0.369***	0.337***	0.267***	0.218***
	(0.064)	(0.068)	(0.061)	(0.060)
Constituency FE	No	Yes	Yes	Yes
Population	No	No	Yes	Yes
Full ctrls.	No	No	No	Yes
Observations	3,280	3,280	3,280	3,280
R-squared	0.308	0.339	0.384	0.414
F-statistic	10.650	13.731	12.642	12.479

Notes: First-stage estimates of the WWI death rate on the instrument, the predicted death rate using regiment-level mortality. Standard errors clustered at the constituency level. Mobilisation rate is always included. Column 2 adds constituency fixed effects, whereas Column 3 adds (log) population. Finally, in Column 4 we add the full set of controls. *, **, and *** represent 10%, 5%, and 1% significance levels, respectively.

Figure B.2

Instrument balancing checks



(A) District-level (B) Shock-level (regiment)

Notes: OLS estimates using standardized pre-determined covariates. Panel A: blue markers are coefficients on the predicted WWI death rate (instrument); red markers are coefficients on the observed WWI death rate; district-level regressions with mobilization, (log) population, and constituency fixed effects; standard errors clustered at the constituency level. Panel B: coefficients on the regiment leave-one-out death rate (shock δ_j); shock-level regressions using exposure shares (α_{ij}) and `ssaggregate`; standard errors clustered at the regiment level. Effective sample size in Panel B is about 20; see footnote in Section 4.1. 95% confidence intervals in both panels.

Table B.8

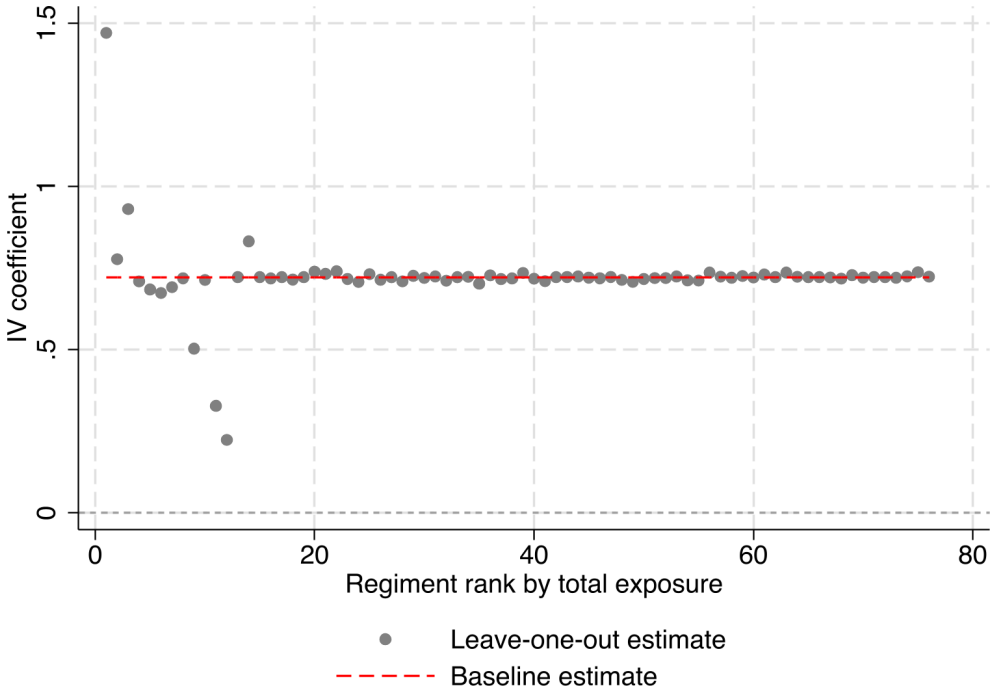
Preferred IV estimate: Wald and Anderson–Rubin confidence intervals

	Wald	Anderson–Rubin
IV coefficient	0.722	0.722
95% CI	[0.11, 1.33]	[0.12, 1.68]
Kleibergen–Paap	12.48	
AR p-value ($H_0 : \beta = 0$)	0.023	
Observations	3,280	

Notes: Preferred full-control district IV from Table 2 (standardised rebel rate on standardised pre-1916 death rate; mobilisation, ln population, full controls, and constituency FE; standard errors clustered at the constituency level). The Anderson–Rubin 95% set is obtained by inverting the AR Wald test of $H_0 : \beta = \beta_0$ over a grid of β_0. The AR p-value is for $H_0 : \beta = 0$.

Figure B.3

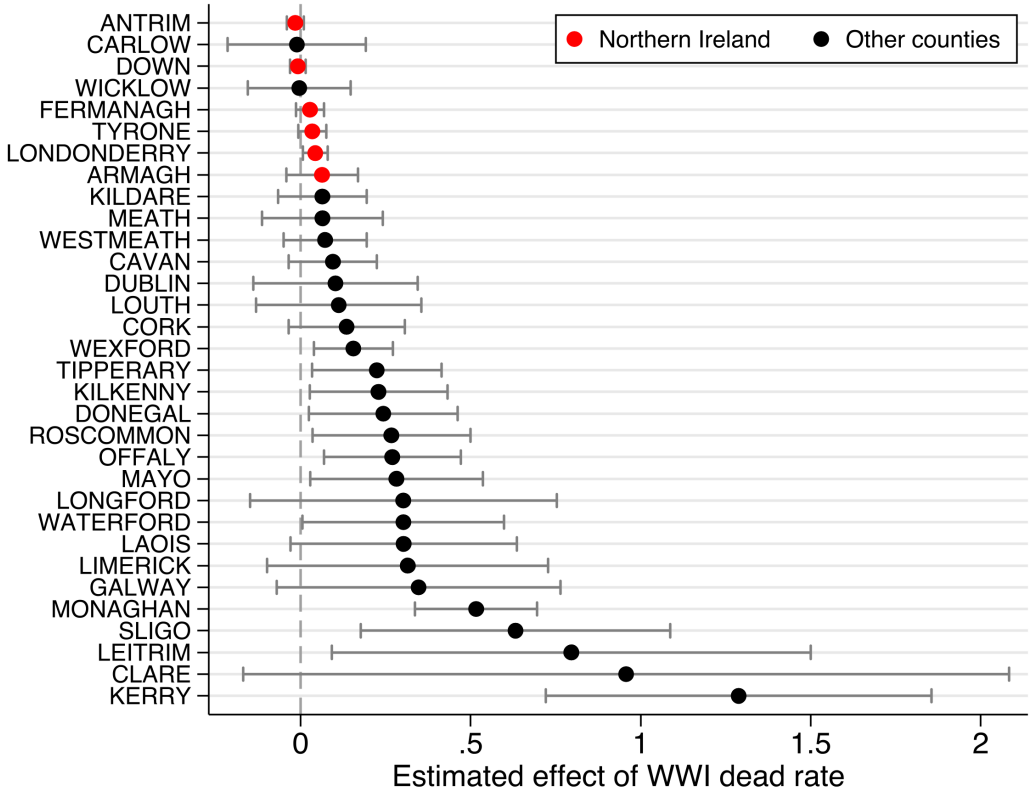
Leave-one-regiment-out IV estimates



Notes: Each marker is the preferred full-control IV coefficient when regiment j is omitted from the shift-share instrument (no share renormalisation). Regiments are ordered by total exposure in the estimation sample. The dashed line is the baseline estimate that uses all regiments. All leave-one-out estimates remain positive (range 0.21 to 1.45; median 0.79).

Figure B.4

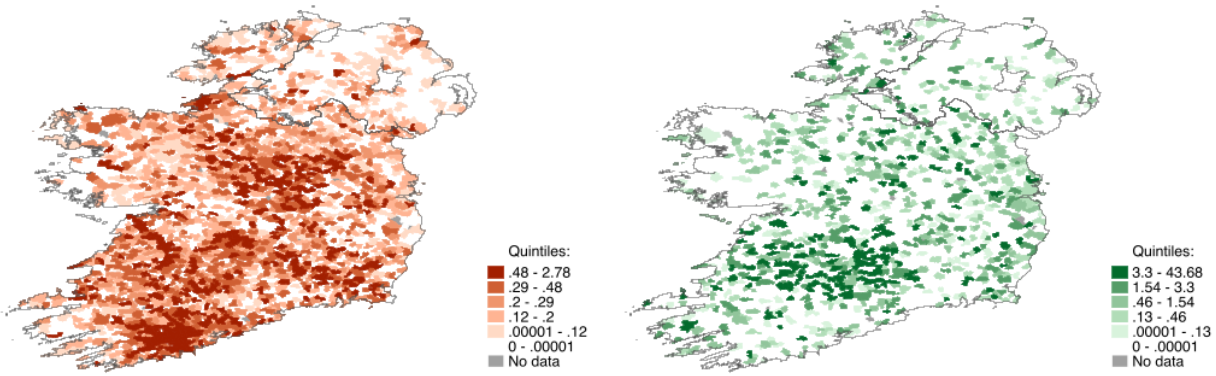
Estimated effect by county



Notes: County-level OLS estimates of eq. (1) (standardized rebel rate on standardized pre-1916 death rate), run separately for each county with mobilization, (log) population, and the full baseline census and barracks controls. 95% confidence intervals; robust standard errors. Northern Ireland counties in red.

Figure B.5

Geographic distribution of IRA brigade activity and INAA donations



(a) IRA brigade activity (p/c)

(b) INAA donations (p/c)

Notes: Historical electoral districts in Ireland and Northern Ireland. Panel A shows IRA brigade activity per capita, defined as the number of IRA brigade actions located in each district over its 1911 population. Panel B shows donations to the INAA per capita, defined as the total amount donated in each district over its 1911 population. Both variables are expressed per 100 inhabitants; grey areas have no recorded values.

Table B.9
Effect of WWI death rates on brigade activity (linear IV and OLS)

	IV			OLS
	(1)	(2)	(3)	(4)
	N. attacks	N. attacks	N. attacks	N. attacks
Death rate	0.322**	0.134	0.107	-0.032
	(0.146)	(0.132)	(0.127)	(0.053)
Mobilis. rate	-0.001	-0.045	-0.054	0.002
	(0.069)	(0.076)	(0.069)	(0.023)
Constituency FE	Yes	Yes	Yes	Yes
Population	No	Yes	Yes	Yes
Full ctrls.	No	No	Yes	Yes
Observations	3,280	3,280	3,280	3,280
R-squared	0.108	0.242	0.271	0.282
Kleibergen–Paap stat.	13.731	12.642	12.479	

Notes: IV (cols. 1–3) and OLS (col. 4) estimates of the effect of the WWI death rate on the district-level count of geolocated brigade attacks. All variables except $\ln(\text{population})$ are standardized. The preferred full specification (column 3) shows no robust effect once population and baseline controls are included. Standard errors clustered at the constituency level. *, **, and *** represent 10%, 5%, and 1% significance levels, respectively.

Table B.10
Effect of WWI death rates on brigade activity (Poisson and IV-Poisson)

	Poisson		IV Poisson	
	(1)	(2)	(3)	(4)
Death rate	0.041		0.038	0.041
	(0.025)		(0.145)	(0.166)
Death rate^{pred}		0.012		
		(0.046)		
Constituency FE	Yes	Yes	Yes	Yes
Pop. & Mob.	Yes	Yes	Yes	Yes
Full ctrls.	No	No	No	Yes
Dep. var mean	1.861	1.861	1.861	1.861
Observations	3,269	3,269	3,269	3,269

Notes: Poisson quasi-maximum-likelihood (cols. 1–2) and IV-Poisson (cols. 3–4) estimates for the district-level count of geolocated brigade attacks. None of the death-rate coefficients is statistically significant at conventional levels in the full specification. Standard errors clustered at the constituency level.

TABLE B.11

EFFECT OF WWI DEATHS ON CULTURAL NAME SCORES (BOYS)

	Catholic Name Score			
	(1)	(2)	(3)	(4)
Panel A: District and birth-year fixed effects				
Any deaths × post-1916	0.892***	0.749**	0.423**	0.359*
	(0.306)	(0.296)	(0.189)	(0.197)
Dep. var. mean	66.51	66.51	66.51	66.51
Observations	730,938	730,938	730,938	730,938
Panel B: Sibling and birth-year fixed effects				
Any deaths × post-1916	1.062***	0.770*	0.620	0.464
	(0.377)	(0.400)	(0.441)	(0.452)
Dep. var. mean	67.25	67.25	67.25	67.25
Observations	340,206	340,206	340,206	340,206
Panel C: District and birth-year fixed effects				
Pred. any deaths × post-1916	0.966***	0.871**	0.530***	0.571*
	(0.294)	(0.354)	(0.196)	(0.323)
Dep. var. mean	66.51	66.51	66.51	66.51
Observations	730,938	730,938	730,938	730,938
Mobilization × Post	No	Yes	No	Yes
Population deciles × Post	No	No	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes

Notes: Difference-in-differences estimates of the effect of pre-1916 WWI mortality on individual Cultural Name Scores (0–100) in the 1926 Irish Free State census. The sample consists of males born 1899–1926 in Panels A and C and 1907–1926 in Panel B, which is further restricted to individuals recorded as children in the household. Panels A and B interact an indicator for any death in the district with an indicator for birth after 1916; Panel C uses an indicator for any predicted death. Panels A and C include district and birth-year fixed effects, while Panel B includes household and birth-year fixed effects. Column (2) adds a post-1916 interaction with an indicator for any mobilisation before 1916; column (3) instead adds post-1916 interactions with 1911 district population deciles; column (4) includes both sets of controls. Standard errors are clustered at the district level. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

TABLE B.12

EFFECT OF WWI DEATHS ON ROYAL NAMES (BOYS)

	Royal name			
	(1)	(2)	(3)	(4)
Panel A: District and birth-year fixed effects				
Any deaths × post-1916	-0.016***	-0.015***	-0.014***	-0.013***
	(0.005)	(0.005)	(0.003)	(0.004)
Dep. var. mean	0.34	0.34	0.34	0.34
Observations	735,618	735,618	735,618	735,618
Panel B: Sibling and birth-year fixed effects				
Any deaths × post-1916	-0.021***	-0.018**	-0.018**	-0.017*
	(0.007)	(0.008)	(0.009)	(0.009)
Dep. var. mean	0.33	0.33	0.33	0.33
Observations	341,994	341,994	341,994	341,994
Panel C: District and birth-year fixed effects				
Pred. any deaths × post-1916	-0.015***	-0.014**	-0.011***	-0.011**
	(0.005)	(0.006)	(0.004)	(0.005)
Dep. var. mean	0.34	0.34	0.34	0.34
Observations	735,618	735,618	735,618	735,618
Mobilization × Post	No	Yes	No	Yes
Population deciles × Post	No	No	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes

Notes: Difference-in-differences estimates of the effect of pre-1916 WWI mortality on an indicator for having a royal name in the 1926 Irish Free State census. The sample consists of males born 1899–1926 in Panels A and C and 1907–1926 in Panel B, which is further restricted to individuals recorded as children in the household. Panels A and B interact an indicator for any death in the district with an indicator for birth after 1916; Panel C uses an indicator for any predicted death. Panels A and C include district and birth-year fixed effects, while Panel B includes household and birth-year fixed effects. Column (2) adds a post-1916 interaction with an indicator for any mobilisation before 1916; column (3) instead adds post-1916 interactions with 1911 district population deciles; column (4) includes both sets of controls. Standard errors are clustered at the district level. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

TABLE B.13
EFFECT OF WWI DEATHS ON CULTURAL NAME SCORES (BOYS AND GIRLS)

	Catholic Name Score			
	(1)	(2)	(3)	(4)
Panel A: District and birth-year fixed effects				
Any deaths × post-1916	0.851***	0.777***	0.442***	0.415***
	(0.287)	(0.274)	(0.139)	(0.144)
Dep. var. mean	64.65	64.65	64.65	64.65
Observations	1,416,227	1,416,227	1,416,227	1,416,227
Panel B: Sibling and birth-year fixed effects				
Any deaths × post-1916	0.881***	0.751***	0.614**	0.535**
	(0.275)	(0.278)	(0.255)	(0.262)
Dep. var. mean	65.32	65.32	65.32	65.32
Observations	764,450	764,450	764,450	764,450
Panel C: District and birth-year fixed effects				
Pred. any deaths × post-1916	0.764***	0.677**	0.325**	0.370*
	(0.267)	(0.266)	(0.133)	(0.220)
Dep. var. mean	64.65	64.65	64.65	64.65
Observations	1,416,227	1,416,227	1,416,227	1,416,227
Mobilization × Post	No	Yes	No	Yes
Population deciles × Post	No	No	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes

Notes: Difference-in-differences estimates of the effect of pre-1916 WWI mortality on individual Cultural Name Scores (0–100) in the 1926 Irish Free State census. The sample consists of males born 1899–1926 in Panels A and C and 1907–1926 in Panel B, which is further restricted to individuals recorded as children in the household. Panels A and B interact an indicator for any death in the district with an indicator for birth after 1916; Panel C uses an indicator for any predicted death. Panels A and C include district and birth-year fixed effects, while Panel B includes household and birth-year fixed effects. Column (2) adds a post-1916 interaction with an indicator for any mobilisation before 1916; column (3) instead adds post-1916 interactions with 1911 district population deciles; column (4) includes both sets of controls. Standard errors are clustered at the district level. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

TABLE B.14

EFFECT OF WWI DEATHS ON ROYAL NAMES (BOYS AND GIRLS)

	Royal name			
	(1)	(2)	(3)	(4)
Panel A: District and birth-year fixed effects				
Any deaths × post-1916	-0.015***	-0.013**	-0.010***	-0.009***
	(0.006)	(0.005)	(0.003)	(0.003)
Dep. var. mean	0.33	0.33	0.33	0.33
Observations	1,427,273	1,427,273	1,427,273	1,427,273
Panel B: Sibling and birth-year fixed effects				
Any deaths × post-1916	-0.005	-0.004	-0.001	-0.001
	(0.005)	(0.005)	(0.005)	(0.005)
Dep. var. mean	0.33	0.33	0.33	0.33
Observations	768,038	768,038	768,038	768,038
Panel C: District and birth-year fixed effects				
Pred. any deaths × post-1916	-0.014***	-0.010*	-0.008***	-0.006
	(0.005)	(0.005)	(0.003)	(0.004)
Dep. var. mean	0.33	0.33	0.33	0.33
Observations	1,427,273	1,427,273	1,427,273	1,427,273
Mobilization × Post	No	Yes	No	Yes
Population deciles × Post	No	No	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes

Notes: Difference-in-differences estimates of the effect of pre-1916 WWI mortality on an indicator for having a royal name in the 1926 Irish Free State census. The sample consists of males born 1899–1926 in Panels A and C and 1907–1926 in Panel B, which is further restricted to individuals recorded as children in the household. Panels A and B interact an indicator for any death in the district with an indicator for birth after 1916; Panel C uses an indicator for any predicted death. Panels A and C include district and birth-year fixed effects, while Panel B includes household and birth-year fixed effects. Column (2) adds a post-1916 interaction with an indicator for any mobilisation before 1916; column (3) instead adds post-1916 interactions with 1911 district population deciles; column (4) includes both sets of controls. Standard errors are clustered at the district level. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.