

# Heroes and Villains: The Effects of Combat Heroism on Autocratic Values and Nazi Collaboration in France\*

Julia Cagé<sup>1</sup>, Anna Dagorret<sup>2</sup>, Pauline Grosjean<sup>3</sup>, and Saumitra Jha<sup>4</sup>

<sup>1</sup>Sciences Po Paris and CEPR  
<sup>2,4</sup>Stanford Graduate School of Business  
<sup>3</sup>University of New South Wales

December 22, 2020

## Abstract

Can heroes legitimize strongly-proscribed and repugnant political behaviors? We exploit the purposefully arbitrary rotation of French regiments to measure the legitimizing effects of heroic credentials. 53% of French line regiments happened to rotate under a specific general, Philippe Pétain, during the pivotal WWI battle of Verdun (1916). Using recently-declassified intelligence data on 95,314 individuals, we find the home municipalities of regiments serving under Pétain at Verdun raised 7% more Nazi collaborators during the Pétain-led Vichy regime (1940-44). The effects are similar across joining Fascist parties, German forces, paramilitaries that hunted Jews and the Resistance, and collaborating economically. These municipalities also increasingly vote for right-wing parties between the wars. The voting effects persist after WWII, becoming particularly salient during social crises. We argue these results reflect the complementary role of the heroes of Verdun in legitimizing and diffusing the authoritarian values of their former leader.

**Please Click Here for the Most Recent Version**

**Keywords:** Heroes, Leaders, Democratic Values, Autocracy, Identity, Networks, Votes, Legitimacy

**JEL:** D74, N44, L14.

---

\* *julia.cage@sciencespo.fr*; *dagorret@stanford.edu*; *p.grosjean@unsw.edu.au*; *saumitra@stanford.edu*. We are grateful to Victor Gay and Dominique Lormier for sharing valuable sources. We are also grateful both for feedback and for the 2020 Oliver Williamson Award for best paper from the Society for Institutional and Organizational Economics. We further thank Oriana Bandiera, Sascha Becker, Christian Dippel, Quoc-Anh Do, Guido Friebel, Kai Gehring, Bob Gibbons, Maxime Grosjean, Jessica Leino, Hongyi Li, Leslie Martin, Andrea Prat, Vincent Pons and Steven Wilkinson, as well as other participants at presentations at ASREC, Columbia, CIVOE, Deakin, LSE, Milan, MIT, NES, Oz Virtual, Sciences Po Paris, Stanford, UC Louvain and Virtual Econ History for insightful comments. Alvaro Calderon, Jeanne Dorlencourt, Stella Hadzilacos, Morgane Fridlin, Paul Gioia, Romain Morgavi and the Stanford GSB Circle Team provided outstanding research assistance. Julia Cagé and Pauline Grosjean acknowledge financial support from the Institute for New Economic Thinking (grant INO1800004) and the Australian Research Council (grant FT190100298). This project received Ethics Approval from UNSW (HC190869). An Appendix with additional empirical material is available on our websites.

*“J’ai fait Verdun.”* [I did Verdun.]

“Frenchmen! Having been called upon by the President of the Republic, I today assume the leadership of the government of France. Certain of the affection of our admirable army that has fought with a heroism worthy of its long military traditions. . . , certain of the support of veterans that I am proud to have commanded, I give to France the gift of my person in order to alleviate her suffering.”- Maréchal Philippe Pétain, June 17, 1940.

## 1 Introduction

In July 1940, one of the most durable democracies in the world, one that had endured for seventy years, weathering both a pandemic and a world war, committed suicide. The French Parliament voluntarily ended its own sovereignty, and with it the Third Republic, by voting full powers to *Le Maréchal*, Philippe Pétain, an 84-year old military officer credited with saving France during the Battle of Verdun in the First World War. Pétain established the right-wing authoritarian *Vichy* regime that would collaborate with Nazi Germany until France’s liberation by the Allies in 1944. At that time, 95,314 French individuals would be listed by French military intelligence as having actively collaborated with the Nazis, while countless more would collaborate more tacitly. France’s crushing military defeat in 1940, however, was only part of the story. Instead, it was arguably in part a symptom of an underlying process that had led to an undermining of democratic values. Unlike other democratic states that had fallen that year to the Nazis, France’s elected representatives in 1940 chose not to set up a legitimate government in exile. Instead, many, from the extreme left to the extreme right, appeared convinced that dictatorship by a historic war hero was necessary for the “national renewal” of France.

Under what conditions do democratic values erode and previously durable democratic institutions falter? To what extent can heroes legitimize otherwise repugnant and extreme anti-democratic political preferences? What role do hierarchical networks forged by shared heroism play in propagating the values of their leaders? In this paper, we measure the effects of *heroic* human capital— the credential that heroic acts provide in acting as a costly signal of type— in shaping political identity and legitimizing political action. Our setting, 1940s France, provides a very useful laboratory for understanding the political economics of heroism. Almost by definition, heroes engage in pro-social acts, making it hard to distinguish heroic legitimization and endorsement of political activities with their inherent social desirability. Yet in the 1940s, the French people were asked by the Victor of Verdun, whose credentials as a patriot were hard to question, to confront an abrupt revocation of the nation’s long-standing democratic institutions and values and to instead collaborate with an oppressive foreign regime.<sup>1</sup> Our setting allows us to examine which individuals choose to actively support the undermining of democracy by a hero, and the extent to which this influence is disproportionately transmitted through others with heroic credentials and their networks to local communities.

---

<sup>1</sup>Even the rallying cry of the 1789 Revolution and motto of Republican France: *Liberté, Égalité, Fraternité* [Liberty, Equality, Fraternity], was banned in 1940 in favor of *Travail, Famille, Patrie* [Work, Family, Fatherland].

In particular, we exploit a natural experiment – the arbitrary rotation of front-line French regiments to service at the pivotal Battle of Verdun during the generalship of Pétain between February and April 1916 – on subsequent active Nazi collaboration by individuals from the home municipalities of those regiments during 1940-1944. We combine this identification strategy with a novel dataset we gathered from a range of original archival and secondary sources at a very fine level of granularity, exploiting data at the individual level, regimental level and among the 34,947 municipalities of 1914 France. This dataset includes unique individual data on more than 95,314 collaborators that we hand-coded from a secret 1945 French intelligence report that has been only recently declassified.

We first document how the French army adopted a systematic rotation system, the *No-ria* [millwheel], that was expanded across much of France to rotate and rest troops from the *Inferno* of Verdun. By design, the French army sought to maintain inter-changeability of its line regiments, and the timing of when different regiments happened to be assigned to the battle was unrelated to the specific characteristics of the home municipalities from which they were raised. Indeed, consistent with the arbitrary nature of the rotation system, municipalities that raised regiments that served under Pétain at Verdun are similar along a range of pre-war characteristics to other municipalities, both within the same department and more generally. Importantly, we use hand-collected novel data to show that this includes similar vote shares for different political parties from the last pre-war election in 1914. These municipalities are also balanced on other pre-war demographics and even their overall fatality rates in the First World War.

We next show that individuals in municipalities that served under Pétain at Verdun were around 7-10% more likely to support Pétain’s authoritarian regime and participate in collaborationist organizations that emerged once he assumed dictatorial powers in 1940. The effects appear across all forms of collaboration in our data, including participating in Fascist political parties, engaging in deep economic collaboration with the Nazis, joining paramilitary groups that conducted the internal repression of the regime against Jews and the Resistance, or by directly enlisting in German combat or auxiliary units. These results hold whether we compare municipalities within the same region of metropolitan France or even more locally– among otherwise similar municipalities within the same department.

We interpret our results as consistent with the *legitimization of anti-democratic values diffusing through a complementary hierarchical network of heroes*. In particular, we argue that those regiments that were rotated through the Battle of Verdun under Pétain’s command were exogenously imbued with a credential of heroism. We show that the resultant network of those sharing this heroic credential proved to be a complement to the message of their heroic commanding general in subsequently spreading and legitimizing anti-democratic values, even though these values ran contrary those of the French Republic for which they had fought.

To shed light on the mechanism, we first establish that Pétain’s leadership and the presence of the heroic network of soldiers forged at Verdun are complements in increasing support for

Nazi collaboration. We then draw upon the detailed individual and municipal data we collected to demonstrate that the effect is due to a diffusion of values beyond the network rather than a number of alternative channels.

To establish that Pétain’s leadership and the network are complements, we proceed in two steps. First, we exploit biographical data on all of Pétain’s peace-time and war-time assignments, including field and staff commands before and after Verdun to measure the relationship between his personal networks and collaboration. We show that collaboration is 7% higher among the home municipalities of regiments exposed to Pétain at Verdun but not at other points in his military career. In fact, those municipalities with regiments that served with Pétain before (or after) Verdun do not appear to have raised significantly greater shares of collaborators during the Vichy regime than otherwise similar municipalities in the rest of France.

Next, we measure the effects of heroic credentials obtained under Pétain and in his absence. We show that, unlike serving at Verdun under Pétain, serving at Verdun just after Pétain’s promotion from direct command on the battlefield does not increase subsequent collaboration. We further exploit detailed regimental histories to show that the effects on collaboration also do not reflect exposure to other battles, including other heroic battles like the First Battle of the Marne that saved Paris, or other major battles in 1916 such as the Somme Offensive. Nor does it reflect exposure to the command of the other heroic marshal of the Great War, Ferdinand Foch, who died in 1929. Thus, though Pétain had other commands, and other French soldiers also gained skills and heroic credentials in other battles, the increase in support for collaboration that we measure reflects the mutual complementary role of a heroic leader present and willing to legitimize autocracy, along with a network of others who are themselves heroes. Together the effect is greater than having each alone.

We next examine the different channels through which the complementary heroic network influenced collaboration, and the extent to which it reflects a change in values. We first assess the main alternative: whether the effects instead reflect differences in the nature of the combat— or the resulting trauma— that just happened to have coincided with Pétain’s generalship. However, using individual data on about 1.15 million French military fatalities, we show that the lethality of combat under Pétain at Verdun was in fact quite similar, not just to fatalities at Verdun itself following Pétain’s reassignment but to other battles on the Western Front throughout the war. Further, rather than the violence ‘begetting more violence’ among the survivors, we do not find that those exposed are more likely to join militarist collaborationist organizations relative to other less violent groups.

We next consider other alternative channels, including pecuniary incentives, post-traumatic stress, the presence of coordination and bandwagon effects, and the development of organizational skills. We exploit detailed individual level data on both collaborators and on resistance fighters to provide evidence that each of these channels provides an incomplete explanation on its own but could play a plausible role when combined with changing support for anti-democratic values.

We next turn to measuring the effects on these values directly. We use hand-collected data on French legislative elections to evaluate the extent to which voters in the home municipalities of Pétain’s Verdun regiments select right-wing and far-right parties that mimicked Pétain’s own values. Even though Pétain assumed only a limited political role in the inter-war period, he was widely recognized as a right-wing conservative strongly opposed to communism, and at least as early as 1918, seen as displaying an increasing propensity to espouse authoritarian values. We show that municipalities whose regiments served under Pétain at Verdun, although politically similar to other municipalities in the 1914 elections, begin voting against the communists in the 1924, and then increasingly vote for the right (and later the extreme right) in the 1932 and, particularly, the 1936 elections. These patterns accentuate the severe inter-war polarization that afflicted France, strengthening a trajectory towards violent internal conflict later considered akin to a civil war (Jackson, 2001). In contrast, as with the subsequent effects on collaboration, being merely exposed to Pétain’s command outside of Verdun, or to other commanders at Verdun after Pétain’s promotion, does not show these patterns. We interpret these results as consistent with complementarities that generated escalating incentives to reinforce the value of the network over time.

Similarly, we show that these effects are durable. The effects on political preferences survive after the Liberation of France in 1944, when the collaborationist regime fell, far-right parties were banned, and Pétain himself would be convicted of high treason.<sup>2</sup> We show that the impact on support for right-wing parties tends to be particularly pronounced in times of political crisis in the post-war period.

Overall, we interpret these results as reflecting the role of a network of individuals with complementary *heroic* credentials in legitimizing and propagating authoritarian, anti-democratic values. At the individual level, heroic credentials provide a strong, often tragically costly, signal of an individual’s type, particularly in demonstrating their relative willingness to forego private interests in the interests of the nation. In environments of moral hazard and hidden information, possessing a heroic credential can engender greater trust in heroes by others.<sup>3</sup> This can make heroes not only more desirable to others as agents in trust-based economic relationships in general, but may be seen as a particularly relevant signal when it comes to the delegation of political authority and decisionmaking. Heroic credentials can engender greater trust in heroes’ endorsements of policies as reflecting the public good rather than their personal interests. This can in turn enable heroes to be more credible when publicly supporting highly-proscribed and potentially repugnant policies relative to other public figures, whose type and thus motives are less clear.

Though gleaned from acts of public self-sacrifice, heroic credentials can ultimately provide some private benefits, whether it be through a purely psychic sense of self-worth, identity-

---

<sup>2</sup>Pétain’s deputy, Pierre Laval, was executed, along with a number of other high-ranking Vichy ministers. De Gaulle, who had served under Pétain in World War I, commuted Pétain’s sentence to life imprisonment in recognition of Pétain’s military contributions in World War I.

<sup>3</sup>On costly investments and hierarchies inducing trust, see Athey et al. (2016).

related, or stemming from the trust heroes enjoy and their ability to persuade others. Often heroes can use this credential in a pro-social manner. However, in our example, the Vichy regime exploited the endorsement of a war hero, Pétain, to dramatically challenge France’s democratic traditions and instead implement extreme racist and dictatorial policies aimed at ‘national renewal’. This departure from previous norms, along with our unique dataset on collaborators, helps us to better isolate the role of heroism in legitimizing otherwise proscribed political behavior

Further, while heroes often distinguish themselves by showing individual initiative, their credentials as heroes do not operate in a vacuum. While we cannot measure the effects of Pétain’s legitimization of anti-democratic values on France as a whole — and in that sense our estimates are lower-bound estimates of the effect of his leadership— we can compare which municipalities were more responsive to his message. Our results suggest that Pétain’s legitimization of authoritarian values was complemented by the persuasive presence of the regular citizen-soldiers, the *poilus* [hairy ones], who shared a common credential with Pétain as heroes of Verdun.

The presence of such complementarities in a hierarchical network can, we argue, also explain some of the more puzzling aspects of Nazi collaboration that we uncover and document. For example, why was it that the heroes of Verdun, symbols of French fortitude and the will of the French Republic to resist, were more likely to instead collaborate with the invading forces? Why was it, that even in 1943-44, when it was clear that Germany was losing the war, the communities exposed to Pétain at Verdun showed durable, and arguably even more violently-ardent, support for the regime, to the extent of joining German forces destined for the Eastern Front, and the hated *Milice*— paramilitaries that hunted Jews, resistance fighters and those seeking to avoid forced labor in Germany?

The logic of robust comparative statics, implied by the presence of complementarity (Milgrom and Roberts, 1990, Milgrom et al., 1991), provides likely answers. If others that share a heroic credential are now considered traitors, this will reduce the value to each hero of their own. This is particularly the case for the most public face of the network— in our case, Pétain. As a result, the heroes of Verdun have more incentives to support their leader: it is costlier to turn against him than for others because of the complementarity of their heroic credentials. Further, there are incentives to invest in participation in organizations and other reinforcing devices that strengthen the value of their heroic credentials and the network as a whole. Yet, the more individuals invest, the costlier it is to abandon the network. These reinforcing incentives over time may explain why the home communities of the heroes of Verdun still supported Pétain even when it was clear that the Nazis were losing, and indeed continued to shape political preferences after the war.<sup>4</sup>

---

<sup>4</sup>Pétain’s death in prison in 1951 sparked demonstrations in most French cities, orchestrated by veterans of Verdun (Williams, 2005, p. 271). See also Jha (2018) for a parallel formalization and other historical examples where reinforcing complementary investments can induce institutional persistence even after the central complementary relationship ceases to exist.

To the best of our knowledge, our paper is the first to measure the effects of heroes and heroic networks in legitimizing and propagating policy preferences. Heroes, and the narratives that emerge around them, have arguably been central to the mental models that humans use to comprehend their past and establish benchmarks for their future interactions with one another and with the state and society at large. From historic annals such as Homer’s epics, the tale of David and Goliath, the Three Kingdoms and the Ramayana to the *Band of Brothers* and modern Hollywood franchises, stories of heroism, particularly forged in war, are ubiquitous across cultures.<sup>5</sup>

Yet, measuring the effects of heroism and the mechanisms through which it operates has thusfar been very difficult. The emergence of heroes, the networks that they develop and the heroic acts that they perform are often hard to empirically distinguish from the specific contexts that call for their heroism. Further, heroic narratives are also often shaped *ex post* by those with specific objectives, making the propagation of heroism itself often endogenous. In our setting, we are able to exploit an arbitrary process that formed a network of heroes, those who *did Verdun*. We are able to exploit a setting where the heroes of the First World War were themselves connected to a heroic leader – Pétain – who would choose the wrong side of history, one later widely perceived to be a *villain* of the Second World War.

Our results also highlight the importance of heroism in providing a form of capital that can broaden the spectrum of policy preferences that individuals can publicly adopt (i.e. *the Overton Window*). In our case this reached the point of encompassing preferences that repudiated France’s democratic tradition and instead involved alignment with an abhorred occupant–preferences that would have otherwise been considered as proscribed and repugnant.

Heroic acts can not only provide a credential for adopting more radical political positions, but also for directly assuming the role of leadership itself. By imbuing heroes with a credential of proven willingness to sacrifice for the nation, heroes can challenge other sources of political legitimacy, including traditional sources such as stemming from religion or descent (Greif and Rubin, 2020) or the legitimacy of democratic elections themselves (Levi et al., 2009). Thus, as we discuss below, heroes can become potent champions of democracy and freedoms, or, as in our case, potentially their greatest challengers. Thus our paper links to an emerging literature measuring the effects of leadership, on the aftermath of conflict, and the determinants of declines in democratic values and political extremism more generally.<sup>6</sup>

Arguably the closest works to ours are by Dippel and Hebllich (2018) and Jha and Wilkinson (2012, 2019). Dippel and Hebllich (2018) compare American towns where exiled German leaders

---

<sup>5</sup>Our work also resonates with recent theoretical contributions on the role of stories in shaping organizational culture and providing normative prescriptions that can motivate effort in organizations. See e.g. Gibbons and Prusak (2020).

<sup>6</sup>The many ways through which leaders can influence individuals actions are explored in a growing, though mainly theoretical literature. Leaders can persuade and organize followers (Hermalin, 1998, Caillaud and Tirole, 2007). They can coordinate group action by defining a reference behavior (Akerlof and Holden, 2016), affecting expectations and social norms (Bursztyn et al., 2017, Acemoglu and Jackson, 2015), or directly shaping group identity (Akerlof, 2016). See also Lenz (2012) on how US party leaders can sometimes change the policy preferences of those who identify with that party.

of the 1848 revolutions chose to settle to otherwise similar towns, and find that towns with more leaders were more likely to develop local athletic societies, open German newspapers and mobilize volunteers in the American Civil War. They address the reflection problem – that leaders emerge endogenously from their communities – by analyzing a setting where the leaders had already emerged elsewhere.<sup>7</sup> Our setting allows us to both exploit an arbitrary process which credentializes heroism and, with it, a specific type of leadership, but also to directly overcome the challenge of the endogenous choice of the communities in which leaders choose to operate by examining the effects on political action in the communities—determined at birth—of the complementary network of those that acquire this heroic credential.

We also build on Jha and Wilkinson (2012, 2019), who use a similar identification strategy to ours— the arbitrary assignment of army units overseas, among World War II South Asian soldiers and French veterans of the American Revolution, respectively— to measure the effects of different combat exposures. Whereas those works focus mainly on grass-roots political organizations among veterans and on the spread of democratic ideas among them, our paper focuses on a distinct channel: that of heroic human capital operating through a complementary hierarchical network, both in legitimizing racist authoritarianism and undermining democratic values.

In this way, our paper also ties to an emerging literature on democratic values and how even durable democracies can fail. In a number of benchmark political economy models, democracy is seen as an absorbing state (see e.g. Acemoglu and Robinson, 2005). However, nascent democracies often revert to dictatorship (e.g. Levitsky and Ziblatt, 2018). For example, an important body of work shows how Nazis were able to assert their authority within the nascent Weimar Republic through propaganda (Adena et al., 2015, Voigtländer and Voth, 2014) and leveraging existing organizations (Satyanath et al., 2017), to name a few. Yet, democracies do appear to become more resilient as they survive. Indeed, the extent to which communities transmit and propagate democratic values over time is seen as an important potential driver of such democratic resilience (Besley and Persson, 2019). Less is known, however, about whether and how long-lived democracies can also fail. Our paper measures the extent to which democratic values are supplanted by autocratic preferences in the face of alternative sources of legitimacy, such as that derived from heroism.<sup>8</sup>

---

<sup>7</sup>People choose to follow or reject leaders based on their own preferences, making it difficult to disentangle the causal influence of leaders from the preferences and actions of their followers. Other solutions to this reflection problem include the use of experimental methods that randomly assign leaders temporarily in lab-like settings (see e.g. Bhalotra et al., 2018, d’Adda et al., 2017), and the measuring of changes in outcomes when managers or leaders turn over or die (e.g. Bertrand and Schoar, 2003, Jones and Olken, 2005, Bandiera et al., 2020).

<sup>8</sup>Our results also contribute to the literature on the effect of conflict on political and economic development. Several studies have highlighted the influence of combat experience or victimization on subsequent voting and political behavior. Conflict experience is associated with heightened collective action (Blattman, 2009, Jha and Wilkinson, 2012, Bauer et al., 2016, Campante and Yanagizawa-Drott, 2016). Koenig (2015) finds that places with more veterans in World War I were more likely to vote for Fascist parties in Germany, a result that does not hold in Italy where instead places that suffered higher military fatalities in WWI voted more for the Fascists during the interwar (Acemoglu et al., 2020). Fontana et al. (2017) show that internal fighting under prolonged German occupation led to more Communist support in post-World War II Italy. They suggest that victims of the conflict identify with the side that won and against those perceived as responsible for the defeat. In our

Finally, to the best of our knowledge, ours is the first paper to measure the causal determinants of collaboration in Nazi-occupied Europe. This question has been relatively ignored by the literature in economics and political science, which mostly focuses on the determinants of insurgency and resistance.<sup>9</sup> This is in part because collaboration, by its nature, tends to be more covert than overt acts of resistance and insurgency, and thus harder to measure. Collaboration in France, in particular, has been the object of a recent fascinating, yet still mostly qualitative historical literature (e.g. Burrin, 1996, Jackson, 2001, Paxton, 2001, Ott, 2017).<sup>10</sup> We exploit a unique and largely untapped data source from a contemporary intelligence report, to create, to the best of our knowledge, the most exhaustive list of collaborators in occupied Europe to date.<sup>11</sup>

We first provide the relevant background on the French Army in the Great War (Section 2) and present our empirical strategy based upon regimental rotation (Section 3). We then briefly discuss the role of Pétain and veterans organizations in the run-up to the Vichy regime, and introduce our new dataset on collaborators (Section 4). We next present the main results (Section 5), and the mechanisms (Section 6), before discussing the broader implications.

## 2 An Exogenous Heroic Network: Verdun, Pétain & the Noria

“In the French collective imagination, the Great War *is* Verdun”—Julian Jackson (2001, p.28).

### 2.1 The Battle of Verdun 1916: ‘The Inferno’

On the 21st of February 1916, the German Army launched Operation *Gericht*. The German commander, Erich von Falkenhayn, aimed to exploit the great symbolic importance of Verdun to either lure the French into contesting a concentrated static position where they could be “bled to death” by artillery or crush French morale by capturing the fortress-city (Horne, 1962, p. 36).<sup>12</sup>

Yet, up until February 1916, Verdun had remained a quiet sector of the front. The Germans were able to maintain great secrecy despite their massive buildup to the attack, and consequently found the French grossly unprepared. The rapid German advance led to disastrous French losses

---

setting, in contrast, we find that a network of victorious heroes of France in the First World War were *more* likely to support the invaders in the Second.

<sup>9</sup>See for example Gagliarducci et al. (2018), Kocher and Monteiro (2016), Ferwerda and Miller (2014) on Europe, and Dell and Querubin (2017), Trebbi and Weese (2019) on US interventions overseas.

<sup>10</sup>We contribute to this historiography in a number of substantive ways as well. While many historians agree that Pétain’s prestige was forged at Verdun and may have helped to legitimize collaboration, there has been no attempt, to the best of our knowledge, to measure this causally. Further, there has been no attempt to measure the extent to which this depended on the presence of a network of heroes who also served at Verdun.

<sup>11</sup>Some key aspects of the date are summarized in Lormier (2017). We are grateful to Dominique Lormier for allowing us to consult and transcribe the original documents.

<sup>12</sup>Verdun’s symbolic importance goes back at least to a treaty in 843 that ended the civil war between Charlemagne’s grandsons, largely delineating the borders of what would become France, Germany and (disputed) Lotharingia. It was the last French fortress to surrender to Prussia in 1870.

and the successive removal of four ineffective French Generals in the first five days of battle. A ‘snap decision’ was made that Pétain should be placed in command at Verdun on February 26th (Horne, 1962, p.129).

Pétain immediately implemented a number of major innovations. First, he began to rely more heavily on artillery to spare the infantry where possible, while reorganizing the slender supply line that would become called the *Voie Sacrée*. Second, he instituted a system of troop replacements, known as the *Noria* [millwheel]. Like the simple wheel of buckets on a stream for which it was named, under the *Noria* system, line regiments were rotated after a few days, before their numbers were decimated and morale impaired, and sent to rest away from the front. They were then returned to the line, then rested again. By April, 53% of the entire French line infantry had been rotated through Verdun.<sup>13</sup>

These innovations stopped the German advances and arguably saved the French army from collapse. However Pétain, already lionized by the Paris press as the *Héros de Verdun*, rankled both the High Command and politicians with his increased visibility and disdain for their directives.<sup>14</sup> As a result Pétain was promoted away from direct command at Verdun on May 1st. Under his successors, Robert Nivelle and Charles Mangin, the furious contest at Verdun continued, even as the major Allied offensive on the Somme on July 1st diverted German resources. The French gradually clawed back German gains until the 17th of December, 1916, when the battle was declared over.

By then, the *Enfer de Verdun* [the Inferno] had become the longest continuous battle in history. French casualties reached around 378,777 while Germany lost around 330,000 men. 305,440 soldiers were killed, almost a death a minute (Ousby, 2007).<sup>15</sup>

The battle was also a watershed of World War I. As Horne (1962)[pp. 1-2] notes: “Before it, Germany still had a reasonable chance of winning the war; in the course of those ten months this chance dwindled away. . . . In the aftermath, too, Verdun was to become a sacred national legend, and universally a household word for fortitude, heroism, and suffering . . . Long after the actual war was over, the effects of this one battle lingered on in France.”

Because of the rotation system, more men of that generation would have the Battle of Verdun engraved on their memory than any other. The profound significance of the simple phrase “*J’ai fait Verdun*” [I did Verdun], adopted broadly among its veterans, was understood throughout the country (Ousby, 2007).

---

<sup>13</sup>By contrast, the Germans deployed the same regiments until they had been literally pulverized by artillery.

<sup>14</sup>The Paris press struggled to find a ‘suitable photograph’ of Pétain when he assumed command at Verdun, but none existed. Prior to the battle, “he was simply not a public figure” (Williams, 2005, p.71). But with his increased visibility, Joffre sought his replacement. His rudeness to Premier Poincaré during his visits probably did not help (ibid).

<sup>15</sup>These figures can be compared to the 405,399 military deaths the United States suffered during the entire Second World War, and the 22,654 soldiers killed on both sides in its bloodiest battle in history, Antietam.

## 2.2 Pétain: the unexpected Hero of Verdun

Pétain had not been born to greatness, but was assigned to Verdun because he happened to be available at the time. Of peasant background, he graduated 229 out of 386 from the Saint-Cyr military academy, and advanced only slowly up the ranks. He spent five years as sous-lieutenant, seven years as lieutenant, and ten as captain (Horne, 1962). In 1914, he was a 58-year old colonel on the verge of retirement (Williams, 2005, p.41).

His slow progress may be explained in part by his modest origins, but also by his disdain for publicity, political networking and his military philosophy, favouring artillery, which was at times at odds with High Command's. Pétain was also known for his clipped tones and delivery, so much so that his nickname while a professor at the *École de Guerre* was *Précis-le-Sec* [Precise-the-Dry] (Williams, 2005, p.35). His lack of willingness to 'manage up' may have also played a role. His superior officers found him sarcastic and cautious, while politicians and many peers found him irreverent and cold.<sup>16</sup>

Yet, even though he appears to have lacked the skills or the inclination to be a charismatic populist demagogue in the vein of Hitler and Mussolini, or an effective manipulator of internal party politics, like Stalin, Pétain was a soldier's general, beloved by the soldiers under his command for the genuine concern he showed their well-being.<sup>17</sup> In this management style, he would differ markedly from his successors at Verdun, Nivelle and Mangin.<sup>18</sup>

Yet, as Horne (1962) writes: "The choice of Pétain to command at Verdun was made less because of his qualities than because he happened to be available at the moment" [p.141]. The dramatic failure of French military plans in 1914 and Commander in Chief Joffre's subsequent sacking of inept generals resulted in rapid promotion for those that remained, Pétain among them. At the start of the Battle of Verdun, he happened to be in command of the Second Army, which had been relieved by the British army in the Champagne sector and moved off the frontline six weeks earlier to form a general reserve. This sequence of routine French military decisions, done without foresight of the coming battle, meant that Pétain happened to be free to be deployed to the front to take command of the collapsing regiments on the line a few days after the start of the battle.<sup>19</sup>

It is important to stress that although Pétain was in charge of military and logistic decisions at Verdun, he had no say in the rotation of specific regiments to Verdun. This was exclusively the responsibility of Joffre, and subject to broader strategic considerations. Joffre's decisions

---

<sup>16</sup>A common refrain of his military evaluations note his 'cold' character (Williams, 2005, p.26). His fellow-officers too noted his "icy formality" (Horne, 1962, p.139).

<sup>17</sup>According to Alastair Horne (1962, p.139), Pétain "was the paternal figure, the leader who was devoted to his men, who suffered what they suffered".

<sup>18</sup>The anti-thesis of Pétain, though 'silver-tongued' and much-admired by politicians, Nivelle was never popular with the soldiers. He was known for not even consulting the casualty lists after battle (Williams, 2005, p.71). His subordinate, Mangin was nicknamed the "Butcher". Both Nivelle and Mangin were later discredited by the catastrophic Chemin des Dames offensive of 1917 and subsequent mutinies in the French army, a situation that Pétain would again be called upon to rescue. See also Bandiera et al. (2020) on how the fit between leadership styles and firms' needs can shape managerial performance.

<sup>19</sup>The order was unanticipated by Pétain himself, who was away from his Noailles headquarters in a Gare du Nord hotel with his mistress at the time of his summons (Williams, 2005)[p.67].

about troop rotations were dictated by the possibility of other attacks and subordinate to the main strategic objective of 1916, the Somme Offensive scheduled for that summer.<sup>20</sup>

### 2.3 The *Noria* Rotation and Heroic Networks

Our empirical identification of heroic networks exploits the fact that the line infantry regiments of the French army, in common with that of many militaries, were designed to be interchangeable in strength and equipment, and thus easily deployable in response to the needs of the moment.<sup>21</sup> Yet despite this *inter-changeability in deployment*, 144 of the 173 regiments of the French army in August, 1914 were *recruited from specific subregions*, each with their own recruitment bureau and military depot.<sup>22</sup> We digitized the 9th edition of the *Dictionnaire des Communes* (Baron and Lassalle, 1915) which enables us to assign each of the 34,947 municipalities to their associated bureau of recruitment within France’s 1914 borders.<sup>23</sup>

On August 2nd, 1914, France mobilized every man between 20 and 48 years of age. Among those, nearly one million (the military classes of 1911, 1912 and 1913, men born between 1891 and 1893) were already in the garrisons, completing their 3-year long military service. They were the line infantry. In addition, 2.2 million men from the classes of 1900 to 1910 (24 to 34 years old in 1914) formed the reserves. The older men formed the Territorial Infantry and its reserves, which initially mostly had a support function, but were also drawn into combat as the war went on. Over the course of the war, 8.4 million men were mobilized.

88.67% of 1915 France’s municipalities sent troops that served in one of the 152 line regiments that were rotated through the Battle of Verdun. 50.10% of all French municipalities, and slightly more than half (54.34%) of those that served at Verdun, did so in one of the 92 regiments rotated through Pétain’s command.

The remaining 20 line regiments were those kept in reserve for the major—and ultimately more bloody— Allied offensive at the Somme in July 2016, or those already assigned to the fronts in the Dardanelles, Greece, or Serbia.<sup>24</sup> We use the resulting quasi-random variation in infantry regiments’ exposure to direct command of Pétain at Verdun. We consider a regiment to be *treated* by Pétain’s leadership at Verdun if it served between the critical period of 26th of February and the 1st of May, as opposed to those that served from May to December, under

---

<sup>20</sup>See, e.g. Army Ministry, 1926, p.331-333, and (Williams, 2005, p.70). See for example, Joffre’s letter to Pétain, on 5 March 1916: “The headquarters of army corps, after their replacement by those who will be *sent to you*, will also be under *my* disposal” (emphasis added, Army Ministry, 1926, p.334).

<sup>21</sup>See e.g. Jha and Wilkinson (2012) on the British army and other forces as well.

<sup>22</sup>The remaining ‘Fortress’ regiments, numbered from 145 to 173, were recruited from specific border areas and were complemented with excess troops from Paris and other population centers in order to allow an increased peacetime concentration at the frontiers (see Imperial General Staff (1914)). We assign these fortress regiments to each of their recruitment sub-region in population-weighted shares. Our results are robust to excluding fortress regiments (see below). Other army corps, such as the artillery, were organised at the broader region level and are therefore less suitable for our analysis.

<sup>23</sup>To replace war-time losses, there was more mixing of recruits from outside the original sub-regions as the war continued (Bracken, 2018). This should attenuate the effects on the original municipalities, making our effects a likely lower bound.

<sup>24</sup>One further line regiment- the 145th- had been captured in 1914 and served 4 years of the war in German POW camps. Thus it too was not part of the rotation.

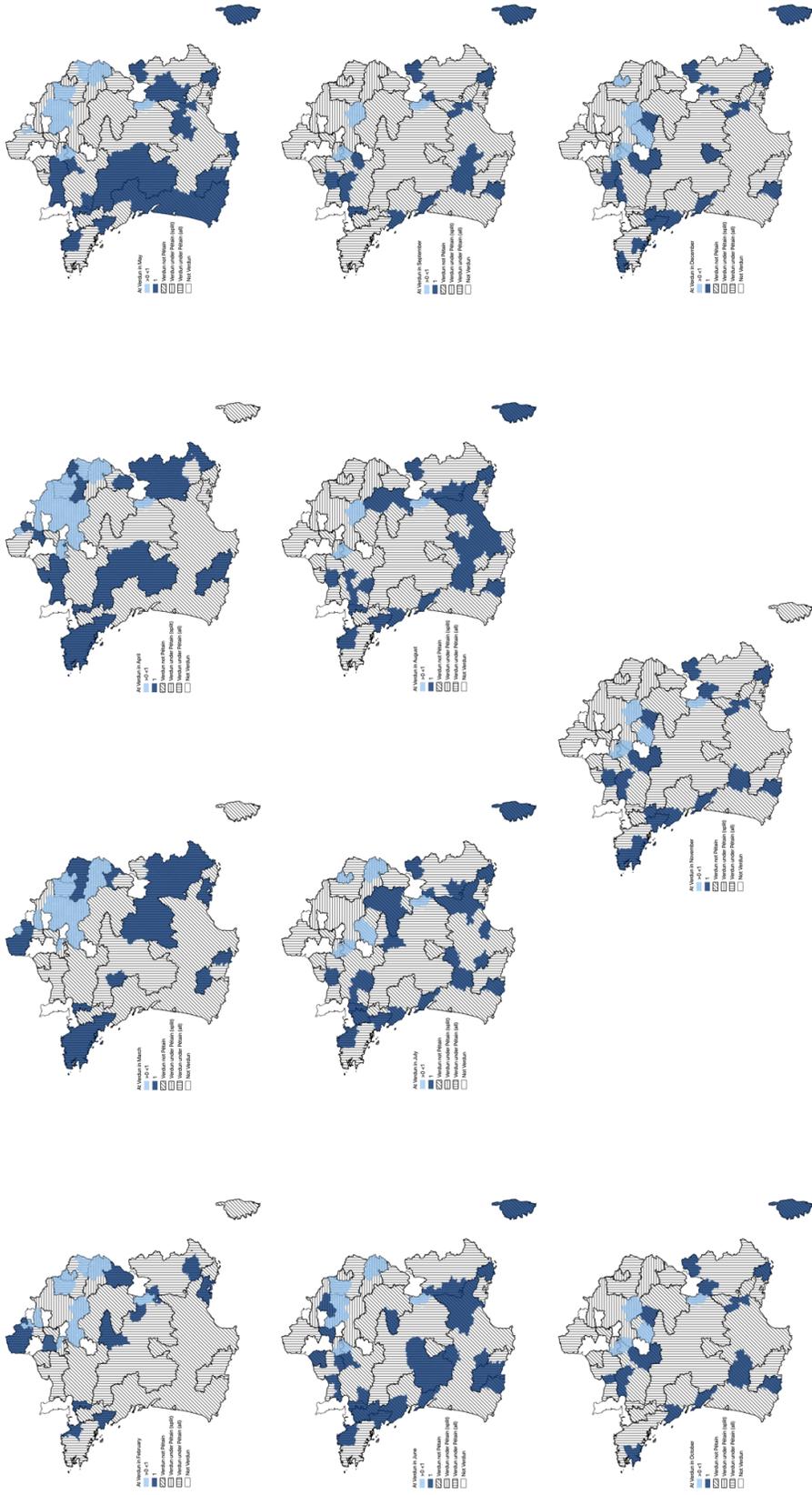
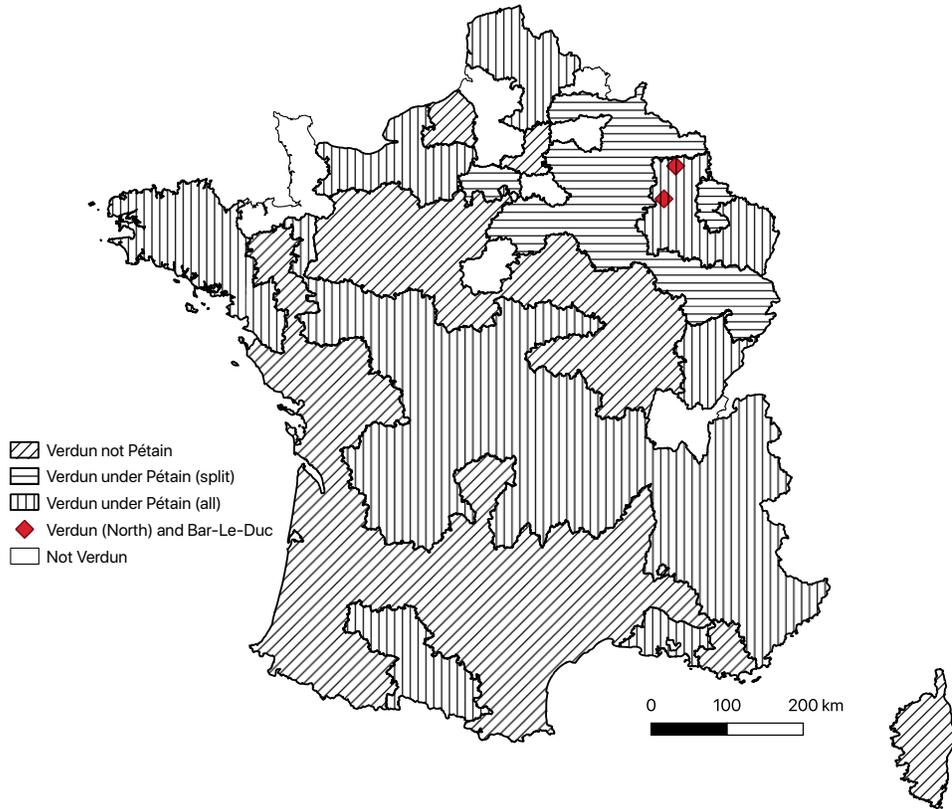


Figure 1: Rotation of regiments through Verdun, by month, February-December, 1916: From the top left (February) to the bottom right (December), different regiments were dispatched to the Battle of Verdun. Pétain commanded between February and May 1st. The figure displays where all (dark blue), some (light blue), some (light blue), or none of the regiments from each municipality were rotated through Verdun each month.



**Notes:** The figure displays whether all (vertical lines), some (horizontal lines) or none of the regiments from each municipality were rotated through Verdun. Red dots indicate the towns of Verdun and Bar-le-Duc, which were linked by the supply line, the *Voie Sacrée*.

Figure 2: Municipalities raising regiments under Pétain at Verdun

Nivelles and Mangin's command.<sup>25</sup> Both in its conception and, as we show, in its implementation, the rotation to Verdun, was based upon the needs of the moment and unrelated to the home characteristics of the regiments involved.

Figure 1 shows the rotation of home municipalities of the regiments assigned to Verdun for each of the ten months of the battle. Figure 2 summarizes these monthly figures, showing which municipalities ultimately raised regiments that served under Pétain at Verdun, which served there under other commanders, and which were deployed elsewhere. As the figures reveal, consistent with the arbitrary nature of the rotation system, almost every area of France sent troops to Verdun, with regiments recruited from different sub-regions arriving at the same time without any systematic distinction as to who was assigned when.

<sup>25</sup>No regiment was withdrawn between the start of the battle and the arrival of Pétain, so that all regiments that served in those 5 days are also treated.

### 3 Empirical Strategy

In what follows, we will estimate the following model at the municipality level  $i$ :

$$Y_{i,1924-1945} = \alpha + \beta \text{Verdun}_{i,1916} + \gamma \text{VerdunPetain}_{i,1916} + \mathbf{X}_{i,<1916} \phi' + \eta_{Di} + \epsilon_i$$

where our unit of analysis  $i$  is a municipality.<sup>26</sup>  $Y_{i,1924-1945}$  denotes a series of outcomes, including our main dependent variable of interest: the intensity of collaboration, measured as the log. share of collaborators listed in 1945 as having been born in municipality  $i$ , normalized by the population.<sup>27</sup>

The measures of combat exposure,  $\text{Verdun}_{i,1916}$  and  $\text{VerdunPetain}_{i,1916}$  are the shares of regiment(s) raised in municipality  $i$  that served at the Battle of Verdun and *under Pétain* specifically.<sup>28</sup> We also control for  $\eta_{Di}$ , a set of 13 regional or, in our preferred specification, 90 departmental fixed effects, as well as for  $X_i$ , a vector including municipality-level pre-treatment variables. Importantly, these include municipal vote shares for the left, center, or right in the last pre-war legislative elections in 1914. We also control for log. population, measured in the last pre-war Census, in 1911. To shed light on the mechanism, in some specifications we also control for a municipality’s military fatality rate in World War I and variables that capture France’s early experience in World War II. We cluster our standard errors at the level of treatment: the regiment.

Our identification exploits the exogeneity of the timing of the rotation of line infantry regiments at Verdun. Our main results compare municipalities which raised regiments that were rotated through Verdun in 1916, but at a different time: either under direct command of Pétain before May 1st, or after. Our identification is thus based on the fact that the processes through which regiments were rotated through Verdun in 1916, and through which Pétain himself was assigned and redeployed, were due to coincidence, military exigency and German action that were independent of the home characteristics of specific regiments themselves.

Consistent with this, Table I shows that municipalities that raised regiments rotated at Verdun under direct command of Pétain are statistically indistinguishable from others, both across France and within the same department, along a range of relevant characteristics. Most

---

<sup>26</sup>There were 34,947 municipalities within France’s 1914 borders, with an average population of 1,137.36 people, the equivalent of a Census block

<sup>27</sup>Given no Census was taken during the war and to avoid our estimates being contaminated by potentially endogenous population movements during and immediately after the war, we report the log ratio of the number of collaborators to the pre-war population of the municipality, measured in the last pre-war Census of 1936. More precisely, to deal with the zeros, we use the log of  $\frac{\text{number of collaborators} + 1}{\text{pre-war population} + 1}$ .

<sup>28</sup>We reconstruct the battle history of each regiment from each of the 173 “*Historique du Régiment*” books, which describe the day-to-day operations of each regiment. For each regiment, we manually code whether, and when, it was rotated at Verdun in 1916. We then define an indicator variable (“Verdun”) equal to one if the regiment fought at Verdun in 1916; and an indicator variable equal to one (“Verdun under Pétain”) if the regiment fought at Verdun under Pétain’s command, i.e. between the 26th of February and the 1st of May 1916. We then construct a municipality exposure share by averaging the battle history over the regiments from the municipality.

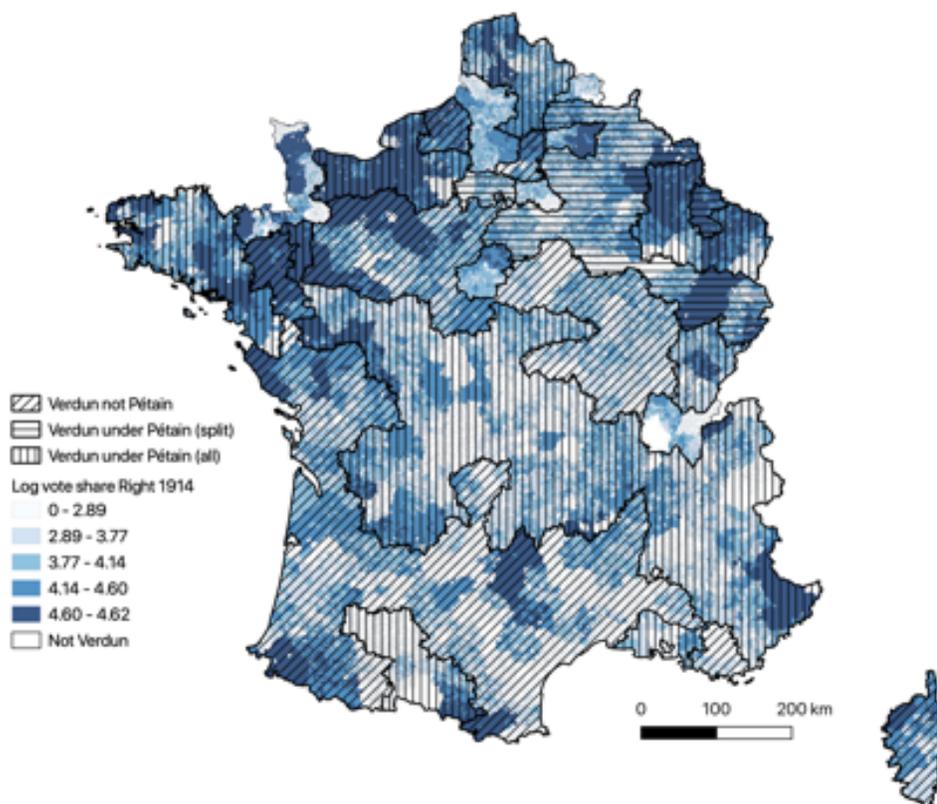
Table I: Summary Statistics and Balance on Pre-War Characteristics and Contemporaneous Covariates

|                               | Observations<br>(municipalities) | Mean<br>(sd)       | Coeff<br>(se)     | p-value | Coeff<br>(se)     | p-value |
|-------------------------------|----------------------------------|--------------------|-------------------|---------|-------------------|---------|
| Controls                      |                                  |                    |                   | None    | Dept FE           |         |
| Pre-Treatment Characteristics |                                  |                    |                   |         |                   |         |
| Left Vote Share 1914          | 33,641                           | 10.735<br>(16.184) | -0.137<br>(1.696) | 0.936   | -0.982<br>(1.527) | 0.521   |
| Centre/Other Vote Share 1914  | 33,641                           | 51.239<br>(31.894) | -2.416<br>(4.136) | 0.560   | 0.837<br>(3.647)  | 0.819   |
| Right Vote Share 1914         | 33,641                           | 42.998<br>(32.589) | 2.733<br>(4.503)  | 0.545   | 0.574<br>(3.182)  | 0.857   |
| Turnout 1914                  | 33,641                           | 79.518<br>(9.862)  | 0.936<br>(1.099)  | 0.396   | 0.028<br>(0.701)  | 0.969   |
| Log Population 1911           | 34,922                           | 6.237<br>(0.985)   | 0.039<br>(0.080)  | 0.624   | -0.015<br>(0.055) | 0.788   |
| Inter-War and WWII Charact.   |                                  |                    |                   |         |                   |         |
| Log Population 1936           | 34,942                           | 6.072<br>(1.064)   | 0.024<br>(0.085)  | 0.775   | -0.067<br>(0.065) | 0.298   |
| Combat Days 1940              | 34,942                           | 4.469<br>(3.477)   | 0.723<br>(0.597)  | 0.228   | 0.340<br>(0.353)  | 0.337   |
| Log Distance Demarcation Line | 34,942                           | 4.659<br>(1.149)   | 0.023<br>(0.200)  | 0.907   | -0.010<br>(0.062) | 0.874   |
| Vichy France 1940-44          | 34,942                           | 0.375<br>(0.484)   | 0.048<br>(0.086)  | 0.574   | 0.006<br>(0.012)  | 0.581   |

**Notes:** This Table compares municipalities whose home regiments were sent to Verdun under Pétain to others on their pre-war characteristics. We show the coefficients (and p-values) of an OLS regression of each characteristic on a municipality's share of regiments sent to Verdun under Pétain, both with no controls and with 90 Department Fixed Effects. Standard errors are clustered at the regiment level. \*p<0.10, \*\* p<0.05, \*\*\* p<0.01.

importantly, we hand-collected a novel dataset on the last pre-war elections in 1914. Whether it be comparing with no controls or comparing communes within the same department, Verdun-under-Pétain municipalities have very similar vote shares to others for left-wing, centrist or right-wing parties.<sup>29</sup> In fact, comparing within the same department, we fail to reject that Verdun-under-Pétain municipalities exhibit the same pre-treatment vote shares at the 52%, 82% and 86% levels respectively. Similarly, we fail to reject differences in election turnout at the 97% level. Figure 3 maps the vote share for the right in 1914 across municipalities. The map visually confirms the absence of geographical patterns across the interface between nearby municipalities whose regiments were rotated at Verdun under Pétain and those that were

<sup>29</sup>We provide details on elections and political parties in 1914 in the online Appendix B.2.1.



**Notes:** The map shows quintiles of the distribution of the log vote share for the right in the 1914 elections at the municipal level, across municipalities that housed a regiment (or a subset of regiments) that was rotated at Verdun under Pétain, at Verdun not under Pétain, and not at Verdun (hereafter municipal regimental combat experience in World War I). This map shows information for France’s 1914 borders (i.e. excluding Alsace and Lorraine). Electoral return data at municipal level in 1914 is available for 33,641 municipalities.

Figure 3: Vote share for the right, 1914 legislative elections

not. Table II disaggregates the 1914 electoral results party by party. There are no significant differences in vote share for any of the parties in Verdun-under-Pétain municipalities. Notably this includes not only parties on the right-wing but also the Socialist party (SFIO) of prominent anti-militarist Jean Jaurès, whose assassination crippled the final efforts to stave off war.

Similarly, using the last pre-war Census in 1911, we observe that Verdun-under-Pétain municipalities had similar populations to other towns in the same department or more widely across France. Further, in Appendix Table A1, we compare populations by gender, literacy rates, share of foreigners, occupational shares of workers, and the number of Catholic, Protestant, Jewish, and other places of worship among the 400 *chef-lieux* – the main towns of the French districts in the most detailed pre-war census that took place in 1872. Once again, municipalities with greater exposure to Verdun-under-Pétain show no robust differences, comparing both within and across France’s departments.<sup>30</sup>

<sup>30</sup>Comparing within the same department, the only difference that is significant at close to the 5% level is that

As a final note, Table I also shows that the Germans do not appear to have perceived Verdun-under-Pétain municipalities to be particularly more or less desirable to directly control than other municipalities during the lead up to the Battle of France in 1940. These municipalities had similar populations in 1936 and experienced similar spells of fighting during the 1940 Blitzkrieg. They were also neither more proximate to the demarcation line that separated German-occupied and Vichy France nor more likely to be assigned to either of these zones.<sup>31</sup> These similarities are true both comparing municipalities across France and comparing locally within the same department.

Table II: Exposure to Pétain and log. 1914 legislative vote shares

|                     | Left              | Center Left         |                     | Center Right      | Right              |                  |
|---------------------|-------------------|---------------------|---------------------|-------------------|--------------------|------------------|
|                     | (1)               | (2)                 | (3)                 | (4)               | (5)                | (6)              |
|                     | SFIO              | RAD-SOC             | RAD-INC             | PRDS              | Progressistes      | ALP              |
| Verdun under Pétain | 0.028<br>(0.074)  | 0.016<br>(0.059)    | -0.057<br>(0.057)   | -0.018<br>(0.057) | -0.051<br>(0.062)  | 0.027<br>(0.048) |
| Verdun              | -0.066<br>(0.097) | -0.168**<br>(0.071) | 0.259***<br>(0.083) | -0.022<br>(0.065) | 0.209**<br>(0.098) | 0.087<br>(0.085) |
| Fixed effects       | Dep               | Dep                 | Dep                 | Dep               | Dep                | Dep              |
| 1911 pop            | Yes               | Yes                 | Yes                 | Yes               | Yes                | Yes              |
| R-squared           | 0.72              | 0.90                | 0.88                | 0.91              | 0.90               | 0.90             |
| Observations        | 33,641            | 33,641              | 33,641              | 33,641            | 33,641             | 33,641           |
| Mean DepVar         | 1.27              | 2.20                | 0.89                | 1.47              | 0.64               | 1.00             |
| Sd DepVar           | 1.58              | 2.03                | 1.86                | 2.09              | 1.77               | 1.89             |

**Notes:** This Table shows that in the 1914 elections, municipalities that raised regiments that served at Verdun under Pétain did not vote differently than other municipalities. Political parties are ordered in the table from most left-wing (“SFIO”) to most right-wing (“ALP”). Political parties are described in details in the online Appendix Section B.2.1. An observation is a municipality. “1911 pop” stands for the logarithm of the 1911 population. Models are estimated using OLS, with robust standard errors clustered at the Regiment level (\*\*\*)  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ ).

The lack of pre-existing differences is consistent with the historical record that suggests that the French Army engaged in interchangeable deployment of regiments that happened to expose soldiers from a specific set of otherwise similar Verdun-under-Pétain municipalities. To supplement this evidence, we can also test alternative possibilities. For example, it could be the case that the regiments from Verdun-under-Pétain municipalities were either specially selected to be *cannon fodder* in the crucial early months at Verdun or ended up being so. They might therefore have experienced greater fatalities in the Great War, and that may explain subsequent differences in willingness to collaborate in the Second World War. Another possibility is that Verdun-under-Pétain municipalities were the opposite: that despite having similar vote shares and other demographics, they were selected from favored municipalities by the French High Command, perhaps from more pacifist or politically influential areas, and thus their soldiers were shielded from war-time fatalities.

the 1872 unemployment rate happened to be 1.53 percentage point higher at the time.

<sup>31</sup>On the strategic choices of positioning the demarcation line, see Kocher and Monteiro (2016).

Table III: Regression: Combat Fatalities by Battle

|                     | Deaths by regiment       |                         | Municipality WWI fatality rate |                     |
|---------------------|--------------------------|-------------------------|--------------------------------|---------------------|
|                     | (1)                      | (2)                     | (3)                            | (4)                 |
| Marne               | 182.957<br>(115.253)     |                         | -0.067<br>(0.096)              |                     |
| Verdun under Pétain | -99.484<br>(134.340)     | 46.783<br>(34.531)      | 0.080<br>(0.096)               | 0.081<br>(0.094)    |
| Verdun              | 156.471<br>(204.919)     | 123.424**<br>(52.801)   | 0.058<br>(0.150)               | 0.062<br>(0.152)    |
| Somme               | 564.169***<br>(129.299)  | 173.988***<br>(33.341)  | -0.059<br>(0.091)              | -0.056<br>(0.090)   |
| Chemin des Dames    | 286.625**<br>(117.171)   |                         | 0.019<br>(0.090)               |                     |
| South Eastern Front | -797.485***<br>(205.665) | -216.133***<br>(52.234) | -0.303**<br>(0.152)            | -0.319**<br>(0.147) |
| Unit of obs.        | Regiment                 | Regiment                | Municipality                   | Municipality        |
| Time-period         | Whole war                | 1916                    | Whole war                      | Whole war           |
| R-squared           | 0.25                     | 0.31                    | 0.00                           | 0.00                |
| Observations        | 173                      | 173                     | 34,602                         | 34,602              |
| Mean DepVar         | 3,141.49                 | 520.01                  | 3.80                           | 3.80                |
| Sd DepVar           | 823.33                   | 223.09                  | 2.10                           | 2.10                |

**Notes:** The models are estimated using OLS. An observation is: a regiment in Columns 1 and 2; a municipality in Columns 3 and 4. Robust standard errors clustered at Regiment level (\*\*\*)  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ ). This table shows cumulative battle deaths by regiment exposed to different battles over the whole war (Column 1) or in 1916 only (Column 2). Columns 3 and 4 show overall municipality WWI death rates (computed as the number of soldiers born in a municipality who died in combat divided by the municipality population in 1911) based upon the regimental shares assigned to each battle.

To examine this, we code whether each line regiment participated in specific battles from their regimental histories, and combine this with data on 1,237,149 military fatalities of French soldiers born in metropolitan France from the *Mémoire des Hommes* online database (see also Gay, 2017). We are able to match nearly 1.15 million deaths to (present-day) municipalities and construct fatality rates relative to each municipality's 1911 population.

As Table III shows, France suffered a tragedy in World War I, with the average municipality losing 3.8% of its population to military fatalities. First note that it was, of course, hard to know *ex ante* which battles would be successes or failures for France, and the major battles of the Great War – and even those solely of 1916 – do exhibit variation in the fatality rates for the regiments that were exposed. This is particularly true of the ultimately failing attempts to break through the German lines at the Somme in 1916 and the Chemin des Dames in 1917 (Column 1 and 2). However, despite the differences stemming from fatalities to regiments in specific battles, their home *municipalities* ultimately had similar overall military fatality rates (Column 3 and 4).<sup>32</sup> Moreover, the regiments exposed to Verdun under Pétain were not

<sup>32</sup>There is one exception: those municipalities whose troops were deployed in the relatively successful landings at Salonica to fight the Ottoman Empire had fewer fatalities ultimately relative to the vast majority of regiments

exceptional in terms of their overall fatality rates. This is true whether comparing fatality rates to those in other regiments serving at Verdun *after* Pétain, other *heroic* battles – like the First Battle of the Marne that saved Paris – or other battles in 1916, such as the Somme Offensive. In other words, by the end of the war, the regiments that fought at Verdun under Pétain had experienced similar losses to other regiments, and municipalities home to those regiments suffered similar World War I losses to other municipalities.

These patterns run contrary to both the cannon fodder and positive selection hypotheses, and instead are consistent with one implication of quasi-random deployment – the fact that over time there will be regression to the mean in terms of fatality rates.<sup>33</sup>

## 4 Collaboration during World War II: Background and Data

Before presenting the main outcome variables, we briefly describe Pétain’s role in the inter-war years and during the German occupation, in combination with veterans’ networks, and describe the new dataset on collaborators we built for this study.

### 4.1 Heroes and the Death of the Third Republic

The Constitution of the Third Republic had been designed specifically to prevent a Napoleon-style ‘heroic’ takeover: a weak executive faced a strong assembly, with shifting coalitions (Reynolds, 2014). The Republic had, nevertheless, proved robust enough to deliver a unity government—the *Union Sacrée*—that won the Great War despite France’s appalling losses. However, this coalition unravelled shortly thereafter. France’s political polarization became further accentuated during the Great Depression, making it hard to sustain majorities. France went through 26 separate cabinets between 1930 and 1940 alone (Steiner, 2005).

The inter-war period also saw the creation and increasingly active engagement of large ex-combatant organizations in politics. Of 6.4 million French war veterans in 1920, about 3 million would join a veterans’ association between the wars. Among these was the *Croix de Feu* [Cross of Fire], a society initially limited only to decorated veterans, many of whom had served at Verdun, that later grew to about 600,000 members. Other right-wing veterans groups included *Union nationale de combattants* (UNC), with 900,000 members (Millington, 2012) as well as more militant networks such as *La Cagoule* [the Hood], set up to violently break up Communist meetings, and the *Corvignolles*, another anti-communist organization set up by Pétain’s aide-de-camp, Captain Léon Bonhomme (Williams, 2005, p.140).<sup>34</sup>

---

that served on the Western Front. This was, again, hard to know *ex ante*, however, as the severe losses the Allies faced during the Gallipoli campaign of 1915 amply demonstrate.

<sup>33</sup>In fact, we fail to reject a test that home regimental assignment to these different battles has *zero* joint effect on municipality-level fatality rates at the 89% level across battles within the Western Front, and 34% if we include the South-Eastern Front.

<sup>34</sup>It is important to note that not all the veterans organizations were right-wing however: there was also the center-left *Union fédérale* with 900,000 veterans as members (Millington, 2012). In fact, historians of the inter-war period disagree about whether veterans groups, because they cut across class boundaries, acted as bulwarks of democratic values (Prost, 1977, Passmore, 2012) or were instead authoritarian, if not proto-Fascist (Millington,

In February 1934, the situation reached the point of crisis, when anti-parliamentarist demonstrations by right-wing *Ligues*, including the *Croix de Feu* and *UNC*, turned bloody, with 14 killed and 236 wounded. This was perceived by the Left as an attempted coup.<sup>35</sup> The subsequent victory of the Leftist Popular Front in 1936 led by the socialist (and Jewish) Premier Léon Blum with Communist support, raised the threat of social change. A common refrain that emerged among the Right in the late 1930s was “rather Hitler than Blum”. The Republican system and its liberal values were seen by some as responsible for these signs of France’s decay, and, in 1940, for its military defeat. Authoritarianism and even collaboration with Germany were viewed as potential solutions to restore order and prevent a social revolution.

Against this backdrop, Pétain himself was, however, seen as a “genuine national hero” (Paxton, 2001, p.34). He was revered in conservative right-wing circles. Even on the left, Léon Blum himself called Pétain France’s “noblest and most humane soldier.” “Wherever he went, he was fêted. The weekly magazines were full of his exploits, of the speeches he made to veterans’ associations, of the prize-givings, of the parades. . . (Williams, 2005)[p.116].” With French politics polarized into weakness in the face of a rising Germany, editorials began to appear in newspapers across the political spectrum, proposing Pétain as the strongman France needed.<sup>36</sup>

Pétain himself developed increasingly authoritarian sympathies.<sup>37</sup> However, after his retirement from France’s highest military position in 1931, Pétain refrained from explicit political position-taking (Paxton, 2001, p.34).<sup>38</sup> On the occasions that he did voice his views, it was, however, to support anti-communist efforts, to express contempt for politicians and parliamentary institutions, and in support of the army’s potential role to intervene in domestic politics.<sup>39</sup>

This changed in the run-up to the elections of 1936, when it became clear the Left was leading the Right by a million votes. Pétain gave a widely-reported interview to *Le Journal*, just before the final vote, attacking communism and its enablers in France. He claimed that

---

2012, Irvine, 1991). Our findings— that the heroic network forged at Verdun linking Pétain to those that served with him there would face specific, escalating incentives— may help reconcile this debate.

<sup>35</sup>As the historian Julian Jackson (2001) describes: “The date 6 February 1934 marked the beginning of a French civil war lasting until 1944. The truth about that night was that a demonstration had turned ugly and the police had panicked. But since civil wars require the enemy to be demonized, the left interpreted the events of 6 February as an abortive fascist coup, the right as a massacre of fifteen innocent patriots by the Republic. . . : this was the bloodiest week in French politics since the Commune.” (p.65)

<sup>36</sup>When, in 1934, the right-wing newspaper *Le Petit Journal* organized a survey on who should lead France as its dictator, Pétain received the highest support (see Appendix). *La Victoire* proclaimed “C’EST PÉTAIN QU’IL NOUS FAUT!” [It is Pétain whom we need!], a cry taken up by *Le Jour*, and the far right *L’Action Française*. More surprising was a 1935 endorsement by the left-wing *Vu* (Williams, 2005, p.135).

<sup>37</sup>This was accentuated while serving with the dictator of Spain, Primo de Riveira, in the Rif War in 1925. On September 9, 1925, the New York Times reported Pétain’s toast to Riveira: “. . . who through his intelligence and patriotism was able to re-establish discipline and order in Spain. Perhaps circumstances may make it necessary to do in France as was done in Spain”.

<sup>38</sup>After the events of 6 February 1934, Pétain agreed to become Minister of War, a position he only held until the new government fell once more. He was later made France’s ambassador to (Fascist) Spain in 1939.

<sup>39</sup>Pétain’s best man, Marshal Emile Fayolle (1964, p.197), noted as early as January 1917 that “Pétain believes he is a great man; he says seriously that the Republic is afraid of him.” He was not alone. In April 1918, Williams (2005, p. 81) writes: “the politicians in Paris objected [to his assuming command] that Pétain was now so widely known for his dislike of politicians in general, and of President Poincaré in particular, that he would be a threat to the Constitution.” See also Williams (2005, p. 142) and Appendix Figure B8.

the people of Fascist Italy and Nazi Germany were happier, and endorsed the veterans of the increasingly right-wing *Croix de Feu*, noting how they “occupy themselves with the moral and spiritual improvement of youth.” He claimed “We are like sailors without a steersman, without a rudder” (Williams, 2005). In fact, as we document below, municipalities exposed to Pétain at Verdun also began to diverge in their vote choices in the 1920s, with lowered support for the Communists, and higher support for right-wing and far-right parties that becomes particularly accentuated in 1936.

As the Victor of Verdun, Pétain was highly focal among the other heroes of that battle in particular. Along with numerous local reunions, he gave prominent speeches at Verdun, including at the dedication of the immense ossuary on the battlefield in 1927 and, adopting a more explicit right-wing tone, for the twentieth anniversary of the battle in 1936.<sup>40</sup> Four years later, when called upon finally to rescue France once more as he had done at Verdun, Pétain would once again invoke the ‘support of the veterans [he had] commanded’.

It is worth noting that “Marshal Pétain did not seize power in the summer of 1940. It descended upon him like a mantle” (Paxton, 2001, p.185). On 18 May 1940, after Germany invaded France, Pétain joined the government, in the hope that his presence would revive the spirit of resistance. With the military situation nevertheless deteriorating rapidly, France’s parliament argued about whether to move France’s seat of government overseas to its empire, to remain in France, or even to join a Franco-British political union. Pétain advocated for the government to remain in France. Favoring continued resistance, Prime Minister Paul Reynaud resigned, and Pétain took his place. On 22 June, France signed an armistice giving Germany control over the North and West, but leaving two-fifths of France’s prewar territory unoccupied to be governed from Vichy. On July 10th 1940, the two legislative chambers ratified the Armistice and granted the Cabinet the authority to draw a new constitution (Lacroix et al., n.d.). Soon Pétain assumed plenipotentiary powers as Head of State. Thus ended the Third Republic, which, to this day, remains the longest-enduring Republican regime in France.

Initially, Pétain’s heroic status was such that most of France did appear to be behind him in the summer and autumn of 1940.<sup>41</sup> Upon gaining power, however, Pétain’s regime quickly began dismantling liberal institutions and adopted an authoritarian course. In October 1940, Pétain’s collaboration took an overt turn, when a photograph of him shaking hands with Hitler at a summit at Montoire was widely publicised and distributed. He promised the French “a new peace of collaboration” and “golden prospects.”<sup>42</sup> Yet the regime’s actions rapidly took on an

---

<sup>40</sup>Pétain’s draft speech at Verdun in 1936 claimed that ‘having won the war, France was at the point of losing the peace’, and called for dramatic political reforms along the right-wing lines of family, army and country (Williams, 2005). The government vetoed his request for a live radio broadcast, and sought to censor parts of his speech, but his words were widely reported. He would return to these themes four years later.

<sup>41</sup>Censors’ estimates based on the sentiment expressed in about 300,000 letters each week – which may or may not have reflected preference falsification – suggest that between 20 and 30 percent of the general population were still supportive of state collaboration after the Allied landing in North Africa in 1942. Support for Pétain himself, however, was believed to be higher and even more enduring (Burrin, 1996, Paxton, 2001).

<sup>42</sup>Extract of Pétain’s speech on 10 October 1940. The choice of collaboration is often explained by historians by the fact that Pétain and those around him thought that a German victory in the War was inevitable, a view that contrasted sharply with that of Charles de Gaulle, who simultaneously was calling on French soldiers to join

extreme right wing and racist agenda, including the deportation of Jews, that outstripped both German expectations and their requests.<sup>43</sup> The regime took an ever more repressive turn after the full occupation of France by Germany in November 1942. In early 1943, a *Milice* [militia] was formed from a grouping of existing veterans organizations to hunt down and kill the French Resistance.

The man who would lead the *Milice* was Joseph Darnand, who had been a hero of World War I. Enlisting early in the army in February 1916, he was assigned to the 35th regiment, which happened to be dispatched to Verdun shortly thereafter to serve under Pétain’s command. Darnand received the *Medaille Militaire* from Pétain himself in 1918 and was further inducted into the *Légion d’Honneur* in 1925, with President Poincaré citing him as one of the “artisans of victory”. Darnand actively invested his time and energies in various veterans organizations, including the *Croix de Feu* and particularly *La Cagoule*, between the wars. Darnand would garner further combat decorations fighting the Germans in 1940. Escaping from a POW camp in August 1940, he swore revenge against the Nazis. He made overtures to join the Resistance to fight the Germans as late as 1943. And yet, he would end the war two years later in Germany, in the uniform of the *Waffen SS*, having sworn fealty to Adolf Hitler, soon to be captured, repatriated back to France and executed for his crimes (Forbes, 2006, pg.32-42).

Why did some of the greatest heroes of France end up among their gravest villains? To what extent was this pattern shared and why? As we will show below, Darnand’s remarkable reversal of loyalties was shared in varying degrees by many, in a manner consistent with the legitimization of previously-repugnant values by Pétain and the escalating commitment of the heroes who shared his heroic credentials at Verdun. As Darnand wrote to De Gaulle, just two days before his execution: “these men [*Miliciens*] are authentic Frenchmen ... Their only mistake is to have been faithful to a great soldier” (Cointet, 2017, pg.257-258).

## 4.2 Collaboration and the Paillole Dataset

Our measure of collaboration itself comes from a remarkable 2,106-pages list collected in 1944-45 under the supervision of Colonel Paul Paillole, the head of French army intelligence at the end of the war (Lormier, 2017). Colonel Paillole was well-qualified to generate this list as he had not only served in the Free French forces, running intelligence networks in France from 1942 onward, but also in the *Deuxième Bureau* – the counter-intelligence services – of the Armistice Army of the Vichy government between 1940 and 1942.<sup>44</sup> Following the German occupation

---

him in resistance.

<sup>43</sup>Pressures on the French to apply the Final Solution to Jews did not start until 1942 according to Paxton (2001, p.143). In any case, Hitler did not care about the National Revolution, which was clearly “the expression of indigenous French urges for change, reform, and revenge...made urgent and possible by defeat” (Paxton, 2001, p.143).

<sup>44</sup>The French Armistice Army was allowed to maintain its counter-intelligence services on the condition that they did not act against Germany or Italy. The former Allied commander and Vichy Minister for National Defense, Weygand, encouraged the *Deuxième Bureau* to create an official *Bureau des menées antinationales* [BMA: Bureau of Anti-National Activities], but also underground organizations, including the innocuous-sounding *Entreprise des Travaux ruraux* [Business of Rural Work], headed by Paillole. These services not only acted against

of the South of France, Paillole joined the Free French in Africa, while continuing to run his networks in France, infiltrating collaborator organizations and supporting resistance networks. For example, a successful raid in 1943 abducted six collaborators and captured a file containing the names of all the members of the *Parti Populaire Français* (PPF), which is now part of our dataset.<sup>45</sup>

The goal of the complete list that we use was to assemble data from a range of organizations in order to “signal the names of suspect and doubtful individuals who should be subject to a thorough investigation”.<sup>46</sup> The file records the name of each suspected collaborator, his or her address, the nature of collaboration, and, in some cases, additional information on place and date of birth (or age) and economic occupation. Appendix Figure B6 shows an anonymized example of these files. The list captures the full spectrum of collaboration, from economic collaboration to membership in collaborationist political parties or paramilitary groups, as well as German auxiliary or combat units.

We digitized the entire file, linking the same individuals if they appear separately as members of different organizations, and geo-referencing the municipality of birth or residence of each entry. Our final dataset includes 95,314 names of individuals and families, representing at least 95,943 individuals.<sup>47</sup> For almost eighty percent of entries, we have information on the nature of collaboration, recorded as membership in almost fifty different specific collaborationist groups.

The largest groups in our dataset include the Fascist parties, the RNP (17,968 individuals) and PPF (9,403 individuals) as well as the Resistance-hunters, the *Milice* (15,404 individuals – see also Figure A1). Other major groups include collaborationist political parties that emanated from the 1930s Fascist Leagues, such as the Francist Movement or the Revolutionary Social Movement. Beyond the *Milice*, other major right-wing paramilitary groups include the *Service d’Ordre Légionnaire* (SOL) from which it grew, as well as the *Légion des Volontaires Français contre le Bolchevisme* (LVF). The most prevalent forms of direct Nazi collaboration consisted in working for the *Gestapo* (5,274 individuals) or the *Service de Renseignement Allemand* (German Intelligence Service: 3,092 individuals). 1,550 people were considered economic collaborators, clearly a subset selecting those with deep economic relationships. We are able to geo-reference the birthplace of 90,273 collaborators.<sup>48</sup>

---

Gaullist resistants and communists, but also targeted German spies within the unoccupied zone. At German insistence, the BMA was dissolved but was surreptitiously reconstituted under the name *Service de Sécurité Militaire*, again headed by Paillole.

<sup>45</sup>Similarly, on March 1st, 1944, the head of the department of the *Rassemblement National Populaire* (RNP) [National Popular Assembly] was abducted in broad daylight, along with all of his documents, which were eventually given to Paillole. Please see Appendix B.1.

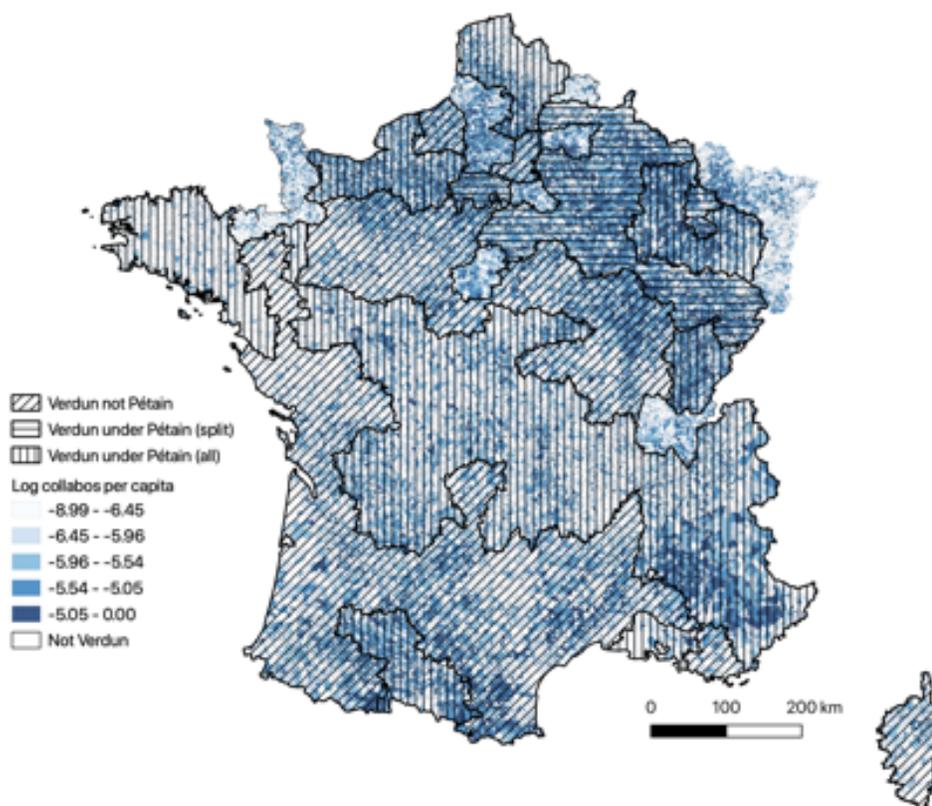
<sup>46</sup>As indicated at the beginning of the file (“*Le présent document a pour but de signaler le nom des individus suspects ou douteux qui doivent faire l’objet d’une enquête approfondie*”). The list disappeared after the war, but resurfaced at Maurice Papon’s trial in 1997, where it was slated to be introduced as evidence that Papon was a collaborator. It then disappeared again, perhaps because a number of those accusing Papon of collaboration were themselves on the list. Before his death in 2002, Paillole shared a copy of the then-classified report with Anne-Marie Pommiés, curator of the Centre National Jean Moulin. Finally, the list was declassified in 2015.

<sup>47</sup>For example, when an entry refers to *M. et Mme [X] et leur famille*, we assign a lower bound of one additional family member for a total of three at a specific address.

<sup>48</sup>We confirm using the military records for a sample (from Oise and Gard departments) that for individuals

## 5 The Main Result: Effects on Collaboration

Figure 4 maps the quintiles of the distribution of collaborators per capita across municipalities in 1945, overlaid with the regimental combat experience in World War I. Notice that there is significant regional variation in the shares of collaborators. However, there are disproportionately higher shares of collaborators in Verdun-under-Pétain municipalities, even compared to others close by. The raw proportions in the data back these geographic patterns. Although they account for 50.10 percent of all municipalities, municipalities home to a regiment that served under Pétain’s command hosted as much as 61.47 percent of the collaborators.



**Notes:** The map shows quintiles of the distribution of the log of collaborators per capita across municipalities in 1945, overlaid with municipal regimental combat experience in World War I. This map shows information for the 36,571 municipalities within France’s 1945 borders

Figure 4: Collaborators in France, 1940-45 (quintiles).

Table IV shows that these raw differences are robust to multiple regression. Column 1 reports the uncontrolled results within 13 regions and Column 6 within 90 departments, showing that the share of collaborators is 8.5 to 9.8 percent higher in municipalities whose regiments

where only an address is listed, this corresponds to their birthplace. For 13,306 individuals, the list includes separate information on birthplace and address. This suggests that 14.74% of the collaborators in our list are internal migrants, a figure that matches estimates of internal migration available from the 1931 Census (16.41%).

had fought at Verdun under direct command of Pétain. In contrast, having fought at Verdun under another general has no statistically significant effect on collaboration. The magnitude of our results is comparable whether we use region or, in our preferred specification, finer-grained department fixed effects, consistent with assignment to treatment being unrelated to specific local characteristics.

Columns 2 and 7 add controls for the results of the 1914 legislative elections, held at the eve of World War I. The Verdun-under-Pétain effect remains stable and statistically significant, confirming that pre-war vote is largely unrelated to the assignment to treatment. Nevertheless, the positive and significant coefficients associated with vote shares both for the right as well as for the left suggest that collaboration was more intense in municipalities within the same department that were also historically more polarized (Column 7).

Columns 3 and 8 further add controls for pre-World War I population. Less populous rural municipalities in France, as elsewhere, tended to be more conservative, and controlling for population somewhat attenuates the relationship between the pre-World War I right vote share and World War II rates of Nazi collaboration. However, the effect of exposure to Verdun-under-Pétain remains strongly significant, increasing collaboration rates by 6.9% comparing otherwise similar municipalities within the same department or the same region.

## 6 Mechanisms

So far, we have established a robust link between communities whose soldiers were rotated through service under Pétain at Verdun and subsequent willingness to actively collaborate with the Nazis twenty-three years later. We now investigate why.

### 6.1 The violence of battle or a network of heroes?

Municipalities that sent troops to fight at Verdun under Pétain not only could claim to have raised a set of heroes on their return, but also faced the tragedy that many did not come back. Perhaps, instead of a heroic network, it was the violence and the losses faced by these municipalities that shaped subsequent propensities to actively collaborate with Germany. Indeed, a growing post-conflict literature points to the importance of exposure to violence, death and memories in changing subsequent outcomes.<sup>49</sup>

As noted above, however, neither Verdun-under-Pétain regiments nor their home municipalities were significantly different in their overall military death rates. In Table IV, we add controls for World War I military fatality rate in Columns 4-5 and 9-10. Notice that the fatality rate itself does not affect the propensity to actively collaborate with the Nazis. Neither does it change the effect of Verdun-under-Pétain exposure on active collaboration.<sup>50</sup> In our

---

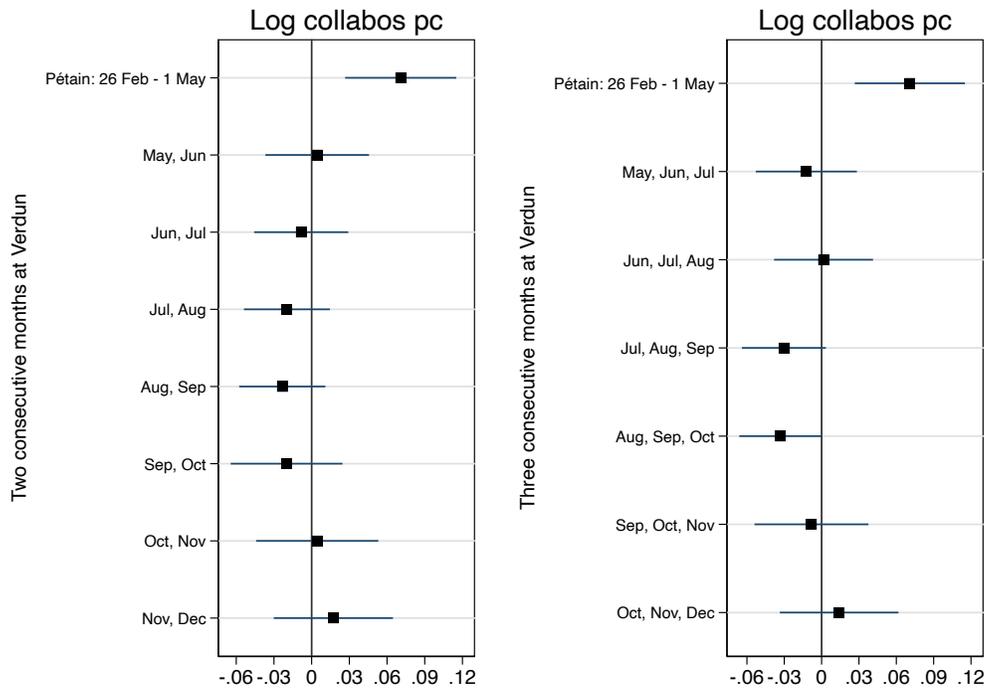
<sup>49</sup>See Bauer et al. (2016) for a recent review and Ochsner and Roesel (2019), Tur-Prats and Valencia (2020) for subsequent contributions.

<sup>50</sup>However, as we discuss in our companion paper (Cagé et al., 2020), the fatality rate in World War I is positively correlated with the propensity to join the Resistance.

Table IV: Regression: Collaboration in World War II

|                           | Log Collaborators pc |                     |                      |                      |                      |                    |                     |                      |                      |                      |
|---------------------------|----------------------|---------------------|----------------------|----------------------|----------------------|--------------------|---------------------|----------------------|----------------------|----------------------|
|                           | (1)                  | (2)                 | (3)                  | (4)                  | (5)                  | (6)                | (7)                 | (8)                  | (9)                  | (10)                 |
| Verdun under Pétain       | 0.098**<br>(0.049)   | 0.106**<br>(0.048)  | 0.069***<br>(0.023)  | 0.069***<br>(0.023)  | 0.077***<br>(0.023)  | 0.085**<br>(0.042) | 0.088**<br>(0.039)  | 0.069***<br>(0.019)  | 0.069***<br>(0.019)  | 0.069***<br>(0.018)  |
| Verdun                    | -0.096<br>(0.099)    | -0.102<br>(0.097)   | -0.011<br>(0.048)    | -0.012<br>(0.047)    | -0.012<br>(0.047)    | -0.018<br>(0.072)  | -0.001<br>(0.070)   | 0.009<br>(0.034)     | 0.008<br>(0.034)     | 0.008<br>(0.033)     |
| Log Share Left, 1914      |                      | -0.014<br>(0.015)   | 0.014**<br>(0.007)   | 0.014*<br>(0.007)    | 0.015**<br>(0.007)   |                    | 0.047***<br>(0.016) | 0.036***<br>(0.007)  | 0.036***<br>(0.007)  | 0.037***<br>(0.007)  |
| Log Share Right, 1914     |                      | 0.034***<br>(0.011) | 0.002<br>(0.006)     | 0.002<br>(0.006)     | 0.002<br>(0.006)     |                    | 0.052***<br>(0.010) | 0.011**<br>(0.005)   | 0.011**<br>(0.005)   | 0.011**<br>(0.005)   |
| Log pop 1911              |                      |                     | -0.591***<br>(0.017) | -0.591***<br>(0.017) | -0.591***<br>(0.017) |                    |                     | -0.588***<br>(0.012) | -0.587***<br>(0.012) | -0.588***<br>(0.012) |
| WWI fatality rate         |                      |                     |                      | -0.001<br>(0.002)    | -0.001<br>(0.002)    |                    |                     |                      | 0.001<br>(0.002)     | 0.001<br>(0.002)     |
| Combat days in 1940       |                      |                     |                      |                      | -0.003<br>(0.006)    |                    |                     |                      |                      | 0.000<br>(0.005)     |
| Log dist demarcation line |                      |                     |                      |                      | 0.008<br>(0.010)     |                    |                     |                      |                      | 0.013<br>(0.008)     |
| Vichy France              |                      |                     |                      |                      | -0.068**<br>(0.032)  |                    |                     |                      |                      | -0.066**<br>(0.028)  |
| Fixed effects             | Region               | Region              | Region               | Region               | Region               | Dept               | Dept                | Dept                 | Dept                 | Dept                 |
| R-squared                 | 0.14                 | 0.14                | 0.56                 | 0.56                 | 0.56                 | 0.23               | 0.24                | 0.60                 | 0.60                 | 0.60                 |
| Observations              | 34,942               | 34,942              | 34,942               | 34,942               | 34,942               | 34,942             | 34,942              | 34,942               | 34,942               | 34,942               |
| Mean DepVar               | -5.74                | -5.74               | -5.74                | -5.74                | -5.74                | -5.74              | -5.74               | -5.74                | -5.74                | -5.74                |
| Sd DepVar                 | 0.83                 | 0.83                | 0.83                 | 0.83                 | 0.83                 | 0.83               | 0.83                | 0.83                 | 0.83                 | 0.83                 |

**Notes:** This table provides OLS estimates of equation (3). The dependent variable is the log collaborators in 1944-1945 per capita (1936). Columns 1 to 5 control for 13 region fixed effects and Columns 6 to 10 for 90 department fixed effects. The excluded category for the results of the 1914 elections is the share of votes for candidates running for the Center (Center Left or Center Right) as well as for “miscellaneous parties” in 1914. We impute zeros for observations with missing historical information (see Table I for summary statistics), and we control for whether a specific variable is missing. Robust standard errors clustered at Regiment level in parentheses (\*\*\* p<0.01, \*\* p<0.05, \* p<0.10).



**Notes:** The figure shows coefficients obtained from separate regressions of the log share of collaborators in the municipality on consecutive months of fighting at Verdun, as indicated, controlling for the full set of controls and department fixed effects. All regressions are at the municipality level and include department fixed effects as well as controls for the natural logarithm of the 1911 municipal population, log vote shares for the left or for the right in 1914, and municipal fatality death rate in WWI (as in Column 9 of Table IV). Standard errors are clustered at the regiment level. Horizontal bars indicate 95% CI. The figure shows that the positive and significant effect of fighting at Verdun on collaboration is only observed for the months during which Pétain was the general in command of the battle (i.e. February, March, April).

Figure 5: Estimated effect of fighting at Verdun in different months on the share of collaborators

preferred specification, including department fixed effects but excluding World War II controls (Column 9), exposure to Pétain at Verdun is associated with a 7% increase in the share of active collaborators, an effect that is statistically significant at the 1% level.

Perhaps, rather than losses in the First War, the effect was due to differential exposure to the German invasion and occupation in the Second World War. As noted above, Columns 5 and 10 add controls for key factors related to the invasion and occupation in World War II. The duration of a municipality's exposure to combat in 1940 does not seem to have an effect, nor the position of a municipality relative to the demarcation line. However, the share of collaborators in our data is 6.5 to 6.7 per cent lower in Vichy France compared to German-occupied France, potentially reflecting the greater opportunity for working with the Germans in the latter. The effect of exposure to Pétain, however, remains stable with the addition of war-related controls.

Could the effects on collaboration be driven by combat experience at Verdun more generally rather than exposure specifically to Pétain? We have already established that those municipalities that sent troops to fight at Verdun at other times do not show these patterns. However, it

may be that two or three months of exposure to Verdun at different times led to similar heroic networks and *esprit de corps*. Figure 5 shows the coefficient on an indicator variable for regiments exposed to any set of two (left panel) or three (right panel) consecutive months of rotation at Verdun.<sup>51</sup> No other consecutive months of fighting, apart from those during which regiments were exposed to Pétain’s leadership, are significantly positively associated with collaboration.

Another source of heterogeneity in combat experience that may drive our results is that, by being rotated through Verdun, a regiment was less likely to be deployed at the Somme offensive. Table A2 shows that our results are robust to adding a control for those regiments that were also rotated through either the Somme or other major battles or theatres of war (Column 1). Rotation through the other heroic battle before Verdun, the first Battle of the Marne (that saved Paris), similarly has no effect (Column 2). Finally, fortress regiments had different recruiting protocols, and were more likely to face the frontier. This led them to experience more deaths in battle – 3,527 deaths for fortress regiments against 3,115 for others (P-value=0.000). However, our results are unchanged when excluding fortress regiments (Column 3).

What if the municipalities had been assigned to combat regiments differently? We conduct permutation inference on our preferred specification and display randomization inference coefficients and t-statistics in the Figures A2 and A3. These also account for potential issues related to imbalance across clusters and spatial correlation. The estimates indicate that our results are not driven by inappropriate asymptotic assumptions: our coefficients and t-statistics are well outside the range of those associated with random reassignment of treatment status across municipalities, whether we use region or department fixed effects, and in uncontrolled regressions as well as when we include the full set of pre-WWII controls (Table IV, Columns 4 and 9). Figure A4 shows that the results are not sensitive to particular regions being dropped out of the estimation sample.<sup>52</sup>

## 6.2 Complementarities: a network of heroes or a network of Pétain?

So far, we have shown that being exposed to war, or even Verdun itself, without Pétain, does not have the same effect as exposure under Pétain’s command. But to establish that complementarities exist, we need to also show that the effect is stronger among those exposed to the network of heroes that served with Pétain at Verdun than among those exposed to Pétain’s own personal network.

Several recent papers have highlighted how charismatic leaders can shape norms and identity by simple contact, either through public rallies, individual meetings, or personal communications with selected audiences (Masera et al., 2020, Assouad, in progress, Becker and Rubin,

---

<sup>51</sup>We focus on 2 and 3 months to best compare with the effect of the 2 months and a few days of exposure to Pétain (Feb 26 - May 1).

<sup>52</sup>Results are similarly insensitive to individual departments being dropped out of the sample one by one, with the main coefficient of interest having a mean of 0.069, standard deviation of 0.003, min of 0.05 (p-value=0.012) when excluding Orne and a max of 0.08 (p-value=0.000) when excluding Vienne. Last, we check in Table A3 that our results are robust to excluding the collaborators who were movers, ie for whom municipality of birth was different than municipality of residence.

2019). As described above, qualitative accounts suggest that Pétain was not known for his charisma *per se*, but he did emerge as a soldier’s general who inspired strong loyalties among some. We gathered information on whether a municipality’s home regiments were exposed to Pétain at any of his field and staff postings both in peace-time and before (and after) Verdun during the war (Etat-Major de l’Armée, 1922, Williams, 2005). If our results were driven by Pétain’s own network rather than operating through the complementary network of heroes under his command at Verdun, we should expect that controlling for Pétain’s personal network should attenuate our coefficient.<sup>53</sup> In contrast, if it was the exogenous complementary network of heroes forged at Verdun that legitimized collaboration, then the effect should be robust.

Table V (Cols 1-2) presents the same specifications as in Columns 9 and 10 of Table IV, to which we add variables that capture the exposure of a municipality’s regiments to Pétain’s command in his preceding career. Before the war, Pétain was an infantry colonel who had held staff or field command positions in eight different regiments (or 3% of the line infantry). At the start of the war, he commanded the 33rd infantry regiment in the field, but quickly rose through the ranks to command the II Army from 22 June 1915 to 19 April 1916 (through which 31 infantry divisions – or 36% of the line infantry– were to be rotated) at the eve of Verdun. We group these together and construct a variable that captures exposure to Pétain’s command before Verdun (“Pétain before Verdun”: mean: 0.38, s.d.: 0.46 ).<sup>54</sup>

Naturally, personal exposure to Pétain is likely to be more intensive within commands where Pétain was a more proximate commander – in peacetime and earlier in the war – than when he was commanding a large and rotating cast of regiments. However, as the table suggests, the coefficients associated with exposure to Pétain before Verdun is almost precisely zero on subsequent collaboration (ranging between -0.001[0.03] and 0.002[0.029]). Thus, it does not appear that exposure to Pétain’s own network raises collaboration relatively more than elsewhere. Further note that the coefficient associated with exposure to Pétain at Verdun remains statistically significant and is unchanged in magnitude with the addition of this additional exposure variable. This suggests that those at Verdun exposed to Pétain for longer at other times do not seem different than those first (and exogenously) exposed to Pétain at Verdun. This highlights the importance of a common heroic credential, shaped out of a common experience.

Another question is whether all hierarchical heroic networks inherently lead to support for authoritarianism, and further whether the effects would have been the same if Pétain had not survived to personally legitimize the Vichy regime. While the latter counterfactual is hard to

---

<sup>53</sup>Unlike the timing of Pétain’s assignment to Verdun, he had more influence on other postings over his career, and thus could have chosen posts, like the 33rd regiment based at Arras, that were closer to home and where people might also be more responsive to his message. Thus we interpret the coefficient on Pétain before Verdun itself as correlational rather than causal.

<sup>54</sup>After Verdun, he oversaw the command of the Center Army Group (to which 176 infantry divisions – or 84% of the infantry– were attached at various points). He later became Commander-in-Chief of all French armies in the West, exposing close to 95% of municipalities to his command. We limit our discussion to his more intimate direct commands before Verdun but including those afterwards does not affect our results: the coefficient associated with exposure to Pétain’s command after Verdun in explaining collaboration (in a specification identical to Column 9 of Table IV) is: -0.037 (P-value: 0.204), while the coefficient associated with exposure to Pétain at Verdun remains robust to the addition of this control.

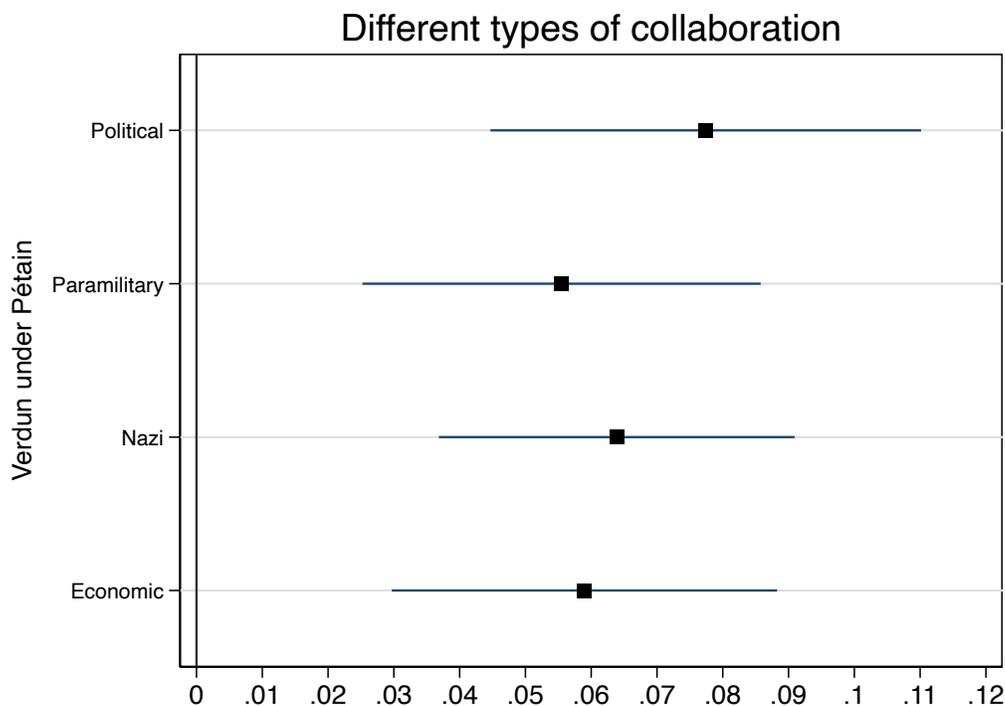
Table V: **Regression: Personal Exposure to Heroic Leaders: Pétain & Foch**

|                      | Log collabos pc |          |          |          |          |          |
|----------------------|-----------------|----------|----------|----------|----------|----------|
|                      | (1)             | (2)      | (3)      | (4)      | (5)      | (6)      |
| Verdun under Pétain  | 0.069***        | 0.069*** | 0.071*** | 0.071*** | 0.071*** | 0.071*** |
|                      | (0.019)         | (0.018)  | (0.019)  | (0.018)  | (0.019)  | (0.019)  |
| Verdun               | 0.008           | 0.008    | 0.007    | 0.007    | 0.007    | 0.007    |
|                      | (0.035)         | (0.033)  | (0.034)  | (0.033)  | (0.035)  | (0.034)  |
| Pétain before Verdun | -0.001          | 0.002    |          |          | -0.001   | 0.002    |
|                      | (0.030)         | (0.029)  |          |          | (0.030)  | (0.029)  |
| Foch                 |                 |          | -0.055   | -0.052   | -0.055   | -0.052   |
|                      |                 |          | (0.057)  | (0.059)  | (0.058)  | (0.060)  |
| Fixed effects        | Dept            | Dept     | Dept     | Dept     | Dept     | Dept     |
| 1911 pop             | Yes             |          | Yes      |          | Yes      |          |
| Pre-WWI vote shares  | Yes             | Yes      | Yes      | Yes      | Yes      | Yes      |
| WWI death rate       | Yes             | Yes      | Yes      | Yes      | Yes      | Yes      |
| WWII controls        | No              | Yes      | No       | Yes      | No       | Yes      |
| R-squared            | 0.60            | 0.60     | 0.60     | 0.60     | 0.60     | 0.60     |
| Observations         | 34,942          | 34,942   | 34,942   | 34,942   | 34,942   | 34,942   |
| Mean DepVar          | -5.7            | -5.7     | -5.7     | -5.7     | -5.7     | -5.7     |
| Sd DepVar            | 0.8             | 0.8      | 0.8      | 0.8      | 0.8      | 0.8      |

**Notes:** This table provides OLS estimates. The dependent variable is the log collaborators (1944-45) per capita (1936). All specifications control for department fixed effects (90 departments). “1911 pop” is the natural logarithm of the municipality population in 1911. “Pre-WWI vote shares” are the log vote shares for the left or for the right in 1914. “WWI death rate” is the WWI military fatality rate at the municipal level (number of soldiers born in a municipality who died in WWI over 1911 municipality population). ‘WWII controls’ include: Combat Days 1940, Vichy France and log. distance to the demarcation line. Robust standard errors clustered at the regiment level are reported in parentheses (\*\*\*)  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ ).

measure, we can examine whether other heroic networks show similar patterns after the war after the demise of their leader. The main rival to Pétain in terms of personal heroic leadership status coming out of the war was the other Maréchal awarded his baton in 1918, Ferdinand Foch. In the inter-war period, Foch’s political sympathies echoed Pétain.<sup>55</sup> However, he died in 1929 with his reputation as a soldier of the Republic intact. Indeed, as the point estimates in Table V (Cols 3-4) suggest, municipalities whose regiments were exposed to Foch’s personal command early in the war were, if anything, 5% *less* likely to collaborate (an insignificant effect). As a result, controlling for exposure to Foch, if anything, slightly increases the effect on collaboration of being assigned to Verdun-under-Pétain (from 6.9% to 7.1%, Cols 3-6). Taken together, our results suggest that complementarity did indeed exist between Pétain’s presence and legitimization of collaboration and the network of heroes forged at Verdun.

<sup>55</sup>Foch was the honorary president of the *Redressement français*, a group formed by industrialist Ernest Mercier in 1925 aimed at ‘scientific management’ of the state to fight Marxism, with army involvement, even if this risked suspending democracy. Pétain also had ties to this organization (Williams, 2005, p.125).



**Notes:** The effect of combat exposure to Pétain at Verdun drives collaboration across the board, from membership to various collaborationist political parties, paramilitary groups, Nazi organizations or economic collaboration. The figure shows the coefficients and 95% confidence intervals from an OLS regression representing the log number of members (1944-45) per capita (1936) across each type. Each regression includes the full set of pre-WWII controls and department fixed effects (as in Column 9 of Table IV). Standard errors are clustered at the regiment level. The *Political* category encompasses membership in: RNP, PPF, Groupe Collaboration, MSR (Mouvement social révolutionnaire), Francisme, Jeunesses Patriotes, CSAR (Comité secret d'action révolutionnaire), Amis du Maréchal, PFNC (Parti français national collectiviste), PNC (Parti national collectiviste), JNRP (Jeunesse du Rassemblement National Populaire), MRF (Mouvement Révolutionnaire Français). *Paramilitary* includes: Milice, Service d'Ordre Légionnaire, Légion des Volontaires Français contre le Bolchevisme, Légion Tricolore, Légion Française des Combattants, Phalange Africaine, Corps des volontaires Français, Police de Sécurité, Groupes Mobiles de Réserve. *Nazi* includes: Gestapo, SS, SA, SD (Sicherheitsdienst), Sicherheitspolizei, German intelligence service, Reichsarbeitsdienst, German Navy, NSDAP, Affaires Juives (Association des Administrations Provisoires), and Organization Todt. *Economic* collaboration is a distinct category.

Figure 6: Effects on different types of collaboration.

### 6.3 Why collaborate? Incentives, trauma or values

We can exploit the fact that we have detailed data on individual memberships in different collaborationist organizations to shed further light on the mechanisms at play. We consider three alternatives in particular. The first, and most obvious, is pecuniary – perhaps being connected with Pétain meant a greater possibility for economic and financial opportunities when he assumed power, irrespective of a change in one's democratic values (as in Fisman (2001)). This would suggest that Verdun-under-Pétain municipalities should be more likely to engage in economic collaboration than other types.

A second possibility is that the first two months at Verdun that coincided with Pétain's

generalship were exceptionally brutal than Verdun at other times in a way that is not fully captured by military fatalities (which, as we have seen are balanced). Perhaps this affected individuals' propensities for risk or psychological costs of violence? This would suggest the effect should be focused upon more violent paramilitary organizations in particular.

A third possibility is our favored explanation. Like Joseph Darnand, the heroism of those that served under Pétain at Verdun provided a common heroic credential that not only made it particularly costly to turn against him but to have complementary incentives to invest more over time. This included joining political parties (see below) and veterans organizations, but then going further, joining violent paramilitary organizations like the Milice in 1943, and even German units, such as the Waffen SS, as late as 1944-45.

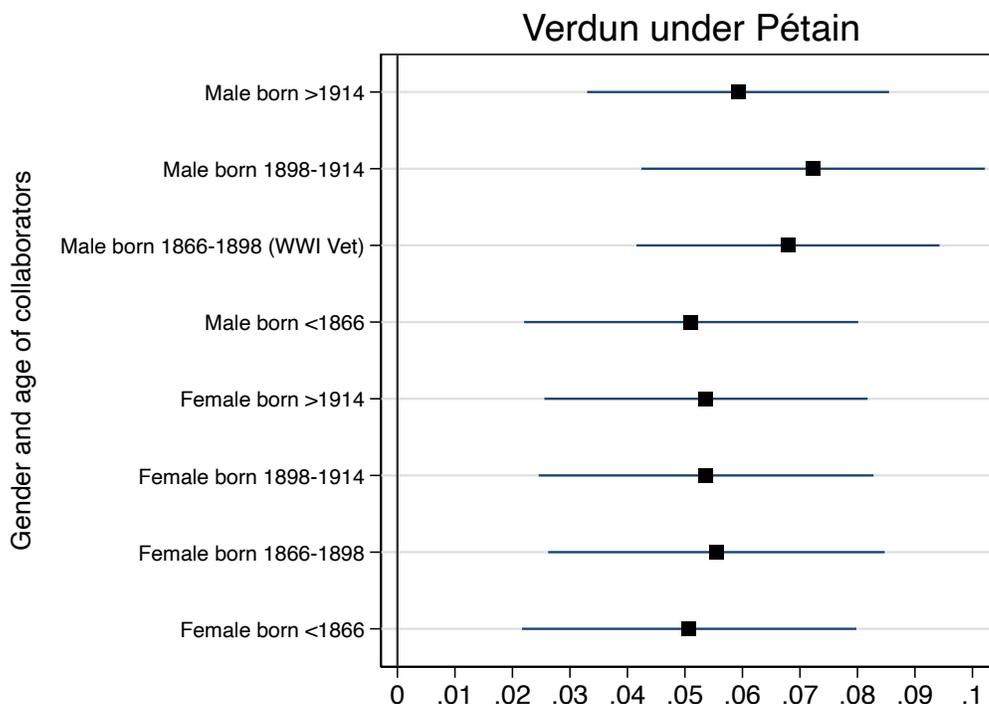
Figure 6 plots the coefficient associated with combat exposure to Pétain at Verdun in the specification with the full set of controls for the share of members in each of chief types of collaboration in our data. As Figure 6 suggests, combat exposure to Pétain at Verdun raises the propensity to collaborate across the whole spectrum of collaboration, from participation in political parties, paramilitary groups, Nazi organizations, as well as economic collaboration.<sup>56</sup> While the effects are somewhat stronger for membership in the main collaborationist political organizations, we cannot reject that the coefficients are the same as for participating in paramilitary groups, working directly for the Nazis, or engaging in economic collaboration (see also the detailed description of collaboration in Appendix Section B.1 and regression results by each organization in Figure A5 and Table A4.)

As another test of whether the effects reflect private pecuniary gains or psychological effects exclusive to the treated set of individuals, or a broader effect on values due to their ability to legitimize behavior, we can exploit the fact that, for a subset of 29% of the individuals on the list, the file records their date of birth, and for 76% of the sample, we can assign a gender as well. If the effect is due to private pecuniary gains exclusive to those in veteran networks or psychological effects, including those due to the effects of specific battle experience, we should expect those collaborators from municipalities exposed to Verdun under Pétain who were most likely to be assigned to serve there at that time – males of World War I military age – to show a significantly heightened effect. If instead, they help legitimize and spread a broader change in values, we should expect the increase to spread to family members and beyond, and muted differences between age groups and gender.

As Figure 7 shows, the increase in the log. share of collaborators due to exposure to Verdun under Pétain is statistically significant for each demographic. Notice that the size of the effects are somewhat higher for men than for women, and somewhat higher for those of military age or just short of military age in World War I than for some other groups. However, women and those born after the First World War in Verdun-under-Pétain municipalities receive the lion's

---

<sup>56</sup>There are 1,550 individuals recorded as economic collaborators. Out of them, 1,476 are purely recorded as economic collaborators and the remaining 74 are also recorded as members of a collaborationist political party, paramilitary organization, Nazi collaborator, or another type of collaboration (including 22 in the RNP, 14 in the Milice and 10 in the Gestapo).



**Notes:** The figure plots coefficients and 95% confidence intervals obtained from estimating specification 3 using the log. share of collaborators of each demographic. “WWI Vet”: those eligible to serve in the line regiments, reserves or territorial infantry (i.e. men aged 47-73 in 1945). Males born prior to 1866 were not eligible to serve in WWI. Note those men born in 1914 and after would have been eligible for drafting in the French army or forced labor in Germany. Each coefficient and confidence interval is from a different regression, with our preferred specification (as in Column 9 of Table IV). An observation is a municipality.

Figure 7: Differential Effects by Gender And Age among Collaborators.

share of the treatment as well, and the differences are statistically indistinguishable. This again suggests a diffusion of values rather than private gains or exposure effects accruing solely to the network of individuals personally connected with Pétain.

#### 6.4 Coordination and bandwagon effects vs inherited values

We have shown so far how the effect diffused through Pétain’s network of heroes, who followed their leader and swayed others around them. However, how did such diffusion operate? Was it due purely to coordination and bandwagon effects (see e.g. Kuran (1997))? Or the imitation of others, particularly of heroic Verdun veterans? Or was it really a deeply transformative process, which reshaped values? We now present direct evidence on the relative roles of coordination versus internalized values in explaining our results.

To do so, we exploit information on the municipality of birth of movers in our collaboration dataset. We compare, within the same destination locality, the behaviors of movers born either in a Verdun-under-Pétain municipality or not. If the results were simply due to coor-

Table VI: Collaboration among movers in the same destination, as a function of treatment status of the municipality of birth

|                     | Collabo V-u-P       | Share V-u-P         | Collabos Not V-u-P  | Share Not V-u-P   |
|---------------------|---------------------|---------------------|---------------------|-------------------|
|                     | (1)                 | (2)                 | (3)                 | (4)               |
| Verdun under Pétain | 0.076***<br>(0.014) | 0.011***<br>(0.003) | 0.058***<br>(0.015) | -0.002<br>(0.004) |
| Verdun              | 0.015<br>(0.024)    | -0.000<br>(0.004)   | 0.003<br>(0.026)    | -0.007<br>(0.004) |
| Fixed effects       | Dept                | Dept                | Dept                | Dept              |
| 1911 pop            | Yes                 | Yes                 | Yes                 | Yes               |
| Pre-WWI vote shares | Yes                 | Yes                 | Yes                 | Yes               |
| WWI death rate      | Yes                 | Yes                 | Yes                 | Yes               |
| R-squared           | 0.91                | 0.14                | 0.91                | 0.14              |
| Observations        | 34,947              | 34,947              | 34,947              | 34,947            |
| Mean DepVar         | -6.03               | 0.02                | -6.03               | 0.02              |
| Sd DepVar           | 0.98                | 0.12                | 0.99                | 0.11              |

**Notes:** The unit of observation is a municipality of residence. “V-u-P” stands for “Verdun-under-Pétain”. This table provides an OLS regression of the log number of collaborators per capita who were born elsewhere and migrated either from a “Verdun-under-Pétain” municipality (Col 1) or from another municipality (Col 3). In Col 2 (resp. 4), the dependent variable is the share of collaborators who migrated from a Verdun-under-Pétain (resp. not Verdun-under-Pétain) municipality among local collaborators who are internal migrants. All regressions are at the municipality level with department fixed effects. “1911 pop” is the natural logarithm of the municipality population in 1911. “Pre-WWI vote shares” are the log vote shares for the left or for the right in 1914. “WWI death rate” is the World War I military fatality rate at the municipal level (number of soldiers born in a municipality who died in WWI over 1911 municipality population). Robust standard errors clustered at Regiment level in parentheses (\*\*\*)  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ ).

dination, only characteristics of residence municipalities should matter. If, by contrast, they also reflected the role of internalized values which individuals carry with them when they move, birth municipalities should influence the behavior of movers, even within the same destination location.

Our analysis is now at the level of the municipality of residence of collaborators. We focus on the sub-sample of movers (i.e. those whose birth municipality is different from their residence in 1944-45,  $N=13,297$ ) and we retain information on the Verdun-under-Pétain exposure of both their birth and residence municipalities. About half of collaborators who migrated originate from a Verdun-under-Pétain municipality (49.84%), which is consistent with about half of municipalities rotated at Verdun under Pétain, and suggests no selective outmigration from Verdun-under-Pétain municipalities. We then compute, within residence municipalities, the overall per capita share of collaborators who were not born locally but who were born in a Verdun-under-Pétain municipality (“*Collabo V-u-P*”) as well as their relative share among all local collaborators who are internal migrants (“*Share V-u-P*”). We proceed in the same way for collaborators who were born in a non Verdun-under-Pétain municipality (“*Collabo Not from V-u-P*” and “*Share Not V-under-P*”). We then estimate equation (3) using these shares as dependent variables.

Table VI presents the results. They show that the treatment status of both birth and resi-

dence municipalities influence whether people collaborate. The coefficient associated with the Verdun-under-Pétain status of residence municipalities is positive and significant in explaining both the numbers of collaborators from “V-u-P” municipalities (Column 1) and from other municipalities (Column 2). In other words, both people from Verdun-under-Pétain municipalities and non Verdun-under-Pétain municipalities are more likely to collaborate when they reside in a Verdun-under-Pétain location. Since we now focus on movers within residence municipalities, this effect could be driven both by selection – people inclined to collaborate are more likely to move to a Verdun-under-Pétain municipality where they find like-minded people, or by a treatment effect of destination location – people absorb local values and are more likely to follow others around them into collaboration in Verdun-under-Pétain municipalities. In either case, this suggests that local coordination is important: either in driving location choices or, conditional on location choices, in driving collaboration behavior. However, migrants born in “V-u-P” municipalities are over represented compared to those born in other municipalities, both in absolute or relative shares. Even though migrants from non “V-u-P” municipalities are also more likely to collaborate in Verdun-under-Pétain municipalities (Column 3), those from “V-u-P” municipalities are even more likely to do so: the coefficient associated with Verdun-under-Pétain is larger in Column 1 than in Column 3, and this difference is statistically significant at the 0.89% level. Collaborators from “V-u-P” municipalities are also overrepresented among local collaborators who are also migrants (Column 2), as opposed to those from non “V-u-P” municipalities (Column 4).<sup>57</sup> In other words, the treatment status of birthplaces also matters in predicting collaboration, even within the same destination location. Overall these results reinforce our interpretation that the effect of exposure to Pétain operates at least partly through internalized values and preferences that individuals carry with them, even when they move, rather than through pure bandwagon effects. This is consistent with the estimated effect of exposure to Pétain being larger for people who never moved, with a 9.1% increase in the likelihood of collaboration in Verdun-under-Pétain municipalities when we exclude movers (see Table A3 in Appendix).

Similarly, we can check whether the effect is different among municipalities that raised several regiments, with some exposed to Verdun-under-Pétain exposure while others were not. We present in Appendix Figure A6 the results of specifications in which we either exclude those split municipalities, or redefine their treatment status as different dummy variables depending on the share that was rotated at Verdun under Pétain. The magnitude of the results increases when we exclude split municipalities and peaks at a 9.52% increase in collaboration in Verdun-under-Pétain municipalities when we define a dummy variable equal to one for our treatment when more than half of regiments was rotated at Verdun under Pétain and exclude those where exactly one half was rotated. Thus having a coherent network of heroes increases the effect somewhat relative to one with differential exposures and identities.

---

<sup>57</sup>The difference between the coefficients in Columns 2 and 4 is itself statistically different from 0 at the 1.15% level.

## 6.5 Collaboration versus Resistance.

So far we have focused upon the incidence of active collaboration. But the people of France had other choices in World War II: to passively collaborate, to wait and see (*attentisme*), or to actively resist.

If, as we have argued, serving under Pétain at Verdun provided veterans with a heroic credential also engendered more organizational capacity (Jha and Wilkinson, 2012) that enabled collective action, then we should expect more organizations to emerge of *both* resistance fighters and of collaborators, each potentially driven by differing values and conceptions of patriotism. If, on the other hand, exposure to heroes mainly legitimizes the undermining of democratic values in favor of authoritarianism, we would expect there to be more active collaborators, at the expense of those in the resistance.

In our companion paper Cagé et al. (2020), we exploit data we collected on more than 425,966 recognized participants from Metropolitan France in another important set of local political organizations, those of the French Resistance. Consistent with a change in values diffusing to the population and a pattern of escalating commitment, we also find that those municipalities exposed to Pétain at Verdun raise 8% fewer civilian members of the French resistance (the *maquisards*) late in the war in 1943-44. This was by far the most numerous form of resistance participation. However, these effects are not uniform: these same municipalities were also more likely to raise participants in the intelligence and escape networks (FFC) that aided the Allies earlier in the war, and the French soldiers, including those evacuated from Dunkirk in 1940, that chose to support another veteran of Verdun under Pétain, Charles De Gaulle.

## 6.6 The Timeline of Commitment: Votes in Interwar France

To what extent is the shift in active collaboration with an extreme authoritarian regime during the war reflected in political behavior in the inter-war period? As mentioned above, this was also a time of rising political polarization.<sup>58</sup>

To investigate whether local exposure to Pétain had already begun to shape political preferences in a way that prefigured collaborationist political inclinations during the Second World War, we gather municipal-level data on the electoral results in three interwar legislative elections – 1924, 1932 and 1936. For each election, we classify each party along an extreme left-extreme right axis, following a process described in more detail in the Appendix Section B.2.

Figure 8 plots the distribution of the log vote share for the right (summing up over all the right-wing parties, including extreme-right) in the 1924 and 1936 elections. The contrast with the same map that plotted the 1914 electoral results in Figure 3 is striking. Although there

---

<sup>58</sup>The interwar elections of 1924, 1932, and 1936 all saw the victory of a left-wing coalition, the first and second “Cartel des Gauches” in 1924 and 1932, and the “Front Populaire” in 1936, which for the first time also included the Communist party (see the Appendix Table B3 for summary statistics and Section B.2 for a detailed description of inter-war politics). Far-right leagues rejected participation in the formal Parliamentary process until the 1936 elections (when they gathered only 0.40% of the total vote).

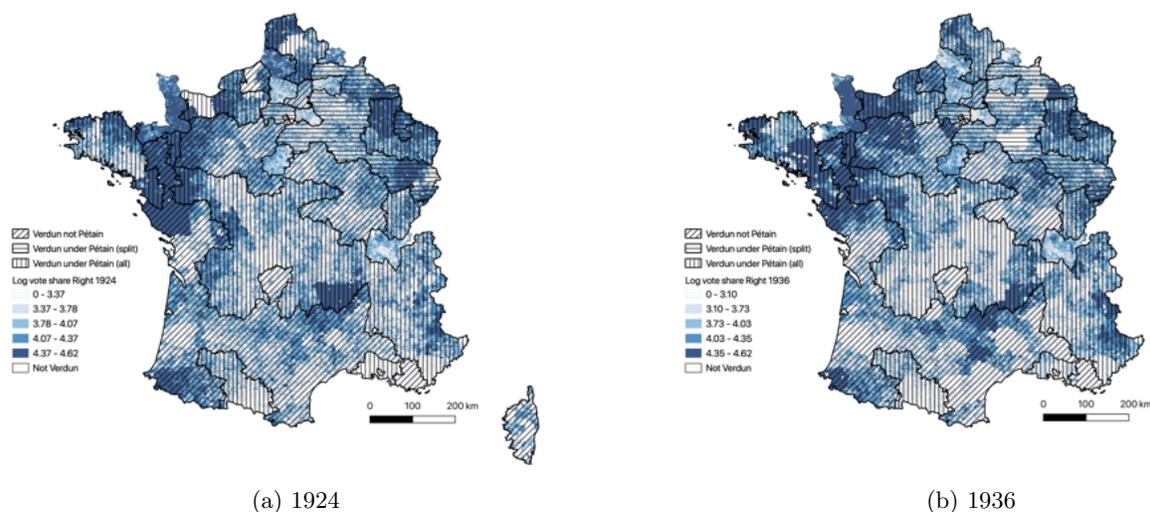


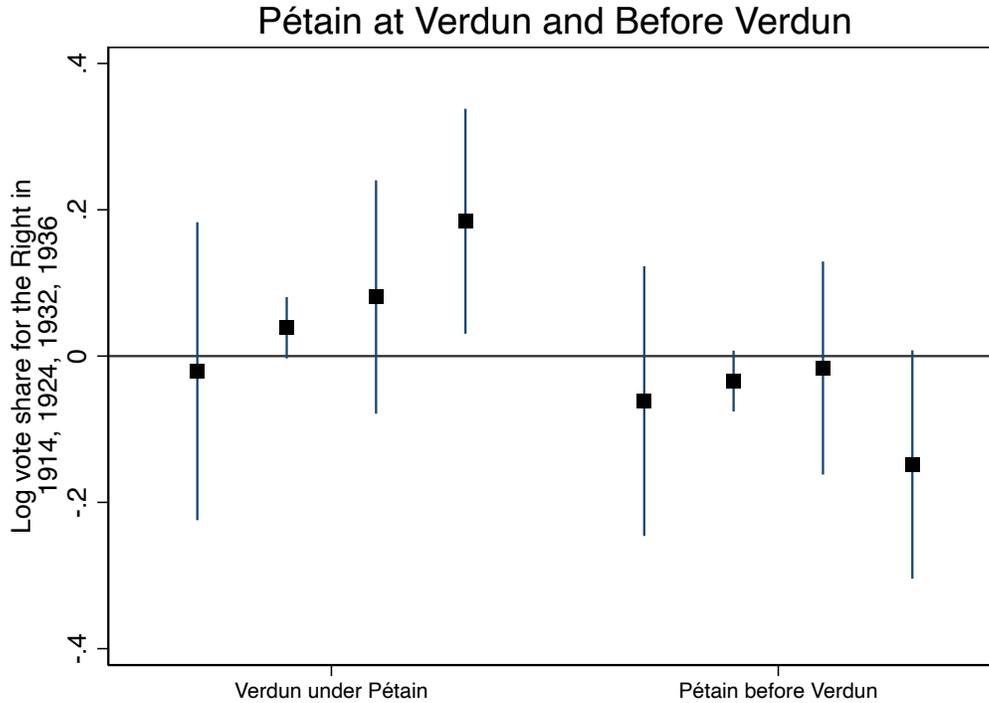
Figure 8: Log. Vote Share for the Right 1924 and 1936 elections

The map shows quintiles of the distribution of the log vote share for the right in four French elections at the municipal level, overlaid with a municipality’s regimental combat experience in World War 1 (within 1914 borders). Electoral return data at municipal level in 1924 and 1936 is available for 32,624 and 33,832 municipalities respectively (see Appendix B).

was no pre-war political differences between municipalities whose regiment was to be rotated at Verdun under Pétain, those municipalities voted more for the right in 1924 and even more so in 1936.<sup>59</sup>

As we have discussed, one implication of complementarity is that the effect of the heroic network can escalate, as individuals face additional incentives to invest further time and resources in augmenting the value of their common heroic credential. Figure 9 displays the coefficients associated with Verdun-under-Pétain in separate regressions, in which the dependent variable is the log vote share for the right in municipality  $i$  in each legislative election of 1914, 1924, 1932, and 1936 (estimation of equation (3), regression results displayed in Table V). For comparison, we also control for– and show– the coefficient on municipalities exposed to Pétain’s personal command outside the battle. Notice that there do appear to be increasing differences over time for the coefficient on Verdun-under-Pétain, but not for Pétain’s personal network. From similar vote shares for the right in 1914, municipalities exposed to Verdun-under-Pétain show *increasing differences* after the war, becoming significantly so in 1936. As mentioned above, these elections were held just after Pétain, already known to be anti-Communist, made his first explicit political speeches honoring the *Croix de Feu* and favoring the Right. In contrast, the increasing pattern is not evident for municipalities exposed to Pétain without the complementary heroic network forged at Verdun.

<sup>59</sup>See also Figure A8 for the 1932 election.



**Notes:** The figure plots coefficients and 95% confidence intervals on Verdun-under-Pétain (left) and Pétain before Verdun (right) obtained using the log vote share for the extreme right, right, and center right combined in each election as the dependent variable in the years 1914, 1924, 1932 and 1936. Each coefficient and confidence interval is from a different regression. We control for department fixed effects, for 1911 population. For 1924, 1932, and 1936, we also control for the (log) shares of vote for the right and for the left in 1914. Standard errors clustered at the regiment level.

Figure 9: Vote share for the Right, 1914-1936

We now analyze how exposure to Pétain at Verdun affects the vote share in each post-war election, party-by-party. Table VII presents the results. In 1924 (sub-Table VIIa), Verdun-under-Pétain municipalities were significantly less likely to vote for the “Bloc Ouvrier Paysan” (BOP) party, that included some Socialists but mostly Communist candidates and that can be classified on the extreme-left. The magnitude is large, with a 10.90% reduction in the vote share for the BOP, a pattern consistent with Pétain’s own anti-communism.

In 1932 (sub-Table VIIb), we observe a large and statistically significant increase in the vote share for two parties from the right. Both the confusingly named center-right “Républicains de Gauche” (part of the “Alliance Démocratique” (AD-RG)) and the right-wing “Union Républicaine Démocratique” (URD: part of the “Fédération Républicaine” (FR-URD)) gained in V-u-P municipalities.<sup>60</sup> In 1932, the URD was close to the extreme right fascist league of the *Jeunesses Patriotes*, founded by the future collaborator Pierre Taittinger. The point estimates on the

<sup>60</sup>The number of observations is lower for the 1932 elections than for the other two elections. It is due to the fact that for that year, the national archives have lost the electoral results in the departments whose first later is A and B (i.e. Ain, Aisne, Allier, Alpes Maritimes, Ardèche, Ardennes, Ariège, Aube, Aude, Aveyron, and Basses Alpes.).

vote shares for the Communist party – PCF – and the Socialist party – SFIO – also decrease (though this is not statistically significant).

Yet, despite these patterns, the 1932 elections were overall a defeat for the right and the center-right. Following the elections, several groups appeared even further to the right of the FR-URD. In particular, Marcel Bucard, a war veteran “whose conduct at the front had earned him Pétain’s praise and the rank of captain” (Sirinelli, n.d., p.140) created the “Francisme” movement in 1933. This fascist and anti-Semitic movement, partly financed by Mussolini, fielded candidates in the 1936 elections. As sub-Table VIIc suggests, Verdun-under-Pétain municipalities are associated with a 3.55% increase in the vote share for the Francist candidates in 1936. We also observe a 9.65% increase in the votes for more mainstream conservative right-wing candidates, the “agrarians” (AGR).<sup>61</sup>

Overall, the party-level analysis of the inter-war electoral results brings to light the role played by exposure to Pétain at Verdun on changing ideologies in the inter-war period. First through an opposition to the communist party consistent with Pétain’s well-known anti-communism, second through an increase in the vote for Taittinger’s URD and then for the fascist Francist movement, electoral choices seem to have both mimicked Pétain’s own views and escalated over time, increasing political polarization and paving the way for Collaboration.<sup>62</sup>

## 6.7 Long-Term Effects on Political Behavior

Finally, to explore the long-term effect of exposure to Pétain on political behavior, we use data on legislative elections in post-war France (Bekkouche and Cagé, 2018, Cagé, 2020). We again classified each party consistently along an extreme-left to extreme-right axis (see Appendix). To explore whether allegiance to Pétain forged at Verdun durably led to a political advantage for the right in post-war France, we estimate equation (3) using the log vote shares for the right (and extreme right) in each election as the dependent variable. Panel A of Figure 10 shows the estimated coefficient associated with Verdun-under-Pétain for each separate election. We do the same for the log vote share for the left (and extreme left) and we display the results in Panel B of Figure 10.

The results provide a clear picture of a durable postwar electoral advantage to the right in Verdun-under-Pétain municipalities, which lasted up to the end of the 1980s. Point estimates suggest that exposure to Pétain at Verdun is associated with a 6.76 percentage point advantage for the right over the left, on average, across all post-war elections until 1988. The analysis of individual elections reveals a striking picture of a persistent and relatively stable lower vote share for the left (except from a particularly large decline in 1988) combined with a durable Pétain effect on reversion to traditionalism in times of real or perceived crisis. The elections for

---

<sup>61</sup>This group had emerged to the right of the FR-URD, which by 1936 had split, retaining mostly centrist elements.

<sup>62</sup>These differences in electoral outcomes cannot be explained by turnout, which, as Appendix Figure A7 shows, remains consistent over time in Verdun under Pétain municipalities. As mentioned above, Pétain’s approach, in common with others (Levitsky and Ziblatt, 2018), was to assume power through (initially) democratic means.

Table VII: Exposure to Pétain and vote in the inter-war period

## (a) 1924 elections

|                     | Ext. Left           | Left              |                    | Center Left       |                  | Center Right     |                   | Right             |                   |
|---------------------|---------------------|-------------------|--------------------|-------------------|------------------|------------------|-------------------|-------------------|-------------------|
|                     | (1)                 | (2)               | (3)                | (4)               | (5)              | (6)              | (7)               | (8)               | (9)               |
|                     | BOP                 | SFIO              | Misc. left         | RAD-SOC           | REP-SOC          | REP-RAD          | RG                | ERD               | Conservateur      |
| Verdun under Pétain | -0.109**<br>(0.045) | 0.006<br>(0.061)  | -0.016<br>(0.029)  | 0.032<br>(0.033)  | 0.026<br>(0.023) | 0.021<br>(0.024) | -0.038<br>(0.048) | 0.064<br>(0.046)  | 0.019<br>(0.032)  |
| Verdun              | -0.015<br>(0.052)   | -0.047<br>(0.101) | 0.079**<br>(0.037) | -0.048<br>(0.067) | 0.021<br>(0.027) | 0.062<br>(0.043) | 0.005<br>(0.052)  | -0.069<br>(0.065) | 0.054*<br>(0.031) |
| Fixed effects       | Dep                 | Dep               | Dep                | Dep               | Dep              | Dep              | Dep               | Dep               | Dep               |
| 1911 pop            | Yes                 | Yes               | Yes                | Yes               | Yes              | Yes              | Yes               | Yes               | Yes               |
| Pre-WWI vote shares | Yes                 | Yes               | Yes                | Yes               | Yes              | Yes              | Yes               | Yes               | Yes               |
| WWI death rate      | Yes                 | Yes               | Yes                | Yes               | Yes              | Yes              | Yes               | Yes               | Yes               |
| R-squared           | 0.58                | 0.85              | 0.87               | 0.90              | 0.89             | 0.90             | 0.89              | 0.90              | 0.87              |
| Observations        | 32,624              | 32,624            | 32,624             | 32,624            | 32,624           | 32,624           | 32,624            | 32,624            | 32,624            |
| Mean DepVar         | 1.29                | 2.41              | -0.06              | 1.15              | 0.08             | 0.13             | 1.47              | 2.85              | 0.11              |
| Sd DepVar           | 1.05                | 1.66              | 0.99               | 1.88              | 1.19             | 1.27             | 1.81              | 1.69              | 1.21              |

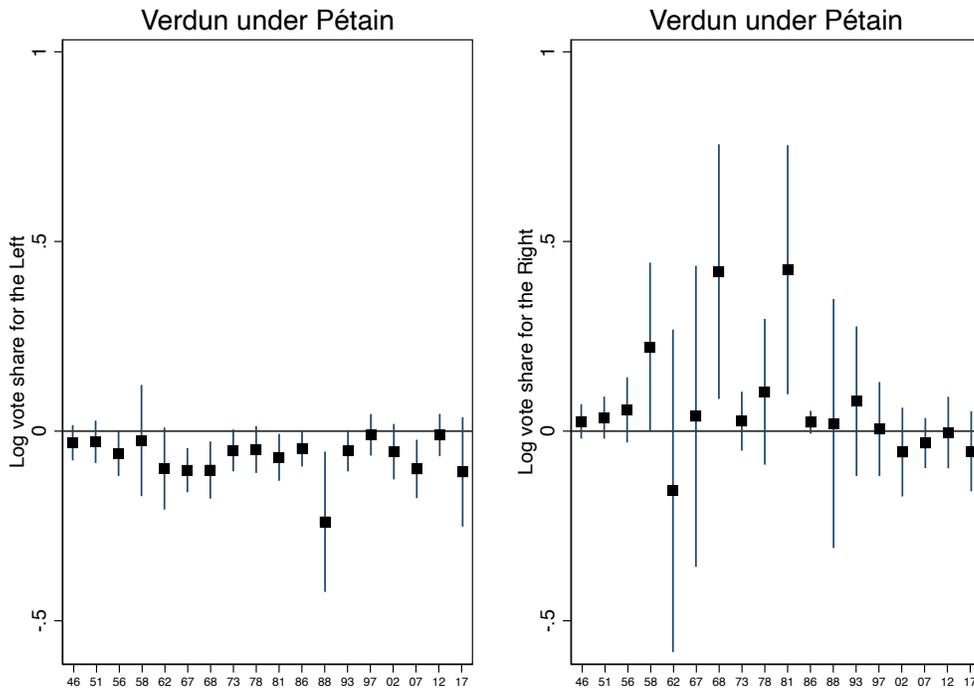
## (b) 1932 elections

|                     | Ext. Left         | Left               | Center Left       |                   | Center Right        |                   | Right            |                     |                  |
|---------------------|-------------------|--------------------|-------------------|-------------------|---------------------|-------------------|------------------|---------------------|------------------|
|                     | (1)               | (2)                | (3)               | (4)               | (5)                 | (6)               | (7)              | (8)                 | (9)              |
|                     | PCF               | SFIO               | REP-SOC           | RAD-SOC           | AD-RG               | AD-IND            | AD-PDP           | FR-URD              | AGR              |
| Verdun under Pétain | -0.002<br>(0.062) | -0.045<br>(0.077)  | -0.003<br>(0.034) | 0.071<br>(0.075)  | 0.161***<br>(0.058) | -0.025<br>(0.086) | 0.016<br>(0.052) | 0.196***<br>(0.045) | 0.014<br>(0.020) |
| Verdun              | 0.082<br>(0.087)  | 0.323**<br>(0.127) | -0.005<br>(0.053) | -0.022<br>(0.101) | -0.107<br>(0.074)   | 0.151*<br>(0.089) | 0.076<br>(0.056) | 0.031<br>(0.047)    | 0.041<br>(0.034) |
| Fixed effects       | Dep               | Dep                | Dep               | Dep               | Dep                 | Dep               | Dep              | Dep                 | Dep              |
| 1911 pop            | Yes               | Yes                | Yes               | Yes               | Yes                 | Yes               | Yes              | Yes                 | Yes              |
| Pre-WWI vote shares | Yes               | Yes                | Yes               | Yes               | Yes                 | Yes               | Yes              | Yes                 | Yes              |
| WWI death rate      | Yes               | Yes                | Yes               | Yes               | Yes                 | Yes               | Yes              | Yes                 | Yes              |
| R-squared           | 0.56              | 0.68               | 0.85              | 0.86              | 0.90                | 0.82              | 0.87             | 0.88                | 0.88             |
| Observations        | 29,036            | 29,036             | 29,036            | 29,036            | 29,036              | 29,036            | 29,036           | 29,036              | 29,036           |
| Mean DepVar         | 1.07              | 2.04               | 0.37              | 2.18              | 1.45                | 1.36              | 0.18             | 0.93                | 0.06             |
| Sd DepVar           | 1.02              | 1.51               | 1.46              | 1.91              | 2.05                | 1.91              | 1.37             | 1.90                | 1.23             |

## (c) 1936 elections

|                     | Ext. Left         | Left              | Center Left       |                  | Center Right       |                   | Right             | Ext. Right          |                     |
|---------------------|-------------------|-------------------|-------------------|------------------|--------------------|-------------------|-------------------|---------------------|---------------------|
|                     | (1)               | (2)               | (3)               | (4)              | (5)                | (6)               | (7)               | (8)                 | (9)                 |
|                     | PCF               | SFIO              | USR               | RAD-SOC          | AD                 | FR-URD            | PRN               | AGR                 | Franciste           |
| Verdun under Pétain | -0.042<br>(0.058) | -0.057<br>(0.083) | -0.014<br>(0.057) | 0.010<br>(0.065) | -0.082<br>(0.097)  | 0.020<br>(0.018)  | -0.100<br>(0.066) | 0.097***<br>(0.029) | 0.035***<br>(0.010) |
| Verdun              | 0.018<br>(0.083)  | 0.039<br>(0.127)  | 0.066<br>(0.080)  | 0.087<br>(0.086) | 0.294**<br>(0.126) | 0.080*<br>(0.047) | 0.118<br>(0.100)  | 0.026<br>(0.059)    | 0.027<br>(0.017)    |
| Fixed effects       | Dep               | Dep               | Dep               | Dep              | Dep                | Dep               | Dep               | Dep                 | Dep                 |
| 1911 pop            | Yes               | Yes               | Yes               | Yes              | Yes                | Yes               | Yes               | Yes                 | Yes                 |
| Pre-WWI vote shares | Yes               | Yes               | Yes               | Yes              | Yes                | Yes               | Yes               | Yes                 | Yes                 |
| WWI death rate      | Yes               | Yes               | Yes               | Yes              | Yes                | Yes               | Yes               | Yes                 | Yes                 |
| R-squared           | 0.56              | 0.65              | 0.80              | 0.84             | 0.85               | 0.80              | 0.89              | 0.82                | 0.78                |
| Observations        | 33,832            | 33,832            | 33,832            | 33,832           | 33,832             | 33,832            | 33,832            | 33,832              | 33,832              |
| Mean DepVar         | 1.96              | 2.42              | 1.37              | 2.37             | 2.61               | 0.79              | 1.84              | 0.93                | 0.76                |
| Sd DepVar           | 0.89              | 1.15              | 1.15              | 1.38             | 1.46               | 0.52              | 1.48              | 0.77                | 0.45                |

**Notes:** \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . This table provides the results of an OLS estimation of equation (3). The dependent variable is the log of the vote share for different political parties in the 1924 ( sub-Table VIIa), 1932 ( sub-Table VIIb), and 1936 ( sub-Table VIIc) legislative elections. All specifications control for department fixed effects (90 departments), 1911 population, and pre-WWI vote shares (share of vote for the right and for the left in 1914; the excluded political pre-trend category is the share of votes for the candidates running for “miscellaneous parties” in 1914). Robust standard errors clustered at Regiment level are reported in parentheses (\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ ).



**Notes:** The figure plots coefficients and 95% confidence intervals obtained from estimating specification 3 using the log vote shares for the left or extreme left (left panel) or for the right or extreme right (right panel) in each election as the dependent variable, with the full set of usual pre-WWII controls and department fixed effects. Each coefficient and confidence interval is from a different regression. An observation is a municipality. Post-war election results are available at the canton level (with varying number of cantons over the years as a function of redistricting, from 2,896 cantons in 1951 to 2,054 after 2015). Standard errors are two-way clustered at the regiment and at the canton level (corresponding to the cantons delimitation in each election year).

Figure 10: Pétain and the difference in vote share for the Left (and Extreme Left) and the Right (and Extreme Right) in post-war France

which the Pétain effect is most significant and largest in magnitude are in 1958, 1967-1968, as well as 1981-1988. The 1958 elections were held in the midst of the Algerian war and under a new constitution, with De Gaulle returning to executive power. The end of the 1960s were times of profound social unrest, with large demonstrations, occupation of universities and factories, and a general strike in 1968, which led to the collapse of the government, de Gaulle leaving to secure support of French forces in Germany and eventually a dissolution of the Parliament leading to the 1968 election. 1981 was also a crucial year in France with the election of the first Socialist president of the Fifth Republic, whose radical program was seen by many as a threat to economic and social order, and who ran for reelection in 1988. Thus in times of crisis, the legacy of Verdun, and of Pétainisme, seems to return to shape French politics.

## 7 Discussion

In this paper, we have shown that in 1940, the heroes of the First World War, the saviours of the nation in 1916, took France down a path of collaboration with one of the most oppressive regimes in history. The attitudes forged in that war have continued to influence France's politics throughout much of the century.

Yet, it is also true that the day after Pétain offered a “gift of himself” as dictator in 1940, another veteran, a relatively obscure and recently promoted Brigadier-General, who had himself served under Marshal Pétain in the First War, broadcast his appeal from London, calling on the French people to resist. De Gaulle, himself embodying the spirit of the French Resistance, would gain a heroic credential through the Second World War, which, though he would step away from politics in 1946, would later enable him to forge a Fifth Republic from the collapse of the Fourth, and a constitution that granted stronger powers to a democratically-elected President, a person who should embody *l'esprit de la nation*. This constitution remains that of France to this day.

The threat that heroes might pose for democracy, yet the need that democracies might have for heroes, is not limited to France. See for example, this letter written during a period of crisis for another resilient democracy:

January 26, 1863: Major-General Hooker:

I have placed you at the head of the Army of the Potomac. I have heard, in such a way as to believe it, of your recently saying that both the Army and the Government needed a Dictator. Of course it was not for this, but in spite of it, that I have given you the command. Only those generals who gain successes, can set up as dictators. What I now ask of you is military success, and I will risk the dictatorship . . . And now beware of rashness. Beware of rashness, but with energy, and sleepless vigilance, go forward, and give us victories.- A. Lincoln<sup>63</sup>

The role of heroes in shaping events is the stuff of both the oldest historic sagas written by mankind and the newest movies yearning for the superhumans of the Marvel universe. Yet, our paper suggests that the legitimacy generated from heroic acts can shape institutions in important ways. In particular, heroes may gain license that allows them to adopt extreme preferences that can both strengthen and undermine democratic values. Heroes may also form complementary networks and organizations that can be particularly potent in swaying political preferences and can last after the heroes themselves are gone.<sup>64</sup> Heroes can provide a great

---

<sup>63</sup>Abraham Lincoln to Joseph Hooker (January 26, 1863).

<sup>64</sup>Our paper points to the aftermath of war as being particularly potent moments for political change, as these are moments where complementary networks of heroes are most likely to exist. This resonates with findings that democratization often follows war. Yet heroes, while often emerging out of a crisis of war, may also emerge from a courageous commitment to non-violent resistance to injustice as well (Bhavnani and Jha, 2012). Beyond the effects on domestic politics, it is a common observation in international relations that politicians from relatively

resource that can protect and save societies, but unless better understood, may also pose a great risk to egalitarian values and democracy.

## References

- Acemoglu, Daron and James A. Robinson**, *Economic origins of dictatorship and democracy*, Cambridge, UK: Cambridge University Press, 2005.
- **and Matthew O. Jackson**, “History, expectations and leadership in the evolution of social norms,” *Review of Economic Studies*, 2015, 82 (2), 423–456.
- , **Giuseppe De Feo, Giacomo De Luca, and Gianluca Russo**, “War, Socialism, and the Rise of Fascism,” Mimeo, MIT 2020.
- Adena, Maja, Ruben Enikolopov, Maria Petrova, Veronica Santarosa, and Ekaterina Zhuravskaya**, “Radio and the Rise of Nazis in Prewar Germany,” *Quarterly Journal of Economics*, July 2015, 130 (4), 1885–1939.
- Akerlof, Robert**, ““We Thinking” and Its Consequences,” *American Economic Review*, May 2016, 106 (5), 415–19.
- **and Richard Holden**, “Movers and Shakers,” *Quarterly Journal of Economics*, 06 2016, 131 (4), 1849–1874.
- Assouad, Lydia**, “Charismatic leaders and nation-building,” in progress. mimeo, PSE.
- Athey, Susan, Emilio Calvano, and Saumitra Jha**, “A theory of community formation and social hierarchy,” working paper 3467, Stanford GSB August 2016.
- Bandiera, Oriana, Andrea Prat, Stephen Hansen, and Raffaella Sadun**, “CEO Behavior and Firm Performance,” *Journal of Political Economy*, 2020, 128 (4), 1325–1369.
- Baron, Ch. and Ch. Lassalle**, “Dictionnaires des Communes Administratif and Militaire,” Dictionnaire 1915.
- Bauer, Michal, Christopher Blattman, Julie Chytilová, Joseph Henrich, Edward Miguel, and Tamar Mitts**, “Can War Foster Cooperation?,” *Journal of Economic Perspectives*, 2016, 30 (3), 249–274.
- Becker, Sascha and Jared Rubin**, “Ideological Entrepreneurs and the Diffusion of Radical Innovation: Martin Luther’s Personal Ties and the Spread of the Early Reformation,” August 2019. mimeo, Chapman.
- Bekkouche, Yasmine and Julia Cagé**, “The Price of a Vote: Evidence from France, 1993-2014,” CEPR Discussion Papers 12614, C.E.P.R. Discussion Papers 2018.
- Bertrand, Marianne and Antoinette Schoar**, “Managing with Style: The Effects of Managers on Firm Policies,” *Quarterly Journal of Economics*, 2003, 118, 1169–1208.
- Besley, Tim and Torsten Persson**, “Democratic Values and Institutions,” *American Economic Review: Insights*, 2019, 1 (1), 59–76.
- Bhalotra, Sonia, Irma Clots-Figueras, Lakshmi Iyer, and Joseph Vecci**, “Leader identity and coordination,” discussion paper 11803, IZA September 2018.

---

hawkish parties are, ironically, often better positioned to make politically risky overtures for peace with long-standing adversaries than their dovish counterparts. One example is Nixon’s famous reapprochement with China. However, our interpretation resonates with the greater set of options available to war heroes to shape politics regardless of party. For example, Yitzhak Rabin, a commando in Israel’s war of independence who rose to be the Army chief during Israel’s victory in the 6 Day War, was also able to pursue the Oslo Peace Accords, as head of the center-left Israeli Labour party.

- Bhavnani, Rikhil and Saumitra Jha**, “Gandhi’s Gift: On the Promise and Limitations of Non-Violent Civil Disobedience,” *Economics of Peace and Security Journal*, 2012.
- Blattman, Christopher**, “From Violence to Voting: War and Political Participation in Uganda,” *American Political Science Review*, 2009, 103 (2), 231–247.
- Bracken, Johnathan**, *The Verdun Regiment*, Pen and Sword, 2018.
- Burrin, Philippe**, *Living with Defeat: France under German Occupation, 1940-1944*, London: Arnold, 1996.
- Bursztyn, Leonardo, Georgy Egorov, and Stefano Fiorin**, “From Extreme to Mainstream: How Social Norms Unravel,” NBER Working Papers 23415, National Bureau of Economic Research, Inc 2017.
- Cagé, Julia**, “Media Competition, Information Provision and Political Participation: Evidence from French Local Newspapers and Elections, 1944-2014,” *Journal of Public Economics*, 2020.
- , **Pauline Grosjean, and Saumitra Jha**, “Army of Shadows: Organising Resistance in WWII France,” Working Paper 2020.
- Caillaud, Bernard and Jean Tirole**, “Consensus Building: How to Persuade a Group,” *The American Economic Review*, 2007, 97 (5), 1877–1900.
- Campante, Filipe and David Yanagizawa-Drott**, “The Intergenerational Transmission of War,” April 2016.
- Cointet, Jean-Paul**, *Les Hommes de Vichy – L’illusion du pouvoir*, Perrin, 2017.
- d’Adda, Giovanna, Donja Darai, Nicola Pavanini, and Roberto A Weber**, “Do Leaders Affect Ethical Conduct?,” *Journal of the European Economic Association*, 02 2017, 15 (6), 1177–1213.
- Dell, Melissa and Pablo Querubin**, “Nation Building Through Foreign Intervention: Evidence from Discontinuities in Military Strategies,” *The Quarterly Journal of Economics*, 2017, 133 (2), 701–764.
- Dippel, Christian and Stephan Hebllich**, “Leadership in Social Networks: Evidence from the Forty-Eighters in the Civil War,” Working Paper 24656, National Bureau of Economic Research 2018.
- Émile Fayolle, Marie**, *Cahiers Secret de la Grande Guerre*, Plon, 1964.
- Etat-Major de l’Armée**, “Les Armées Francaises dans la Grande Guerre,” 1922.
- Ferwerda, Jeremy and Nicholas Miller**, “Political Devolution and Resistance to Foreign Rule: A Natural Experiment,” *American Political Science Review*, 2014, 108 (3), 642–660.
- Fisman, Raymond**, “Estimating the Value of Political Connections,” *The American Economic Review*, 2001, 91 (4), 1095–1102.
- Fontana, Nicola, Tommaso Nannicini, and Guido Tabellini**, “Historical Roots of Political Extremism: The Effects of Nazi Occupation of Italy,” CEPR Discussion Papers 11758, C.E.P.R. Discussion Papers 2017.
- Forbes, Robert**, *For Europe: The French Volunteers of the Waffen-SS*, Helion, 2006.
- Gagliarducci, Stefano, Massimiliano Onorato, Francesco Sobbrino, and Guido Tabellini**, “War of the Waves: Radio and Resistance During World War II,” CEPR Discussion Papers 12746, C.E.P.R. Discussion Papers 2018.
- Gay, Victor**, “The Legacy of the Missing Men: The Long-Run Impact of World War I on Female Labor Force Participation,” 2017 Papers pga905, Job Market Papers 2017.
- Gibbons, Robert and Laurence Prusak**, “Knowledge, Stories and Culture in Organizations,” *AEA Papers and Proceedings*, May 2020, 110, 187–192.
- Greif, Avner and Jared Rubin**, “Political Legitimacy and the Institutional Foundations of Constitutional Government,” February 2020. mimeo, Chapman.
- Hermalin, Benjamin E.**, “Toward an Economic Theory of Leadership: Leading by Example,” *The*

- American Economic Review*, 1998, 88 (5), 1188–1206.
- Horne, Alistair**, *The Price of Glory: Verdun 1916*, London: MacMillian & Company Limited, 1962.
- Imperial General Staff**, *Handbook of the French Army*, Great Britain War Office, 1914.
- Irvine, William D.**, “Fascism in France and the Strange Case of the Croix de Feu,” *Journal of Modern History*, June 1991, 63 (2), 271–295.
- Jackson, Julian**, *France: The Dark Years, 1940-1944*, Oxford U. Press, 2001.
- Jha, Saumitra**, “Trading for Peace,” *Economic Policy*, July 2018, pp. 485–526.
- and **Steven Wilkinson**, “Does Combat Experience Foster Organizational Skill? Evidence from Ethnic Cleansing during the Partition of South Asia,” *American Political Science Review*, 2012, 106 (4), 883–907.
- and —, “Marching towards the Bastille: Veterans as Vanguard in the French Revolution,” 2019. mimeo, Stanford.
- Jones, Benjamin and Benjamin Olken**, “Do Leaders Matter? National Leadership and Growth Since World War II,” *Quarterly Journal of Economics*, 2005, 120 (3), 835–864.
- Kocher, Matthew A and Nuno P Monteiro**, “Lines of Demarcation: Causation, Design-Based Inference, and Historical Research,” *Perspectives on Politics*, 2016, 14 (4), 952–975.
- Koenig, Christoph**, “Loose Cannons – War Veterans and the Erosion of Democracy in Weimar Germany,” Technical Report 2015.
- Kuran, Timur**, *Private Truths, Public Lies*, Harvard U. Press, 1997.
- Lacroix, Jean, Pierre-Guillaume Méon, and Kim Oosterlinck**, Technical Report.
- Lenz, Gabriel**, *Follow the Leader? How Voters Respond to Politicians’ Policies and Performance*, U. Chicago Press, 2012.
- Levi, Margaret, Audrey Sacks, and Tom Tyler**, “Conceptualizing Legitimacy, Measuring Legitimizing Beliefs,” *American Behavioral Scientist*, November 2009, 53 (3), 354–375.
- Levitsky, Steven and Daniel Ziblatt**, *How Democracies Die*, New York: Broadway Books, 2018.
- Lormier, Dominique**, *Les 100 000 collabos: Le fichier interdit de la collaboration française* Documents, Cherche Midi, 2017.
- Masera, Federico, Pauline Grosjean, and Hasin Yousaf**, “Whistle the Racist Dogs: Political Campaigns and Police Stops,” Technical Report, UNSW 2020.
- Milgrom, Paul and John Roberts**, “The Economics of Modern Manufacturing: Technology, Strategy and Organization,” *American Economic Review*, 1990, 80 (3), 511–28.
- , **Yingyi Qian, and John Roberts**, “Complementarities, momentum and the evolution of modern manufacturing,” *American Economic Review: Papers and Proceedings*, May 1991, 81 (2), 84–88.
- Millington, Chris**, *From victory to Vichy: Veterans in inter-war France*, Manchester U. Press, 2012.
- Ochsner, Christian and Felix Roesel**, “Mobilizing History,” working paper, CERGE-EI 2019.
- Ott, Sandra**, *Living with the Enemy: German Occupation, Collaboration and Justice in the Western Pyrenees, 1940-1948*, Cambridge U. Press, 2017.
- Ousby, Ian**, *The Road to Verdun: France, Nationalism and the First World War*, London: Jonathan Cape, 2007.
- Passmore, Kevin**, *The Right in France from the Third Republic to Vichy*, Oxford: Oxford U. Press, 2012.
- Paxton, Robert**, *Vichy France: Old Guard and New Order, 1940-1945*, Columbia U. Press, 2001.
- Prost, Antoine**, *Les anciens combattants et la société française, 1914-39*, Sciences-Po, 1977.
- Reynolds, David**, *The Long Shadow: The Legacies of the Great War in the Twentieth Century*, New York: W.W. Norton, 2014.

- Satyanath, Shanker, Nico Voigtländer, and Hans-Joachim Voth**, “Bowling for Fascism: Social Capital and the Rise of the Nazi Party in Weimar Germany, 1919- 33,” *Journal of Political Economy*, 2017, 125 (2).
- Sirinelli, Jean-François**, *Histoire des droites en France: Politique*.
- Steiner, Zara**, *The Lights that Failed: European International History, 1919-1933*, Cambridge, 2005.
- Trebbi, Francesco and Eric Weese**, “Insurgency and Small Wars: Estimation of Unobserved Coalition Structures,” *Econometrica*, 2019, 87 (2), 463–496.
- Tur-Prats, Ana and Felipe Valencia**, “The Long Shadow of the Spanish Civil War,” working paper, UC Merced 2020.
- Voigtländer, Nico and Hans-Joachim Voth**, “Highway to Hitler,” NBER Working Papers 20150, National Bureau of Economic Research, Inc 2014.
- Williams, Charles**, *Pétain*, Palgrave Macmillan, 2005.

# Appendix: *Heroes and Villains*

Julia Cagé, Anna Dagorret, Pauline Grosjean and Saumitra Jha

December 22, 2020

*Note:* Appendices denoted A are intended for posting on the journal and on the authors' websites. Appendices denoted B appear only on the authors' websites.

## Contents

|                                                               |          |
|---------------------------------------------------------------|----------|
| <b>A Appendix Tables and Figures</b>                          | <b>1</b> |
| <b>B Supplementary Appendix: Not Intended for Publication</b> | <b>i</b> |
| B.1 Forms of Collaboration in our Data . . . . .              | i        |
| B.2 Electoral data . . . . .                                  | ii       |
| B.3 World War 2 Combat Exposure and Resistance Data . . . . . | xii      |

## A Appendix Tables and Figures

### List of Tables

|                                                                                              |    |
|----------------------------------------------------------------------------------------------|----|
| A1 Balance on 1872 Demographic, Religious and Industrial Characteristics . . . . .           | 3  |
| A2 Accounting for differences in battle experiences in 1916 and excluding fortress regiments | 4  |
| A3 Robustness of main estimates to excluding movers . . . . .                                | 5  |
| A4 Effects by Collaborationist Organization . . . . .                                        | 6  |
| B1 1914 legislative elections: Summary statistics . . . . .                                  | vi |
| B2 1924 legislative elections: Summary statistics . . . . .                                  | ix |
| B3 1932 legislative elections: Summary statistics . . . . .                                  | x  |
| B4 1936 legislative elections: Summary statistics . . . . .                                  | xi |

### List of Figures

|                                                                   |   |
|-------------------------------------------------------------------|---|
| A1 Number of collaborators by category, main categories . . . . . | 7 |
| A2 Permutation inference: Distribution of coefficients . . . . .  | 8 |
| A3 Permutation inference: Distribution of t-statistics . . . . .  | 8 |
| A4 Robustness to dropping each region one by one . . . . .        | 9 |

|    |                                                                                                                                                                                                   |      |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| A5 | Effects on membership in each of the main collaborationist organizations. . . . .                                                                                                                 | 10   |
| A6 | Robustness to redefining the treatment status of municipalities that raised more than one regiment . . . . .                                                                                      | 11   |
| A7 | Effects on Turnout . . . . .                                                                                                                                                                      | 12   |
| A8 | Vote share for the right, 1932 legislative elections . . . . .                                                                                                                                    | 13   |
| B1 | Example of the 1914 municipal-level election data . . . . .                                                                                                                                       | iv   |
| B2 | Example of the 1914 district-level electoral results we use to recover the political parties of the candidates . . . . .                                                                          | v    |
| B3 | Example of the 1924 municipal-level election data . . . . .                                                                                                                                       | vii  |
| B4 | Example of the 1924 district-level electoral results we use to recover the political parties of the candidates . . . . .                                                                          | viii |
| B5 | Heat map of combat intensity in 1940. Own calculations based upon weekly German individual unit movements derived from the <i>The West Point atlas of American wars</i> . . .                     | xiii |
| B6 | Example page from the secret list of collaborators collected in 1944 and 1945 under the supervision of Colonel Paul Paillole, the head of French army intelligence at the end of the war. . . . . | xiv  |
| B7 | Referendum on “If France had to choose a dictator, who would you pick?” in the “Petit Journal” newspaper, on 5 December 1934 . . . . .                                                            | xiv  |
| B8 | Letter from Pétain, then ambassador to Spain, to General Héring, upon Héring’s nomination as military commander of Paris, 22 December 1939. . . . .                                               | xv   |

Table A1: Balance on 1872 Industrial and Religious Characteristics

|                                  | Observations<br>(chef-lieux) | Mean<br>(sd)       | Coeff<br>(se)     | p-value | Coeff<br>(se)     | p-value |
|----------------------------------|------------------------------|--------------------|-------------------|---------|-------------------|---------|
| Controls                         |                              |                    |                   | None    |                   | Dept FE |
| Demographics and Education(1872) |                              |                    |                   |         |                   |         |
| Log population                   | 400                          | 9.151<br>(0.960)   | 0.004<br>(0.106)  | 0.973   | 0.086<br>(0.179)  | 0.633   |
| Share Men                        | 400                          | 48.476<br>(3.052)  | 0.020<br>(0.386)  | 0.958   | -0.594<br>(0.586) | 0.313   |
| Share Women                      | 400                          | 51.524<br>(3.052)  | -0.020<br>(0.386) | 0.958   | 0.594<br>(0.586)  | 0.313   |
| Share Foreigners                 | 400                          | 2.894<br>(6.880)   | 1.606<br>(1.496)  | 0.285   | -0.136<br>(0.926) | 0.884   |
| Share Illiterate                 | 400                          | 17.869<br>(7.222)  | 1.776<br>(1.037)  | 0.089   | 1.204<br>(0.919)  | 0.192   |
| Religious Characteristics(1872)  |                              |                    |                   |         |                   |         |
| Catholic places of worship       | 400                          | 97.343<br>(6.923)  | 0.450<br>(0.810)  | 0.579   | -0.672<br>(1.361) | 0.622   |
| Protestant places of worship     | 400                          | 1.692<br>(5.462)   | -1.189<br>(0.702) | 0.092   | -0.686<br>(0.710) | 0.336   |
| Jewish places of worship         | 400                          | 0.165<br>(0.607)   | 0.055<br>(0.069)  | 0.424   | 0.007<br>(0.036)  | 0.842   |
| Other places of worship          | 400                          | 0.293<br>(1.300)   | 0.073<br>(0.139)  | 0.597   | 0.262<br>(0.154)  | 0.091   |
| Occupation Shares(1872)          |                              |                    |                   |         |                   |         |
| Industrial workers               | 400                          | 33.844<br>(16.705) | 5.358<br>(2.272)  | 0.020   | 4.027<br>(3.548)  | 0.258   |
| Farmers                          | 400                          | 18.421<br>(15.261) | -1.515<br>(2.105) | 0.473   | -4.401<br>(2.598) | 0.093   |
| Merchants                        | 400                          | 14.740<br>(7.443)  | 0.346<br>(0.793)  | 0.663   | 0.137<br>(1.496)  | 0.927   |
| Liberal occupations              | 400                          | 11.645<br>(6.357)  | -0.946<br>(0.755) | 0.212   | -2.194<br>(1.261) | 0.084   |
| Unemployed                       | 400                          | 1.289<br>(2.565)   | -0.009<br>(0.284) | 0.974   | 1.532<br>(0.774)  | 0.050   |

**Notes:** This Table compares 1872 characteristics in chef-lieux (the main town in each of France's arrondissements). The first two columns are means and standard deviations for those chef-lieux in which at least one home regiment was sent to Verdun under Pétain to others that sent none on their 1872 characteristics. We then show the coefficients (and p-values) of an OLS regression of each characteristic on the Verdun under Pétain variable (which includes partial assignments) with no controls (Col 3 and 4) and with 90 Department Fixed Effects (Cols 5-6). Standard errors clustered at Regiment level are reported in parentheses (\*\*\*)  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ ).

Table A2: **Accounting for differences in battle experiences in 1916 and excluding fortress regiments**

|                     | Log collabos pc     |                     |                     |                     |
|---------------------|---------------------|---------------------|---------------------|---------------------|
|                     | (1)                 | (2)                 | (3)                 | (4)                 |
| Verdun under Pétain | 0.069***<br>(0.019) | 0.067***<br>(0.018) | 0.067***<br>(0.018) | 0.059***<br>(0.017) |
| Verdun              | 0.009<br>(0.034)    | -0.013<br>(0.031)   | -0.013<br>(0.031)   | -0.010<br>(0.028)   |
| Somme               | -0.016<br>(0.022)   | -0.024<br>(0.021)   | -0.024<br>(0.021)   |                     |
| South Eastern Front |                     | -0.059<br>(0.042)   | -0.060<br>(0.043)   |                     |
| Marne               |                     |                     | -0.003<br>(0.029)   |                     |
| Sample              | All                 | All                 | All                 | No Fortress         |
| Fixed effects       | Dept                | Dept                | Dept                | Dept                |
| 1911 pop            | Yes                 | Yes                 | Yes                 | Yes                 |
| Pre-WWI vote shares | Yes                 | Yes                 | Yes                 | Yes                 |
| WWI death rate      | Yes                 | Yes                 | Yes                 | Yes                 |
| R-squared           | 0.60                | 0.60                | 0.60                | 0.60                |
| Observations        | 34,942              | 34,942              | 34,942              | 33,332              |
| Mean DepVar         | -5.74               | -5.74               | -5.74               | -5.75               |
| Sd DepVar           | 0.83                | 0.83                | 0.83                | 0.83                |

**Notes:** This table shows that the effect associated with Pétain’s leadership at Verdun on collaboration in WWII is robust to accounting for other potential differences in battle experience in 1916, or before. Columns 1 and 2 consider the influence of the other major theatres of operation for the French Army in 1916: the Battle of the Somme and the European South-Eastern front. Column 3 considers the potential influence of another major battle prior to 1916: the Battle of the Marne in 1914. Column 4 excludes fortress regiments (the regiments numbered 145 and above, which manned the eastern fortifications, including Verdun, before the start of the Battle) from the estimation sample. All regressions include, as indicated, department fixed effects as well as controls for the natural logarithm of the 1911 municipal population, vote shares for the left and for the right in 1914, and municipal fatality death rate in WWI (as in Column 9 of Table IV). Robust standard errors clustered at Regiment level in parentheses (\*\*\*)  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ ).

Table A3: **Robustness of main estimates to excluding movers**

|                     | Log collabos pc - w/o movers |                    |                     |                     |                     |
|---------------------|------------------------------|--------------------|---------------------|---------------------|---------------------|
|                     | (1)                          | (2)                | (3)                 | (4)                 | (5)                 |
| Verdun under Pétain | 0.117**<br>(0.049)           | 0.113**<br>(0.045) | 0.091***<br>(0.026) | 0.091***<br>(0.026) | 0.091***<br>(0.025) |
| Verdun              | -0.012<br>(0.084)            | 0.014<br>(0.081)   | 0.021<br>(0.052)    | 0.020<br>(0.052)    | 0.015<br>(0.048)    |
| Fixed effects       | Dept                         | Dept               | Dept                | Dept                | Dept                |
| 1911 pop            | No                           | Yes                | Yes                 | Yes                 | Yes                 |
| Pre-WWI vote shares | No                           | No                 | No                  | Yes                 | Yes                 |
| WWI death rate      | No                           | Yes                | Yes                 | Yes                 | Yes                 |
| WWII controls       | No                           | No                 | No                  | No                  | No                  |
| R-squared           | 0.21                         | 0.21               | 0.50                | 0.50                | 0.50                |
| Observations        | 9,407                        | 9,407              | 9,407               | 9,407               | 9,407               |
| Mean DepVar         | -5.91                        | -5.91              | -5.91               | -5.91               | -5.91               |
| Sd DepVar           | 0.96                         | 0.96               | 0.96                | 0.96                | 0.96                |

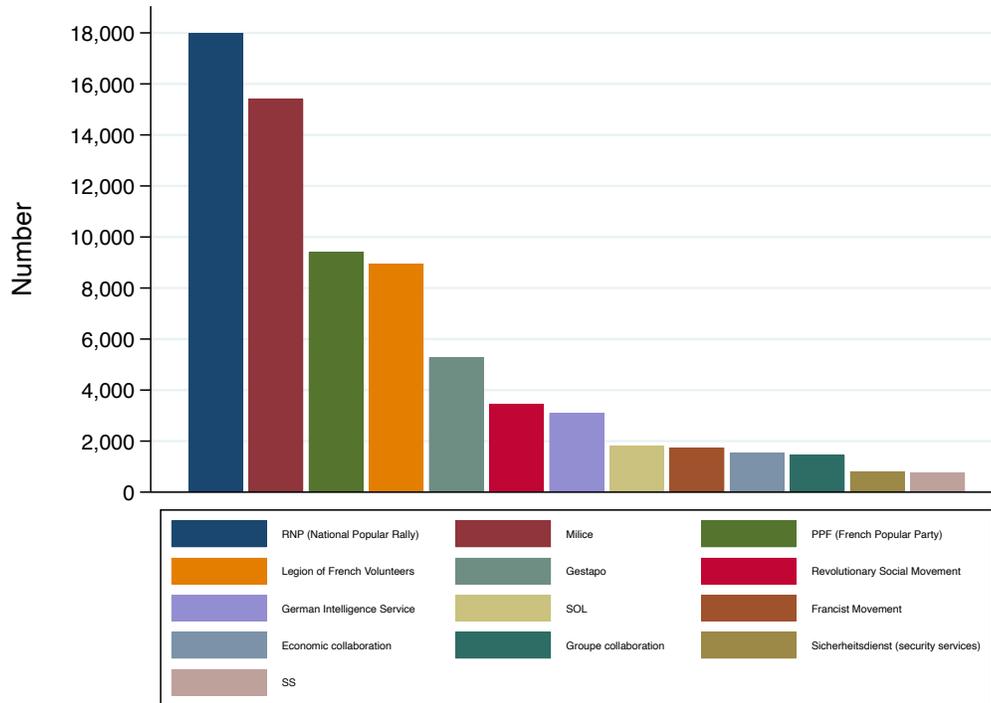
**Notes:** The Table reproduces Column 5 to 10 of Table IV, restricting the estimation sample to the subsample of collaborators whose residence in 1945 is not different from their municipality of birth. All regressions are at the municipality level with department fixed effects. “1911 pop” is the natural logarithm of the municipality population in 1911. “Pre-WWI vote shares” are: vote share for the Left in 1914 and vote share for the Right in 1914. “WWI death rate” is the World War I military fatality rate at the municipal level (number of soldiers born in a municipality who died in WWI over 1911 municipality population). Robust standard errors clustered at Regiment level in parentheses (\*\*\*)  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ ).

Table A4: Effects by Collaboratorist Organization

|                     | RNP                 | PPF                 | MSR                 | Franc               | GC                  | SOL                 | Milice              | LVF                 | Germ Int            | Gestapo             | Eco coll            | AM                  |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                     | (1)                 | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 | (7)                 | (8)                 | (9)                 | (10)                | (11)                | (12)                |
| Verdun under Pétain | 0.074***<br>(0.015) | 0.066***<br>(0.014) | 0.056***<br>(0.015) | 0.058***<br>(0.015) | 0.057***<br>(0.014) | 0.056***<br>(0.015) | 0.050***<br>(0.014) | 0.063***<br>(0.015) | 0.061***<br>(0.014) | 0.056***<br>(0.014) | 0.059***<br>(0.015) | 0.053***<br>(0.014) |
| Verdun              | -0.001<br>(0.027)   | 0.025<br>(0.024)    | 0.013<br>(0.024)    | 0.010<br>(0.024)    | 0.009<br>(0.023)    | 0.018<br>(0.024)    | 0.028<br>(0.026)    | 0.025<br>(0.025)    | 0.015<br>(0.024)    | 0.023<br>(0.023)    | 0.021<br>(0.023)    | 0.019<br>(0.023)    |
| Fixed effects       | Dept                |
| 1911 pop            | Yes                 |
| Pre-WWI vote shares | Yes                 |
| WWI death rate      | Yes                 |
| R-squared           | 0.86                | 0.88                | 0.93                | 0.94                | 0.94                | 0.94                | 0.86                | 0.89                | 0.94                | 0.92                | 0.95                | 0.95                |
| Observations        | 34,942              | 34,942              | 34,942              | 34,942              | 34,942              | 34,942              | 34,942              | 34,942              | 34,942              | 34,942              | 34,942              | 34,942              |
| Mean DepVar         | -5.98               | -6.00               | -6.05               | -6.05               | -6.06               | -6.05               | -5.98               | -6.00               | -6.05               | -6.04               | -6.06               | -6.07               |
| Sd DepVar           | 0.96                | 0.96                | 1.02                | 1.02                | 1.03                | 1.04                | 0.95                | 0.96                | 1.02                | 1.00                | 1.03                | 1.05                |

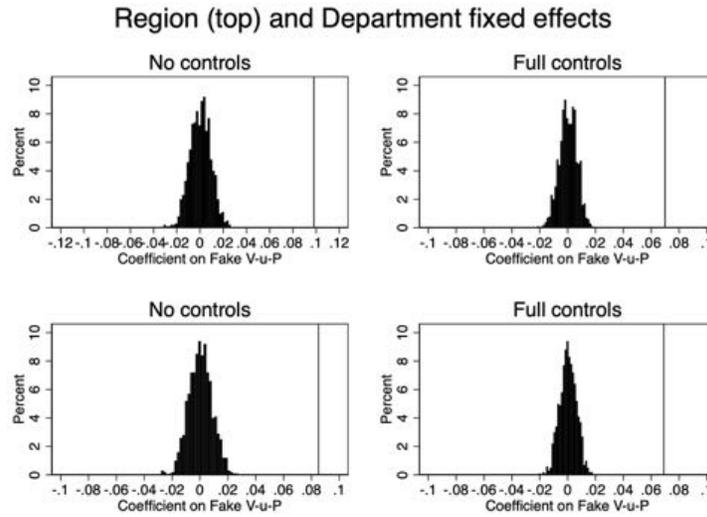
**Notes:** This table shows that exposure to Pétain at Verdun influences collaboration across all different types of collaboration. All regressions include, as indicated, department fixed effects as well as controls for the natural logarithm of the 1911 municipal population, vote shares for the left and for the right in 1914, and municipal fatality death rate in WWI (as in Column 9 of Table IV). Robust standard errors clustered at Regiment level in parentheses (\*\*\*)  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

The organizations are ranked by decreasing absolute membership numbers. The dependent variables are the log number of members in each organization per capita. RNP: National Popular Rally; PPF: French Popular Party. The PPF and RNP are the two major collaboratorist political parties. Secondary parties, inherited from the 1930s Fascist Leagues are: MSR: Revolutionary Social Movement; and Franc: Francism. GC: Groupe Collaboration is a collaboratorist think-tank gathering many prominent intellectuals and members of the elite. SOL: Legionary Order Service is a para-military group grounded in WWI Veterans organizations. Milice is the primary para-military group after 1943. LVF: Legion of French Volunteers against Bolshevism; para-military group of volunteers to fight alongside the Wehrmacht on the Eastern Front. Germ Int: German Intelligence Service. Eco coll: Economic Collaboration. AM: "Amis du Maréchal": Friends of the Marshal [Pétain].



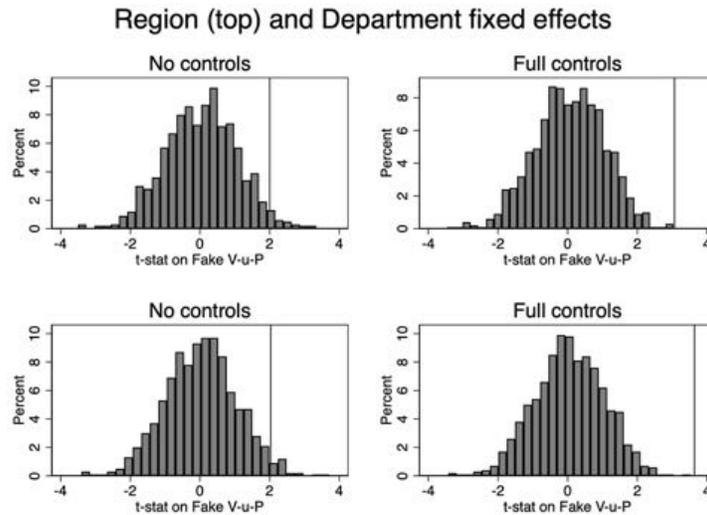
**Notes:** The figure plots the number of collaborators in the main groups. The main group by membership consists of the RNP (National Popular Rally, or *Rassemblement National Populaire*, a Fascist collaborationist political party created in 1941 by Marcel Déat, former number 2 of the socialist party SFIO, as well as former leaders of veteran organizations in the occupied zone). The other major Fascist collaborationist party, the PPF (French Popular Party, or *Parti Populaire Français*, created by the former number 2 of the communist party Jacques Doriot) comes third in total membership in our collaborators list. Secondary collaborationist parties are the MSR (the Revolutionary Social Movement) and the Francist Movement, two parties that were the direct continuation of Fascist right-wing leagues from the 1930s. Groupe Collaboration (11th on our list in terms of total membership) were a more elite and less violent political organization that supported collaboration with Nazi Germany for a new European order. The second major group in total membership in our list consists of the Milice, a para-military organization that succeeded to the SOL (the 8th group in total membership) in January 1943. While the SOL was firmly grounded in WWI Veterans organizations and wore its allegiance to Petain, the Milice was younger and more disparate in membership. The second major paramilitary organization is the Legion of French Volunteers (against Bolshevism) (or LVF), created in July 1941 whose volunteers fought in the Wehrmacht uniform on the Eastern front. Other collaborators directly supported the Nazi occupation by joining the Gestapo (the 5th most predominant form of collaboration in our list), working for the German Intelligence Service (7th), the German security services (12th) or the SS (13th). Economic collaboration is also recorded in our list. 1,550 (1.62% of the total) collaborators are listed as economic collaborators, and the vast majority of them are listed only for this reason (only 30 of them are also listed as members of a collaborationist political party, 18 as Nazi collaborators (Gestapo, SS, Intelligence or Security services), and 14 as Milice members). This suggests that these economic collaborators are distinct from the others, ideological collaborators, but that only serious cases of profiteering, as opposed to day-to-day exchange, are included.

Figure A1: Number of collaborators by category, main categories



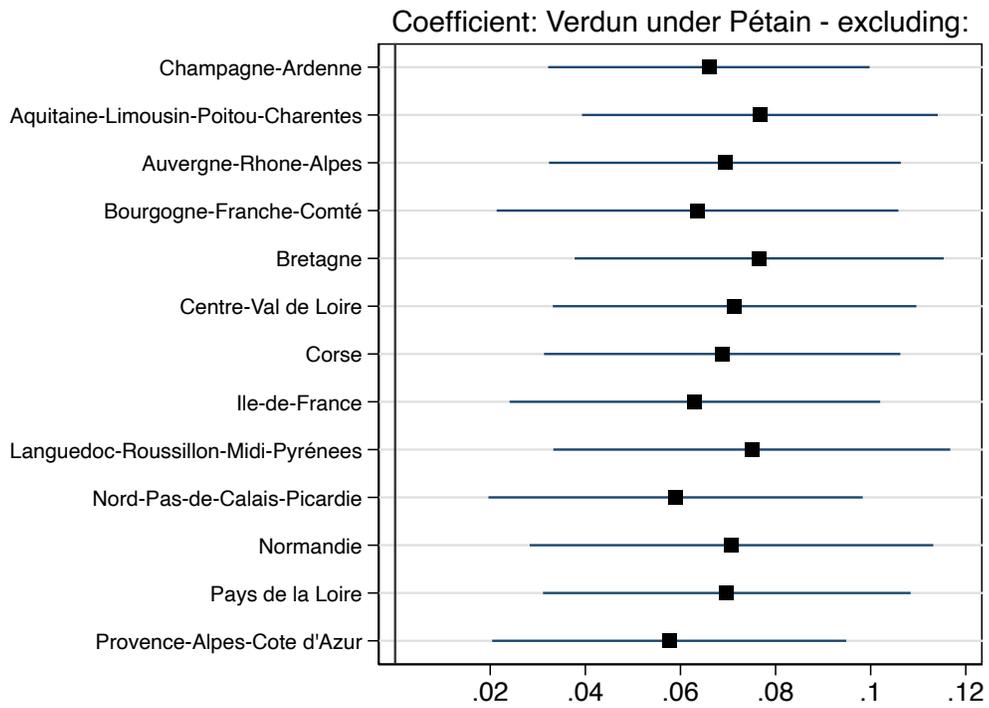
**Notes:** The histogram shows the distribution of coefficients obtained from permutation inference based on 1,000 replications. The distribution of t-statistics is shown in Figure A3. The top panel includes region fixed effects, without any control (left) or with the full set of controls (right). The bottom panel repeats the same exercise with department fixed effects. The vertical bars indicate the coefficients obtained from the real assignment (see Table IV in the paper).

Figure A2: Permutation inference: Distribution of coefficients



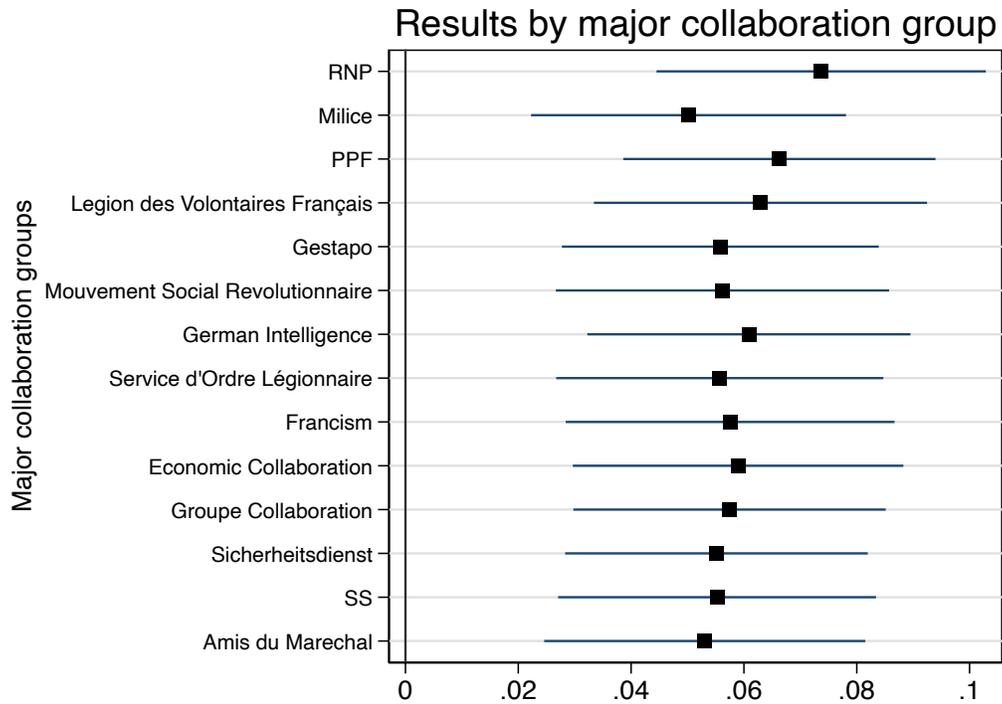
**Notes:** The histogram shows the distribution of t-statistics associated with each coefficient obtained from permutation inference based on 1,000 replications. The distribution of coefficients is shown in Figure A2. The top panel includes region fixed effects, without any control (left) or with the full set of controls (right). The bottom panel repeats the same exercise with department fixed effects. The vertical bars indicate the t-statistics obtained from the real assignment (see Table IV in the paper).

Figure A3: Permutation inference: Distribution of t-statistics



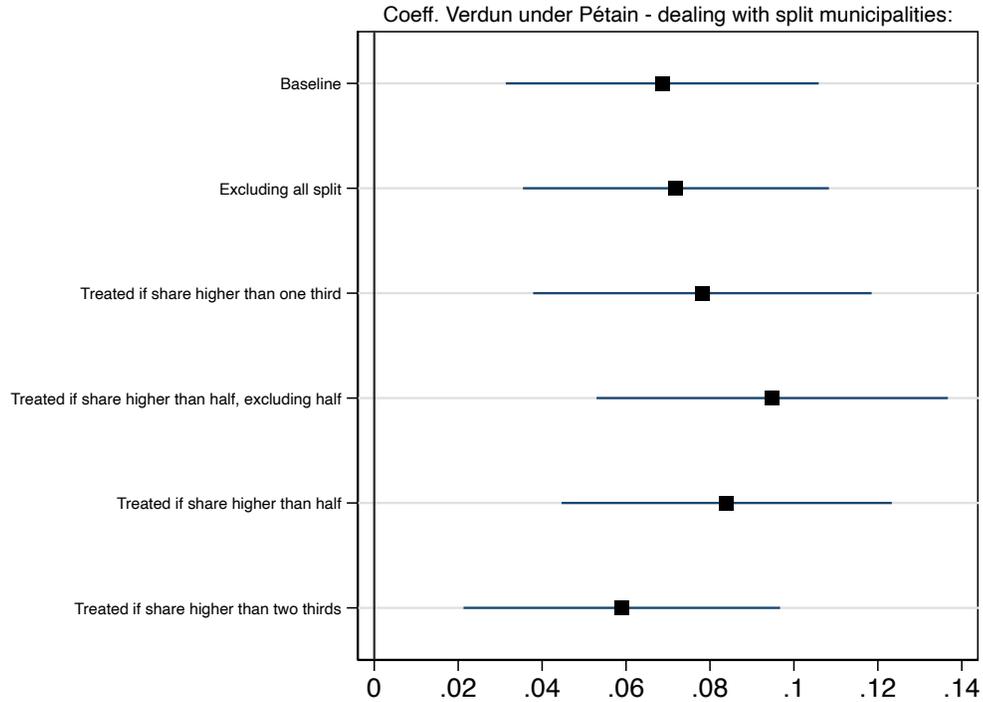
**Notes:** The figure shows coefficients and 95% confidence intervals in separate regressions in which we drop each region one by one, as indicated. All regressions are at the municipality level and include department fixed effects as well as controls for the natural logarithm of the 1911 municipal population, vote shares for the left and for the right in 1914, and municipal fatality death rate in WWI (as in Column 9 of Table IV). Standard errors are clustered at the regiment level.

Figure A4: Robustness to dropping each region one by one



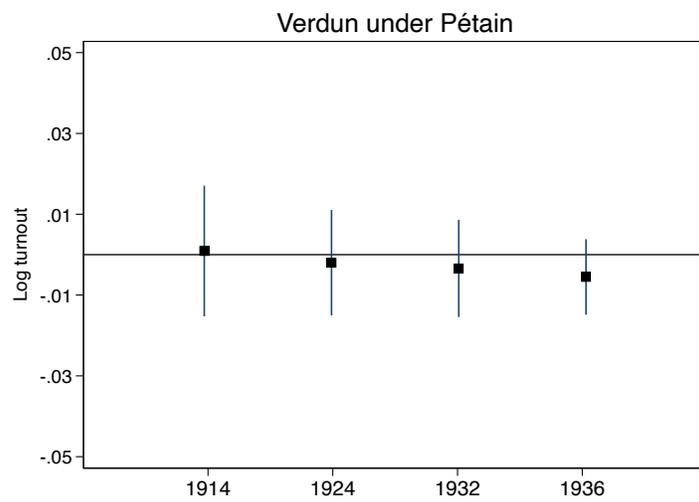
**Notes:** The figure shows coefficients and 95% confidence intervals obtained from a specification regressing the log of collaborators per capita, for each broad type of collaboration, as indicated. Groups are ordered by membership size. We present results for each major group by membership size (see Figure A1 in Appendix), as well as the “Friends of the Marshal”: a more marginal group but with explicit allegiance to Marshal Pétain as its sole purpose. Each line is a separate regression, which includes the full set of pre-WWII controls and department fixed effects (as in Column 9 of Table IV). Standard errors are clustered at the regiment level. Regression results are displayed in Table A4. The figure shows that the effect of combat exposure to Pétain at Verdun drives collaboration across the board, from membership to various collaborationist political parties, paramilitary groups, Nazi organizations or economic collaboration. More detail on the different forms of collaboration can be found in Appendix B.1.

Figure A5: Effects on membership in each of the main collaborationist organizations.



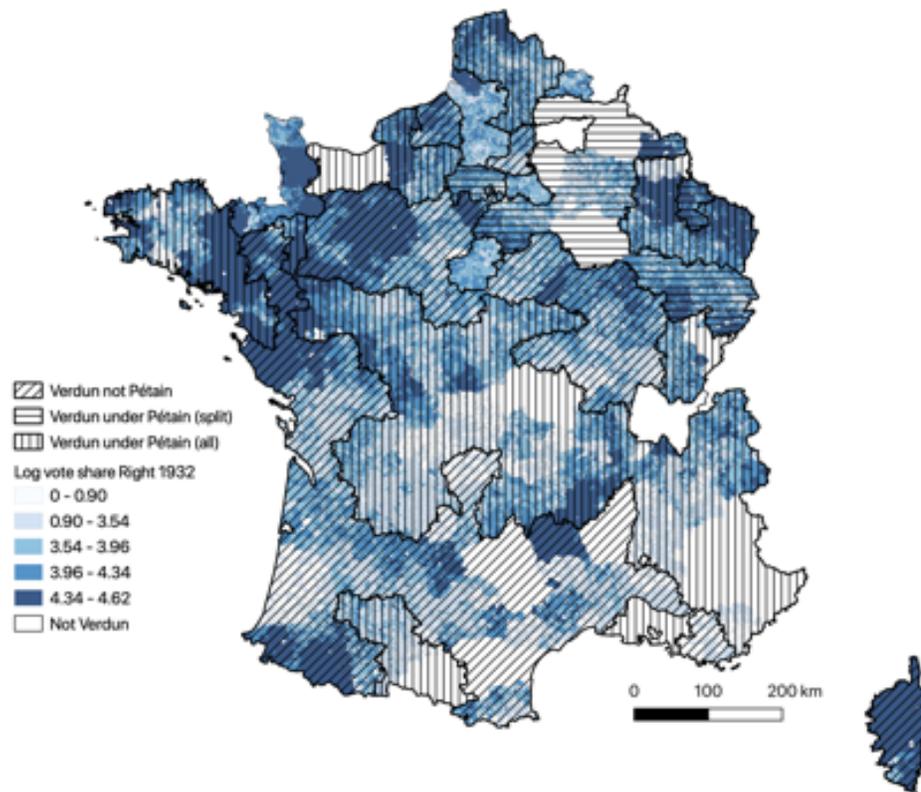
**Notes:** The figure shows coefficients and 95% confidence intervals in separate regressions in which we redefine the treatment status of municipalities that raised more than one regiment, when the rotation history of these regiments at Verdun-under-Pétain is different from one another (henceforth “split municipalities”). Our baseline estimate (top estimate reproduced here for comparison purposes) relies on the share of regiments that was treated. The second estimate from the top is the estimate we obtain when we simply exclude from the estimation sample all split municipalities (reducing the estimation sample to 30,344 as a result, with mean value of Verdun-under-Pétain: 0.50). The third estimate from the top defines a treatment dummy for Verdun-under-Pétain that takes value one if the share rotated at Verdun under Pétain is higher than or equal to one third, and zero otherwise (mean value of Verdun-under-Pétain: 0.55). The fourth and fifth estimate from the top define instead such a treatment dummy to take value one if the share rotated at Verdun under Pétain is higher than one half, and zero otherwise, excluding those exactly at one half (fourth estimate) or considering them as treated (fifth) (mean values of Verdun-under-Pétain: 0.49 and 0.53 respectively). The last estimate defines the treatment dummy to take value one if the share rotated at Verdun under Pétain is higher than (or equal) to two-thirds (mean value of Verdun-under-Pétain: 0.44). The specifications are identical to Column 9 of Table IV and include department fixed effects as well as controls for the natural logarithm of the 1911 municipal population, vote shares for the left and for the right in 1914, and municipal fatality death rate in WWI (as in Column 9 of Table IV). Standard errors are clustered at the regiment level. Horizontal bars indicate 95% CI.

Figure A6: Robustness to redefining the treatment status of municipalities that raised more than one regiment



**Notes:** The figure shows coefficients and 95% confidence intervals of regressing log. Turnout in the elections of 1914, 1924, 1932 and 1936 on exposure to Verdun-under-Pétain. All regressions at at the municipality level and include department fixed effects as well as controls for the natural logarithm of the 1911 municipal population, and municipal fatality death rate in WWI (as in Column 9 of Table IV). Standard errors are clustered at the regiment level.

Figure A7: Effects on Turnout



**Notes:** The map shows quintiles of the distribution of the log vote share for the right in the 1932 elections at the municipal level, overlaid with a municipality's regiments' combat experience in World War 1. Electoral return data at municipal level in 1932 combined with rotation history at Verdun (i.e. within 1914 borders) is available for 29,036 municipalities. NB: The observations are fewer for the 1932 elections than for the other legislative elections. For that year, the national archives lost the electoral results in departments whose first letter is A and B (See Appendix B).

Figure A8: Vote share for the right, 1932 legislative elections

## B Supplementary Appendix: Not Intended for Publication

### B.1 Forms of Collaboration in our Data

**Collaborationist political parties.** A range of political parties and organizations in France provided opportunities for different forms and intensities of collaboration. This diversity was in sharp contrast with other European fascist regimes, which tended to impose a unique Fascist party; and with other occupied countries, where political parties were not tolerated by the German occupant.<sup>1</sup> Collaborationist parties were most active in 1941-1942. They distributed newspapers, held meetings, and organized demonstrations. But they also engaged in spying, informing, denunciation, and violence against Jews and opponents, including the Resistance.

The two main collaborationist parties were the French Popular Party (PPF) and the National Popular Rally (RNP).<sup>2</sup> Both parties were created by two former Left-wing prominent politicians (respectively former number two of the Communist and Socialist parties), both heroic veterans of the first World War: Jacques Doriot and Marcel Déat.<sup>3</sup> Alongside them were parties that were direct emanations of the Right-wing fascist leagues of the 1930's, chief among which the Francist movement and the Revolutionary Social Movement.<sup>4</sup> More mainstream intellectuals joined the Groupe Collaboration, whose members promoted cultural exchanges with Germany and the advent of a New European order.

Such a wide political spectrum of collaborationist parties shows how people from all sides of the polarized and radicalized 1930s, rallied behind collaboration. All were united against the Republic, against Bolshevism, and against liberalism. Although critical of Vichy for what they judged a too tepid stance on collaboration, all the parties' leaders claimed Pétain's support (Burrin, 1996, p.382), and some, such as the leader of the RNP, accepted positions at Vichy.<sup>5</sup>

**Paramilitary Groups.** Immediately after the signature of the Armistice, Xavier Vallat, the state secretary in charge of veteran affairs grouped all Great War veteran organizations under the single umbrella of the *Legion Française des Combattants* (The Legion). Its statutes plainly stipulated the Legion was to substitute for all existing associations of veterans (Journal Officiel, Art. 5, 30 August 1940, p.4845). The Legion swore its allegiance to Marshal Pétain and was officially charged with the implementation of the "National Revolution". The role of the Legion, its Verdun roots, and the central influence of Pétain's prestige is clear: veterans "must form groups down up the uttermost village in order to have the wise counsels of their

---

<sup>1</sup>This was due in part to the fact that Vichy only ruled over part of France, and even there, Pétain did not encourage any particular political party.

<sup>2</sup>Respectively in French: "Parti Populaire Français" and "Rassemblement National Populaire". In the absence of our data, many estimates have tended to use very round numbers, placing total membership at between 40,000 and 50,000 for the PPF (Burrin, 1996, p. 417, 469), and between 20,000 (Burrin, 1996, p. 393) and 30,000 (Paxton, 2001, p. 253) for the RNP.

<sup>3</sup>An active combatant for the whole duration of the war, Déat had been awarded the highest French order of merit (the Legion d'Honneur) and received five bravery citations. Doriot, 4 years his junior, joined active combat in 1917 and was made prisoner. He was awarded the War Cross ["Croix de Guerre"] for valorous service. Doriot eventually joined the Eastern Front in the "Legion des Volontaires Français contre le Bolchevisme". He was killed by an Allied plane in Germany in 1945. After a short appointment in the Vichy government, Déat joined the SS, and fled to Germany and then Italy at the end of the War.

<sup>4</sup>Both movements had also been formed by WWI veterans, Marcel Bucard and Eugène Deloncle.

<sup>5</sup>As Burrin describes: "The Paris leaders were rivals, not opponents, extremists of Pétainism, not anti-Pétainists" (Burrin, 1996, p.383).

leader of Verdun heeded and carried out.”<sup>6</sup> However, the Legion never engaged in violent actions. This was the prerogative of two other groups, the *Service d’Ordre de la Legion* (SOL) and, later on, of the *Milice*.

To substitute for the Legion, which was seen as too ideologically disparate and hard to mobilise, the SOL was constituted in January 1942. It morphed into the *Milice* in January 1943, after fighting against the Allies in North Africa during Operation Torch. The SOL and the *Milice* were paramilitary organisations as well as a political movement<sup>7</sup>. The SOL and the *Milice* informed on, executed, or helped deport Jews, free masons, anybody suspected of Resistance as well as those seeking to escape the order to work in Germany under the Compulsory Labour Service. Historians believe 45,000 people volunteered for the *Milice* and the SOL (Paxton, 2001, p.298), and that among them 15 percent were women (Burrin, 1996).

The “Legion des Volontaires Français contre le Bolchevisme” was created in 1941 by the collaborationist parties to raise volunteers to fight alongside the Wehrmacht on the Eastern front, and was controlled by the collaborationist parties and the *Milice*. It was replaced in 1944 by the so-called “SS Charlemagne” (Waffen Grenadier Brigade of the SS Charlemagne).

**Nazi collaboration** An estimated total of 22,000 French people directly served Germany in combat or auxiliary units (Burrin, 1996, p.433). They joined the Gestapo or the Waffen-SS or joined the Wehrmacht on the Eastern front under the “Legion des Volontaires Français contre le Bolchevisme” or the SS Charlemagne division. Twice as many had volunteered but were not deemed fit for service, many of them veterans of the First World War who were too old. Pétain had actively encouraged them, by declaring in November 1941: “You are responsible for part of our military honour” (in Burrin, 1996, p.433).

Although this classification between political, paramilitary and Nazi collaboration was made by historians, in practice, the delimitations between these groups were porous and unclear. Political parties engaged in violent demonstrations and violent action, often alongside the SOL, the *Milice*, or French and German Gestapo members. The SOL and the *Milice* were originally intended as a unique political party, which would eventually absorb the collaborationist parties. They were armed by the SS. The “Legion des Volontaires Français contre le Bolchevisme” was created and controlled by collaborationist parties but fought under the Wehrmacht uniform. Hence, although useful to paint a rough picture of the facets of collaboration, we prefer to focus on specific groups in our analysis.

## B.2 Electoral data

To study the effect of combat exposure to Pétain on political preferences and to control for pre-trends, we collected, digitized, and consistently coded the results of all but two of the 24 legislative elections in France since 1914. In this Section, we provide institutional details on elections and political parties over that period. The French political system is characterized by a lot of entries and exits of parties, and parties regularly change their name. One of the main empirical challenge is therefore to classify the different political parties from the extreme-left to the extreme-right over such a long period of time. To do so, we rely mainly on Agrikoliansky (2016), Poirmeur (2014), and Haegel (2007) for the pre-WWII period; post-WWII data mainly

---

<sup>6</sup>Xavier Vallat, quoted in *D’Ordre du maréchal Pétain. Documents officiels réunis et commentés par Jean Thouvenin* (Paris, n.d.1940 in Paxton (2001), p.190).

<sup>7</sup>The political objectives of the SOL are set against: “bourgeois selfishness”, “egalitarianism”, “individualism”, “global capitalism”, as well as against “gaullist dissidence”, “bolshevism”, “the Jewish plague”, “freemasonry” and in favour of: “discipline”, “authority”, “truth”, “nationalism”, and “Christian civilisation” (21 points of the SOL, in Germain, p. 481).

come from Cagé (2020) and Bekkouche and Cagé (2018). Here, we briefly describe the data for three crucial time periods in our analysis: 1914, in order to control for pretrends; the interwar, when an alignment in political preferences along Pétain’s conservative right-wing agenda emerged; and the post World War II period, after the fall of the Vichy regime and the restoration of the French Republic.

Please note: the fact that there are more observations, for each of the elections, in the tables below than in the tables in the body of the paper, is due to the fact that for some large cities (such as Paris, but also Marseille, Lyon, Bordeaux, Toulouse, Nice, etc.), we collect the electoral data at the finest possible level we have and report the electoral results at a geographical level smaller than the commune. However, to perform the regression analyses in the paper, we need to collapse the electoral data at the commune level so as to match it with our other observables.

### B.2.1 The 1914 Elections

Elections took place in April 1914, three months before the outbreak of WW1.<sup>8</sup> The voting system was the “*scrutin uninominal à deux tours par arrondissements*”, a two-round system, and there were 586 electoral districts in Metropolitan France. 2,904 candidates ran in the first round of the elections.

We collect and digitize the 1914 electoral results at the municipality level (more than 34,000 municipalities) from the paper archives of the Interior Ministry.<sup>9</sup> Figure B1 shows an example of the data. As it appears on the picture, the Interior Ministry data only report the name of the candidates but not their political party. To obtain information on the political party of all the candidates, we digitize the official results at the district level (see Figure B2 for an illustration) and manually match the candidates using the district where they run and their name.

To classify the candidates, we mostly rely on Georges Lachapelle (“Les élections législatives des 26 avril et 10 mai 1914. Résultats officiels”), and rank the main parties as follows (from left to right) in 7 different categories:

1. Parti Socialiste Unifié (**SFIO**). It includes the Socialiste Unifiés and the Parti Ouvrier Révolutionnaire.
2. Républicain Socialiste (**REP-SOC**). It includes the Républicain Socialiste and the Socialistes indépendants.
3. Radical Unifié (**RAD-SOC**);
4. Radical Indépendant (**RAD-IND**). It includes the Radical Indépendant (ou Gauche Radicale)<sup>10</sup>, the Républicains indépendants and Républicain de gauche.
5. Parti Républicain Démocratique et Social (**PRDS**).<sup>11</sup> It also includes the Alliance Républicaine and the Fédération des gauches.<sup>12</sup>

---

<sup>8</sup>More precisely, the first round took place on April 26 1914 and the second round on May 10 1914.

<sup>9</sup>These results are available in the boxes C//7241 to C//7254 at the National Archives. To the extent of our knowledge, we are the very first to digitize these data.

<sup>10</sup>The Radical Indépendant splintered from other “Radicals” over the alliance with the Socialists.

<sup>11</sup>The name is “Parti Républicain Démocratique” from 1911 to 1917 – i.e. in 1914 – and then Parti Républicain Démocratique et Social (PRDS) from 1920 to 1926. Hence here, for the sake of clarity, we will use the same name in 1914 and 1924: PRDS.

<sup>12</sup>The “Fédération des gauches”, despite its name, was on the right and later formally joins the PRDS.

Figure B1: Example of the 1914 municipal-level election data

6. **Progressistes**. It includes the Progressistes and the Fédération républicaine.
7. **Action Libérale Populaire (ALP)**. It includes the Droite, the Action Libérale Populaire, and the Républicain Libéral.

The remaining candidates are classified in a “**Divers**” (Miscellaneous) category.

We also classify the candidates into five different Nuances: Left, Center left, Center right, Right and Divers. We include in the Right nuance the PRDS, the ALP and the Progressistes. We include in the Center-right nuance the RAD-IND . Under the Center-left umbrella, we include the RAD-SOC and the REP-SOC, and the SFIO is classified as Left. The remaining parties are classified in the “Divers” (Miscellaneous) nuance.

The “*Radical Unifié*” (RAD-SOC) came first in the 1914 elections. In Table B1 we report the vote share (popular vote) obtained by each party in the first round of the election, as well as summary statistics for the turnout rate.

### B.2.2 The Interwar Period: the 1924, 1932, and 1936 Elections

We focus here on the 1924, 1932 and 1936 elections. All these elections saw the victory of a left-wing coalition. The first “*Cartel des Gauches*”, an alliance between the Radical-Socialist Party and the SFIO (the French Socialist Party), as well as the independent radicals and the Socialist Republicans won the 1924 elections. The second *Cartel des gauches* won the 1932

**AIN (6 députés)**

**Bourg (1<sup>re</sup> circ.)** : i. 17.589; s. e. 13.467; s. 212

Pierre Goujon, *d. s. F. D. G.* 6.964 v. .... ÉLU  
 Chanel, *Rad. U.* ..... 5.084 v.  
 Odru, *P. S.* ..... 1.419 v.

**Bourg (2<sup>e</sup> circ.)** : i. 17.020; s. e. 14.531; s. 136

|                                     | 1 <sup>er</sup> Tour | 2 <sup>e</sup> Tour |
|-------------------------------------|----------------------|---------------------|
| Bozonnet, <i>d. s., Rad. U.</i> ... | 6.034 v.             | 6.121 v.            |
| Derognat, <i>Rad. Ind.</i> ...      | 3.888 v.             | 7.511 v. ÉLU        |
| Bourgoin, <i>Rép. lib.</i> ...      | 3.226 v.             | 16 v.               |
| Bardat, <i>P. R. D.</i> ...         | 1.174 v.             | 17 v.               |
| Perraton, <i>Progr.</i> ...         | 209 v.               |                     |
| Divers                              |                      | 4                   |

**Belley** : i. 23.193; s. e. 18.163; s. 143

Laguerre, *Rad. U.* ..... 9.833 v. .... ÉLU  
 Martelin, *P. R. D.* ..... 8.163 v.  
 Baussan, *F. D. G.* ..... 170 v.

**Gex** : i. 6.351; s. e. 3.576; s. 31

Cropel, *d. s., Rad. U.* ..... 3.631 v. .... ÉLU  
 Gros, *P. S.* ..... 545 v.

Figure B2: Example of the 1914 district-level electoral results we use to recover the political parties of the candidates

elections.<sup>13</sup> The 1936 elections saw the victory of a more radical left-wing alliance. For the first time, the communist party was included in the winning coalition. The victorious “*Front Populaire*” (Popular Front) consisted of the SFIO (Socialist Party), the Radical-Socialists, the Communist Party, as well as a number of other smaller parties on the left.

The Right gathered a number of parties over that period. Although fascist and extreme-right leagues were active during the interwar period, they rejected participation in elections, until the 1936 elections. The Parti Franciste and the Jeunesses Patriotes ran in the 1936 elections, but obtained a very low electoral score.

Uniquely, as for the 1914 elections, we are the very first to have collected the electoral results for the 1924, 1932, and 1936 elections at the municipality level, directly from paper-format archival data.<sup>14</sup> Figure B3 shows an example of these data for 1924.

<sup>13</sup>The main parties constituting this Cartel are, as in 1924, the “*Radicaux Indépendants*” (Independent Radicals), the “*Parti Républicain Socialiste*” (Republican-Socialist Party), the SFIO (the French Socialist Party), and the Radical Party.

<sup>14</sup>These results are available in the boxes C//10010 to C//10019 at the National Archives for 1924; and in the boxes C//10030 to C//10041 for 1932.

Table B1: 1914 legislative elections: Summary statistics

|                                  | Mean  | St.Dev | Median | P75  | Max |
|----------------------------------|-------|--------|--------|------|-----|
| <b>Vote share - Left</b>         |       |        |        |      |     |
| SFIO                             | 9.5   | 16.4   | 0.4    | 11.8 | 100 |
| <b>Vote share - Center left</b>  |       |        |        |      |     |
| REP-SOC                          | 3.6   | 13.3   | 0.0    | 0.0  | 100 |
| RAD-SOC                          | 28.6  | 29.7   | 24.0   | 51.6 | 100 |
| <b>Vote share - Center right</b> |       |        |        |      |     |
| RAD-IND                          | 11.8  | 23.6   | 0.0    | 8.5  | 100 |
| <b>Vote share - Right</b>        |       |        |        |      |     |
| PRDS                             | 20.5  | 29.5   | 0.0    | 39.1 | 100 |
| Progressistes                    | 9.3   | 21.1   | 0.0    | 0.0  | 100 |
| ALP                              | 12.8  | 23.4   | 0.0    | 18.4 | 100 |
| Vote share - Miscellaneous       | 3.8   | 14.3   | 0.0    | 0.0  | 100 |
| <b>Turnout</b>                   |       |        |        |      |     |
| Observations                     | 79.6  | 9.9    | 81.4   | 86.2 | 100 |
|                                  | 35285 |        |        |      |     |

**Notes:** This table provides summary statistics on the 1914 legislative elections results. An observation is a municipality. The different political parties are described in the text.

**The 1924 elections** The 1924 elections were held in May. The voting system was the “*scrutin mixte à un tour*”.<sup>15</sup> The “*scrutin mixte à un tour*” is a mixed-member voting system, combining multi-member majority and multi-member proportional ballot in only one election round, in the departmental framework. The department is the electoral district, with the election of one deputy for every 75,000 inhabitants; however, if there are more than 6 deputies to be elected, the department is divided into constituencies which must elect at least 3 deputies each. A minimum floor is also established: each department must have at least 3 deputies.

Candidates must organize themselves into lists. The number of candidates per list cannot exceed the number of deputies to be elected in the constituency. Isolated candidates are also allowed, if they have the support of 100 voters in the constituency. It is forbidden to stand for election in more than one constituency. In practice, majority voting takes precedence over proportional representation as any candidate who obtains an absolute majority is declared elected within the limit of the seats to be filled. The seats are, in each list, allocated to the candidates who have won the most votes. If seats remain to be filled, only then the ballot becomes proportional. The electoral quotient is determined by dividing the number of voters by that of the deputies to be elected; and the average of each list by dividing the total number of votes obtained by the number of candidates. Each list is allocated as many seats as its average contains the electoral quotient. For candidates to be elected, they must have won a number of votes greater than half the average number of votes on the list of which they are part. In the event of an equal number of votes, the oldest candidate wins.

A number of different lists run during the 1924 elections. The archival data, as illus-

<sup>15</sup>This voting system has been used exceptionally two times under the Third Republic (in 1919 and 1924) following the enactment of the law of July 12, 1919. To describe this system, we rely here on Chevallier and Mayeur (2009).

Figure B3: Example of the 1924 municipal-level election data

trated in Figure B3, only provides information on the name of the list; given candidates from the same party gather together on different lists depending on the districts, to classify the lists, we complete the Interior Ministry information with information collected from Georges Lachapelle (*“Elections législatives du 11 Mai 1924, illustrated in Figure B4).*

The main political forces running are (from the left to the right):

1. The “Liste du Bloc Ouvrier Paysan-Parti communiste” (**BOP**). This list is formed of the Communist Party and of some members of the Socialist Party.
2. The “*Liste du parti socialiste*” (**SFIO**) .
3. The “*Liste Républicaine Socialiste*” (**REP-SOC**).
4. The “*Liste radicale-socialiste*” (**RAD-SOC**).
5. The “*Républicains radicaux nationaux*” or dissidents (**REP-RAD**).
6. The “*Liste des républicains de gauche*” (**RG**).<sup>16</sup>
7. The “*Entente Républicaine Démocratique*” (**ERD**).
8. The “**Conservateurs**”.

<sup>16</sup>This list is on the right despite the name.

Candidates from smaller parties on the Left are classified as “Miscellaneous left”. The remaining candidates are classified in a “**Divers**” category. Table B2 provides summary statistics at the municipal level on these elections.<sup>17</sup>

| Liste du Cartel des gauches.                                                  |                  |
|-------------------------------------------------------------------------------|------------------|
| Blanc (Antoine), prop., Rad. Soc.                                             | 38.291 ÉLU. Q.   |
| Fribourg, professeur, Rad. Soc....                                            | 38.335 ÉLU. Q.   |
| BOCCARD, médecin, Rad. Soc.....                                               | 37.895 ÉLU. F.M. |
| NICOLLET, médecin, Soc.....                                                   | 37.482 ÉLU. F.M. |
| PARINOT, surveill. des P.T.T., Soc.                                           | 37.324           |
| TOTAL .....                                                                   | 189.327          |
| MOYENNE .....                                                                 | 37.865           |
| Liste du Parti communiste.                                                    |                  |
| Nicod, publiciste, Com.....                                                   | 8.033            |
| BOUYEYRON, cheminot.....                                                      | 7.243            |
| DULAC, ouvrier métallurgiste....                                              | 7.247            |
| GRUTTEY, imprimeur.....                                                       | 7.232            |
| NICOLLET, ouvrier filériste.....                                              | 7.169            |
| TOTAL .....                                                                   | 36.924           |
| MOYENNE .....                                                                 | 7.384            |
| R. P. : Union rép., 2 sièges au lieu de 1 ; Cartel,<br>3 sièges au lieu de 4. |                  |
| AISNE (8 Députés)                                                             |                  |
| Inscrits .....                                                                | 134.957          |
| Votants.....                                                                  | 116.581          |
| Blancs et nuls .                                                              | 2.135            |
| Suffrages expr..                                                              | 114.446          |
| Majorité absol..                                                              | 57.224           |
| Quotient élect..                                                              | 14.305           |

| Liste d'Union républicaine nationale.                     |                  |
|-----------------------------------------------------------|------------------|
| Ferry, agriculteur (E. R. D.) ...                         | 40.463 ÉLU. F.M. |
| Bisart de Verneuil, propriétaire ..                       | 40.638 ÉLU. Q.   |
| Dojardins, avocat .....                                   | 40.989 ÉLU. Q.   |
| VILLEMANT, négociant .....                                | 39.563 ÉLU. F.M. |
| LANGOWSKI, ingénieur-chimiste..                           | 38.646           |
| BOUXIN, notaire honoraire .....                           | 38.564           |
| DESSE, ingénieur .....                                    | 38.904           |
| FERTÉ, agriculteur.....                                   | 38.091 ÉLU. F.M. |
| TOTAL .....                                               | 316.758          |
| MOYENNE .....                                             | 39.594           |
| Liste du Bloc des Gauches.                                |                  |
| Accomley, anc. off., Rad. soc..                           | 35.907 ÉLU. Q.   |
| Bisguier, publiciste, Soc.....                            | 35.904           |
| DOUCEDAME, avocat, Rad. soc..                             | 35.937           |
| GUERNUT, avocat, Soc .....                                | 35.566           |
| LAMARRE, nég. en vins, Rad. soc.                          | 35.593           |
| MARQUENT, avocat, Rad. soc. ...                           | 35.942 ÉLU. Q.   |
| NANQUETTE, industriel, Rad. soc.                          | 35.347           |
| TRICOTTEAUX, rep. de commerce,<br>Soc. (S. F. I. O.)..... | 35.366           |
| TOTAL .....                                               | 285.112          |
| MOYENNE .....                                             | 35.639           |

Figure B4: Example of the 1924 district-level electoral results we use to recover the political parties of the candidates

Just as for 1914, we also classify the candidates into Nuances, including for 1924 the Extreme left category (we rely on Guillaume, 1998; Dubasque and Kocher-Marboeuf, 2014). We include in the Right category the ERD and the Conservateur. The REP-RAD and the RG are classified as Center right. The Center-left category gathers the RAD-SOC and the REP-SOC, the Left the SFIO, and the Extreme left the BOP.

**The 1932 elections** The 1932 (as well as the 1936 elections) took place with the “*scrutin uninominal majoritaire à deux tours*” (two-round system). The constituencies are single-member constituencies. If a candidate obtains the absolute majority in the first round, as well as a minimum of 25% of all the registered voters, then she is elected. If no candidate obtains the absolute majority in the first round, then there is a second round where the two most-voted candidates and the candidates who obtained more than 12.5% of the registered voters can take part. The candidate who obtains most votes win.

Candidates in the legislative elections of 1932 are often difficult to classify, especially candidates from the right half of the political spectrum, who are often characterized more by

<sup>17</sup>Note that, given the electoral system used – the “*scrutin mixte à un tour*” where, as described above, citizens were given as many votes as there were MPs to elect, and where they could distribute those votes as they wished among the various candidates on all lists –, one cannot compute as usual the vote share obtained by each list using the number of votes cast.

Table B2: 1924 legislative elections: Summary statistics

|                                  | Mean  | St.Dev | Median | P75  | Max |
|----------------------------------|-------|--------|--------|------|-----|
| <b>Vote share - Extreme left</b> |       |        |        |      |     |
| BOP                              | 5.3   | 8.5    | 2.1    | 6.1  | 98  |
| <b>Vote share - Left</b>         |       |        |        |      |     |
| SFIO                             | 24.5  | 24.6   | 16.4   | 44.4 | 100 |
| Miscellaneous left               | 0.2   | 1.7    | 0.0    | 0.0  | 89  |
| <b>Vote share - Center left</b>  |       |        |        |      |     |
| RAD-SOC                          | 12.2  | 20.5   | 0.0    | 18.7 | 100 |
| REP-SOC                          | 1.5   | 8.2    | 0.0    | 0.0  | 100 |
| <b>Vote share - Center right</b> |       |        |        |      |     |
| REP-RAD                          | 2.0   | 8.6    | 0.0    | 0.0  | 100 |
| RG                               | 13.9  | 20.3   | 0.0    | 24.9 | 100 |
| <b>Vote share - Right</b>        |       |        |        |      |     |
| ERD                              | 35.9  | 26.9   | 35.0   | 54.9 | 100 |
| Conservateur                     | 1.8   | 8.9    | 0.0    | 0.0  | 100 |
| Vote share - Miscellaneous       | 0.7   | 5.4    | 0.0    | 0.0  | 94  |
| <b>Turnout</b>                   | 84.4  | 8.0    | 85.5   | 89.5 | 100 |
| Observations                     | 35560 |        |        |      |     |

**Notes:** This table provides summary statistics on the 1924 legislative elections results. An observation is a municipality. The different political parties are described in the text.

their opposition to the three major parties and the left and centre-left (PCF, SFIO, Radicals) than by their membership of a particular party, especially since the boundaries between the many right-wing parliamentary organizations and groups are often quite fluid and frequently change during the course of a legislature. Based on Lachapelle’s classifications, the main parties are, from the extreme-left to the right:

- The Communist party (**PCF**);
- The Socialist party (**SFIO**);
- The Républicains Socialistes (**REP-SOC**);
- The Radicaux Socialistes (**RAD-SOC**);
- The Républicains de gauche (**AD-RG**) (that are part of the “Alliance Démocratique”);
- The Radicaux Indépendants (**AD-IND**) (which also include candidates from the “gauche radicale”, the “gauche sociale et radicale”, and the “indépendants de gauche”), that are part of the “Alliance Démocratique”;
- The Parti Démocrate Populaire (**AD-PDP**) (Christian-democrats), that is also part of the “Alliance Démocratique”;
- The Union Républicaine Démocratique (**FR-URD**), that also includes candidates presented by the Fédération Républicaine.

Besides, there were also a number of “Miscellaneous right” candidates, mostly under the label “Conservative”, and as well as “Miscellaneous left” candidates. Table B3 provides summary statistics at the municipal level on the 1932 elections.

Table B3: 1932 legislative elections: Summary statistics

|                                  | Mean  | St.Dev | Median | P75  | Max |
|----------------------------------|-------|--------|--------|------|-----|
| <b>Vote share - Extreme left</b> |       |        |        |      |     |
| PCF                              | 4.2   | 7.7    | 1.4    | 4.4  | 93  |
| <b>Vote share - Left</b>         |       |        |        |      |     |
| SFIO                             | 16.1  | 19.8   | 7.1    | 26.4 | 100 |
| Miscellaneous left               | 0.2   | 2.4    | 0.0    | 0.0  | 68  |
| <b>Vote share - Center left</b>  |       |        |        |      |     |
| REP-SOC                          | 4.0   | 12.6   | 0.0    | 0.0  | 97  |
| RAD-SOC                          | 23.2  | 24.7   | 16.0   | 42.1 | 100 |
| <b>Vote share - Center right</b> |       |        |        |      |     |
| AD-RG                            | 17.9  | 25.4   | 0.0    | 35.5 | 100 |
| AD-IND                           | 15.6  | 24.7   | 0.0    | 26.3 | 100 |
| <b>Vote share - Right</b>        |       |        |        |      |     |
| AD-PDP                           | 3.6   | 12.7   | 0.0    | 0.0  | 100 |
| FR-URD                           | 12.7  | 23.6   | 0.0    | 16.4 | 100 |
| AGR                              | 1.3   | 5.8    | 0.0    | 0.0  | 84  |
| Miscellaneous right              | 0.8   | 6.2    | 0.0    | 0.0  | 99  |
| Vote share - Miscellaneous       | 0.5   | 6.7    | 0.0    | 0.0  | 100 |
| <b>Turnout</b>                   |       |        |        |      |     |
|                                  | 85.0  | 8.1    | 86.3   | 90.1 | 100 |
| Observations                     | 31828 |        |        |      |     |

**Notes:** This table provides summary statistics on the 1932 legislative elections results. An observation is a municipality. The different political parties are described in the text. The number of observations is lower for the 1932 elections than for the other legislatives elections. It is due to the fact that for that year, the national archives have lost the electoral results in the departments whose first letter is A and B (i.e. Ain , Aisne, Allier, Alpes Maritimes, Ardèche, Ardennes, Ariège, Aube, Aude, Aveyron, and Basses Alpes).

**1936 Elections** The 1936 legislative elections took place on 26 April and 3 May, to fill 618 seats in the Chamber of Deputies. There were won by the “*Front Populaire*” (Popular Front) composed of the SFIO, the RAD-SOC, the Communist Party (PCF), as well as a number of other smaller parties on the left. The voting system was similar to the one used in 1932 (single-member, two-round ballot). The “*Front Populaire*” fell in 1938, when the RAD-SOC forced the SFIO out of cabinet, the Communists broke with the coalition over the vote for the Munich agreement (which the Communists voted against). A general strike ensued in 1938, which the RAD-SOC crushed, before joining a political alliance with conservative right-wing parties, the AD and the URD.

In the continuation of 1932, candidates in the 1936 elections, particularly in the opposition, on the right, are often difficult to classify. We adopt the following classification, from the extreme-left to the right:

- The Communist party (**PCF**);

- The Socialist party (**SFIO**);
- The Union Socialiste Républicaine (**USR**);
- The **RAD-SOC**;
- The Alliance Démocrate (**AD**);
- The Fédération Républicaine - Union Républicaine et Démocratique (**FR-URD**);
- The Parti épublicain National (**PRN**);
- The Parti **Franciste**.

Table B4 provides summary statistics at the municipal level on the 1936 elections.

Table B4: 1936 legislative elections: Summary statistics

|                                   | Mean  | St.Dev | Median | P75   | Max |
|-----------------------------------|-------|--------|--------|-------|-----|
| <b>Vote share - Extreme left</b>  |       |        |        |       |     |
| PCF                               | 8.56  | 11.4   | 4.23   | 11.36 | 90  |
| <b>Vote share - Left</b>          |       |        |        |       |     |
| SFIO                              | 16.66 | 18.6   | 9.14   | 28.11 | 100 |
| Miscellaneous left                | 0.21  | 2.7    | 0.00   | 0.00  | 73  |
| <b>Vote share - Center left</b>   |       |        |        |       |     |
| USR                               | 6.62  | 15.1   | 0.00   | 1.57  | 100 |
| RAD-SOC                           | 19.14 | 21.2   | 12.37  | 34.63 | 100 |
| <b>Vote share - Center right</b>  |       |        |        |       |     |
| AD                                | 26.83 | 27.4   | 21.43  | 46.34 | 100 |
| FR-URD                            | 0.28  | 2.6    | 0.00   | 0.00  | 93  |
| PRN                               | 15.91 | 25.2   | 0.00   | 28.44 | 100 |
| <b>Vote share - Right</b>         |       |        |        |       |     |
| AGR                               | 1.95  | 8.4    | 0.00   | 0.00  | 100 |
| Miscellaneous right               | 2.18  | 10.1   | 0.00   | 0.00  | 100 |
| <b>Vote share - Extreme right</b> |       |        |        |       |     |
| Franciste                         | 0.04  | 0.8    | 0.00   | 0.00  | 53  |
| Vote share - Miscellaneous        | 1.62  | 9.8    | 0.00   | 0.00  | 100 |
| <b>Turnout</b>                    | 84.85 | 7.3    | 85.83  | 89.47 | 100 |
| Observations                      | 36903 |        |        |       |     |

**Notes:** This table provides summary statistics on the 1936 legislative elections results. An observation is a municipality. The different political parties are described in the text.

### B.2.3 The Post-World War 2 Legislative Elections

To investigate the long-run consequences of the exposure to Pétain, we gather the results of the post-WW2 legislative elections. Under the Fourth and the Fifth Republic, legislative elections in France were supposed to take place every five years. However, given the executive

power to dissolve the National Assembly – which happened a number of times under the Fourth and the Fifth Republic – the time interval between two legislative elections in our sample can be shorter. Between 1945 and 2017, 18 legislative elections took place.<sup>18</sup> Data for these elections are from Cagé (2020) and Bekkouche and Cagé (2018).

The wartime period marks an almost wholly clean break with the prewar party system: in the aftermath of WW2, the political landscape is upside down and the ratio of power is completely modified, in particular regarding political parties on the right. In striking contrast with the interwar period, the Right held a large electoral advantage until the 1980s. As for the extreme right, the history of the French extreme-right is the one of splinter groupuscules that are marginal in the political life (Agrikoliansky, 2016)<sup>19</sup> until the first electoral success of the National Front in 1983.

### **B.3 World War 2 Combat Exposure and Resistance Data**

We use several other datasets that capture the other dimensions of French history during WWII beyond collaboration, and in particular data on combat intensity in 1940 and 1944 and on the Resistance.

#### **B.3.1 Combat in 1940**

We digitized and geocoded data on the battles that took place in France from the maps of the *The West Point Atlas of American wars*. The so-called “Battle of France” only lasted six weeks (from May 1940 to June 1940). We construct measures of the days of combat at a given point, and we aggregate at the municipality level. Figure B5 below shows the resulting heat map of combat intensity across France. The mean number of days of combat in a given municipality in 1940 was 4.47 days, and the maximum 23 days. The delimitation of the demarcation line was, to some extent, determined by the advance of German troops, as well as by economic consideration, with major economic resources and railway lines in the occupied zone. Accordingly, the mean combat intensity is much higher in the occupied zone (6.39 days) compared to the Vichy-controlled area (1.27 days).

---

<sup>18</sup>In 1945, 1951, 1956, 1958, 1962, 1967, 1968, 1973, 1978, 1981, 1986, 1988, 1993, 1997, 2002, 2007, 2012, and 2017.

<sup>19</sup>The only success – the one of the “Poujadisme” in 1956 – is short-lived.

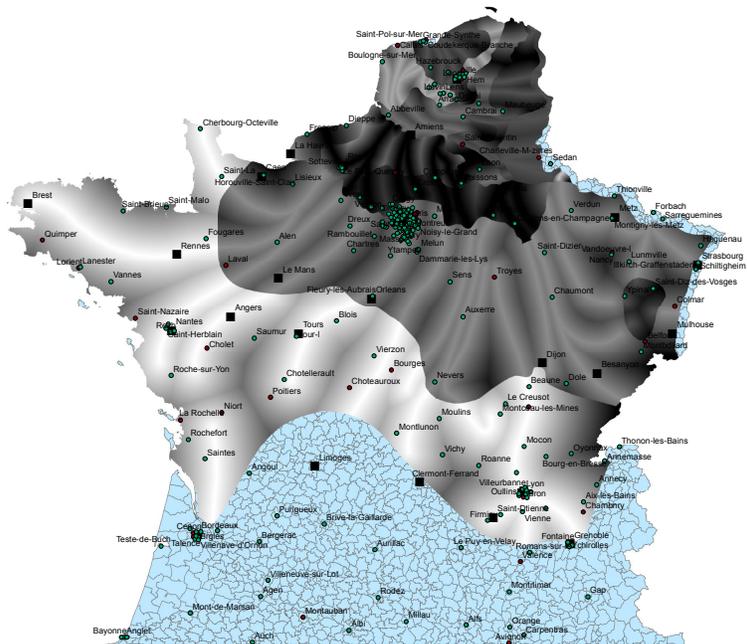


Figure B5: Heat map of combat intensity in 1940. Own calculations based upon weekly German individual unit movements derived from the *The West Point atlas of American wars*.

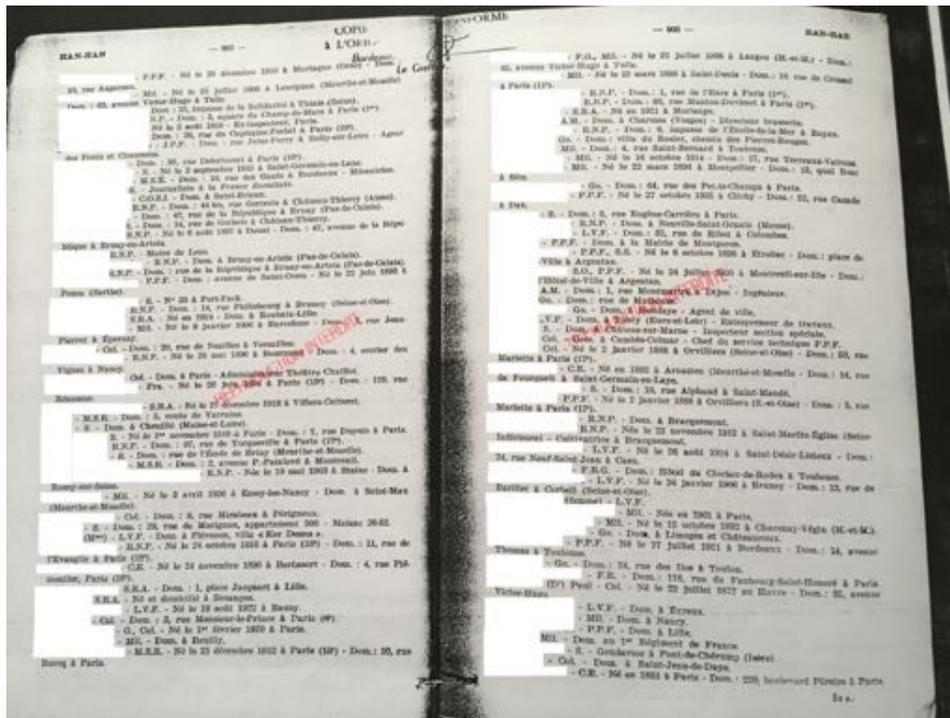


Figure B6: Example page from the secret list of collaborators collected in 1944 and 1945 under the supervision of Colonel Paul Paillolle, the head of French army intelligence at the end of the war.



Figure B7: Referendum on “If France had to choose a dictator, who would you pick?” in the “Petit Journal” newspaper, on 5 December 1934

AMBASSADE DE FRANCE 22 X<sup>bre</sup> 1939  
EN ESPAGNE

R Mon cher Héring

Bien! Paris a un gouverneur  
digne d'elle. La guerre, ou  
plutôt l'état de guerre,  
va devenir très pénible  
pour l'arrière. Celui des  
deux partenaires qui conservera  
le meilleur moral gagnera  
la guerre. Vous avez su  
montrer dans plusieurs  
circonstances une attitude  
ferme; continuez et débar-  
rasser Paris des Communistes.  
Vous avez déjà fait du  
bon travail; les gens avisés  
sont contents de vous voir  
au poste où vous avez été

Figure B8: Letter from Pétain, then ambassador to Spain, to General Héring, upon Héring's nomination as military commander of Paris, 22 December 1939.

Pétain writes: "My dear Héring, Finally! Paris has a governor who is worth her. The war, or rather the state of war, is about to become very uncomfortable for the back. The one of the two partners who keeps better morale will win the war. You have shown in several circumstances a firm attitude, go on and keep ridding Paris of the Communists. You already have done a good job, the people in the know are glad to see you in this position" (translation from the Authors).

## References

- Agrikoliansky, É**, *Les partis politiques en France - 3e édition* Science politique, Armand Colin, 2016.
- Bekkouche, Yasmine and Julia Cagé**, “The Price of a Vote: Evidence from France, 1993-2014,” CEPR Discussion Papers 12614, C.E.P.R. Discussion Papers 2018.
- Burrin, Philippe**, *Living with Defeat: France under German Occupation, 1940-1944*, Arnold: London, Sydney, Auckland, 1996.
- Cagé, Julia**, “Media Competition, Information Provision and Political Participation: Evidence from French Local Newspapers and Elections, 1944-2014,” *Journal of Public Economics*, 2020.
- Chevallier, J J and J M Mayeur**, *Histoire des institutions et des régimes politiques de la France de 1789 à 1958* Campfire graphic novels: Classic, Dalloz, 2009.
- Dubasque, François and Eric Kocher-Marboeuf**, *Terres d’élections : Les dynamiques de l’ancrage politique (1750-2009)*, Rennes: Presse Universitaires de Rennes, 2014.
- Guillaume, Sylvie**, *Dictionnaire des parlementaires d’Aquitaine sous la Troisième République*, Presses universitaires de Bordeaux, 1998.
- Haegel, F**, *Partis politiques et système partisan en France* Fait politique, Sciences Po, 2007.
- Paxton, Robert**, *Vichy France: Old Guard and New Order, 1940-1945*, Columbia University Press: New York, 2001.
- Poirmeur, Yves**, *Les partis politiques: Du XIXe au XXIe siècle en France*, LGDJ, 2014.