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

Julia Cagé[1], Anna Dagorret[2], Pauline Grosjean[3], and Saumitra Jha[4]

[1]Sciences Po Paris and CEPR
[2,4]Stanford Graduate School of Business
[3]University of New South Wales

March 1, 2020

Abstract

To what extent can heroes coordinate and legitimize otherwise strongly- proscribed and potentially repugnant political behavior? In this paper, we exploit the purposefully arbitrary *Noria* rotation of French regiments to measure the legitimizing effects of *heroic* human capital, gleaned through exposure to the pivotal Battle of Verdun under General Philippe Pétain in 1916. We wed this with a unique newly declassified dataset of 97,242 individual collaborators with the Nazis collected by French army intelligence in 1945 to show that, during the Pétain-led Vichy regime (1940-44), municipalities that raised troops that served under Pétain at Verdun later housed more collaborators with the Nazis than otherwise similar municipalities. Residents of these municipalities were 5 to 10% more likely to join Fascist political parties or paramilitary groups that conducted the internal repression of the regime against Jews and resistants, and to directly join German military units. We interpret these results as reflecting the role that Verdun played in generating both credentials for leadership and organizational capacity that legitimized otherwise proscribed values, forging political identities that proved durable in explaining the Left-Right divide in France throughout much of the post-war period, and was particularly salient in times of social and political crisis.

Keywords: Heroes, Leaders, Democratic Values, Autocracy, Voting
JEL: D74, N44.

* *julia.cage@sciencespo.fr*; *dagorret@stanford.edu*;*p.grosjean@unsw.edu.au*; *saumitra@stanford.edu*. We are grateful to seminar participants at the Milan Labour Lunch Seminar, at Stanford GSB and at UCLouvain, and to conference participants at the Stanford PE Mini-Conference, the Stanford Undergraduate Research Seminar, the Deakin Workshop on Natural Experiments in History, the LSE Interwar Workshop, and the 2019 ASREC Conference. We thank Dominique Lormier for helping us with the collaboration files. Alvaro Calderon, Jeanne Dorlencourt, Morgane Fridlin, and Paul Gioia provided outstanding research assistance. This project received Ethics Approval from UNSW (HC190869). All errors remain our own.

"J'ai fait Verdun." [I did Verdun.]

"In our old age we'd be able to say to our families, and to young children being taught the Battle of Verdun, that we were there. And if we've seen such things, ... people will look at us in amazement ..."- Marcel Dupont, Lieutenant, 7th Chausseurs, *En Campagne: L'attente*, 1918, cited in Ousby (2007)[p.7]

"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."- 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, committed suicide. The French Parliament voluntarily ended its own sovereignty, and with it the Third Republic, by voting full powers to Marshal Pétain, an 84-year old military officer credited with saving France during the Battle of Verdun in the First World War. Pétain established an authoritarian, conservative, and repressive regime that would collaborate with Nazi Germany until France's liberation by the Allies in June 1944. Over that period, more than 97,242 French individuals would subsequently 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, indeed arguably was in part also a symptom, of an underlying process that had led to an undermining of democratic values.[1] 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 a 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 heroic credentials play a role in legitimizing otherwise proscribed and repugnant, extreme, anti-democratic political preferences? How is personal attachment to a hero formed, and how durably can it shape political choices? In this paper, we measure the effects of *heroic* human capital– encompassing both the credential that heroic

[1]The remarkable tenacity that French soldiers had displayed in spite of devastating losses in the First World War contrasts with the collapse of French arms in the Second. For example, during the similarly grim crisis of September, 1914, with German vanguards approaching the suburbs of Paris, the French leader on the spot, Ferdinand Foch famously cabled headquarters: *Mon centre céde, ma droite recule. Situation excellente, j'attaque.*[My center is giving way, my right is in retreat. The situation is excellent. I attack.]". More than 1.3 million French soldiers died in WWI compared with 218,000 in WWII. The former represented around 7% of the French male population.

acts provide in acting as a costly signal of leadership type and the actual organizational skills acquired through learning by doing – in legitimizing and coordinating political action. Our setting, 1940s France, provides a very useful laboratory for understanding the political economics of heroism. Almost by definition, heroes engage in *patriotic* acts, deemed pro-social in most societies, making it hard to distinguish heroic legitimization and endorsement of political activities with their inherent social desirability. Yet in the 1940s, French men and women were asked by the great hero of Verdun, whose patriotic credentials could not be questioned, to confront an abrupt revocation of the nation's long-standing democratic institutions, to collaborate with an oppressive foreign regime and to forsake France's historic democratic values.[2] Our setting allows us to examine which individuals choose to follow a hero politically, and the extent to which this influence is disproportionately transmitted through others with heroic credentials and their networks to local communities.

In particular, we exploit an 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 1940-1945. 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 the level of France's 33,721 municipalities. This data set includes unique individual data on more than 97,242 collaborators that we hand-coded from a 1945 French intelligence report that had subsequently gone missing and has been only recently declassified.

We first document how the French army adopted a systematic rotation system, the *Noria*, that was based upon the military need to maintain inter-changeability of line regiments, and was aimed to rest troops from *L'enfer de Verdun*, rather than on specific characteristics of their home communities. 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 characteristics to other municipalities, both within the same department and more generally. These characteristics include not only their demographics and pre-1914 political leanings but also the regiment-level casualties they endured in the First World War. We next show, however, that during the Second World War, residents of municipalities that served under Petain at Verdun were 5 to 10% more likely to join fascist political parties or paramilitary groups that conducted the internal repression of the regime against Jews and resistants, and to directly join German combat or auxiliary units. These municipalities were also 10% less likely to raise members of the French resistance during the war. In contrast, we do not find these effects for regiments that served at Verdun outside of the period of

[2]Even the rallying cry of the Great Revolution that had long been the motto of Republican France: *Liberte, Fraternite, Egalite* was banned in 1940 in favor of *Travail, Famille, Patrie* [Work, Family, Fatherland].

Pétain's generalship, even in the immediate month following his replacement at Verdun, or in municipalities that happen to be geographically just across the border of the military catchment areas of regiments that served at Verdun under Pétain. We also observe no effect on collaboration of home regimental exposure to the other major battles of the First World War, such as the Marne in 1914, the Somme in 1916, or the Chemin des Dames in 1917.

We further find that these effects are attenuated among municipalities that raised regiments that suffered more fatalities *after* the battle of Verdun (but not before), suggesting that it was that the surviving soldiers themselves who were responding to and bringing back the treatment. We also find an additional effect in municipalities whose regiments had served the longest under Pétain, even before Verdun. However, these effects, tied to the heroic veterans themselves, only explain paramilitary collaboration, which was strongly grounded in veterans circles and swore its allegiance to Pétain. They do not explain the Pétain exposure effect on other forms of collaboration, such as engagement in collaborationist political parties, or direct Nazi collaboration. To rationalize those, we document the effect of exposure to Pétain at Verdun on political preferences, which started materializing even before the Second World War. Even though Pétain assumed no major political role in the inter-war period, he was already a deeply popular heroic figure[3] and widely recognized as a right-wing, conservative figure. We observe that municipalities whose regiments served under Pétain started to vote more for the right in the 1932 and 1936 elections. These effects also appear durable after the war in terms of shaping support for right wing parties, and diminishing support for those on the left up until the 1980s. These effects are particularly accentuated during years of social and political crisis, such as the threat of Algerian independence in 1958, massive social unrest in 1968, or the coming to power of the first Socialist president of the Fifth Republic in 1981.

We interpret these findings as reflecting the role played by exposure to Verdun in creating a network of individuals, tied to Pétain, who all shared heroic credentials. Heroic credentials can provide a strong, often tragically costly, signal of an individual's *patriotic* type, by which we mean a agent relatively more willing to forego private interests in the interests of the nation. This credential can enable war heroes, whose patriotism cannot be questioned, to adopt and support otherwise highly-proscribed and potentially repugnant policies relative to other public figures, whose type is less clear. While often such heroes can use this credential in a pro-social manner, such as to pursue peace, in our example, the war hero, Pétain, also packaged peace with a range of extreme racist and dictatorial policies aimed at 'national renewal'. His decisions, which dramatically challenged France's institutions and its democratic traditions, along with our unique dataset of collaboration, help us to better isolate the role of heroism in legimitizing otherwise proscribed and repugnant political behaviour.

[3]Even Léon Blum, the Jewish socialist politician and Prime Minister in the Left Popular Front government in 1936-37 called Pétain France's "noblest and most humane soldier."

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 Petain's legimitization of anti-democratic values on France as a whole, we can compare which municipalities were more responsive to his message. Our results suggest that Pétain's legimitizing authority was relatively stronger among those communities home to the regular citizen-soldiers who were themselves heroes of Verdun and directly linked through shared experience with Pétain himself, the *poilu* [the shaggy ones]. This appears to reflect not only their relative willingness to *follow the leader* in his political views, but also in their ability sway others around them.[4]

Further, as we show, the effects on political preferences appear durable, even after the collaborationist regime would fall, extreme right wing parties were banned, and Pétain himself would be convicted of high treason.[5] The fact that support for those right-wing parties that remained in municipalities exposed to Pétain at Verdun tended to be particularly pronounced in times of political crisis in the post-war period, hints at how views legitimized through exposure to heroes can at times also lead to a durable affinity with dictatorial conservatism.

To the best of our knowledge, our paper is the first to measure the role of heroes in legitimizing previously proscribed and repugnant 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 Ramayana and the Romance of the Three Kingdoms to the *Band of Brothers* and modern Hollywood franchises, stories of heroism, particularly forged in war, are ubiquitous across cultures.

Yet, measuring the effects of heroism and the mechanisms through which it operates has thusfar been very difficult. This is because 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 which enable their heroism. Further, heroic narratives are also often shaped after the fact 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 that *did Verdun*. We are able to exploit a setting where the heroes of the First World War were themselves connected to a leader on the wrong side of history, widely perceived as a *villain*, of the Second 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. By

[4]See e.g. Lenz (2012) on how party leaders can sometimes change the policy preferences of those who identify with that party in the US.

[5]Pétain would die in prison in 1951. His deputy, Pierre Laval, would be executed, along with a number of other high ranking Vichy ministers.

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, and more pertinent to our case, the legitimacy of democratic elections (Levi et al., 2009). Thus, as we discuss below, depending on the context, heroes can become potent champions of democracy and freedoms, but also, as in our case, potentially their greatest challengers.

Heroic acts can not only provide a credential for adopting more radical political positions, but also for directly assuming the role of leadership itself. Thus our paper links to emerging literatures measuring the effects of leadership (e.g. Bertrand and Schoar, 2003; Jones and Olken, 2005), on the aftermath of conflict, and the determinants of declines in democratic values and political extremism more generally.[6]

Arguably the closest works to ours are by Dippel and Heblich (2018) and Jha and Wilkinson (2012),2019. Dippel and Heblich (2018) compare American towns where exiled former leaders of the failed 1848 revolutions in Germany chose to settle relative to otherwise similar towns, and find that the towns with more leaders were more likely to develop local Turner societies, open German newspapers and to mobilize more volunteer troops in the American Civil War. A strength of their work is that it overcomes the reflection problem— that leaders emerge endogenously from their communities— by analyzing a setting where the leaders had already emerged elsewhere.[7] Our setting also allows us to both exploit an arbitrary process which credentializes heroism and, with it a specific type of leadership, but also to more 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 those that acquire this heroic credential. Our unique setting also allow us to distinguish between both ideological effects and effects through the network of individuals with heroic credentials.

We also build on Jha and Wilkinson (2012), who use a similar identification strategy to ours– the quasi-random assignment of Indian army battalions to different combat experiences in the Second World War– to measure the effects of combat exposure on public goods provision and ethnic cleansing in the battalions' home districts during the Partition of South Asia. Jha and Wilkinson (2019) further exploit the arbitrary assignment of French regiments to serve

[6]The many ways through which leaders can influence individuals actions have been explored in an extensive, though largely 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 (Acemoglu and Jackson, 2015), or directly shaping group identity (Akerlof, 2016).

[7]People choose to follow or reject leaders based on their own preferences, making it very 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 in short-lived lab-experimental sessions (see .e.g d'Adda et al. (2017)), and the measuring of changes in outcomes when managers or leaders turn over or die (Bertrand and Schoar, 2003; **?**)

in the American revolution to examine how exposure to democratic ideas among military veterans helped precipitate more local support for democratic values and pro-revolutionary mobilization in the early, constitutional, phase of the French Revolution. They interpret their results as reflecting the key role that military experience can play in providing local leadership and organizational skills to veterans, which can be particularly potent in propagating new political ideas. In contrast to this work, which emphasizes organizational capacity derived from combat experience in propagating more egalitarian democratic values, we are able to examine a different channel: the role of heroic credentials operating through a network, this time to *undermine* democratic values.

In this way, our paper also ties to an emerging literature on democratic values and how even durable democracies can fail.[8] In a number of benchmark models of political economy, democracy is seen as an absorbing state (eg Acemoglu and Robinson, 2005), Fukuyama. However, nascent democracies often revert to dictatorship. Indeed, an important body of work on the inter-war period shows how in the German context, Nazis were able to assert their authority within the nascent Weimar republic through propaganda (Adena ,Enikolopov, Petrova, et al.), the leveraging of public works projects (Satyanath, Voigtlander and Voth) and existing organizations (Voigtlander and Voth), to name a few. Yet, democracies appear to become more resilient as they survive. 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, 2016). Less is, however, known about how even durable democracies may also revert to autocracy. 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.

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).[9]

Finally, to the best of our knowledge, ours is the first paper to measure the determinants of collaboration in Nazi-occupied Europe. This question has been relatively ignored by the literature in economics and political science, which has mostly focused, instead, on the deter-

[8] Ziblatt 2019 provides an account of alternative channels through which this may occur.

[9] In the context of the World Wars in Europe, recent papers by Koenig (2015) show that places with more veterans in the first World War were more likely to vote for fascist parties in Germany. Conversely, Fontana et al. (2017) show that internal fighting under prolonged German occupation led to a higher vote share for the Communist party after the Second World War in Italy. The underlying hypothesized mechanism is that veterans and victims of the conflict identify with the side that won the conflict and against (actual or perceived) those responsible for the defeat. In our setting, in contrast, the heroes of the victorious French army the First World War were in fact more likely to support those the invading power that had lost that conflict.

minants of insurgency and resistance.[10] This is, in part, because collaboration, by its nature tend to be more covert than overt acts of resistance and insurgency and thus hard to measure. Collaboration in France in particular has been the object of a mostly qualitative and descriptive historical literature (e.g. Jackson, 2001; Ott, 2017; Burrin, 1996; Paxton, 2001).[11] Instead we exploit a unique and largely untapped data source from a contemporary intelligence report, which we digitise, clean and geolocate to create, to the best of our knowledge, the most exhaustive list of collaborators in occupied Europe to date.[12]

The rest of the paper is organized as follows. Section 2 below presents historical background on WWII in France, the collaboration and the resistance. In Section 3, we present the new dataset we built for this paper and provide summary statistics. Section 4 performs the empirical analysis and presents the results. In Section 5, we discuss a number of mechanisms that may help rationalizing our findings. Finally, we discuss the broader implications.

2 Historical background

2.1 The Battle of Verdun

2.1.1 The 'worst' and longest battle in history

Like Stalingrad or Pearl Harbor, the Battle of Verdun assumed a great symbolic importance for France. "In the French collective imagination, the Great War *is* Verdun" ((Jackson, 2001), p.28, emphasis added).

On the 21st of February 1916, the German Army launched Operation *Gericht*. The plan of the German Commander-in-Chief, Erich von Falkenhayn, was to exploit the symbolic importance of the Verdun fortress to lure the French infantry into contesting a concentrated and static position where they would be "bled to death" to the point of collapse.[13]

Verdun was, until 1916, a quiet sector of the front. At the start of the offensive, the

[10] For example, in Europe (Gagliarducci et al., 2018; Monteiro and Assuncao, 2011; Ferwerda and Miller, 2014) or in foreign US interventions (Dell and Querubin, 2017; Trebbi et al., 2017; Trebbi and Weese, 2019).

[11] We contribute 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. While we cannot evaluate whether Pétain's prestige encouraged collaboration on the whole, as has been claimed in the literature, we break new ground by showing that it was not the battle of Verdun that mattered, per se, but Pétain's support was disproportionately generated among the home communities of those who served under Pétain's *direct* command at Verdun.

[12] Some key aspects of the data were summarized in Lormier (2017), who as describe below had been given a copy of the then-classified report by Anne-Marie Pommiés, curator of the Centre National Jean Moulin. We are very grateful to Dominique Lormier for allowing us to consult and transcribe the original documents.

[13] In the words of Falkenhayn "Within our reach behind the French sector of the Western front there are objectives for the retention of which the French General Staff would be compelled to throw in everyman they have. If they do so the forces of France will bleed to death – as there can be no question of a voluntary withdrawal – whether we reach our goal or not. If they do not do so, and we reach our objectives, the moral effect on France will be enormous" (Falkenhayn's memorandum, cited in (Horne, 1962)[pg. 36], emph. added). The French military doctrine of *attaque à outrance* would then play into the hands of this strategy.

Germans found France grossly unprepared. After a few days of extraordinary rapid German advance by First World War's standards, disastrous loss of French men, guns, and strongholds, and the successive sacking of no less than five impuissant French Generals in the first five days of battle (Bapst, de Bonneval, Chretien and Herr), Pétain was put in command of the battle on February 25th.

Pétain implemented two major innovations. Firstly, he adopted a more defensive stance that relied more heavily on artillery and spared infantry troops. Secondly, he instituted a system of troop replacements, known as the"Noria". Under the Noria system, line regiments were pulled out after a few days, before their numbers were decimated and morale impaired, and sent to rest away from the front. They were then moved back to the line, then rested again.[14] To transport the large supplies of shells and fresh troops needed to relieve the frontline infantry (190,000 men were brought in in the first week), Pétain re-organised the supply line (that would later be referred to by the French nationalist, Maurras, as the *Voie Sacree* [Sacred Way]).

These innovations succeeded in stopping German advances, and several months of deadlock battle ensued, to the dissatisfaction of France's High Command which still believe that "offensive at all cost" was the solution. Yet, Pétain, already revered as the "savior of Verdun" was unsackable. The solution to them came on the first of May, when Pétain was promoted away from direct command at Verdun and replaced by the overtly aggressive generals Nivelle and Mangin. The opening of the Battle of the Somme on 1 July, finally forced the Germans to withdraw some of their artillery from Verdun and ended German successes. The German defense finally collapsed after heavy French bombardment on the 17th of December 1916.

Verdun was the longest battle in history. Estimates on the total casualties vary widely. France's Official War History (published in 1936) sets French losses at 377,231, although calculations based on Churchill (1929) put them as high as 469,000. [15] German losses were assessed at 337,000 (Churchill: just under 373,000). In any case, the combined casualties reached over 700,000. Another 800,000 were estimated gassed or wounded. Between 40 and 60 million shells fell over the battlefield.[16]. Although Verdun itself was reconstructed, of many surrounding villages nothing was left. Six of them were never rebuilt.

The battle was a watershed of prime importance in the Great War. As noted by (Horne, 1962)[pg. 1-2]: "Before it, Germany still had a reasonable chance of winning the war; in the course of those ten months this chance dwindled away. Beyond it, neither the French nor the German army would be quite the same again ... In the aftermath, too, Verdun was to become a sacred national legend, and universally a household word for fortitude, heroism,

[14]By contrast, the Germans, and the French before (and after) Pétain kept units in line until they were literally ground to powder.

[15]Out of the estimated 1.315 million French soldiers killed in combat in the Great War (Horne, 1962)[pg. 6]

[16]All figures are from (Horne, 1962)[pg. 327]

and suffering ... Long after the actual war was over, the effects of this one battle lingered on in France". Because of the length of the battle and of the rotation system implemented by Pétain, nearly three-quarters of the French Army and more than 80% of the line infantry were drawn through it. As a result, more men of that generation would have the memory of the Battle of Verdun engraved in their memory more than any other battle. The significance of the simple phrase *"J'ai fait Verdun."* [I did Verdun], adopted broadly among its veterans, was understood throughout the country Ousby (2007).

2.1.2 Pétain: the savior of Verdun

Pétain's rise to power, in the first as much as the second World War, was all but a succession of historical accidents. Pétain, after graduating from the French Military Academy at Saint-Cyr, had experienced very slow advancement. He had spent five years as sous-lieutenant, seven years as lieutenant, and ten as captain (Horne, 1962). At the start of the War, at fifty-eight, he was a simple colonel. His slow progress was explained in part by his modest peasant origins, but also his disdain for political networking and his military philosophy that was at odds with High Command's. France's High Command had been obsessed with infantry-led offensive since France's humiliating defeat against Prussia in 1870. Pétain, in complete contrast, was a proponent of defensive attrition based on the artillery, and compulsively economical with human lives. [17]. Pétain was not liked by High Command, who found him too cautious, nor was he liked by politicians, who found him irreverent and cold.[18] However, the dramatic failure of French military plans in the Marne battle and Commander in Chief Joffre's ruthless sacking of inept generals resulted in rapid promotion for those that remain, Pétain among these. At the start of the Battle of Verdun, he happened to be in command of the Second Army which was called to the rescue a few days after the start of the battle. As (Horne, 1962)[pg. 141] 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".

For his reliance on the artillery to spare the infantry and for the Noria rotation that rested the frontline infantry, Pétain was beloved by his soldiers, the infantry in particular. Pétain was also closer to his men than any other commander: always ready to move up the front line with the infantry, "he was the paternal figure, the leader who was devoted to his men, who suffered what they suffered" ((Horne, 1962)[pg. 139]). Nivelle and Mangin, who replaced him in command of Verdun on the 1st of May, were never close nor popular with the soldiers. Mangin was nicknamed the "butcher of troops". Both Nivelle and Mangin were entirely discredited by the catastrophic Chemin des Dames offensive of 1917. In the French collective imagination, and particularly among the *poilus*, Pétain alone embodied the "sacred

[17] An open critic of Joffre, one of his favourite maxim was that "one does not fight with men against materiel"

[18] To Poincaré, then President of the Republic, he once remarked that "nobody was better placed than the President himself to be aware that France was neither led nor governed" (Horne, 1962)[pg. 134].

national legend" of Verdun.

2.2 Military Recruitment in World War I and the Verdun rotation

Our empirical identification relies on the fact that military recruitment in the First World War was local. The French Army was reorganised after the defeat against Prussia by the laws of July 24, 1873 and July 15, 1889. The territory was divided into eighteen army-corps regions, each subdivided into eight subregions. The infantry was organised at the subregion level, and each subregion had its own recruitment bureau and military depot.[19] At the day of general mobilization, on the second of August 1914, France had 173 line Infantry regiments. 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.[20] 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) from the reserves were called to form the reserve regiments. The older men formed the Territorial Infantry (those 35 to 41 years old in 1914) and its reserves (those 41 to 48 in 1914), 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.[21]

Because of the length of the battle, and of Pétain's Noria troop rotation system, more French infantry regiments served at Verdun than at any other battle. The regiments that were not rotated at Verdun were those kept in reserve for the major (and ultimately more bloody) Allied offensive at the Somme in the Spring of 2016, or those already assigned to the fronts in the Dardanelles, Greece, or Serbia.[22] We use the resulting quasi-random variation in infantry regiments' exposure to direct command of Pétain at the Battle of Verdun. We consider a regiment to be treated to Petain's leadership at Verdun if it served between the critical period of 25th of February and the 1st of May, as opposed to those that served from May to December, under Nivelle and Mangin's command.[23] Both in its conception and, as we will 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.

[19] Other army corps, such as the artillery, were organised at the broader region level and are therefore less suitable for our analysis.

[20] The 1913 *Loi des trois ans* had already extended the length of military service from two to three years.

[21] These included 7% colonial troops. 21 additional infantry regiments had been formed from scattered units of decimated regiments, new recruits from annexed regions, or fresh troops of the classes of 1915, 1916, 1917 and 1918.

[22] The 145th regiment, that had been captured in 1914 and served 4 years of the war in German POW camps, was also not part of the rotation.

[23] 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. In the empirical analysis, we restrict our attention to regiments that only served in April vs May, which removes potential unobserved heterogeneity between regiments that were stationed at Verdun before the battle and those that were brought in after its start. We also exclude fortress regiments that were generally stationed in France's eastern fronts, such as Verdun.

2.3 Collaboration during World War II

2.3.1 Pétain at Vichy

As fortuitously as he had found himself in command at Verdun in 1916, Pétain came to head the government after France's rapid invasion by Germany (the so-called "blitzkrieg"): "Marshal Pétain did not seize power in the summer of 1940. It descended upon him like a mantle" ((Paxton, 2001), p.185). After his retirement from France's highest military position in 1931 Pétain's political roles had been limited during the interwar period. He held no "visible ties to the politics of the sorry 1930s" (Paxton, 2001)[p.34].[24] He seldom expressed his views on national politics and held both politics and politicians in disdain.[25] He was, however, an immensely popular and "genuine national hero" ((Paxton, 2001), p.34). To all, he embodied France's traditional values, those of "Old France: an erect soldier of austere tastes, of Catholic peasant stock, marshal of France" ((Paxton, 2001), p. 35). When a newspaper organized a public consultation on who should lead France as its dictator, Pétain received the highest support (see 11 in Appendix). He was revered by conservative right-wing circles, but even Léon Blum, the Jewish socialist politician and Prime Minister in the Left Popular Front government in 1936-37 called Pétain France's "noblest and most humane soldier."

1930s France had become highly politically polarized. The Third Republic in the inter-war period had found it hard to maintain sustained majorities in the Parliament given the intense political polarization, with some cabinets lasting less than a week. The Right's attempt at a coup in 1934 had radicalized the Left, while the subsequent victory of the Left Popular Front in 1936 had raised the threat of social change and radicalized the Right. A common refrain on the Right 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 for its military defeat. Collaboration with Germany and authoritarianism were the solutions to restore order and prevent a social revolution.

To rescue France once more from Germany as he had done at Verdun, Pétain was called to head France after her crushing defeat in World War II. On 18 May 1940, after Germany invaded France, Pétain joined the government, in the hope that his presence would revive the spirit of resistance and patriotism in the French Army.[26] That having failed, Pétain supported Commander-in-Chief Weygand's call for an armistice and advocated for the government to remain in France. The Prime Minister resigned and Pétain was named in his place. On 22 June, France signed the armistice at Compiègne that gave Germany control over the North and

[24] After the 6th February 1934 coup attempts by far-right leagues, he reluctantly accepted to become Minister of War, a position he only held for a few months. He was then made France's ambassador to Spain in 1939.

[25] *He had for example described the position of President of the Republic as only ''suitable for defeated marshals"* in (**?**, p.134)

[26] He had initially turned down a position in the government when World War II had begun in September 1939

West of the country, including Paris and all of the Atlantic coastline, but left the rest, around two-fifths of France's prewar territory, unoccupied. On July 10th 1940, the two legislative chambers met to ratify the Armistice. They granted the Cabinet the authority to draw a new constitution. Soon, Pétain assumed plenipotentiary powers as Head of State. This put an end to the Third Republic, which, to this day, remains the longest-enduring Republican regime in France.

Upon gaining power, Pétain's regime, however, quickly took on a clear authoritarian course. It implemented a "National Revolution" around the traditionalist values of "Work, Family, Fatherland". In October 1940, Pétain's collaboration took a more over turn, we he shook Hitler's hand at a summit at Montoire. He promised the French, "a new peace of collaboration" and "golden prospects" [27]. 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.[28] Yet the regime's actions rapidly took on an extreme right wing and racist agenda, including the deportation of Jews, that outstripped both German expectations and their requests.[29] Any possible ambiguity about the nature of Pétain's regime and of state collaboration were resolved by 1942, when the Vichy government offered Germany to join the war against the Allies alongside Germany ((Paxton, 2001) p.143). The regime took an even more repressive turn after 1943, when formed a "Milice" to hunt down and kill the French Resistance.

2.3.2 Collaborationist groups

Initially, Pétain's authority as a war hero was such that most of France appeared to be behind him in the summer and autumn of 1940. Collaboration was also encouraged by an active propaganda machine put in place both by the Vichy regime and by the German occupation authorities ((Burrin, 1996), p.179).[30]

The degree of support varied, from what Burrin (1996) describes as viewing collaboration as a way to accommodate and secure advantages in difficult circumstances to viewing it as a "providential" chance to implement authoritarian reforms and align with Nazi Germany

[27] Extract of Pétain's speech on 10 October 1940)

[28] To a large extent, this view may have been shaped by Pétain's perception of the inferiority of the British infantry. (Burrin, 1996) p.118 writes "Pétain was convinced of the military inability of the Anglo-Saxons - an old prejudice of a French infantryman." and may be preferable for France given England's territorial views over the French Empire (Burrin, 1996)[p.117].

[29] Pressures on 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).

[30] Censors' estimates based on the sentiment expressed in about 300,000 letters each week 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, which made an Allied victory more likely. Support for Pétain himself, however, was believed to be higher and even more enduring (Burrin, 1996; Paxton, 2001)).

(Burrin (1996), p. 183). Accordingly, collaboration took several forms, from economic collaboration (trading with the occupant), joining collaborationist political groups, participating in para-military groups that conducted the repression of internal Resistance and the deportation of Jews, free-masons, communists, and labourers for German factories [31], or directly joining the Gestapo, the SS, or combatant Wehrmacht troops on the Eastern front. We focus here on the forms of collaboration that denoted an ideological engagement: joining a collaborationist political party, joining a paramilitary organization, or the German side.

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. This was due to many factors. Vichy only ruled over part of France, and even there, Pétain did not encourage any particular political party. These parties operated mostly in occupied France with Germany's authorization and with German funds. 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)[32]. Estimates place 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. 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.[33] Alongside them were parties that were direct emanations of the Right-wing fascist leagues of the 1930's, such as the Francist movement and the Revolutionary Social Movement,[34] More mainstream intellectuals joined the Groupe Collaboration, whose $42,283$ 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

[31] The Compulsory Work Service in Germany (Service du Travail Obligatoire or STO), was instituted in 1942 for all males born between 1920 and 1922

[32] French: Parti Populaire Francais, PPF) and Rassemblement National Populaire (RNP)

[33] 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 bravoury citations. Doriot, 4 years his junior, joined active combat in 1917 and was made prisoner. He was awarded the War Cross (French: Croix de Guerre) for valourous service. Doriot eventually joined the Eastern Front in the "Legion des Volontaires Francais contre le Bolchevisme". He was killed by an Allied plane in Germany in 1945. After a short appointment in the Vichy government at the insistence of Germany, Déat joined the SS, and fled to Germany then Italy at the end of the War.

[34] Both movements had also been formed by WWI veterans Marcel Bucard and Eugene Deloncle.

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. [35]

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 Francaise 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), although it was forbidden in the occupied zone. 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 leader of Verdun heeded and carried out."[36]. 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 especially 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. Initially a political movement[37], the Milice became increasingly armed and violent from 1943 onwards. Pro-fascist, the Milice was clearly encouraged by Pétain and his Prime minister Laval. The creator of the SOL and the Milice, Joseph Darnand, was a heroic veteran of the 35th Infantry Regiment who served at Verdun in April and May 1916. He was served the Vichy government in 1943 and 1944, as minister of internal affairs. Contrary to previous paramilitary groups, the Milice also became active in the occupied zone from February 1944, where it was joined by many members of collaborationist political groups. Its main activities, as the SOL's, was to inform on, execute, or help 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. $45,000$ people volunteered for the Milice and the SOL (Paxton (2001), p.298), 15 percent of them women ((Burrin, 1996), p.).

Direct 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

[35] As Burrin describes: "The Paris leaders were rivals, not opponents, extremists of Pétainism, not anti-Pétainists" ((Burrin, 1996), p.383).

[36] Xavier Vallat, quoted in *D'Ordre du marechal Pétain. Documents officiels réunis et commentés par Jean Thouvenin* (Paris, n.d.1940 in (Paxton, 2001), p.190)

[37] 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).

the Waffen-SS or joined the Wehrmacht on the Eastern front under the "Legion des Volontaires Francais contre le Bolchevisme", controlled by the collaborationist parties, or the SS Charlemagne division, controlled by the Milice. 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).

The delimitations between political parties and paramilitary groups were much more fluid than what modern-day understanding of political parties would suggest. By and large, the collaborationist political parties were mostly operating in the occupied zone, while the pro-Vichy paramilitary groups were mostly active in the so called free zone, and so, to a large extent, one was the geographic counterpart of the other. Political parties engaged regularly in violent demonstrations and violent actions. Conversely, the main paramilitary group, the Milice, was originally intended as a unique political party, which would eventually absorb the collaborationist parties. The boundaries between political parties, para-military groups, and direct Nazi collaboration were also porous. Germany directly funded collaborationist political parties. The SS provided arms for the Milice. The SOL and the Milice, together with political parties, conducted many exactions alongside French and German Gestapo members.

3 Data and descriptive statistics

In this paper, we combine data from a number different sources to investigate how combat exposure to Pétain in 1916 at Verdun drove collaboration with Nazi Germany in WWII. Our unit of analysis is a municipality ($33,721$ municipalities in France, the equivalent of a Census block group). We assemble a novel dataset that combines new and hand-collected information on more than $97,242$ individual collaborators – to date, and to the best of our knowledge, the most exhaustive list of collaborators in occupied Europe– with combat exposure to Pétain at Verdun. The measure of combat exposure is built from the military histories of each line infantry regiment in WWI and the 1915 *Dictionnaire des Communes* which assigns each municipality to its infantry regiment. We also use data on battle deaths in WWI, battle intensity in WWII, membership to the Resistance, and Census data at municipality level for each Census since 1911. Finally, we explore the legacy of Pétain on political preferences using newly digitized electoral data for all but two of France's 24 legislative elections since 1914. We describe each of our main data sources in turn.

3.1 Collaboration

Our measure of collaboration comes from a list of suspected collaborators established in 1944 and 1945 by the Resistance's Central Bureau of Intelligence and Operations.[38] This list was declassified in 2015 but not made public because of enduring sensitivity(Lormier, 2017). The goal of this list was to "signal the names of suspect and doubtful individuals who should be subject to a thorough investigation". [39]. It was created under the supervision of Colonel Paillole[40], to punish active and potential collaborators after the Liberation of France. It records information on the first and last name of each suspected collaborator, his or her address at the end of WWII, the nature of collaboration, and, in some cases, additional information on place and date of birth (or age) and economic occupation. Figure 4 in the online Appendix shows an anonymized example of these files.

We digitized the two volumes of around 1,000 pages each, and geo-referenced the municipality of birth or residence of each collaborator. Our final dataset includes the names of $96,636$ collaborators. For almost 80 percent of them, we have information on the precise nature of collaboration, recorded as membership to one or several of 50 different collaborationist groups. We classify these 50 groups into either a collaborationist political party, a paramilitary group, or direct Nazi collaboration.[41] We are able to geo-reference the address of $90,508$ collaborators (including $89,118$ in metropolitan France). For about a third of collaborators, information is available on their age ($28,406$ individuals, 37.28 years old on average) and birthplace ($19,521$ individuals). From the information on first names, we code the gender of $73,626$ collaborators. 15 percent of whom are female, which corresponds to other estimates found in the literature (e.g. (Burrin, 1996), p.427).

The largest groups consist of the RNP (18.64%) and the Milice (16.14%). Other major groups included various collaborationist political parties, paramilitary groups, or combat or auxiliary German troops, such as the Legion of French Volunteers against Bolchevism and the Gestapo.

[Figure 1 about here.]

3.2 Combat exposure to Pétain

To construct a measure of combat exposure to Pétain for all French municipalities, we combine information on the allocation of each municipality to a line infantry regiment in WWI with

[38] The *"Bureau central de renseignement et d'action"* was created in 1940 by General Charles de Gaulle. It was commanded by Major André Dewavrin, better known during the war under the name of "Colonel Passy". The volumes have been published by the "section Action" of the BCRA which later became the Fifth Bureau of the General Staff (*"Cinquième bureau de l'Etat-major de l'Armé française"*).

[39] *"Le présent document a pour but de signaler le nom des individus suspecs ou douteux qui doivent faire l'object d'une enquête approfondie."*

[40] Paul Paillole : French secret service chief.

[41] see section in Appendix for details on the classification of each group.

the military history of each regiment in WWI and, in particular, whether and when the regiment was rotated at Verdun. We also rely on the universe of the 1.24 million military deaths in WWI from *Mémoire des Hommes* and (Gay, 2017) to build additional measures of battle casualties before and after Verdun and explore mechanisms underlying the relationship between battle exposure to Pétain and collaboration.

3.2.1 WWI and the Verdun Rotation

We focus on the 173 line Infantry regiments that were already constituted at the start of WWI in order to obtain sufficient, and precise enough, spatial variation at the municipality level in the exposure to different battles. Other army corps, such as the Artillery were organized at the broader region level and does thus not offer sufficient local variation in battle exposure. Other Infantry regiments, which were formed after the start of the war, gathered recruits from different regions so that we cannot trace back the exposure of a given municipality to a given battle for those regiments. [42]

We reconstruct the battle history of each regiment from each of the 173 *"Historique du Regiment"* books, which describe the day-to-day operations of each regiment during WWI. These documents are published by several sources (see the Appendix data description for the list of all sources). For each regiment, we manually code whether, and when, it was rotated at Verdun in 1916. We then define a dummy variable ("Verdun") equal to one if the regiment fought at Verdun in 1916; and a dummy 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 code additional information of each infrantry regiment' rotation to other crucial battles of WWI, in particular: the First Battle of the Marne in 1914, the Battle of the Somme in the Summer and Autumn of 1916 (1 July 1916 - 18 November 1916), and the Chemin des Dames (April to October 1917), another battle of major significance for France, as well as whether the regiment served on a front other than the Western front. Because Pétain played a significant role in resolving the many cases of mutiny in the French Army after the disaster of the Chemin des Dames in 1917, we also code a dummy variable that takes value one if the regiment experienced an event of mutiny in 1917.

We also retain information on the $1,237,149$ million military casualties in WWI of French soldiers born in metropolitan France (Mémoire des Hommes, Gay (2017)).This data lists each soldier, his rank, regiment (at death), date of death, date of birth, and municipality of birth.

[42] We focus on the line infantry rather than the reserves, as these were the most exposed to active combat and therefore the most susceptible to form strong attachment to their commanders. Moreover, given that reserve regiments were attached to line infantry regiments and drawn from the same locality (but from the pool of older men), the history of each line infantry regiment mostly encompasses the history of the reserves. The history of the reserve regiments is also harder to reconstitute as they were often divided between several units, compared to the line infantry.

We obtained this data from (Gay, 2017) and cleaned and matched municipalities of birth to present day municipalities. We are able to match nearly $1,150,000$ soldiers to (present-day) municipalities and construct municipality-level overall death rates, and relative share of officers among the dead. We also use this dataset to determine the extent to which infantry regiments that served at different battles suffered differential losses over the course of the war. Results are presented in Table10 in the Appendix. We do not find evidence that Verdun was a particularly devastating battle, compared to, for example, the Somme, or Chemin des Dames. Using information on regiment and date of death, we construct a measure of regiment-level deaths before and after Verdun, as well as monthly death rates during the Battle of Verdun for each of the 173 line infantry regiments.

3.2.2 Municipal exposure to Verdun and Pétain

As explained in Section 2., military recruitment in WWI was local. Each municipality was allocated to a military depot, or garrison, where an infantry regiment was constituted. The 9th edition of the 1915 *Dictionnaire des Communes*(Baron and Lassalle, 1915) is unique in that it lists the military circumscription, or recruitment bureau, to which each municipality is attached. It also provides information on the assignment of each recruitment bureau to a regiment. We digitised the *Dictionnaire* and assigned each of the $34,259$ municipalities within France's 1915 borders[43] to its line infantry regiment. We check this assignment using additional sources, such as the Handbook of the French Army (July 1914), the Carte de répartition des recrutements militaires du Département de la Seine for Paris[44]

One issue we encounter is that some recruitment bureaus provided troops to different regiments, in particular for the fortress regiments. These regiments, numbered 145-173, were, at least initially, destined to man the fortresses in eastern France and they drew recruits from different areas in France (Law of July 25, 1887). In particular, excess recruits from some military regions were reassigned from their local regiments to these fortress regiments. Overall, we are able to obtain a match to a unique regiment for $27,241$ municipalities. The remaining $7,018$ municipalities are matched to between 2 and 12 possible regiments. For those, we average the battle history over possible regiments. The resulting estimates should therefore be interpreted as Intention-to-Treat estimates. We then use a geolocalisation software to overlay the boundaries of present-day municipalities to the 1915 boundaries in order to obtain the assignment of present-day municipalities to their first World War regiments.

Figure 2 shows the allocation of each municipality to Verdun and to Verdun under Pétain. In Figures 6 to 16 in the Appendix, we show the rotation of each municipality (through its regiment) at Verdun for each of the 10 months of the battle.

[43] 1915 France did not include Alsace and Lorraine. Therefore the number of municipalities in 1915 is lower than nowadays.

[44] (accessed 15 January 2020).

Overall, 88.66 percent of 1915 France's 35,000 municipalities served in a regiment that was rotated at the Battle of Verdun (see descriptive statistics in 1 and Figure 2). 49.22 percent of all French municipalities, and slightly more than half (54.64 percent) of those that served at Verdun, served directly under Pétain's command. In turn, these municipalities have more that their proportional share of collaborators, by a magnitude of between 10 and 20 percentage points. Although they account for less than half of all municipalities, municipalities home to a regiment that served under Pétain's command hosted 61.88 percent of the 90,508 collaborators recorded at the end of WWII. Figures based on the commune of birth of collaborators are even more striking: 67.17 percent of all collaborators were born in a municipality that served at Verdun under Pétain. By contrast, under 30 percent (27.68 to 29.48 percent) of collaborators were born or lived in one of the 40.78 percent of municipalities that had served at Verdun, but not under Pétain. The remaining 5.15 to 8.64 percent of collaborators were born or lived in one of the 11.34 percent of commune that did not serve at Verdun. Figures 3 and 4 show the geographic distributions of collaborators, based on municipality of birth or residence and show how these match areas of France home to regiments that served under Pétain's command in the First World War.

[Figure 2 about here.]

[Table 1 about here.]

[Figure 3 about here.]

[Figure 4 about here.]

3.3 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. Section B in Appendix provides more institutional detail on elections and political parties over that period. One of the main empirical challenge is to classify the different political parties from the extreme-left to the extreme-right over such a long period of time. The French political system is indeed characterized by a lot of entries and exits of parties, and parties regularly change their name. In Section B of the Appendix, we provide – for each election – a list of all the parties running, briefly describe them and precise the associate label (from extreme left to extreme right we use to tag them). To do so, we rely mainly on Agrikoliansky (2016), Poirmeur (2014), and Haegel (2007). 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 with Pétain's conservative right-wing agenda may have emerged; and the post World War II period, after the fall of the Vichy regime and the restoration of the French Republic.

3.3.1 The 1914 Elections and Political Pre-trends

Elections took place in May 1914, three months before the outbreak of WW1. We collect and digitize the 1914 electoral results at the municipality level from the paper archives of the Interior Ministry.[45] We check that there is no pre-existing difference across municipalities that were to fill the regiments that fought at Verdun under Petain, or not.

In addition to the 1914 electoral data, we capture longer political trends with data on violent political protests in France between 1830 and 1914 and on strikes from (Tilly and Zambrano, 1 12) and (Shorter and Tilly, 1974). We only focus on the subset of these data that deals with pre-WWI events, as post WWI events may be influenced by our main treatment of interest. We clean and aggregate at the commune level all the violent events described in (Tilly and Zambrano, 1 12). 440 communes have one or more event listed in the database, which we match to the rest of our data. We retaining information on the political affiliation of demonstrators in the following main categories: Anarchists, Bonapartists, Communists, Socialists, and Royalists. We also retain information on the number of strikes and the share of employees who striked in each establishment affected by strikes from (Shorter and Tilly, 1974). This information is only available at department level.

3.3.2 The Interwar Period: 1924, 1932, 1936

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 elections.[46]. 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 (see Section B in Appendix for more detail). Although fascist and extreme-right leagues were active during that 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. Online Appendix Figures 1 and 2 presents the results of the 1932 and 1936 elections.

Results are available at the municipal level for 1924 [47] but only at the canton level in 1932 and 1936. A canton is a geographical subdivision in France, smaller than the department,

[45] These results are available in the boxes C//7241 to C//7254 at the National Archives.

[46] 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

[47] These results are available in the boxes C//10010 to C//10019 at the National Archives.

but larger than the municipality. In 1932, there were 2,227 cantons.

3.3.3 The Post-WW2 Legislative Elections

Finally, 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.[48] Data for these elections are from Cagé (2020) and Bekkouche and Cagé (2018), and further detail on the different parties in the online Appendix Section B.

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)[49] until the first electoral success of the National Front in 1983.

3.4 Other data on WWII

We use several 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.

3.4.1 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", i.e. the German invasion of France, only lasted six weeks (from May 1940 to June 1940). It is also known as the "Blitzkrieg". We construct measures of the days of combat at a given point, and we aggregate at the municipality level. Figure 12 in Appendix shows the resulting heat map of combat intensity across France. The mean number of days of combat in a given municipality in 1940 was 4.45 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

[48] In 1945, 1951, 1956, 1958, 1962, 1967, 1968, 1973, 1978, 1981, 1986, 1988, 1993, 1997, 2002, 2007, 2012, and 2017.

[49] The only success – the one of the "Poujadisme" in 1956 is short-lived.

zone. Accordingly, the mean combat intensity is much higher in the occupied zone (6.46 days) compared to the Vichy-controlled area (1.26 days).

3.4.2 Resistance

While the battle of France was extremely short, resistance movements organized to fight the German occupation. To measure the "intensity" of the resistance movement at the local level, we use data on individual membership to Resistance networks. We build a unique dataset using 600,000 individual files including information on the first and last names, place of birth and affiliation to different Resistance networks of each individual. These files come from *"Mémoire des Hommes"* and draws up a list of all the individual files established by a number of administrations – and in particular the Resistance Bureau – at the end of WWII in order to recognize and compensate (with war pensions for some) the activities of various Resistants during the war.[50].

3.5 Historical Censuses

We rely on the historical Censuses for information on population at municipality level. Censuses were conducted in France in general every 5 to 10 years, depending on budgetary constraints. No Census was conducted in 1916 or in 1941 because of the wars. We rely both on each historical Censuses since 1911 and on the harmonized historical population Census (INSEE, 2019).[51] The population Census before 1962 only include data on population counts.

4 Empirical analysis: Exposure to Pétain and Collaboration

Our analysis relates the intensity of collaboration in WWII to municipality-level combat exposure to Pétain at the Battle of Verdun in 1916. We discuss the exogeneity of combat exposure to Pétain in more detail in section 4.1. Our results show that local exposure to Pétain had a substantial effect on collaboration in WWII. Our estimates suggest that exposure to Pétain in WWI increased the municipal share of collaborator in WWII by 5 to 10%, and did so across all dimensions of collaboration.

4.1 Empirical Strategy

Our individual level data on collaborators includes information on the municipality of residence or birth of collaborators. We aggregate the collaboration data at the municipality of

[50] "Titres, homologations et services pour faits de résistance". *http://www.memoiredeshommes.sga.defense.gouv.fr/en/article.php?larub=268&titre=titres-homologations-et-services-pour-faits-de-resistance*

[51] This includes the Censuses of 1876, 1881, 1886, 1891, 1901, 1906, 1911, 1921, 1931, 1936, 1954, 1962, 1968, 1975, 1982, 1990, 1999, 2008, 2013, and 2015.

residence level i, and we estimate the following regression at the municipality level:

$$Collabos_i = \alpha + \beta Verdun_i + \gamma VerdunPetain_i + \mathbf{X}_i\phi' + \eta_{Di} + \epsilon_i$$

where $Collabos_i$ denotes the logarithm of the share of collaborators either born, or residing in municipality i, depending on our specification, normalized by population. Collaborators were recorded in our list in 1944 and 1945. No Census was taken during the war, and the first post-war Census only takes place in 1946. To avoid our estimates being contaminated by potentially endogenous population movements during and immediately after the war, we report the number of collaborators to the pre-war population of the municipality, measured in the last pre-war Census of 1936. Our preferred specification deals with the shares of collaborators born in the municipality. However, since this information is recorded for less than a third of collaborators, we also present the results of specifications based on municipality of residence. $Verdun_i$ is a dummy variable that takes the value one if the line infantry regiment associated with the municipality fought at the Battle of Verdun, at any time between 21st February and 18th December 1918. $VerdunPetain_i$ is a dummy variable that takes the value one if it fought at Verdun between the 26th of February and the first of May 1916, i.e. under direct command of then General Pétain. $\mathbf{X}_i$ is a vector of municipality's characteristics. The death rate in WWI could have directly affected pro-German sentiment in the municipality. We therefore control for the death rate in combat during WWI from our *Memoire des Hommes* and (Gay, 2017) data, which we construct as the number of military casualties within a given municipality of birth of the soldiers, as a proportion of the 1911 municipality population (the last pre WWI Census). Because, as we have seen, densely populated areas were more likely to give extra recruits, and extra recuits were more likely to be affected to fortress regiments, and we also control for the logarithms of the 1911 population. To account for differences in size across municipalities, which could affect the probability of joining collaborationist groups through different mechanisms, such as the presence of an organized group but also how visible one's behavior was to others, we control for the municipal population in 1936 (in logs). We capture differences in local experiences during WWII that could influence collaboration by combat intensity in 1940 (average number of days of combat), whether the municipality was located in Vichy or occupied France, and the log distance to demarcation line (in km). Last, we control for political pre-trends, measured by number of demonstrations from Royalist or Bonapartist groups, from Anarchists, and from Socialists and Communists, prior to 1914 ((Tilly and Zambrano, 1 12)). Finally, η_{D_i} represents fixed effects for each of the 95 departments in metropolitan France. These absorb unobserved differences in the local socioeconomic and political environment (such as labor market conditions, influence and quality of local prefects) and in geography. We cluster the error term ϵ_i at the level at which our treatment is defined: the regiment.

Exogeneity of combat exposure to Pétain Our identification hinges on the exogeneity of the exact timing of the rotation of each of the 173 line infantry regiments at Verdun. We compare, within a small geographic district, municipalities which filled regiments that were rotated through Verdun in 1916, but at a different time: either under direct command of Pétain before the first of May, or after. Our identification assumption is that the timing of rotation of its regiment through Verdun in 1916 was uncorrelated with the propensity of a municipality to support the Vichy regime and the German occupation during WWII. Table **??** shows that across a wide range of dimensions, such military casualty rate in WWI, combat experience in 1940, delimitation of the demarcation line between Vichy and occupied France, major demographic characteristics, or pre-1914 political manifestations by the Right (Royalists and Bonapartists), the Left (Communists and Socialists) or Anarchists, nothing differentiates municipalities whose regiment was commanded by Pétain at Verdun from others.

Our identification also requires that it was specifically exposure to Pétain and not other dimensions of battle experience, which could have differed before of after the 1st of May, and that influence the propensity to follow Pétain's collaboration agenda in WWII. We have already shown that at least in one important dimension of battle experience: the military casualty rate, there was no difference under direct command of Pétain or not. Nevertheless, we are comparing regiments that fought at Verdun at different times. Therefore, the battle experience of the different regiments could differ in two main ways. First of all, the timing at which a regiment was in Verdun may have influenced its rotation to other major battles of WWI, and most particularly the Somme, which also took place in 1916. To address this issue, we present robustness specifications in which we control for the full battle history of each regiment. Second of all, it is possible that the battle experience at Verdun was very different in -say- February 1916, right after the start of the battle, than in December, when it drew to an end. To reduce the associated potential unboserved heterogeneity in battle experience at Verdun, we present specifications in which we restrict the sample only to regiments that fought at Verdun in either April, under Pétain or in May, not under Pétain.

Our identification does not require that the boundaries of military catchment to different regiments be exogenous. Given the circumstances of military recruitment in World War I already discussed, and namely the fact that excess troops from a given area were more likely to be affected to a regiment far away, such as fortress regiments, or other regiments that were lacking recruits, we do not exclude the possibility that the local boundaries of military circumscriptions were endogenous to local socio-economic characteristics. However, to the extent that the exact timing of rotation to Verdun of the different regiments drawn from these circumscriptions was exogenous, this does not affect our results. The fact that military deaths during the conflict, as well as population or population density in 1911 (proxies for the likelihood of having extra recruits in 1914) are uncorrelated with the Verdun rotation

under Pétain, suggest that indeed, the exact timing of the rotation is likely uncorrelated with municipalities' characteristics that could potentially influence the exact delimitation of military districts. Still, we provide two types of regression discontinuity analyses that address any remaining concerns. The first, which we have already discussed, deals with the timing of rotation. We only compare municipalities, within the same department, which served at Verdun in April versus May. The second deals with potential endogeneity of military boundaries and their potential correlation with the timing of rotation at Verdun, and is based on spatial discontinuities at the boundaries of military catchment to different regiments. We compare, within each department, municipalities that are just across the military circumscription border and that were allocated to two different regiments, one which served at Verdun under Pétain, and the other that did not.

4.2 Results: Combat Exposure to Pétain in WWI and Collaboration in WWII

4.2.1 Collaboration and Resistance

Table 2 shows that the share of collaborators was significantly higher in municipalities with direct combat exposure to Pétain at Verdun in 1916. This result is true whether we consider collaborators born (Columns 1 to 3) or residing (Columns 4 to 6) in the municipality. Columns 1 and 4 report results without any controls (only department fixed effects), showing that the share of collaborators is 9.5 to 10.5 percent higher in municipalities whose regiments had fought at Verdun under direct command of Pétain. In contrast, having fought at Verdun under another general has no effect on collaboration.

Columns 2 and 5 add controls for the death rate in WWI at the municipality level, combat intensity in 1940, an indicator for Vichy versus occupied France, distance for the demarcation line as well as demographic controls for 1911 and 1936 municipality level population. The coefficients drop to between 3.3 and 4.9 percent but remain highly statistically significant. The goodness of fit of the specifications increases with the inclusion of controls. The results show that the battle death rate in WWI is positively and significantly associated with the share of collaborators during WWII. This suggests that the trauma of WWI and the willingness to avoid another bloodletting on French soil drove the willingness to collaborate with the German occupant, not only for Pétain, but for the broader population as well. By contrast, combat days in 1940 or distance to the demarcation line are unrelated to collaboration. The share of collaborators residing in a municipality is lower in Vichy France, although the share of collaborators born in a given municipality is higher. This could be due to migration of people from rural areas to richer and more urbanized areas, including Paris, which were then occupied. This interpretation is also consistent with the opposite sign associated with the

1911 population whether we consider municipalities of residence or birth, whereas smaller municipalities in 1936 consistently have a higher recorded share of collaborators. Because of potential migration, specifications based on birth municipality are our preferred specifications, although this information is more sparse.

We also estimate specification 4.1 using the local share of Resistance members as the dependent variable. Table 3 shows that Resistance was deterred in municipalities that had fought at Verdun under Pétain. The magnitude of the effect on Resistance is comparable to collaboration. The share of people who joined the Resistance is around 10% lower in municipalities with direct combat exposure to Pétain. This result mirrors the result on collaboration: direct combat exposure to Pétain aligned preferences and political behavior with those of Pétain. As such, it increased the share of supporters of collaboration, and decreased the share of those who resisted against it.

Columns 3 and 5 of Table 2 and Column 3 of Table 3 add controls for political pre-trends. These results highlight the role of pre-existing polarization and radicalization. Municipalities where right-leaning, pro-authoritarianism Royalists and Bonapartists groups had been more active before 1914 have a significantly higher share of collaborators and of resistants in WWII. So do municipalities where Communists and Socialists had been more active. These results are consistent with the historical fact that the collaboration agenda rallied a wide spectrum of political groups behind it, not only from the right, but also from the left. The leaders of the two main political collaborationist parties (RNP and PPF) were former forefront leaders of the Socialist and Communist party. Results discussed in the next section accordingly show that Left-wing demonstrations specifically explain PPF membership, which confirms that the appeal of collaboration and fascism to former communists was widespread. Conversely, the Resistance was not only a left-wing affair. Many members of France's traditional Germanophobe extreme right found Resistance against Germany more natural than collaboration with it. Regardless, the inclusion of these political pre-trends does not affect the magnitude or statistical significance of the coefficient of our variable of interest, suggesting that these long-run trends in French society, although important drivers of political choices in WWII, were uncorrelated with direct exposure to Pétain.

Tables 12 and 13 in Appendix show the robustness of these results to other functional forms. Table 12 reports the results of Poisson specification using the number of collaborators as the dependent variable. The results show that the results on collaborators in the municipality of birth and on resistance are robust, but the results for collaborators in municipality of residence fall short of statistical significance. However, Table 13 show that these are robust when we consider the intensive margin of collaboration. [+++]

[Table 2 about here.]

[Table 3 about here.]

4.2.2 The nature of collaboration

Table 4 presents the Pétain effect on collaboration across different types of collaboration, discussed in Section 2: political collaboration (membership to a collaborationist party, such as the RNP and PPF), paramilitary collaboration (membership to a paramilitary group, such as the Milice and the SOL) and Nazi collaboration (the LVF, the Gestapo or the Waffen-SS). Appendix Section A describes the classification of the 50 different collaborationist groups into these categories. For each broad category, we present alternatively results based on municipality of birth or residence. For each category of collaboration, we present results without controls, and then add the full set of WWI and WWII-related controls, demographic controls, and political pre-trends.

[Table 4 about here.]

The results show that combat exposure to Pétain at Verdun drove collaboration across the whole spectrum of active collaboration. Based on our estimates for municipalities of birth, the magnitude of the Pétain effect is comparable across the different categories of political, paramilitary, and Nazi collaboration. As we have already described, the delimitations between these different types of collaboration were very porous; and the activities and the rhetoric of these different groups were similar. For municipalities of residence, the Pétain effect is most robust for political collaboration. Table shows that these results are larger in magnitude and more precisely estimated when the local density of Resistance members is included as a covariate.

Table 14 and Figure 5 further breakdown collaboration amongst the major groups in our sample.

The results show that the Pétain effect is comparable in magnitude across the main two collaborationist political parties, the RNP and the PPF. The most notable result is that when it comes to paramilitary groups, the results are only robust for the SOL, and not for the Milice. As we have described in Section 2, the SOL was the precursor of the Milice. As such, although our list does not include any information on the timing of collaboration, it is fair to assume that members of the SOL joined the collaboration at an earlier point than those who joined only the Milice.[52] Historians such as Burrin (1996) have argued that the motivations behind joining a collaborationist group, as well as the social composition of collaborators changed over the course of the war. In particular, as the war was taking a more difficult turn for

[52] Of course, many members of the SOL would have joined the Milice and would therefore be recorded under the Milice, which, as opposed to the SOL, still existed until the Liberation. Accordingly, membership to the Milice is much more prevalent in our sample ($15,600$) than membership to the SOL ($1,824$).

Germany, and internal repression by the regime against the Resistance was intensifying after 1943, collaboration became harder to justify and Pétain's public image and popularity were hurt. Consequently, Burrin (1996) highlights the declining role played by pro-Pétaininsm in explaining collaboration over the course of the war. This may explain why the Pétain effect is more robust for the SOL, which was created in January 1942, than for the Milice, which substituted for the SOL in January 1943. Another group for which the Pétain effect is not significant is the Workers Relief Committe ("Comite ouvrier de Secours Immédiat"). This group was a left-leaning organization created in 1942 to deliver aid to factory workers affected by English bombing raids. It was constituted mostly by former union leaders. Pétain being a right-wing traditionalist who had banned unions, it is not surprising that we do not find an effect for this group whose objectives and political orientation were very different from those of Pétain 's.

[Figure 5 about here.]

4.2.3 Identification: Full Battle History, April vs May 1916 at Verdun, and Mutinies of 1917

As noted in Section 4.1, our identification requires that it was specifically exposure to Pétain and not other dimensions of battle experience that influence the propensity to follow Pétain into collaboration in WWII. Since our identification relies on the precise timing of the Verdun rotation, these could differ in two main ways.

First of all, if a regiment was at Verdun in the Spring and Summer of 1916 (i.e. not under Pétain's command), it could not have simultaneously fought the Battle of the Somme of 1916. Accordingly, we observe in our data an overall negative correlation between having fought at Verdun and in the Somme (-0.24) but a positive correlation between having fought at Verdun under Pétain and in the Somme (0.32). More generally, the different regiments may have systematically experienced a different rotation to other major battles of WWI. It could be these differences that explain the motivation to collaborate in WWII. To address this issue, we add to our main specification 4.1 controls for the full battle history of each regiment. We only present results without any controls and with the full set of controls. Results presented in Table 5 are robust to these additional controls. Moreover, we observe that none of the other major battles of the First World War robustly influenced collaboration in WWII.

Second of all, although we have found no differences in the casualty rate at Verdun under Pétain, the battle experience could have differed between Feb-April and May-December for reasons unrelated to Pétain's command. For example, the Somme offensive forced Germany to reassign units and eased the pressure on Verdun. To address this concern, we restrict our sample to the municipalities whose regiments fought at Verdun during two consecutive months,

in April and in May 1916, immediately before and after Pétain's replacement by Nivelle on May 1st (we exclude regiments that were serving in May but that had also served earlier, under Pétain). The size of our sample drops by about a third to 13,297 municipalities. Table 5 shows the estimation results. Since all these regiments were at Verdun, we can only estimate the coefficient associated with Pétain's command. We focus on municipalities with residing collaborators, because of statistical power issued when relying on collaborators' municipalities of birth. Although less precisely estimated in this restricted sample, the Pétain effect is still statistically significant and about twice as large in magnitude in explaining the share of overall collaborators, compared to the full sample. This suggests that other differences Across the different categories of collaboration, the effect is only robust for paramilitary collaboration as comparable in this small subsample. Our results are robust. The magnitude of the Pétain effect, although less precisely estimated, is actually larger than in the full sample. Controlling for the full set of controls, including the WWI death rate, municipalities that fought at Verdun in April under Pétain's direct command have a more than 10 percent higher share of collaborators in WWII, compared with municipalities in the same department who also fought at Verdun, but in May, under Nivelle's command. We also check that our results are not driven by other months at Verdun. Pétain was in command at Verdun in February, March and April. We define placebo treatments as any other three consecutive months of battle at Verdun. Figure 13 shows that the positive and significant effect of Verdun combat exposure is only driven by the months of Pétain's command.

Last, we also account for the fact that Pétain was not only famous for being the hero of Verdun, but also as a result was also called in for one of the most difficult tasks: to suppress the 1917 mutinies. Although both events are often discussed together as contributing to Pétain's popularity, we expect these two events to play very differently as drivers of collaboration in WWII. For saving Verdun and organizing a rotation system that rested and spared the line infantry, he was revered by his soldiers. For putting down the mutinies, he was mostly feted by politicians. In 1917, Pétain was general in chief of the armies and had much fewer direct contacts with his soldiers than at Verdun. Moreover, even though he handled the mutineers in an arguably more humane way than any other commanding officer of WWI, it is hard to imagine how *any* commander in charge of handling mutinies could be popular with the soldiers. $3,500$ soldiers were punished, including 554 sentenced to death and $1,381$ to forced labor. Accordingly, when we add a control for whether the regiment experienced a mutiny in 1917 in Columns 7 to 10 Table 5, we observe not only that the Pétain effect on collaboration driven by the Verdun rotation remains robust, but that the direct effect of mutinies on collaboration is, if anything, negative. One possible limitation of this analysis is that the 1917 mutinies were endogenously determined by soldiers' experience at Verdun. Historical accounts are unanimous that the mutinies were mostly driven by the disastrous

Chemin des Dames battle of 1917. Nevertheless, the coefficients should be interpreted with caution.

[Table 5 about here.]

[Figure 6 about here.]

4.2.4 Identification: Excluding fortress regiments and Military circumscriptions boundaries sample

As already discussed in Section 4.1, our identification assumption does not require that the boundaries of military circumscriptions are exogenous, as long as the they are not also systematically correlated with the timing of rotation at Verdun. It seems unlikely that military authorities had sufficient foresight to engineer such an endogenous rotation. The same authorities, after all, considered Verdun a quiet sector of the front at the start of 1916. Nevertheless, a specific concern deals with the so-called fortress regiments. As we have discussed, these were more likely to draw recruits from different areas of France, and they were initially destined to man France's eastern forts, including those in the sector of Verdun[53]. Fortress regiments experienced more deaths in battle ($3,526.94$ deaths for fortress regiments against 3114.28 for others (P-value=0.000). Serving in the east, they also observed directly the devastating effects of German occupation of the East of France in WWI. We check in Appendix Table 16 that the results presented in Tables 2 and 3 are robust to excluding these fortress regiments. Our results are virtually unchanged, except for Nazi collaboration. In the case of Nazi collaboration, either based on residence or birth municipality, the point estimate is actually more than twice as large when we exclude fortress regiments, and this difference is statistically significant at the 1 percent level.[54].

Beyond the specific issue of fortress regiments, we provide a spatial regression discontinuity (RD) analysis around the boundaries of military catchments that addresses any remaining concern about the potential endogeneity of military boundaries. We compute for each municipality the nearest distance to a military catchment area that sent regiments to Verdun under Pétain. We then compare municipalities just on either side of the regiment catchment border, but allocated to different regiments, which then served under Pétain at Verdun, or not. Based on the Calonico et al. (2014) optimal bandwidth selection procedure, we only retain municipalities that are less than 20km away from the military boundary.[55] Since some

[53]These fortress regiments, number 145 to 173, indeed all served at Verdun, and probably because those responsible for the Verdun sector were manning the forts at the beginning of the offensive, also more likely to have served at Verdun under Pétain compared to other regiments (0.65 versus 0.48, P-value=0.000).

[54]The P-value on an interaction between combat exposure to Pétain and fortress regiment is 0.010 when the dependent variable is log of Nazi collaborators residing in the commune, and 0.000 when the dependent variable is log of Nazi collaborators born in the commune

[55]The average distance of a municipality to the boundary of its military catchment area is 25.89 (s.d. 22.34).

municipalities belonged to a catchment that garrisoned more than one regiment with possible different battle histories, ours is a fuzzy RD design.

We first check whether there are no pre-existing differences in political preferences between the two sides of the regiment catchment border. Figure 7 shows that there is no difference in the number of Left, Right, or Anarchist demonstrations prior to 1914. We also check that there are no other differences related to either the first World War or the division of France between Vichy and occupied France between the two sides of the regiment catchment border. Figure 14 shows that there is no difference in the military casualty rate in WWI, in population in 1911, or in the likelihood of ending up in the occupied part of France during WWII. In contrast, Figure 8 shows that there is a sharp discontinuity in the local shares of collaborators either residing or being born in the municipalities on either side of the regiment catchment border. There is also a sharp discontinuity in combat exposure to Pétain (see last panel of Figure 14). This confirms that combat exposure to Pétain encouraged collaboration, even in municipalities that are geographically extremely close to one another. Table 17 in the Appendix complements these figures, presenting results based on spatial regression discontinuity design (RDD) on the regiments' catchment boundaries sample and controlling for pre-1914 socio demographic characteristics, WWI casualty rates, WWII but pre-Vichy related controls, department fixed effects, and a quadratic polynomial in latitude and longitude of the centroid of the municipality. We also present sensitivity checks that vary the bandwidth between 30, 20, or 15 km away from the boundary. The results confirm that combat exposure to Pétain in 1916 increased the share of collaborators in the municipality during WWII.

[Figure 7 about here.]

[Figure 8 about here.]

5 Mechanisms

How can we rationalize the positive effect of the exposure to Pétain on Collaboration? In this section, we test a number of different mechanisms. We first explore how loyalty to Pétain operated through the organizational capacity of the veterans themselves and explains collaboration in the paramilitary groups that directly emanated from veterans organizations. We then provide evidence of a wider effect of loyalty to Pétain on political preferences, which is consistent with the effect of Pétain on political collaboration and had materialized even before the Second World War.

5.1 Loyalty and the organizational capacity of the veterans

One possible mechanism that may explain why municipalities that served under direct command of Pétain in 1916 had a higher share of collaborators in WWII is though the organizational capacity of the veterans themselves. 3 million men had served in WWI. In 1939, 40% of the French male population were veterans of the Great War. The main collaborationist paramilitary organizations, the Legion, then the SOL and, after 1943, the Milice, emanated directly from veterans' organizations. Their members swore their allegiance to Pétain. Some of them had served under Pétain and were personally, and deeply, connected to him. This direct connection may have incited them to follow Pétain, as well as to organize, through a cascade of leadership, other veterans.

We have two alternative ways in our data to track the veterans with a direct connection to Pétain. The first is from the composition of the II Army Corps. Before the Battle of Verdun, Pétain had been in charge of the II Army since June 1915. These soldiers would thus be the ones with the longest, and probably deepest connection to Pétain. The Second Army included eight line infantry regiments, who mostly served in the same sector in 1915. However, after Pétain was promoted as commander in chief at Verdun, those regiments experienced a very different 1916. Only two regiments served at Verdun (and did so under Pétain), while the others served in different sectors before fighting the Somme, and one was dispatched to the Salonica front. In Appendix Table 18, we estimate specification 4.1 with the full set of controls and department fixed effect and we add a control for belonging to the Second Army. The results show that the municipalities that housed the regiments of the Second Army later had higher shares of collaborators. Although the coefficient in explaining overall shares of collaborators is barely significant at conventional levels, it is positive and significant at the 5% level in explaining the share of collaborators in paramilitary organizations. However, the inclusion of a control for the Second Army barely affects the coefficient associated with the Verdun rotation under Pétain. In other words, serving in the Second Army is only an additional channel through which closeness to Pétain contributed to paramilitary collaboration.

The second way to capture the possible influence of the veterans "treated" by Pétain's direct command, is to rely on the variation across regiments in the number of these "treated' " veterans who survived the war and came back to their villages to tell the tale of their heroic Verdun commander. From the Memoire des Hommes data on the date of death of the 1.3 million French casualties, we construct variables that count the number of soldiers who died either before or after (or during) the battle of Verdun (i.e. before or after February 1916). The rationale for distinguishing between before and after is the following. If a soldier of a given regiment died before Verdun, he was replaced by another soldier generally from the same area. Thus, the number of soldiers who died before Verdun does not affect the potential stock of veterans who will be "treated" by Pétain exposure after the war. By contrast, a soldier

dead after exposure to Pétain in 1916 is one less soldier to come back home to tell the tale. [56] We therefore expect to see no effect of casualties before 1916, but a attenuating effect of losses after 1916 on the Pétain effect on collaboration. To test for this hypothesis, we estimate equation 4.1 by adding the number of deaths either before or after February 1916, and their interaction with Pétain exposure.[57] Since we are using information on the municipality of birth of WWI soldiers, we only present results for the municipalities of birth of collaborators. Columns 1 to 4 of Table 19 shows that, consistent with our hypothesis on the organizational capacity of veterans, the Pétain effect is attenuated in municipalities where fewer veterans came back after their exposure to Pétain's command. By contrast, we observe no effect of casualties that occurred among untreated soldiers, that is to say *before* exposure to Pétain at Verdun (Columns 5 to 8 of Table 19). Again, the effect is only significant for collaborationist groups directly tied to veterans: paramilitary groups.

Both the additional effect of the Second Army and the attenuating effect of military losses after exposure to Pétain are consistent with our hypothesized mechanism of organizational capacity of the loyal veterans themselves. However, this effect alone cannot explain our full set of results, which also indicate a positive and significant Pétain effect beyond veterans-based paramilitary organizations, on collaborationist political parties that were not connected to veterans and even on Nazi collaboration. In the next section, we provide direct evidence of a more transformative effect of loyalty to Pétain on political preferences, which started materializing even before the start of the Second World War.

5.2 Loyalty and ideology

Although Pétain assumed no major political role in the interwar, he was widely recognized as a right-wing political figure, with a a conservative stance and a moral aura. Revealing is the fact that when a referendum entitled *"Is dictatorship up for discussion?"* was organized in November 1934 by *Le Petit Journal* – a right-wing newspaper – Pétain arrived first with 20% of the votes (followed by Pierre Laval with 16% and Gaston Doumergue with 12%).[58]

To investigate whether local exposure to Pétain had already shaped political preferences in a way that prefigured collaborationist political inclinations during the Second World War, we turn to political behavior in the interwar period. To do so and as described in the Data Section 3.3, we collected data on the electoral results at three legislative elections: 1924, 1932, and 1936. If the effect of the direct exposure to Pétain partly happens through ideology, one should indeed expect an increase in the share of the votes for right-wing parties in the Interwar

[56] This is especially the case since, as noted by (BV., 1999), by January 1916, France had suffered well over 2 million casualties (dead or incapacitated) and already mobilised 87 percent of the total manpower it would muster during the war, "thus making every soldier lost at Verdun" (or after) "litterally irreplaceable" (p.14).

[57] The results are similar when using the log of the deaths instead.

[58] Overall, 194,785 readers participated in this referendum.

period.

Consistently with our previous analysis, we estimate the following specification:

$$\text{share votes}_i = \alpha + \beta Verdun_i + \gamma VerdunPetain_i + \mathbf{X}_i\phi' + \eta_{Di} + \epsilon_i \quad (1)$$

where our dependent variable of interest share votes$_{it}$ is the share of the votes obtained by a given party (e.g. the Union Républicaine Démocratique) in commune i, and the rest of the variables are defined as in equation (4.1.) For each of the elections, we consider alternatively the total share of the votes obtained by the right (summing upon the right-wing parties), and the share of the votes obtained by each party taken individually.

Results Table 6 presents the results for the 1932 legislative elections. We find that the direct exposure to Pétain during WW1 leads to an increase in the vote share obtained by the right, and that this finding is robust to the use of a number of different specifications (specification in level in Columns (1) and (2) and in logarithm in Columns (3) and (4)).

[Table 6 about here.]

The findings for the 1936 legislative elections are consistent with the ones we obtain for 1932, and are presented in Table 7. We consider both the votes for the right and for the far right, given a number of extreme-right candidates were running at the time. We obtain an increase in the share of the votes in both cases; however, this increase in only statistically significant for the right (but it is important to highlight that the far-right vote was so low at the time that there was not a lot of variation).

[Table 7 about here.]

To better understand the mechanisms at play, we perform the same analysis but at the party level. Table 8 shows the results. Interestingly, the increase in the vote share of the right is driven by two political parties: the "Alliance Démocratique" on the one hand (Column 6), and the Union Républicaine Démocratique (URD) on the other hand (Column 7). The URD was created by Pierre Taittinger, who later founded the *"Jeunesses Patriotes"*, one of the important collaborationist groups.

[Table 8 about here.]

To sum up, we have shown so far that combat exposure to Petain forged loyalties and shaped political ideology. In the inter-war, municipalities with a direct connection to Petain, a conservative figure, voted more for Right and Extreme Right parties. In the Second World

War, they followed Petain in the course of collaboration by joining pro-collaborationist political organizations. In the next section, we show that after the Second World War, the effect persisted through a long-lasting Left-Right swing that shaped post World War II French politics until the early 2000s'.

6 The Long-Term Effects of Pétain leadership on Political Behaviour

Last, we explore the long-term effect of exposure to Pétain on political behavior. We collected information on each legislative election in post war France and classified each party consistently along a Extreme Left - Extreme Right axis (see Appendix for more detail on the elections and party classifications). Figure **??** below shows the estimated coefficient associated with combat exposure to the "Victor of Verdun" on the share of vote for the Right or the Extreme Right in each election of the post war. Each line is a separate estimation of equation 1 for a different election or decade.

The results point a clear picture of a postwar Left-Right swing in municipalities directly exposed to Pétain, which lasted up until the 1980s. Point estimates suggest that the size of the swing over that period amounts to more than 3 percentage point on average across all elections. Considering that about half of all French municipalities fought under Pétain at Verdun, these results suggest a roughly 1.5 percentage point durable advantage for the Right in those elections. The analysis of individual elections reveal a striking picture of a durable Pétain effect on reversion to traditionalism in times of real or perceived crisis. The elections for which the Pétain effect is most significant and largest in magnitude are in 1981 (5.95), 1968 (4.13), 1958 (4.81) and 1956 (3.95). 1981 was a crucial year in France with the election of the first Socialist president of the Vth Republic, whose radical program was seen by many as a threat to economic and social order. The 1968 elections were held in the aftermath of one of France's most profound social unrest in the post-war period, "May 68", punctuated by general strikes, large demonstrations, and occupation of universities and factories, and the French President De Gaulle even fleeing to Germany. As for the 1956 and 1958 elections, these were held in the context of France's military defeat in Vietnam and in Algeria. The crisis in 1958 was so deep, with rebellious generals opposing Algerian independence even taking control of Corsica and threatening to conduct an assault on Paris, that the Prime Minister was sacked, a government of National Unity nominated in his place, and a new Constitution (France's current Constitution) drawn. Thus in times of crisis, the legacy of Verdun, and of Pétainisme returns to shape French politics.

[Figure 9 about here.]

[Figure 10 about here.]

7 Conclusion

> "Whatever happens, the flame of French resistance must not be extinguished and will not be extinguished."- Charles de Gaulle, June 18, 1940.

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 continue to influence its politics to this day.

Yet, it is also true that the day after Petain 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 Petain 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 *le esprit de 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

.

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, much more needs to be understood about the extent to which legitimacy generated from heroic acts can shape institutions, the extent to which heroes can adopt extreme preferences

that can both strengthen and undermine democratic values and the actual mechanisms by which heroes transmit their influence.[59]

[59]Further, heroes, while often emerging out of a crisis of war, like that of Verdun, 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 hawkish parties are, ironically, often better positioned to make politically risky overtures for peace with long-standing adversaries than their dovish counterparts.One is example is Nixon's famous reapprochement with China. However, our interpretation resonates with the greater set of options available to war heroes to shape 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.

References

Acemoglu, D. and Jackson, M. O. (2015). *Review of Economic Studies*, 82(2):423–456.

Acemoglu, D. and Robinson, J. A. (2005). *Economic origins of dictatorship and democracy*. Cambridge University Press, Cambridge,UK.

Agrikoliansky, É. (2016). *Les partis politiques en France - 3e édition*. Science politique. Armand Colin.

Akerlof, R. (2016). "we thinking" and its consequences. *American Economic Review*, 106(5):415–19.

Akerlof, R. and Holden, R. (2016). Movers and Shakers*. *The Quarterly Journal of Economics*, 131(4):1849–1874.

Baron, C. and Lassalle, C. (1915). Dictionnaires des Communes Administratif and Militaire. Dictionnaire.

Bauer, M., Blattman, C., Chytilová, J., Henrich, J., Miguel, E., and Mitts, T. (2016). Can War Foster Cooperation? *Journal of Economic Perspectives*, 30(3):249–274.

Bekkouche, Y. and Cagé, J. (2018). The Price of a Vote: Evidence from France, 1993-2014. CEPR Discussion Papers 12614, C.E.P.R. Discussion Papers.

Bertrand, M. and Schoar, A. (2003). Managing with style: The effects of managers on firm policies. 118:1169–1208.

Besley, T. and Persson, T. (2016). Democratic values and institutions. mimeo, LSE.

Bhavnani, R. and Jha, S. (2012). Gandhi's gift: On the promise and limitations of non-violent civil disobedience. *Economics of Peace and Security Journal*.

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

Burrin, P. (1996). *Living with Defeat: France under German Occupation, 1940-1944*. Arnold: London, Sydney, Auckland.

BV., B. R. (1999). To the Last Limits of Their Strength: The French Army and the Logistics of Attrition at the Battle of Verdun: 21 February – 18 December 1916. *Army History*, (45):9–21.

Cagé, J. (2020). Media Competition, Information Provision and Political Participation: Evidence from French Local Newspapers and Elections, 1944-2014. *Journal of Public Economics*.

Caillaud, B. and Tirole, J. (2007). Consensus building: How to persuade a group. *The American Economic Review*, 97(5):1877–1900.

Calonico, S., Cattaneo, M. D., and Titiunik, R. (2014). Robust nonparametric confidence intervals for regression-discontinuity designs. *Econometrica*, 82(6):2295–2326.

d'Adda, G., Darai, D., Pavanini, N., and Weber, R. A. (2017). Do Leaders Affect Ethical Conduct? *Journal of the European Economic Association*, 15(6):1177–1213.

Dell, M. and Querubin, P. (2017). Nation Building Through Foreign Intervention: Evidence from Discontinuities in Military Strategies*. *The Quarterly Journal of Economics*, 133(2):701–764.

Dippel, C. and Heblich, S. (2018). Leadership in Social Networks: Evidence from the Forty-Eighters in the Civil War. Working Paper 24656, National Bureau of Economic Research.

Ferwerda, J. and Miller, N. (2014). Political Devolution and Resistance to Foreign Rule: A Natural Experiment. *American Political Science Review*, 108(3):642–660.

Fontana, N., Nannicini, T., and Tabellini, G. (2017). Historical Roots of Political Extremism: The Effects of Nazi Occupation of Italy. CEPR Discussion Papers 11758, C.E.P.R. Discussion Papers.

Gagliarducci, S., Onorato, M., Sobbrio, F., and Tabellini, G. (2018). War of the Waves: Radio and Resistance During World War II. CEPR Discussion Papers 12746, C.E.P.R. Discussion Papers.

Gay, V. (2017). 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.

Greif, A. and Rubin, J. (2020). Political legitimacy and the institutional foundations of constitutional government. mimeo, Chapman.

Haegel, F. (2007). *Partis politiques et système partisan en France*. Fait politique. Sciences Po.

Hermalin, B. E. (1998). Toward an economic theory of leadership: Leading by example. *The American Economic Review*, 88(5):1188–1206.

Horne, A. (1962). *The Price of Glory: Verdun 1916*. MacMillian & Company Limited, London.

INSEE (2019). Populations communales de 1876 à 2015. Census.

Jackson, J. (2001). *France: The Dark Years, 1940-1944*. Oxford University Press.

Jha, S. and Wilkinson, S. (2012). Does combat experience foster organizational skill? evidence from ethnic cleansing during the partition of south asia. *American Political Science Review*, 106(4):883–907.

Jha, S. and Wilkinson, S. (2019). Marching towards the bastille: Veterans as vanguards in the french revolution. mimeo, Stanford.

Jones, B. F. and Olken, B. A. (2005). Do Leaders Matter? National Leadership and Growth Since World War II. *Quarterly Journal of Economics*, 120(3):835–864.

Koenig, C. (2015). Loose Cannons – War Veterans and the Erosion of Democracy in Weimar Germany. Technical report.

Lenz, G. (2012). *Follow the Leader? How Voters Respond to Politicians' Policies and Performance*. U. Chicago Press.

Levi, M., Sacks, A., and Tyler, T. (2009). Conceptualizing legitimacy, measuring legitimating

beliefs. *American Behavioral Scientist*, 53(3):354–375.

Lormier, D. (2017). *Les 100 000 collabos: Le fichier interdit de la collaboration française*. Documents. Cherche Midi.

Monteiro, J. C. M. and Assuncao, J. J. (2011). Coming out of the shadows? Estimating the impact of bureaucracy simplification and tax cut on formality in Brazilian microenterprises. *Journal of Development Economics*, (0):–.

Ott, S. (2017). *Living with the Enemy: german Occupation, Collaboration and Justice in the Western Pyrenees, 1940-1948*. Cambridge University Press.

Ousby, I. (2007). *The Road to Verdun: France, Nationalism and the First World War*. Jonathan Cape, London.

Paxton, R. (2001). *Vichy France: Old Guard and New Order, 1940-1945*. Columbia University Press: New York.

Poirmeur, Y. (2014). *Les partis politiques: Du XIXe au XXIe siècle en France*. LGDJ.

Shorter, E. and Tilly, C. (1974). Strikes in France, 1830-1968. Technical report, Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].

Tilly, C. and Zambrano, R. (2006-01-12). Violent Events in France, 1830-1860 and 1930-1960. Technical report, Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].

Trebbi, F. and Weese, E. (2019). Insurgency and Small Wars: Estimation of Unobserved Coalition Structures. *Econometrica*, 87(2):463–496.

Trebbi, F., Weese, E., Wright, A. L., and Shaver, A. (2017). Insurgent Learning. Working Paper 23475, National Bureau of Economic Research.

8 APPENDIX FIGURES

[Figure 11 about here.]

[Figure 12 about here.]

8.1 Rotation of each commune at Verdun, by month

8.2 Placebo treatment

[Figure 13 about here.]

8.3 Military catchment boundaries sample

[Figure 14 about here.]

9 Additional Tables

[Table 9 about here.]

[Table 10 about here.]

[Table 11 about here.]

[Table 12 about here.]

[Table 13 about here.]

[Table 14 about here.]

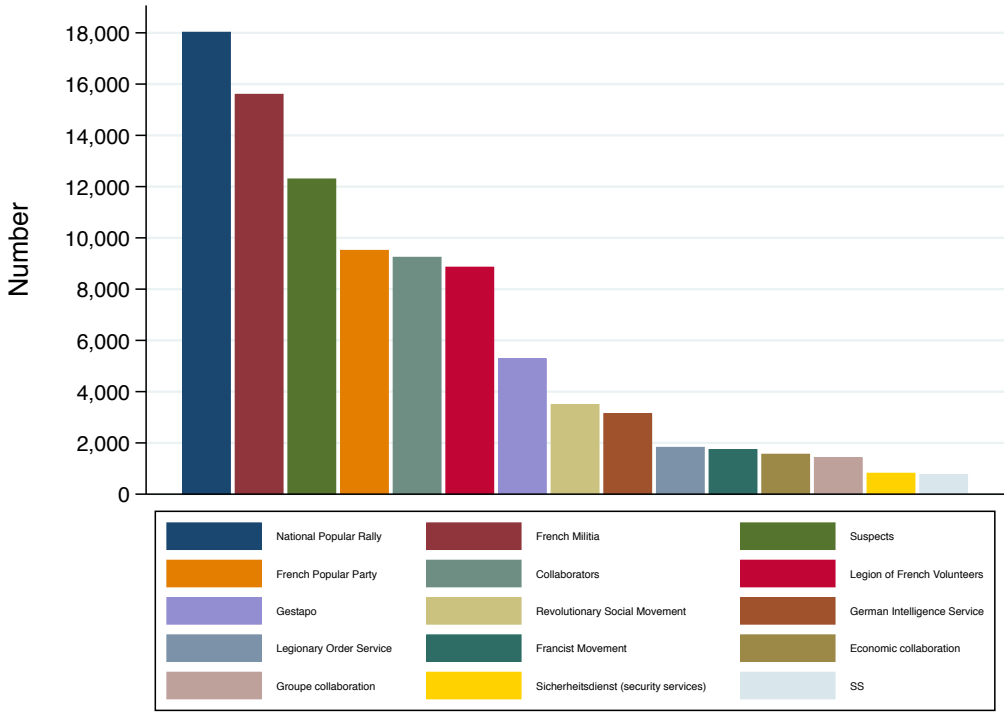
[Table 15 about here.]

[Table 16 about here.]

[Table 17 about here.]

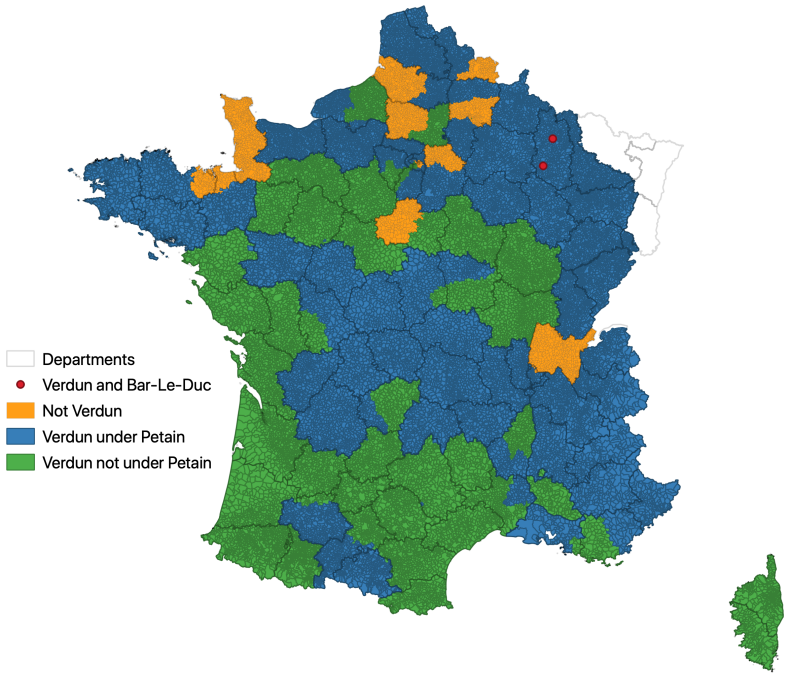
[Table 18 about here.]

[Table 19 about here.]



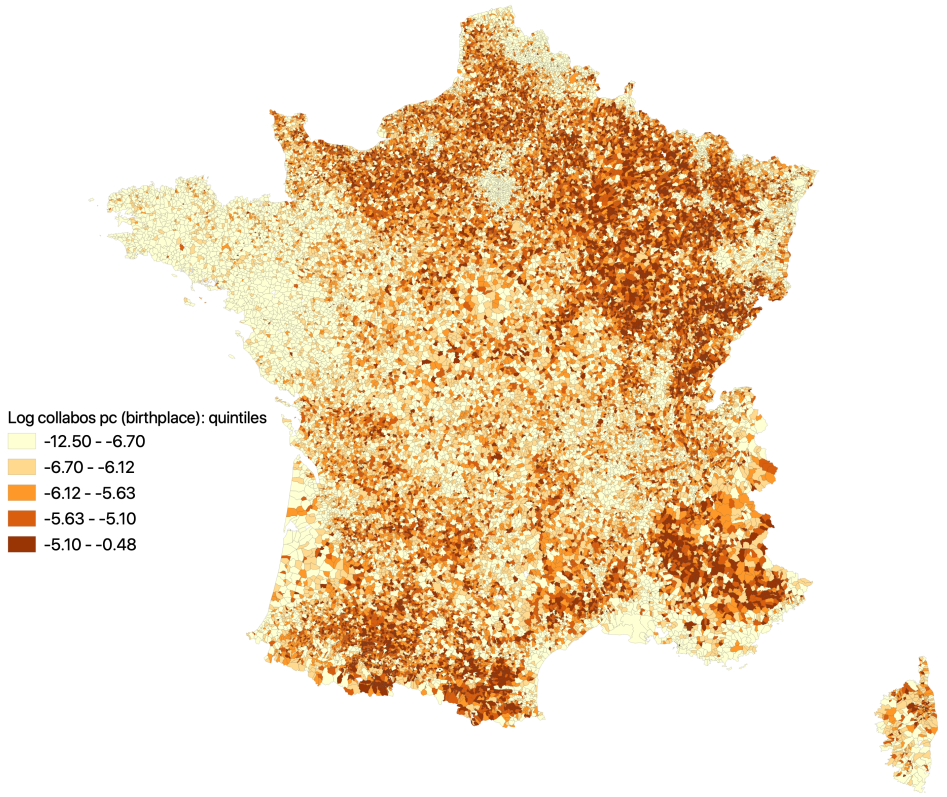
Notes: The figure plots the number of collaborators in each category.

Figure 1: Number of collaborators by category, main categories



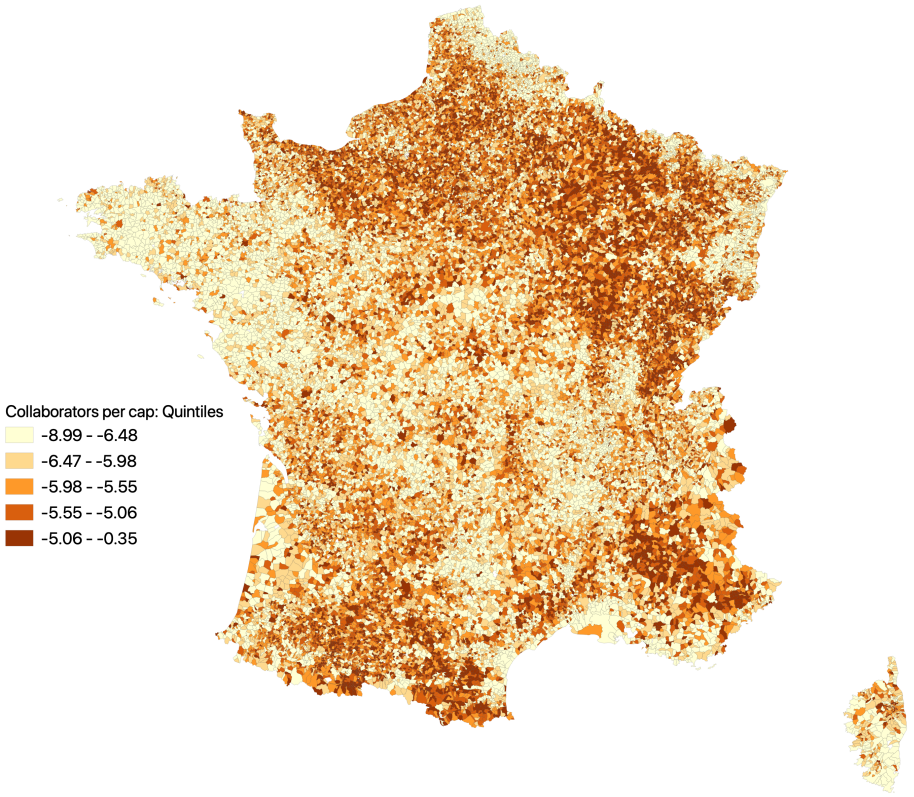
Notes: The map shows which commune housed a regiment that was rotated at Verdun under Pétain, at Verdun not under Pétain and not at Verdun. The figure shows commune boundaries (in light gray), department boundaries (in dark gray), the location of Verdun and of Bar-le-Duc to the south of Verdun. The two towns were linked by the "Voie Sacree". This map shows information for France's 1915 borders as only information for 1915 borders is available from the *Dictionnaire des Communes*

Figure 2: Municipalities at Verdun, at Verdun under Pétain and not at Verdun



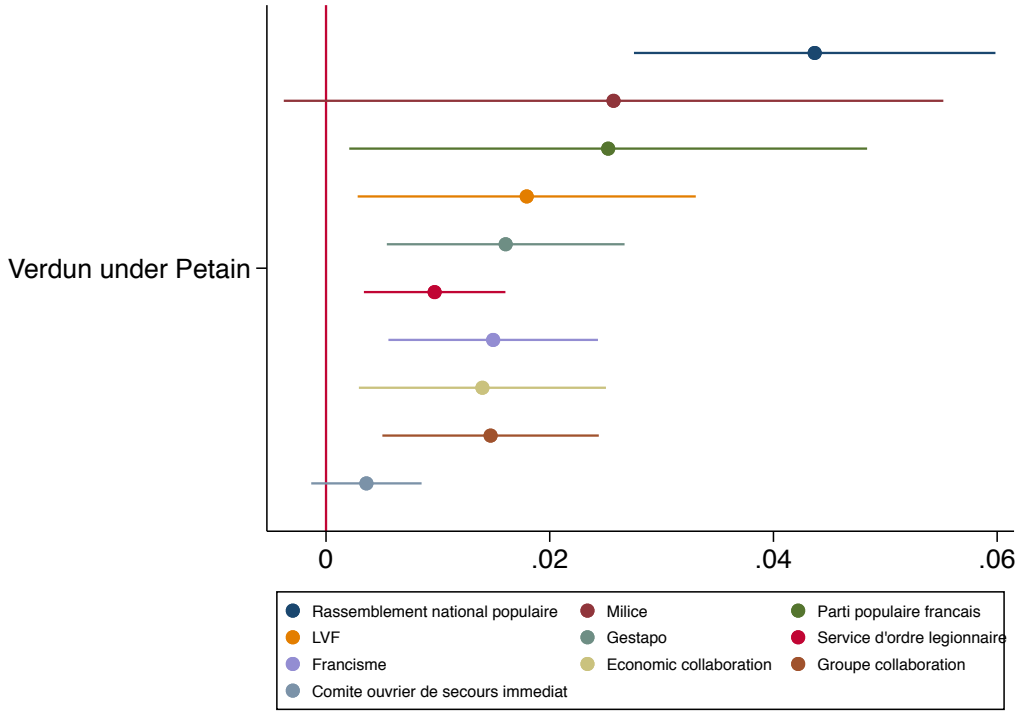
Notes: The map shows the distribution of collaborators based on municipality of birth. This map shows information for France's 1945 borders.

Figure 3: Quintiles of the distribution of collaborators – municipality of birth



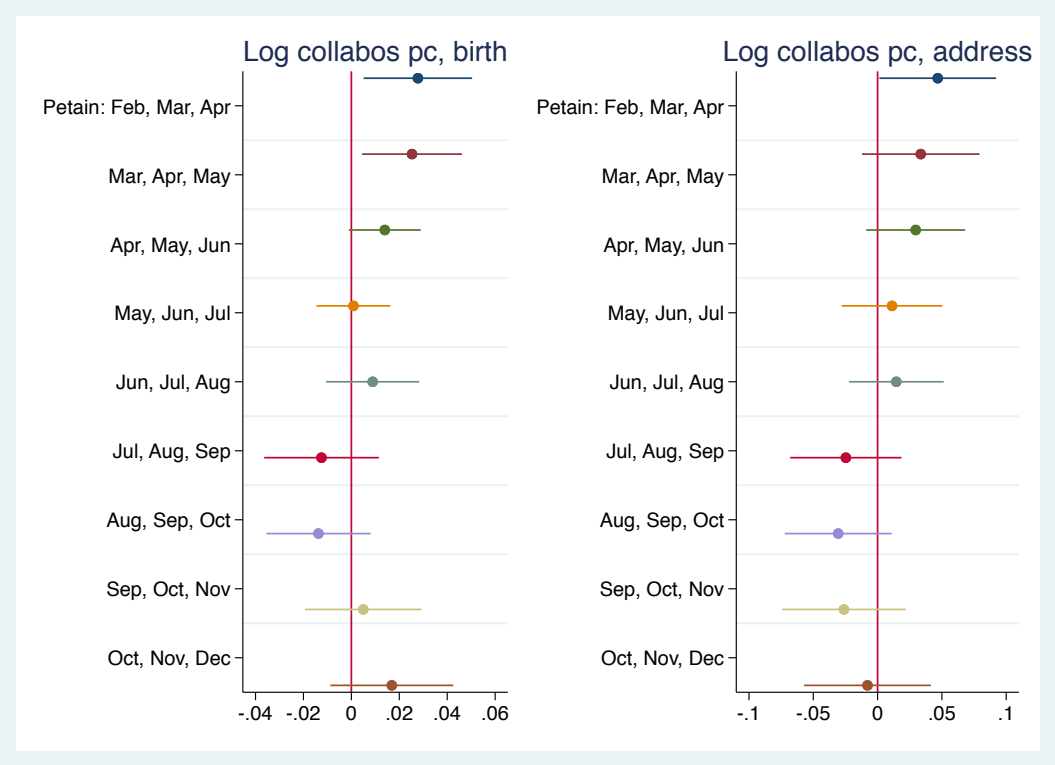
Notes: The map shows the distribution of collaborators based on residence. This map shows information for France's 1945 borders.

Figure 4: Quintiles of the distribution of collaborators – municipality of residence



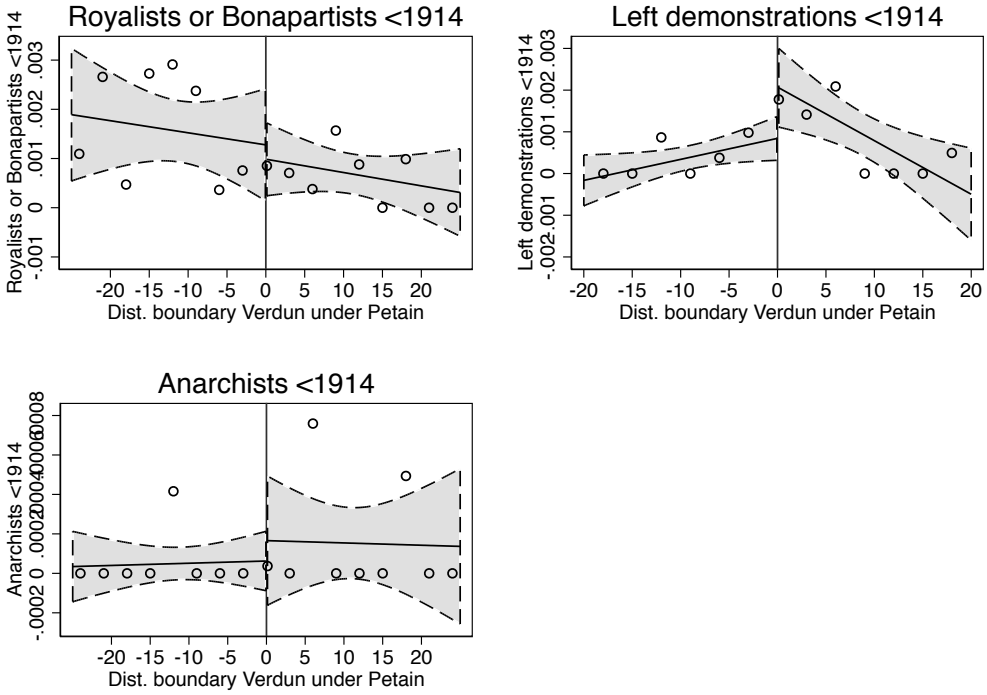
Notes: The figure shows coefficients obtained from separate regressions of the log share of collaborators in different categories (as indicated) residing in the municipality, controlling for the full set of controls and department fixed effects. Each line is a separate regression. Standard errors are clustered at the regiment level. Horizontal bars indicate 90% CI. The figure shows that the Pétain effect a a significant driver of collaboration across the board. The only categories for which the coefficient falls short of statistical significance is the Milice (imprecisely estimated) and the left-wing collaboration group: Comite ouvrier de Secours Immédiat. One reason why the coefficient is imprecisely estimated for the Milice is that the Milice was constituted very late, in 1943, when initial enthusiasm for Pétain had already waned. Furthermore, as stressed by (Burrin, 1996), due to its violent nature, the Milice was a disparate group formed not only of Pétain's faithful followers but also of many hot heads and criminals, a category that would blur the Pétain effect.

Figure 5: Number of collaborators by category, main categories



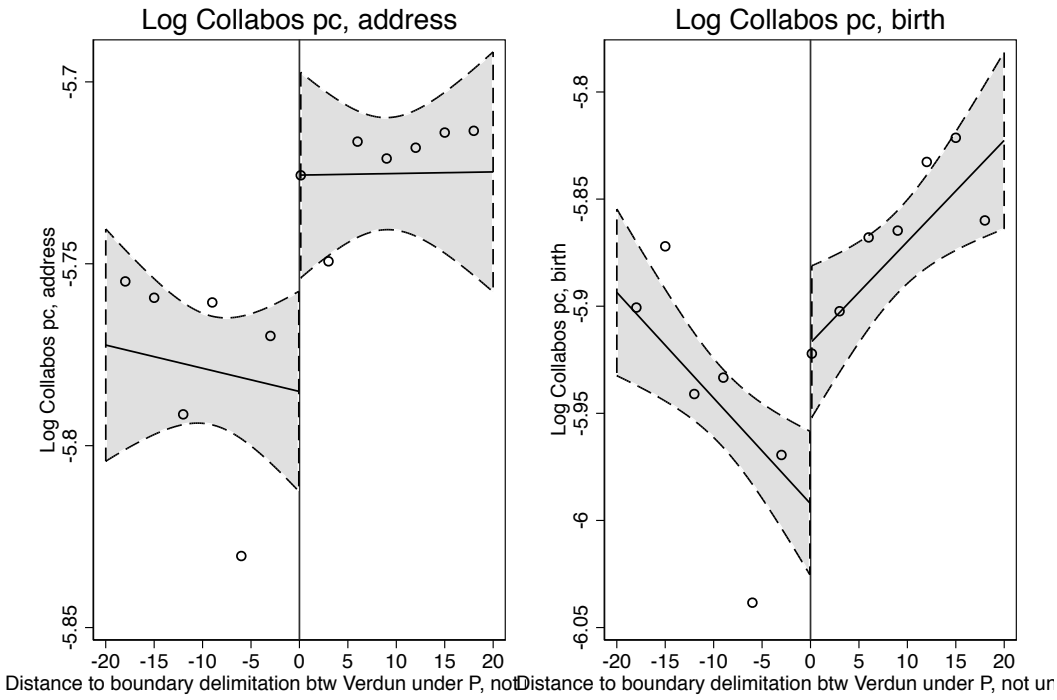
Notes: The figure shows coefficients obtained from separate regressions of the log share of collaborators either residing (left panel) or born (right panel) in the municipality, controlling for the full set of controls and department fixed effects, and varying the months of combat at Verdun. Each line is a separate regression. Standard errors are clustered at the regiment level. Horizontal bars indicate 90% 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 6: Estimated effect of fighting at Verdun in different months on the share of collaborators



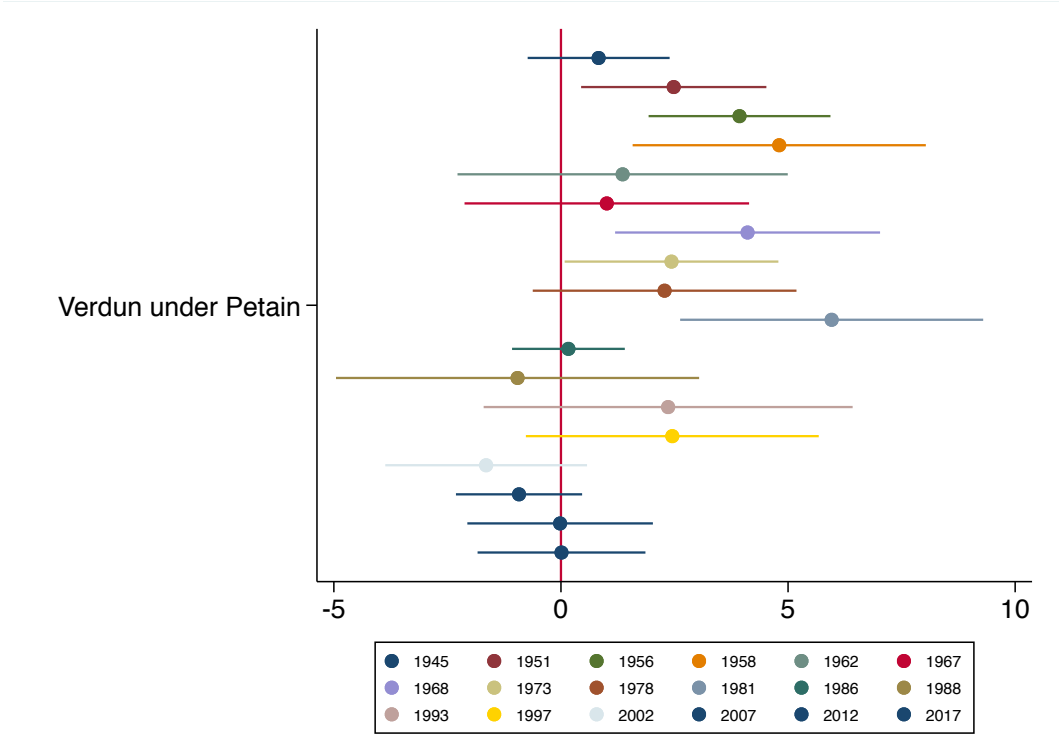
Notes: This figure uses only municipalities in an area 20km or less of the boundary between two military catchment areas: one that did sent troops to Verdun under direct command of Pétain, and the other that did not. The figure shows that there is no difference in political preferences measured by local demonstrations for: Royalist of Bonapartist groups, Anarchist groups, or Communist or Socialist groups, before 1914. Dots correspond to data aggregated into 3-km (1.86-mile) bins for visualization, while the lines are based on all underlying observations, with the shaded areas representing 90% confidence intervals. The 20km bandwidth is based on the **??** optimal bandwidth selection procedure.

Figure 7: Regressions Discontinuity plots



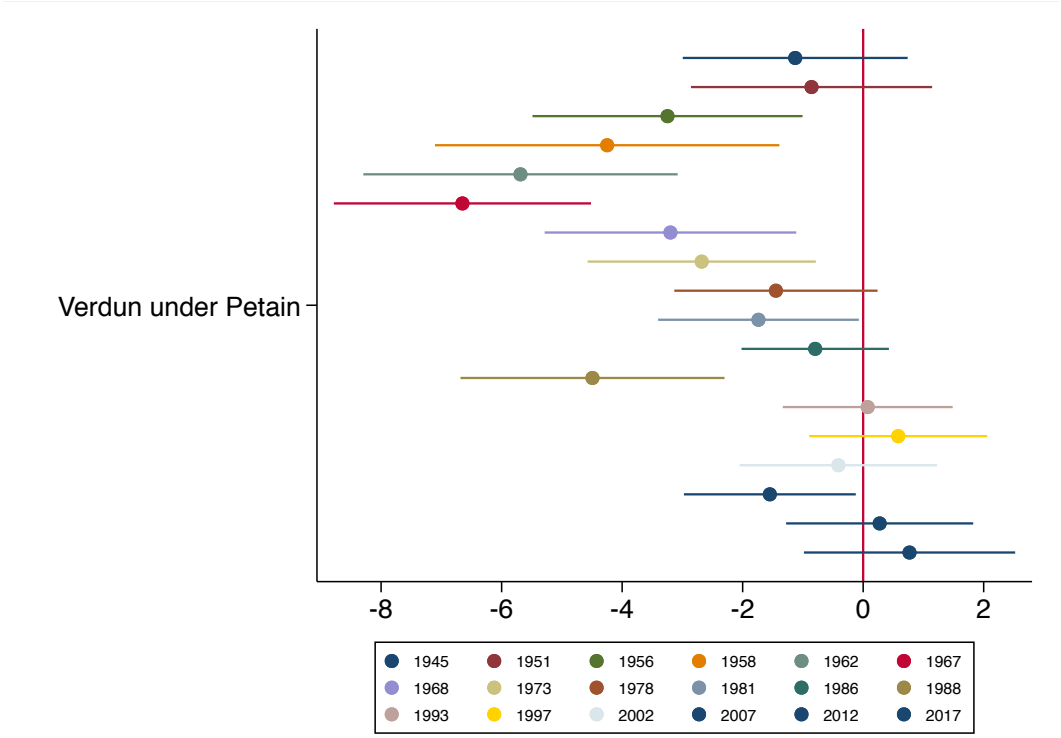
Notes: See notes to Figure 7. The Figure shows a sharp discontinuity in the local shares of collaborators, with the local shares of collaborators residing (left panel) or born in the municipalities (right panel) whose regiment served under direct command of Pétain at Verdun in 1916. See Table 17 in appendix for the corresponding regression results.

Figure 8: Regressions Discontinuity plots



Notes: The figure plots the results of individual specifications identical to using the share of votes for the Right or the Extreme Right in each election (as indicated in the bottom of the table) as the dependent variable, with the full set of usual controls and department fixed effects. Standard errors clustered at the canton level (political administrative unit).

Figure 9: Pétain and the vote share for the Right and Extreme Right in post-war France



Notes: The figure plots the results of individual specifications identical to using the share of votes for the Left or the Extreme Left in each election (as indicated in the bottom of the table) as the dependent variable, with the full set of usual controls and department fixed effects. Standard errors clustered at the canton level (political administrative unit).

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



Figure 11: Referendum on "If France had to choose a dictator, who would you pick?" in the "Petit Journal" newspaper, on 5 December 1934

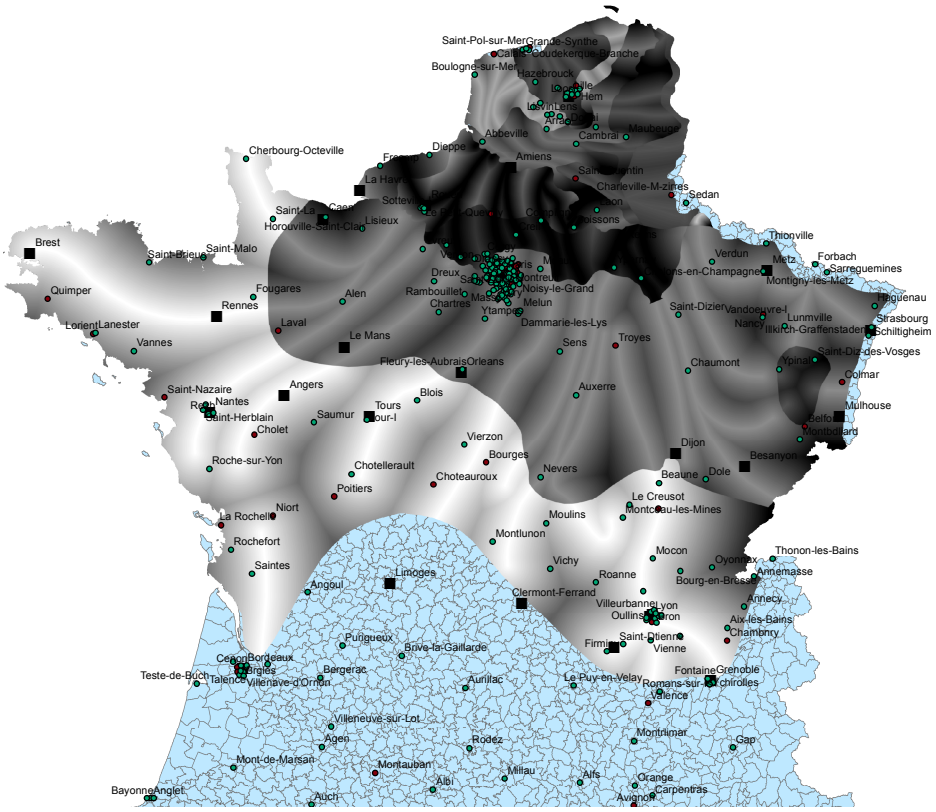
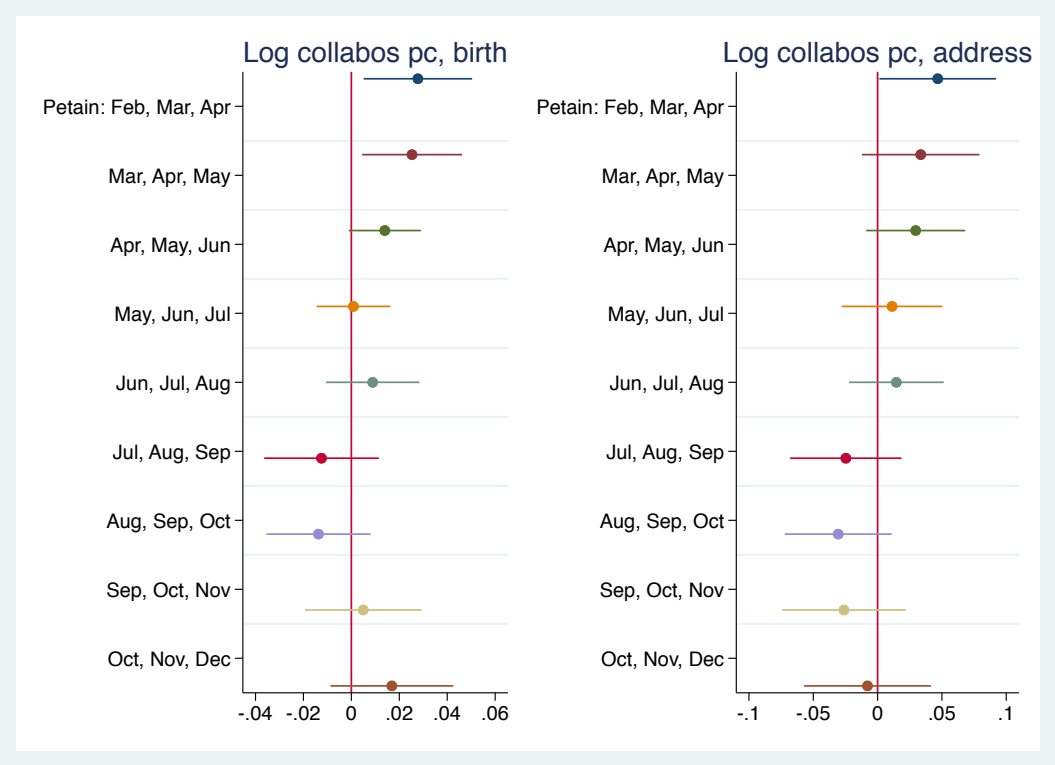
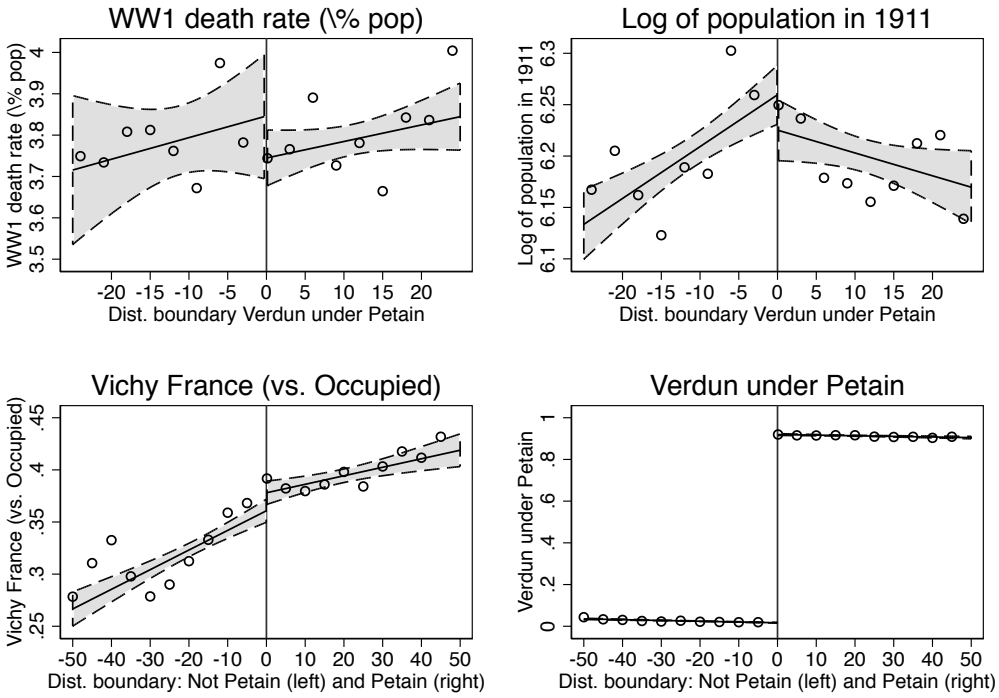


Figure 12: Heat map of combat intensity in 1940. Own calculations based upon weekly German individual unit movements derived from the *The West Point atlas of American wars*.



Notes: The figure shows coefficients obtained from a specification regressing the shares of collaborators either residing (left panel) or born (right panel) in the municipality on any combination of three consecutive months at Verdun, controlling for the full set of controls and department fixed effects. Each line is a separate regression. Standard errors are clustered at the regiment level. The figure shows that the effect of combat at Verdun on the shares of collaborators is only positive and significant for the months during which Petain was in command of the battle, that is to say: February, March, and April. For the share of collaborators born in the commune (right panel), the positive coefficient remains positive but becomes smaller for March, April, and May, that is to say when the combination includes two treated months (March, April) and an untreated month (May), suggesting that the inclusion of the untreated month brings the coefficient towards zero.

Figure 13: Number of collaborators by category, main categories



Notes: This figure uses only municipalities in an area 20km or less of the boundary between two military catchment areas: one that did sent troops to Verdun under direct command of Petain, and the other that did not. The figure shows that there is no difference in other covariates related to the first World War, such as the rate of military casualties, or to the Second World War, such as the delimitation between Vichy or occupied France. There is also no differences in the log of the population in 1911, which could gave affected the likelihood of drawing excess recruits, which could then be affected to a different regiment than the military catchment's. Because some military catchments garrisoned multiple regiments, whose battle history could differ, the RD design is fuzzy. Nevertheless, the last panel in the Figure shows that there is a sharp discontinuity in the probability of serving at Verdun under direct command of Petain to the right of the border. Dots correspond to data aggregated into 3-km (1.86-mile) bins for visualization, while the lines are based on all underlying observations, with the shaded areas representing 90% confidence intervals. The 20km bandwidth is based on the **??** optimal bandwidth selection procedure.

Figure 14: Regressions Discontinuity plots

Table 1: **Descriptive statistics**

Variable	Mean	Mean	St. Dev.	Min	Max
Collaboration					
Log Collabos pc, address	33,721	-5.77	0.85	-9.40	-0.35
Log Collabos pc, birth	33,721	-5.92	1.01	-12.53	-0.48
Log Pol. Collabos pc, address	33,721	-5.93	0.92	-10.61	-1.95
Log Pol. Collabos pc, birth	33,721	-6.02	1.03	-12.53	-1.03
Log Param. Collabos pc, address	33,721	-5.95	0.93	-10.20	-1.59
Log Param. Collabos pc, birth	33,721	-6.01	1.03	-12.53	-0.83
Log Nazi Collabos pc, address	33,721	-6.07	1.06	-12.53	-1.95
Log Nazi Collabos pc, birth	33,721	-6.03	0.99	-11.76	-1.95
Log RNP pc, address	33,721	-5.99	0.98	-12.40	-1.95
Log PPF pc, address	33,721	-6.02	0.98	-10.91	-1.95
Log Milice pc, address	33,721	-6.00	0.97	-10.43	-1.95
Log SOL pc, address	33,721	-6.07	1.05	-12.05	-1.95
Log Gestapo pc, address	33,721	-6.05	1.02	-11.76	-1.95
Log RNP pc, birth	33,721	-6.06	1.06	-12.53	-1.95
Log PPF pc, birth	33,721	-6.05	1.04	-12.53	-1.95
Log Milice pc, birth	33,721	-6.04	1.05	-12.53	-1.12
Log SOL pc, birth	33,721	-6.08	1.07	-12.53	-1.95
Log Gestapo pc, birth	33,721	-6.08	1.07	-12.53	-1.95
WWI variables					
Verdun under Pétain	33,721	0.49	0.47	0	1
Verdun	33,721	0.89	0.30	0	1
Marne	33,721	0.65	0.45	0	1
Somme	33,721	0.44	0.48	0	1
Chemin des Dames	33,721	0.37	0.46	0	1
Mutinies 1917	33,721	0.24	0.39	0	1
Second Army	33,721	0.04	0.21	0	1
WWI Death Rate	32,920	3.78	3.17	0.01	400.55
Log Pop 1911	33,542	6.24	1.00	0	13.22
Share officers as prop. all casualties	33,005	0.02	0.05	0	1
Total Deaths Regiment	33,721	3135.05	722.32	1373	4726
WWII variables					
Log pop 1936	33,721	6.09	1.08	1.95	12.55
Combat days in 1940	33,721	4.44	3.50	0	23
Log distance to demarcation	33,721	4.65	1.16	0	6.35
Vichy France	33,721	0.38	0.49	0	1
Log resistants	28,369	-4.37	0.71	-10.89	1.99
Political pre-trends					
Royalists or Bonapartists < 1914	33,447	0.12	3.34	0	100
Anarchists < 1914	33,447	0.02	1.28	0	100
Socialists or Communists < 1914	33,447	0.06	2.38	0	100

Data sources: Data on collaborators from the list of suspected collaborators from *"Bureau central de renseignement et d'action"*, data on commune assignment to WWI battles from the 1915 *Dictionnaire des Communes* and the military histories of each of the 173 line French infantry regiments engaged at the start of WWI, data on military casualties in WWI from Memoire des Hommes and (Gay, 2017), data on combat intensity in WWII from the Hoover Institute. Data on political protests from Tilly and Zambrano (1 12).

Table 2: **Combat exposure to Pétain and Collaboration**

	(1)	(2)	(3)	(4)	(5)	(6)
	Log Collaborators per capita					
	Birthplaces			*Addresses*		
Verdun under Pétain	0.109**	0.032**	0.033**	0.101**	0.051**	0.051**
	(0.052)	(0.013)	(0.013)	(0.042)	(0.024)	(0.024)
Verdun	-0.044	-0.011	-0.011	-0.038	-0.012	-0.012
	(0.084)	(0.011)	(0.011)	(0.080)	(0.032)	(0.031)
WWI Death Rate		0.004***	0.004***		-0.001	-0.001
		(0.001)	(0.001)		(0.001)	(0.001)
Log Pop 1911		0.076***	0.073***		-0.049*	-0.053*
		(0.010)	(0.010)		(0.026)	(0.027)
Log pop 1936			0.792***			1.054***
			(0.222)			(0.231)
Combat days in 1940			-0.015			-0.302
			(0.767)			(0.894)
Log distance to demarcation			0.900**			0.954*
			(0.430)			(0.512)
Vichy France		-0.903***	-0.904***		-0.536***	-0.537***
		(0.010)	(0.009)		(0.030)	(0.031)
Royalists or Bonapartists < 1914		0.001	0.001		0.002	0.002
		(0.002)	(0.002)		(0.005)	(0.005)
Anarchists < 1914		-0.006	-0.006		0.015*	0.014*
		(0.005)	(0.005)		(0.008)	(0.008)
Socialists or Communists < 191		0.030**	0.029**		-0.074**	-0.075**
		(0.013)	(0.013)		(0.032)	(0.033)
Department FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,728	33,728	33,728	33,721	33,721	33,721
R-squared	0.248	0.853	0.854	0.220	0.626	0.628

Notes: This table shows that municipalities which fought at Verdun under direct command of Pétain in 1916 have substantially higher shares of collaborators in WWII either residing or born in the municipality. We ran regressions at the municipality level using data from the list of 100,000 suspected collaborators collected by the *"Bureau central de renseignement et d'action"*, the 1915 (*Dictionnaire des Communes*, the military histories of each of the 173 line French infantry regiments engaged at the start of WWI, data on military casualties in WWI from Memoire des Hommes and (Gay, 2017), data on combat intensity in WWI from the Hoover Institute. We impute zeros for observations with missing information on: Pop 1911, Pop 1936, or WWI death rates, as well as an indicator dummy for whether the variable is missing. Robust standard errors clustered at Regiment level in parentheses (*** p¡0.01, ** p¡0.05, * p¡0.10).

Table 3: **Combat exposure to Pétain and Resistance**

	(1)	(2)	(3)
	Log Resistants per capita		
Verdun under Pétain	-0.081**	-0.110***	-0.109***
	(0.037)	(0.029)	(0.029)
Verdun	0.004	0.022	0.022
	(0.057)	(0.038)	(0.038)
WWI Death Rate		0.003**	0.003**
		(0.001)	(0.001)
Log Pop 1911		0.344***	0.343***
		(0.030)	(0.030)
Log pop 1936		-0.524***	-0.525***
		(0.030)	(0.030)
Combat days in 1940		-0.012*	-0.012*
		(0.006)	(0.006)
Log distance to demarcation		-0.017	-0.017
		(0.016)	(0.016)
Vichy France		0.090**	0.090**
		(0.043)	(0.043)
Royalists or Bonapartists < 1914			0.439***
			(0.126)
Anarchists < 1914			-0.156
			(0.236)
Socialists or Communists < 1914			0.479***
			(0.139)
Department FE	Yes	Yes	Yes
Observations	28,369	28,369	28,369
R-squared	0.324	0.428	0.429

Notes: This table shows that municipalities which fought at Verdun under direct command of Pétain in 1916 have substantially higher shares of resistants in WWII. We ran regressions at the municipality level using data from the list of 600,000 members of the Resistance from the military Archices. Other sources of data are the 1915 (*Dictionnaire des Communes*, the military histories of each of the 173 line French infantry regiments engaged at the start of WWI, data on military casualties in WWI from Memoire des Hommes and (Gay, 2017), data on combat intensity in WWI from the Hoover Institute. We impute zeros for observations with missing information on: Pop 1911, Pop 1936, or WWI death rates, as well as an indicator dummy for whether the variable is missing. Robust standard errors clustered at Regiment level in parentheses (*** p¡0.01, ** p¡0.05, * p¡0.10).

Table 4: **Combat exposure to Pétain and the Nature of Collaboration**

	(1)	(2)	(3)	(4)	(5)	(6)
	Log Pol. Collabos		Log Param. Collabos		Log Nazi Collabos	
	Per capita, Birthplaces					
Verdun under Petain	0.097*	0.016*	0.100*	0.018*	0.096*	0.010**
	(0.054)	(0.009)	(0.055)	(0.010)	(0.057)	(0.004)
Verdun	-0.040	-0.002	-0.045	-0.008	-0.034	0.008***
	(0.090)	(0.007)	(0.090)	(0.009)	(0.094)	(0.003)
Pre-1914 controls	No	Yes	No	Yes	No	Yes
WWII Controls	No	Yes	No	Yes	No	Yes
Pre-trends	No	Yes	No	Yes	No	Yes
Department FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,728	33,728	33,728	33,728	33,728	33,728
R-squared	0.251	0.936	0.250	0.934	0.245	0.982

	(7)	(8)	(9)	(10)	(11)	(12)
	Log Pol. Collabos		Log Param. Collabos		Log Nazi Collabos	
	Per capita, Addresses					
Verdun under Petain	0.121**	0.057***	0.094**	0.027	0.101*	0.024**
	(0.050)	(0.017)	(0.047)	(0.019)	(0.054)	(0.010)
Verdun	-0.066	-0.034+	-0.024	0.006	-0.056	-0.018+
	(0.088)	(0.024)	(0.086)	(0.020)	(0.092)	(0.011)
Pre-1914 controls	No	Yes	No	Yes	No	Yes
WWII Controls	No	Yes	No	Yes	No	Yes
Pre-trends	No	Yes	No	Yes	No	Yes
Department FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,728	33,728	33,728	33,728	33,728	33,728
R-squared	0.235	0.815	0.235	0.842	0.231	0.945

Notes: This table shows that Pétain exposure influences collaboration across its various facets. All regressions are at the municipality level with department fixed effects. "Pre-1914 controls" are: World War I death rate (number of soldiers born in a municipality who died in WWI, as a function of 1911 municipality population) and the log of the 1911 population. "WWII Controls": mean combat days in 1940, log of distance to demarcation line, indicator dummy for Vichy France, log of 1936 population. "Pre-trends": number of pre-1914 demonstrations by: Royalist or Bonapartist groups, Anarchsist groups, or Communist or Socialist groups. See notes to Table 2 for data sources and imputation methods for missing historical information. Robust standard errors clustered at Regiment level in parentheses (*** p¡0.01, ** p¡0.05, * p¡0.10).

Table 5: **Accounting for differences in battle experiences in the First World War**

Dependent variable	(1) Log Collabos pc, address	(2)	(3) Log Collabos pc, birth	(4)	(5) Log Collabos pc, address	(6)	(7) Log Collabos pc, address	(8)	(9) Log Collabos pc, birth	(10)
Sample	*Full sample*				*April vs May 1916 at Verdun*		*Full sample*			
Verdun under Petain	0.091**	0.045*	0.105**	0.033***	0.262**	0.105*	0.110**	0.052**	0.123**	0.031**
	(0.042)	(0.024)	(0.052)	(0.012)	(0.099)	(0.057)	(0.044)	(0.025)	(0.052)	(0.013)
Verdun	-0.042	-0.018	-0.032	-0.003			-0.039	-0.012	-0.044	-0.010
	(0.074)	(0.029)	(0.087)	(0.012)			(0.080)	(0.031)	(0.085)	(0.011)
Marne	-0.011	-0.006	0.009	0.017*						
	(0.075)	(0.030)	(0.086)	(0.010)						
Somme	-0.001	0.012	-0.001	0.010						
	(0.059)	(0.026)	(0.074)	(0.012)						
Chemin des Dames	-0.028	-0.017	-0.002	0.026*						
	(0.042)	(0.035)	(0.058)	(0.015)						
Outside France	-0.042	-0.037	0.016	0.026*						
	(0.077)	(0.032)	(0.079)	(0.015)						
Mutiny in 1917							-0.039	0.001	-0.063	0.004
							(0.038)	(0.017)	(0.044)	(0.010)
Pre-1914 controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
WWII Controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Pre-trends	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Department FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,721	33,721	33,728	33,728	13,297	13,297	33,721	33,721	33,728	33,728
R-squared	0.220	0.628	0.248	0.854	0.243	0.620	0.220	0.628	0.248	0.854

Notes: This table shows that the Pétain effect is rosbut to accounting for other potential differences in battle experience in the First World War. Columns 1 to 4 consider the full battle history of the regiment in other major battles or fronts of the First World War. Columns 5 and 6 restrict the sample to regiments that fought at Verdun in either April (under Pétain's command) or May (immediately after Pétain was removed from direct command on May 1st). Columns 7 to 10 includes a control for whether the regiment filled by the municipality experienced a mutiny in 1917. See notes to Table 2 for description of controls, data sources and imputation methods for missing historical information. Robust standard errors clustered at Regiment level in parentheses (*** p¡0.01, ** p¡0.05, * p¡0.10).

Table 6: Exposure to Pétain and 1932 legislative election results: Vote for the right

	Right 1932 (level)		Right 1932 (log)	
	(1)	(2)	(3)	(4)
Verdun under Pétain	3.811*	3.817*	0.440**	0.440**
	(2.179)	(2.179)	(0.210)	(0.210)
Verdun	-1.312	-1.314	0.002	0.002
	(4.356)	(4.356)	(0.378)	(0.378)
Fixed effecs	Dep	Dep	Dep	Dep
WWI Death rate	Yes	Yes	Yes	Yes
Political pre-trends	No	Yes	No	Yes
R-squared	0.28	0.28	0.28	0.28
Observations	28,221	28,221	28,221	28,221
Mean DepVar	15.4	15.4	1.5	1.5
Sd DepVar	21.8	21.8	1.7	1.7

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a canton. All the estimations include department fixed effects.

Table 7: Exposure to Pétain and 1936 legislative election results: Vote for the right

	Right 1936		Far Right 1936	
	(1)	(2)	(3)	(4)
Verdun under Pétain	0.560*	0.560*	0.001	0.001
	(0.291)	(0.291)	(0.002)	(0.002)
Verdun	-0.790**	-0.791**	0.002	0.002
	(0.394)	(0.394)	(0.003)	(0.003)
Fixed effecs	Dep	Dep	Dep	Dep
WWI Death rate	Yes	Yes	Yes	Yes
Political pre-trends	No	Yes	No	Yes
R-squared	0.34	0.34	0.19	0.19
Observations	30,536	30,536	30,536	30,536
Mean DepVar	1.8	1.8	0.0	0.0
Sd DepVar	1.8	1.8	0.1	0.1

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a canton. All the estimations include department fixed effects.

Table 8: Exposure to Pétain and 1936 legislative election results: Party-level analysis

	Communist	SFIO	USR	Rad. Soc.	Dem. pop.	Alliance Democratique	URD	Conservateurs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Verdun under Pétain	0.048	-0.033	-0.200*	0.133	-0.023	0.464*	0.483*	0.083
	(0.096)	(0.105)	(0.115)	(0.340)	(0.094)	(0.253)	(0.254)	(0.148)
Verdun	-0.090	0.131	0.325**	-0.617	0.251**	-0.642	-0.515	-0.159
	(0.152)	(0.176)	(0.153)	(0.397)	(0.109)	(0.407)	(0.403)	(0.130)
Fixed effecs	Dep	Dep	Dep	Dep	Dep	Dep	Dep	Dep
WWI Death rate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Political pre-trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.45	0.47	0.31	0.36	0.26	0.30	0.35	0.24
Observations	30,536	30,536	30,536	30,536	30,536	30,536	30,536	30,536
Mean DepVar	1.9	2.4	0.5	2.1	0.3	2.1	1.5	0.1
Sd DepVar	0.9	1.3	1.1	1.6	0.9	1.8	1.8	0.6

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models are estimated using OLS estimates. An observation is a canton. All the estimations include department fixed effects.

Table 9: **Regiment-level deaths by battle**

	(1) Battle Deaths Regiment
Marne	62.102
	(113.758)
Verdun	177.239
	(201.535)
Verdun under Petain	-153.652
	(131.601)
Somme	425.231***
	(128.708)
Chemin des Dames	570.350***
	(117.006)
Outside France	-639.610***
	(206.597)
Constant	2,597.935***
	(211.203)
Observations	173
R-squared	0.303

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10, + p<0.15

Table 10: **Regiment-level deaths by battle**

	(1) WWI Death Rate	(2) Log Pop 1911	(3) Share officers as prop. All casualties	(4) Log pop 1936	(5) Combat days in 1940	(6) Log distance to demarcation	(7) Vichy France	(8) Royalists or Bonapartists < 1914	(9) Anarchists < 1914	(10) Socialists or Communists < 1914	(11) Number of strikes 1890 to 1914*	(12) Number of strikes: 1830-1935*	(13) Share of strikers: 1890-1914*
Verdun under Petain	0.100	-0.033	-0.001	-0.085+	-0.096	0.004	0.009	-0.000	0.000	0.000	43.779	23.677	-0.002
	(0.128)	(0.049)	(0.001)	(0.057)	(0.232)	(0.081)	(0.016)	(0.001)	(0.000)	(0.001)	(62.752)	(43.101)	(0.028)
Verdun	0.209+	0.047	-0.007***	0.042	0.839	-0.031	-0.006	0.000	0.000	-0.000	182.742	136.150	-0.012
	(0.143)	(0.079)	(0.002)	(0.094)	(0.581)	(0.070)	(0.009)	(0.001)	(0.000)	(0.000)	(203.954)	(123.356)	(0.046)
Constant	3.555***	6.209***	0.026***	6.090***	3.773***	4.665***	0.375***	0.001**	0.000***	0.000**	46.690	49.210	0.714***
	(0.127)	(0.071)	(0.002)	(0.087)	(0.552)	(0.048)	(0.006)	(0.000)	(0.000)	(0.000)	(188.294)	(112.300)	(0.039)
Observations	34,125	34,766	34,210	33,721	34,947	34,947	34,947	34,669	34,669	34,669	34,947	34,947	34,947
R-squared	0.025	0.256	0.046	0.245	0.834	0.800	0.874	0.009	0.003	0.009	0.201	0.195	0.169

Table 11: **Robustness to controlling for Resistance Membership**

	(1)	(2)	(3)	(4)	(5)	(6)
	Log Collabos pc, birth			Log Collabos pc, address		
Verdun under Petain	0.121***	0.038***	0.038***	0.110***	0.064***	0.064***
	(0.041)	(0.013)	(0.013)	(0.039)	(0.024)	(0.024)
Verdun	-0.046	-0.014	-0.014	-0.032	-0.013	-0.013
	(0.064)	(0.012)	(0.012)	(0.066)	(0.033)	(0.032)
Log Resistants pc	0.529***	0.086***	0.084***	0.445***	0.175***	0.173***
	(0.020)	(0.006)	(0.006)	(0.018)	(0.011)	(0.011)
WWI Death Rate		0.003**	0.003**		-0.002	-0.002
		(0.001)	(0.001)		(0.001)	(0.001)
Log Pop 1911		0.052***	0.051***		-0.072***	-0.074***
		(0.013)	(0.013)		(0.023)	(0.023)
Log pop 1936		-0.842***	-0.845***		-0.443***	-0.446***
		(0.012)	(0.012)		(0.027)	(0.027)
Combat days in 1940		0.003	0.003		0.005	0.004
		(0.002)	(0.002)		(0.005)	(0.005)
Log distance to demarcation		-0.004	-0.005		0.016*	0.015*
		(0.006)	(0.006)		(0.008)	(0.008)
Vichy France		0.022+	0.021+		-0.090**	-0.091**
		(0.014)	(0.014)		(0.035)	(0.035)
Royalists or Bonapartists < 1914			0.766***			0.939***
			(0.230)			(0.210)
Anarchists < 1914			-0.046			-0.298
			(0.757)			(0.857)
Socialists or Communists < 1914			0.866*			0.838+
			(0.453)			(0.509)
Observations	28,369	28,369	28,369	28,369	28,369	28,369
R-squared	0.347	0.836	0.837	0.311	0.591	0.594

Table 12: **Robustness of Table 2 to Poisson estimation**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Collaborators per capita				Resistance members per capita		
	Birthplaces				*Addresses*				
Specification					Poisson				
Verdun under Pétain	0.347***	0.346***	0.346***	0.119	0.115	0.117	-0.177***	-0.198***	-0.198***
	(0.084)	(0.081)	(0.082)	(0.098)	(0.097)	(0.096)	(0.052)	(0.047)	(0.047)
Verdun	-0.193**	-0.146	-0.150	-0.050	-0.038	-0.040	0.076	0.077	0.077
	(0.098)	(0.107)	(0.106)	(0.118)	(0.120)	(0.119)	(0.063)	(0.055)	(0.055)
WWI Death Rate		0.009***	0.009***		0.000	0.000		0.003***	0.003***
		(0.002)	(0.002)		(0.006)	(0.006)		(0.001)	(0.001)
Log Pop 1911		-0.020	-0.024		-0.011	-0.017		0.574***	0.574***
		(0.084)	(0.084)		(0.080)	(0.075)		(0.057)	(0.056)
Log pop 1936	-0.517***	-0.488***	-0.487***	0.221***	0.227***	0.227***	-0.002	-0.512***	-0.512***
	(0.034)	(0.081)	(0.081)	(0.022)	(0.070)	(0.068)	(0.010)	(0.055)	(0.053)
Combat days in 1940		-0.024	-0.024		-0.007	-0.008		-0.012	-0.012
		(0.020)	(0.020)		(0.014)	(0.014)		(0.009)	(0.009)
Log distance to demarcation		-0.062	-0.063		0.061*	0.060*		0.002	0.002
		(0.044)	(0.044)		(0.033)	(0.033)		(0.021)	(0.021)
Vichy France		0.327**	0.330**		-0.174	-0.177		0.085	0.084
		(0.146)	(0.147)		(0.131)	(0.132)		(0.059)	(0.059)
Royalists or Bonapartists < 1914			1.706***			0.483**			-0.001
			(0.509)			(0.211)			(0.204)
Anarchists < 1914			0.566			-0.643			0.133
			(0.851)			(0.709)			(0.298)
Socialists or Communists < 1914			0.832			0.923**			-0.001
			(0.636)			(0.401)			(0.274)
Department fixed effects	Yes	Yes	Yes	Yes	Yes	Yes			
Observations	33,716	33,716	33,716	33,719	33,719	33,719	33,699	33,699	33,699

Table 13: **Robustness of Table 2: intensive margin**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Collaborators per capita						Resistance members per capita		
	Birthplaces with at least one collaborator			*Addresses with at least one collaborator*			*Places with at least one resistance member*		
Specification					OLS				
Verdun under Pétain	0.146*	0.042	0.047+	0.156***	0.135***	0.139***	-0.081**	-0.110***	-0.109***
	(0.079)	(0.032)	(0.033)	(0.047)	(0.034)	(0.033)	(0.037)	(0.029)	(0.029)
Verdun	0.045	0.065**	0.062**	-0.103	-0.089**	-0.091**	0.004	0.022	0.022
	(0.135)	(0.029)	(0.028)	(0.080)	(0.040)	(0.040)	(0.057)	(0.038)	(0.038)
WWI Death Rate		0.003+	0.003+		-0.000	-0.000		0.003**	0.003**
		(0.002)	(0.002)		(0.004)	(0.004)		(0.001)	(0.001)
Log Pop 1911		0.119**	0.105*		0.059**	0.051*		0.344***	0.343***
		(0.059)	(0.059)		(0.026)	(0.026)		(0.030)	(0.030)
Log pop 1936		-0.887***	-0.886***		-0.540***	-0.541***		-0.524***	-0.525***
		(0.054)	(0.054)		(0.028)	(0.027)		(0.030)	(0.030)
Combat days in 1940		-0.004	-0.005		0.008	0.008		-0.012*	-0.012*
		(0.004)	(0.004)		(0.007)	(0.007)		(0.006)	(0.006)
Log distance to demarcation		0.012	0.009		0.007	0.006		-0.017	-0.017
		(0.011)	(0.011)		(0.011)	(0.012)		(0.016)	(0.016)
Vichy France		-0.031	-0.043		-0.033	-0.043		0.090**	0.090**
		(0.031)	(0.031)		(0.048)	(0.049)		(0.043)	(0.043)
Royalists or Bonapartists <1914			1.066***			0.893***			0.439***
			(0.301)			(0.220)			(0.126)
Anarchists < 1914			0.598			0.274			-0.156
			(0.972)			(1.180)			(0.236)
Socialists or Communists <1914			1.044**			0.901*			0.479***
			(0.472)			(0.528)			(0.139)
Department fixxed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,718	5,718	5,718	8,551	8,551	8,551	28,369	28,369	28,369
R-squared	0.212	0.844	0.848	0.209	0.564	0.569	0.324	0.428	0.429

Table 14: **The nature of collaboration: Results by collaborationist subgroups**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Log RNP pc, address			Log PPF pc, address			Log Milice pc, address			Log SOL pc, address			Log Gestapo pc, address		
Verdun under Petain	0.109**	0.040***	0.040***	0.093*	0.023*	0.023*	0.091*	0.023	0.023	0.087+	0.009**	0.009**	0.090*	0.015**	0.015**
	(0.050)	(0.010)	(0.010)	(0.052)	(0.014)	(0.013)	(0.047)	(0.017)	(0.017)	(0.056)	(0.004)	(0.004)	(0.054)	(0.006)	(0.006)
Verdun	-0.061	-0.030**	-0.030**	-0.017	0.013	0.013	-0.030	-0.001	-0.001	-0.038	-0.003	-0.002	-0.040	-0.005	-0.005
	(0.089)	(0.014)	(0.014)	(0.089)	(0.013)	(0.013)	(0.088)	(0.016)	(0.016)	(0.094)	(0.004)	(0.004)	(0.092)	(0.007)	(0.007)
Pre-1914 controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
WWII Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Pre-trends	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
Department FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728
R-squared	0.231	0.894	0.895	0.237	0.926	0.928	0.232	0.896	0.898	0.246	0.983	0.983	0.234	0.967	0.967

	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
	Log RNP pc, birth			Log PPF pc, birth			Log Milice pc, birth			Log SOL pc, birth			Log Gestapo pc, birth		
Verdun under Petain	0.092*	0.013**	0.013**	0.088+	0.010	0.010+	0.089+	0.011	0.011	0.082+	0.002	0.002	0.083+	0.003	0.003
	(0.054)	(0.005)	(0.005)	(0.054)	(0.007)	(0.007)	(0.054)	(0.008)	(0.008)	(0.057)	(0.003)	(0.003)	(0.056)	(0.003)	(0.002)
Verdun	-0.038	-0.002	-0.002	-0.032	0.002	0.002	-0.036	-0.003	-0.003	-0.036	0.000	0.000	-0.031	0.006**	0.006**
	(0.091)	(0.004)	(0.004)	(0.091)	(0.006)	(0.006)	(0.090)	(0.007)	(0.007)	(0.095)	(0.003)	(0.003)	(0.094)	(0.003)	(0.003)
Pre-1914 controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
WWII Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Pre-trends	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
Department FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728	33,728
R-squared	0.247	0.980	0.980	0.251	0.964	0.964	0.248	0.960	0.960	0.246	0.991	0.991	0.245	0.992	0.992

Table 15: **The nature of collaboration: Robustness to controlling for Resistance Membership**

	(1)	(2)	(3)	(4)	(5)	(6)
	Log Pol. Collabos		Log Param.		Log Nazi Collabos	
	Per capita, Birthplaces					
Verdun under Petain	0.111**	0.020**	0.112**	0.021*	0.110**	0.013**
	(0.043)	(0.009)	(0.044)	(0.011)	(0.047)	(0.005)
Verdun	-0.043	-0.005	-0.047	-0.010	-0.035	0.008*
	(0.070)	(0.008)	(0.070)	(0.011)	(0.075)	(0.004)
Log Resistants pc	0.540***	0.050***	0.540***	0.049***	0.547***	0.020***
	(0.022)	(0.004)	(0.022)	(0.004)	(0.023)	(0.003)
Pre-1914 controls	No	Yes	No	Yes	No	Yes
WWII Controls	No	Yes	No	Yes	No	Yes
Pre-trends	No	Yes	No	Yes	No	Yes
Department FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,369	28,369	28,369	28,369	28,369	28,369
R-squared	0.348	0.928	0.348	0.926	0.340	0.980

	(7)	(8)	(9)	(10)	(11)	(12)
	Log Pol. Collabos		Log Param.		Log Nazi Collabos	
	Per capita, Addresses					
Verdun under Petain	0.129***	0.062***	0.107***	0.036*	0.112**	0.027***
	(0.041)	(0.016)	(0.041)	(0.019)	(0.044)	(0.010)
Verdun	-0.062	-0.034	-0.022	0.005	-0.055	-0.018+
	(0.072)	(0.024)	(0.068)	(0.021)	(0.073)	(0.012)
Log Resistants pc	0.486***	0.103***	0.501***	0.106***	0.534***	0.061***
	(0.020)	(0.009)	(0.020)	(0.007)	(0.022)	(0.005)
Pre-1914 controls	No	Yes	No	Yes	No	Yes
WWII Controls	No	Yes	No	Yes	No	Yes
Pre-trends	No	Yes	No	Yes	No	Yes
Department FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,369	28,369	28,369	28,369	28,369	28,369
R-squared	0.331	0.791	0.340	0.821	0.335	0.938

Table 16: **Robustness to excluding fortress regiments**

	(1) Log Collabos per capita, address	(2) Log Collabos per capita, birth	(3) Log Pol. Collabos pc, address	(4) Log Pol. Collabos pc, birth	(5) Log Param. Collabos pc, address	(6) Log Param. Collabos pc, birth	(7) Log Nazi Collabos pc, address	(8) Log Nazi Collabos pc, birth
Verdun under Petain	0.042*	0.031**	0.050***	0.014*	0.018	0.016*	0.025**	0.011**
	(0.023)	(0.012)	(0.017)	(0.009)	(0.017)	(0.009)	(0.010)	(0.004)
Verdun	-0.021	-0.007	-0.041*	-0.000	0.007	-0.005	-0.021*	0.008**
	(0.029)	(0.011)	(0.022)	(0.007)	(0.020)	(0.010)	(0.011)	(0.003)
Pre-1914 controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WWII Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pre-trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32,131	32,134	32,134	32,134	32,134	32,134	32,134	32,134
R-squared	0.624	0.853	0.812	0.935	0.839	0.933	0.944	0.982

Table 17: **Regression Discontinuity across regiments' catchment boundaries**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Log Collabos per capita, address						Log Collabos per capita, birth					
Boundary sample	*<30km*		*<20km*		*<15km*		*<30km*		*<20km*		*<15km*	
Verdun under Petain	0.122***	0.051*	0.132***	0.051*	0.143***	0.050*	0.145***	0.024*	0.153***	0.022+	0.166***	0.025+
	(0.041)	(0.027)	(0.040)	(0.026)	(0.035)	(0.025)	(0.047)	(0.013)	(0.048)	(0.014)	(0.047)	(0.015)
Verdun	-0.068	-0.048+	-0.048	-0.024	-0.018	-0.008	-0.079	-0.006	-0.061	0.002	-0.039	-0.004
	(0.071)	(0.029)	(0.070)	(0.031)	(0.055)	(0.032)	(0.073)	(0.011)	(0.073)	(0.014)	(0.063)	(0.015)
Pre-1914 controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
WWII Controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
RD polynomial	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	22,084	22,083	16,537	16,536	13,144	13,143	22,085	22,084	16,538	16,537	13,145	13,144
R-squared	0.215	0.632	0.218	0.641	0.219	0.651	0.254	0.852	0.267	0.853	0.278	0.860

Table 18: **Organizational capacity of veterans: The additional effect of the Second Army**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Log collabos pc		Log. Political collabos pc		Log. Paramil. collabos pc		Log. Nazi collabos pc	
	Address	Birth	Address	Birth	Address	Birth	Address	Birth
Verdun under Pétain	0.042*	0.033***	0.049***	0.014*	0.019	0.017*	0.025**	0.009**
	(0.024)	(0.012)	(0.018)	(0.009)	(0.018)	(0.010)	(0.010)	(0.004)
Second Army	0.078+	0.021+	0.031	0.017	0.070**	0.014	0.007	0.005
	(0.049)	(0.013)	(0.040)	(0.012)	(0.027)	(0.010)	(0.017)	(0.007)
Verdun	0.017	-0.004	-0.020	0.004	0.031	-0.003	-0.016	0.011**
	(0.038)	(0.013)	(0.030)	(0.009)	(0.023)	(0.011)	(0.015)	(0.005)
Pre-1914 controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WWII Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pre-trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,721	33,728	33,728	33,728	33,728	33,728	33,728	33,728
R-squared	0.628	0.854	0.815	0.936	0.842	0.934	0.945	0.982
Mean Dep. Var.	-5.77	-5.92	-5.93	-6.02	-5.94	-6.01	-6.03	-6.06
Mean Verdun under Pétain				0.494				
Mean Second Army				0.044				

Table 19: **Organizational capacity of veterans: Deaths before and after exposure to Petain**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Log Collabos pc, birth		Log Pol. Collabos pc,		Log Param. Collabos pc, birth		Log Nazi Collabos pc, birth	
Verdun under Petain (Petain)	0.086**	0.050*	0.028	0.006	0.074***	0.041*	0.019*	0.001
	(0.036)	(0.030)	(0.022)	(0.020)	(0.027)	(0.023)	(0.011)	(0.010)
Verdun	-0.002	-0.005	0.001	-0.002	-0.001	-0.003	0.009***	0.007**
	(0.012)	(0.012)	(0.008)	(0.007)	(0.009)	(0.009)	(0.003)	(0.003)
Petain*Deaths after Verdun	-0.560*		-0.134		-0.575**		-0.092	
	(0.322)		(0.180)		(0.221)		(0.093)	
Deaths after Verdun	0.178		-0.059		0.293**		0.050	
	(0.162)		(0.094)		(0.128)		(0.056)	
Petain*Deaths before Verdun		-0.127		0.044		-0.151		0.045
		(0.152)		(0.101)		(0.114)		(0.049)
Deaths before Verdun		0.074		-0.032		0.123+		-0.008
		(0.110)		(0.081)		(0.081)		(0.039)
Pre-1914 controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WWII Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pre-trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Department FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32,925	32,925	32,925	32,925	32,925	32,925	32,925	32,925
R-squared	0.850	0.850	0.934	0.934	0.932	0.932	0.982	0.982