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Abstract

The quasi-exogenous division of the French regions Alsace and Lorraine after the Franco-Prussian War allows us to provide evidence about group identity formation within historically homogeneous regions. Using several measures of stated and revealed preferences spanning over half a century, we show that being exposed to occupation and repression for many decades caused a persistently stronger regional identity. The geographical RDD results are robust across all specifications. We document two mechanisms using data on regional newspapers and regionalist parties. The differences are strongest for the first two age cohorts after WWII and associated with preferences for more regional decision-making.

JEL-Codes: D910, H700, N400, Z190.

Keywords: group identity, regional identity, identity formation, persistence of preferences, homogenization policies, assimilation, Alsace-Lorraine.

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1 Introduction

The formation of common group identities at the regional, ethnic or country level is an important, yet poorly understood aspect of human behavior. Even though recent evidence suggests that heterogeneity within groups is on average greater than heterogeneity between groups (Desmet et al., 2017), we still observe strong existing group identities. These identities also have important effects both economically and politically (see summary in Kranton, 2016). Among others, arbitrarily determined national borders are associated with strong ethnic identities and weak common national identities in Africa, often related to conflict, violent struggles for autonomy, and inferior development (e.g., Besley and Reynal-Querol, 2014; Michalopoulos and Papaioannou, 2014, 2016; Rohner et al., 2013). In Europe, the strength of regional identities relative to national identities fuels separatism in regions like Catalonia, Flanders, and Scotland. At the same time, there exist culturally heterogeneous countries like Switzerland and the US, which exhibit a strong sense of common identity.

One reason for the difficulty of disentangling the factors influencing the identity formation process is the inadequacy of laboratory experiments to emulate identity formation. Experiments can only study groups of limited size for a short time period, and have to rely on artificial/restricted manipulations. For instance, it is hard to simulate violent repression, even though occupations and changes in nation status occurred frequently in history. Almost all current nation-states are composed of initially heterogeneous regions, which were more or less forcefully integrated and assimilated during the process of state formation. Observational studies, in contrast, can exploit these historical events, but struggle to distinguish their effect from other aspects that are specific to particular regions.

Our paper exploits a historical experiment that provides us with a unique opportunity to study the causal effect of occupation and intrusive assimilation policies. The French regions of Alsace and Lorraine were, as we explain in more detail below, split in an exogenous way into one part that always remained French and a (treated) part. The treated part was first in 1870 occupied by Germany and then became French again after WWI. The treated part was subject to more intrusive assimilation attempts by first the German and then the French central government. It took until the 1950s for tensions to calm down, which marks the end of our treatment period. This setting allows us to compare regional identity in a treated and control area that: (i.) belong to the same historically homogeneous regions, (ii.) were split in an exogenous way, (iii.) had one area clearly exposed to more repression and intrusive homogenization policies, (iv.) belong to the same institutional environment today, and (v.) allow us to gather outcome variables at a very fine-grained local geographical level.

Figure 1 shows the treated and untreated area of the Alsace and Lorraine regions. We first verify that there are no pre-treatment differences in regional and national identity, based on the *Cahiers de doléances* from 1789. Our main results using a geographical Regression Discontinuity Design (RDD) document a stronger regional identity in the treated area after that period, using municipal-level data from a referendum about higher regional autonomy in 1969 as a proxy for regional identity. We then show that this effect persists by using two related referenda in 1992 and 2005. We augment these measures of revealed preferences with survey evidence that people in the treated area state a stronger regional identity, while national identity is similarly strong in both areas.

Figure 1: Geographical location of the treated and untreated area



Notes: The map shows the division of Alsace and Lorraine after 1871. The treated area is shaded in light grey, and the untreated control area in dark grey. Both areas belong to France today. Current national borders are in bold.

One crucial advantage of our setting is the exogenous drawing of the border in 1870/71 due to disagreements within the German leadership, and the fact that the region returned to France after WWI. This enables us to compare people in the treated area with those in the control area after the treatment period (1870-1950s) ended, all of whom belong to the same institutional environment today. Thus we can use a wide range of variables as proxies for regional identity and as covariates. One inherent feature of this natural experiment is that the treated part experienced two changes in nation status: French to German, and German back to French. This means the treated area was exposed to more intrusive homogenization policies as part of the forceful integration into both the German, and then later the French nation-state. This could reduce the external validity if the initial occupier, Germany would have been successful in installing a strong German identity. In such a case, a clash between two competing national identities could explain the observed differences in regional identity, instead of, or in addition to, the higher exposure to forceful assimilation.

We discuss and provide evidence, however, that Germany never succeeded in installing a strong German identity. First, we do not find significant differences in French national identity in our survey data, as well as in a robustness test that uses support for the French national soccer team during the World Cup 2014 on Twitter. Second, we are able to replicate our results focusing only on French-speaking areas, where it was least likely that any German homogenization was successful. Third, historical qualitative evidence documents the foundation of regional political organizations and newspapers, as well as strong support for regionalist parties already during the treatment period. No comparable development occurred in the part that always remained French. Detailed historical evidence also specifically explains stronger regional identity in the treated area a plausible reaction to the intrusive homogenization policies enforced by the German and the French government between 1870 and the 1950s (Carrol and Zanoun, 2011; Höpel, 2012; Rothenberger, 1975).

Besides these concerns about the interpretation of the effect, there are other potential threats to identification. As the treatment border coincides with the current département border, differences between départements, such as a better policy in the treated area, could also cause a stronger regional

identity. We consider a wide range of post-treatment socio-economic factors and public goods to show that there are no problematic discontinuities at the border. Moreover, the exogeneity of the border is less credible in Alsace, where it largely coincides with the linguistic dialect border. All our results hold when excluding Alsace and German-dialect speaking areas from the analysis. We also run three important placebo tests. In the first, we show that there are no significant discontinuities at the older historical border of the two pre-1870 départements dividing Lorraine. Moreover, two other tests verify that distance to Paris or the closest external border does not affect the results. The second placebo test shows that there are no discontinuities at the border separating the untreated area from the rest of France. The third compares all French border départements with their adjacent neighbors. There are on average only much smaller and mostly insignificant discontinuities in the share of yes votes for the 1992 and 2005 referenda, and no regional or national identity differences in the survey results.

We then provide a simple formal model of identity transmission to explain how a temporary historical shock can lead to persistent differences in regional, but not necessarily national, identity. It models national and regional identity formation as being influenced by inputs from the central state as well as from regional agents. To align with the existing literature (e.g. [Bisin et al., 2011](#); [Doepke and Zilibotti, 2017](#)), we use the example of public schooling as an activity of the central state versus private input by the parents and other regional actors. Regional agents can invest in the regional identity of their children directly or by forming regional organizations like parties, associations and newspapers. We can provide evidence on these mechanisms. Still, note that for a concept like identity, any variable that we label a mechanism or input in the process can also itself be considered as an outcome signaling regional identity.

Regarding the formation of regionalist organizations, the historical evidence is detailed and clear. Many such organizations were established in the treated area already during the treatment period ([Anderson, 1972](#); [Carrol and Zanoun, 2011](#)), while no such development is reported from the control area. Despite occasional attempts to shut particular organizations and newspapers down, regionalist parties were politically successful during the treatment period. Even though being accused of conspiring with Nazi Germany in WWII (partly unfounded) was a huge blow in particular in Lorraine, we can show that regionalist parties remain significantly stronger in the treated area today. This holds particularly in formerly Alemanic-speaking areas. The second mechanism we can provide evidence for are differences in subscription rates to a regional newspaper. Regional newspapers are an interesting mechanism because every consumer can choose between regional and national newspapers. A regional newspaper is a valuable source of information about regional culture for the subscribers and their children, and also contains information about regional events and associations. We find that subscription rates are also significantly higher in the treated area within Lorraine.

Furthermore, distinguishing the prior survey results by age cohort shows that the differences in regional identity are strongest for the two age cohorts after the treatment period ended. The differences remain stronger when incorporating Alsace in the analysis, which could be related to the

stronger presence of regionalist parties or linguistic differences. Finally, we show that the differences in regional identity have important policy implications. People in the treated area show a significantly stronger preference for regional decision-making in many dimensions including schooling.

To set these results in a broader context, it is useful to consider alternative ways to verify the effect of repressing a particular group on their identity in observational studies. One solution is to study specific groups of immigrants living in the same host country, but being exposed to repressive policies in certain parts of the country and not in others (the approach in Fouka, 2018). This has the advantage that everyone can be observed in largely the same institutional environment, and that comparable outcome variables are available. One limitation is that migrants are a selected share of the initial population. Observing the behavior of a minority immigrant group in a foreign host country does also not necessarily have to correspond to the reaction of people whose home regions are integrated in larger nation-states. Our evidence is thus complementary to Fouka (2018).

Historically and contemporaneously, there are many examples of regions that are a part of current nation-states and experienced, or still experience, tensions with the central state. In Europe, examples range from Catalonia in Spain, to Corse in France, and Scotland in the UK. More violent examples of homogenization policies and repressive policies today are Chechnya and Crimea with their mixed populations in Russia, as well as Tibet and the Uighurs in China.¹ All those regions are or were at some point exposed to a "treatment" composed of more or less intrusive attempts to impose a common national identity. Empirically, however, there are no clear corresponding counterfactuals for a meaningful comparison.

There are also a few selected cases where initially homogeneous regions were split between different nation-states. The Kurdish region was split between Iran, Iraq and Turkey; the Austrian region Tyrol was split into Austrian Tyrol and South Tyrol in Italy; and the Basque region was split between France and Spain. For the two latter cases, we know that the parts which experienced arguably more tensions with the central state (in Italy and Spain) also exhibit a stronger regional identity and stronger regionalist parties. Nonetheless, it is hard to attribute these differences causally to forceful integration and homogenization policies, as the respective parts can only be observed in different nation-states today. The fact that our causal effect aligns with stronger regionalism in cases where we can only study correlations, and with the evidence on immigrants in Fouka (2018), is reassuring. Hence, we are convinced that our finding is not specific to our case, or that the repeated change in nation status does not affect the external validity of our results in a problematic way.

Our research adds and relates to different strands of literature. First, it adds to the literature on identity economics (e.g, Akerlof and Kranton, 2000; Fouka, Mazumder, and Tabellini, 2017; Lowes, Nunn, Robinson, and Weigel, 2017) and on the persistence and transmission of culture, identities and values (e.g, Bisin and Verdier, 2010; Gennaioli and Rainer, 2007; Giuliano and Nunn, 2016; Voigtländer and Voth, 2012 and Tabellini, 2008). Most existing models consider the case of two groups, a minority and majority group, and the choice whether to transmit certain values to the

¹ The Polish regions of Silesia and Bohemia, as well as Kaliningrad and Danzig originally featured a strong influence of German culture, which the central government tried to eliminate after WW2. Scania in Sweden was once Danish, and still has a distinct regional identity. Selected Sources can be found in Online Appendix, Section M.

next generation via parental investment. [Bisin et al. \(2011\)](#) explain how oppositional identities can persist, and [Fouka \(2018\)](#) models how both vertical socialization (parental investment) and horizontal socialization (schooling) influence the strength and transmission of a group identity. Our results model also reflects input from these two dimensions and provides evidence on the mechanisms.

There are also related strands of literature ranging from political science to sociology and social psychology. It is widely accepted that a common identity needs not to be based on objectively aligned preferences ([Turner, 1982](#)). [Tajfel et al. \(1971, p.16\)](#) argue that “awareness of a common category membership” is a necessary and sufficient condition for individuals to feel and act as a group. It seems plausible that the intrusive assimilation policies strengthened the awareness of Alsatians and Lorrainians of their cultural distinctiveness and led to an “alienation” of the affected citizens ([Goodfellow, 1993, p.454](#)). [Leed \(1981\)](#) argues that such a common experience strengthens the perceived importance of common group experiences and traits. The rejection-identification hypothesis ([Branscombe et al., 1999](#)) argues that the perceived common identity between an individual and a group can be affected not only by changing actual norms or preferences, but also by changing the importance assigned to different attributes. For instance, [Depetris-Chauvin et al. \(2018\)](#) show that the success of a common national sports team can increase national identity in Africa in the short term, arguably without changing actual intergroup differences.

We also relate to an emerging literature on policies that affect identities (e.g. [Alesina and Reich, 2018](#)).² [Dell and Querubin \(2017\)](#) document that bombing a region in Vietnam increased hostility towards the central government. Scholars also partly explain the below-average school performance of African Americans in the US with the perception of investments in education as acting “white” and opposed to black group identity ([Fryer Jr. and Torelli, 2010](#)), while for Asian Americans no such effects are observed. Our paper compares areas where people formerly possessed the same identity within the historical regions of Alsace and Lorraine by exploiting the exogenous border location.

One important mechanism through which the state can influence identity formation is schooling (e.g., [Bandiera et al., 2017](#); [Lott, 1999](#); [Ortega and Tangerås, 2008](#)). [Carvalho and Koyama \(2016\)](#) model how an education system that marginalizes a certain identity can cause cultural resistance on part of the marginalized group. Our model explains how this resistance can lead to persistent differences. The long run persistence of such an effect is not unusual, compared to other papers that document persistence over periods stretching more than a century ([Becker et al., 2015](#); [Guiso et al., 2016](#)). Compared to many other papers, we can document the treatment effect in the mid range, as well as in the long run about half a century later.

Our paper is structured as follows. Section 2 explains the historical background of Alsace and Lorraine, the exogeneity of the border, and describes our theoretical framework. Section 3 discusses the data and identification strategy, whilst Section 4 presents the main results. Section 5 discusses mechanisms, persistence and policy implications, and Section 6 evaluates potential threats to identification. Section 7 concludes.

² As well as to the literature about the size of nations and secessionism. Secessionism and separatist conflict can be driven by economic factors ([Gehring and Schneider, 2016](#)) and cultural differences (modeled as preference heterogeneity in [Alesina and Spolaore, 1997](#)).

2 Historical background and theoretical framework

2.1 History of Alsace and Lorraine: Division, borders and homogenization policies

To put our natural experiment into perspective, it is helpful to briefly discuss some important aspects of the history in the Alsace and Lorraine regions. Both regions have been autonomous political entities as far back as the 7th century. Under Charles the Bald, all of modern Lorraine was first united as a part of the Duchy of Lotharingia. Over the centuries, both regions developed strong regional identities with specific traditions and norms. After the Thirty Years' War (1618-1648), the Treaty of Westphalia ceded the Lorrainian cities of Metz, Verdun and Toul and all of Alsace to France. The rest of Lorraine effectively became French in 1767. Thus, at the time of the Franco-Prussian War in 1870/71, Alsace and Lorraine had been French for more than a century and were exposed to the same degree to nation building policies of Napoleon and other French leaders.

The peace treaty ending the Franco-Prussian War –July 19, 1870 to May 10, 1871 – then stipulated that large parts of Alsace and the eastern part of Lorraine were ceded to the newly created German state. The resulting border does not follow (i.) the existing *département* borders (Figure 2b), (ii.) any older historical border (Figures A4 - A7)³, (iii.) the historical linguistic border between French and German dialect speakers (Figure 2c). Of course, we want to better understand the reasons for this surprising decision. Luckily, historians cover the war period and negotiation process in detail.

There were three important groups in the negotiation. On the German side a faction led by Chancellor Bismarck and a faction composed of the charismatic military general von Moltke and the aged emperor Wilhelm I. The French side was represented by the leader of the anti-war conservative party, Adolphe Thiers. Obviously, the aim of the French side was to avoid any loss of territory. On the German side, the cautious statesman Chancellor Bismarck wanted to restrain territorial expansion to the Alemannic-dialect speaking parts of Alsace and Lorraine (Lipgens, 1964), in order to ease integration and avoid humiliating the French. In contrast, the historical literature indicates that the military faction led by von Moltke had always planned to conquer as much territory as possible (Förster, 1990), and keep it to weaken the arch-enemy in subsequent conflicts.

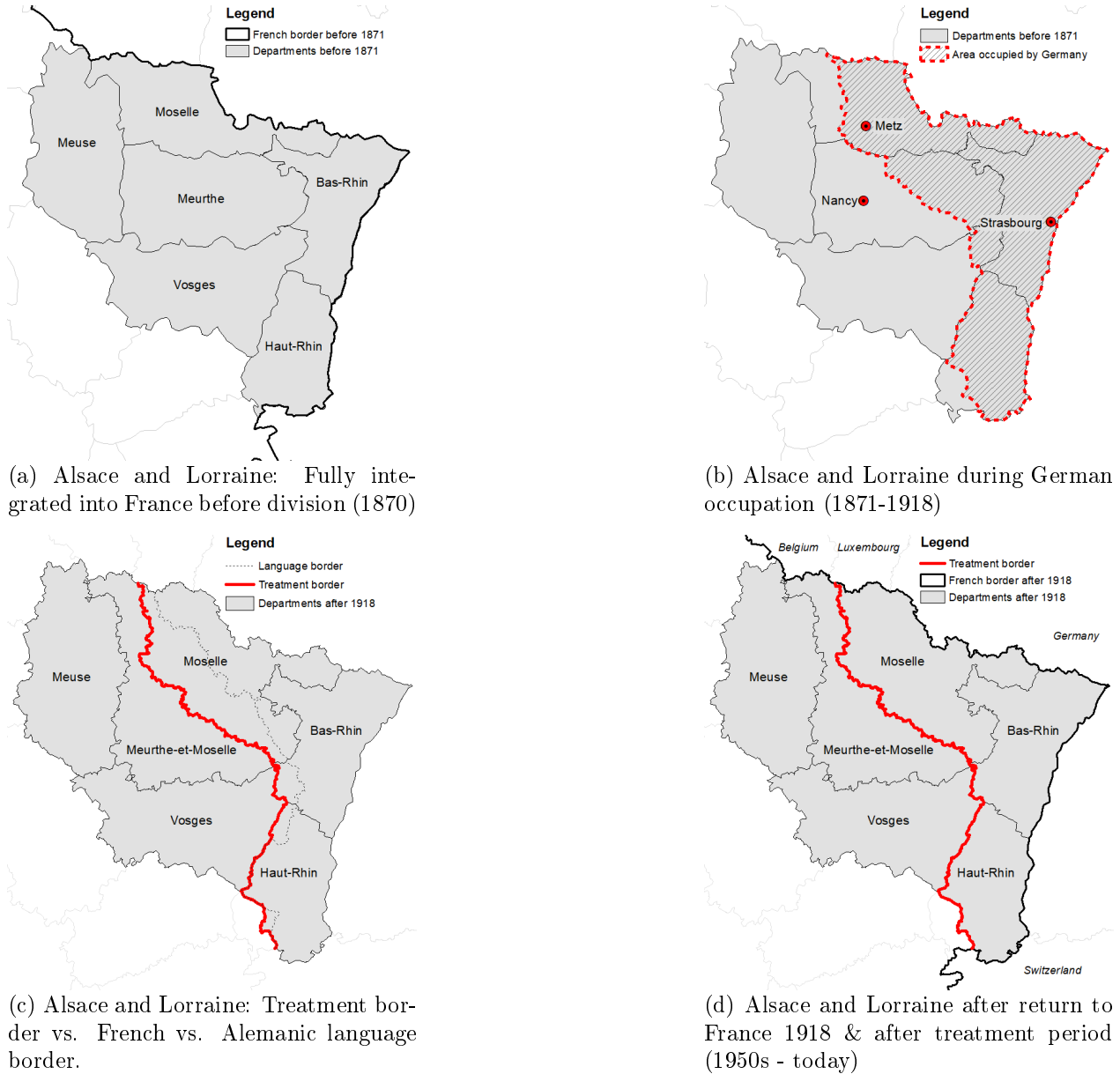
The negotiation process went back and forth and led to a final border demarcation that was exogenous to socio-economic considerations, in particular within Lorraine (Förster, 1990; Lipgens, 1964; Messerschmidt, 1975). The historical accounts document that pride, rather than precise strategic considerations, dominated the negotiation.⁴ Bismarck was willing to “save Metz for France”, and considered retaining French parts of Lorraine altogether as a “folly of the first order” (Wawro, 2005 p. 206). Von Moltke, however, considered having conquered Metz as one of the military’s greatest achievements, and convinced Wilhelm I that a return would be a “national humiliation”. Another illustrative example is that Thiers was able to move the border a little further towards Germany in

³ All tables and figures denoted with an A are shown in the Online Appendix.

⁴ There is one important exception where explicit strategic considerations mattered, regarding the fortresses of Belfort. This affects a small area in the far South, but we anyway exclude it from our estimations.

exchange for offering the German military to conduct a victory parade through the Champs Elysees in Paris, which they proudly accepted.

Figure 2: Historical maps: before, during and after German occupation



Notes: Moselle is the treated part in Lorraine, Meuse and Meurte-et-Moselle the untreated parts. Bas-Rhin and Haut-Rhin compose Alsace, Vosges serves as their counterfactual. The language border in Figure (c) marks the historical linguistic border.

The final result was a compromise in which, at least partly, “Bismarck, [...], quite uncharacteristically wilted under the pressure” (Wawro, 2005 p.305). The border was decided in the central negotiation process and, as Figure 2 shows, drawn without considering specific local circumstances. To augment this historical evidence, we will show that there are no discontinuities in geographical factors at the border, no indications that pre-treatment regional identity was stronger on one side than the other, and no problematic differences in post-treatment variables.

The annexed area was incorporated into the German Empire as the *Reichsland Elsass-Lothringen*. In Alsace, the départements already in place during French rule were converted into the German districts of *Oberelsass* and *Unterelsass*, corresponding to the former (and current) départements Haut-Rhin and Bas-Rhin, respectively. In Lorraine, out of parts from the former départements *Moselle* and *Meurthe*, the district *Lothringen* was created, corresponding to today's département *Moselle*. France regained control of the lost provinces after WWI and kept this administrative delineation until today (see Figure 2d).⁵

Hence, the "treatment" we capture is the exposure to repressive homogenization policies and the suppression of group identity associated with occupation and integration into a nation-state. This does not allow us to trace the treatment effects back to any particular policy, or distinguish exactly what share was caused by French and German policies. Nonetheless, forceful integration into a nation-state is usually not only confined to a single policy, but brings with it a broad set of assimilation policies. What matters is that we are capturing a set of policies that is predominately intrusive, as opposed to more peaceful integration policies like building better transport connections and enhancing trade. Unless regions voluntarily founded a nation like Germany in 1870 or the US in 1776, such policies were a common feature of many integration processes.

Historians emphasize the homogenization policies by both Germany and France as the crucial aspect in which the treated area differed between 1870 and the 1950s (Goodfellow, 1993). Table 1 presents examples of the homogenization policies, which are divided into five categories for the sake of clarity: *Language* policies, aiming to oust local languages and foster the use of the national language; *Media* policies, restricting the freedom of press; *Social, political, military freedom, and equality* policies, aiming to restrict political rights, participation, socio-regional gatherings, and the choice to serve in the military; *Separation and segregation* policies, aiming to separate or segregate locals according to origin or nationality; and *Regional institutions and administrative personnel*, aiming at replacing regional institutions and administration. Table A8 shows a comprehensive list of both German and French policies until the early 1950s.

Examples of political restrictions under German rule include that Alsace-Lorraine initially had no representatives in the *Bundesrat* or the *Reichstag* (Vajta, 2013). Due to doubts about the loyalty of the new citizens, the treated area never became an integrated part of Germany; instead the area remained an imperial territory under the direct authority of Kaiser Wilhelm I (Carrol and Zanoun, 2011). As part of the "Kulturkampf" (culture war), government regulations restricted particular types of education (Silverman, 1966). Restrictions on the press were not lifted until 1898. The government also kept the French dictatorship paragraph of 1849 in force, which allowed house searches, the expulsion of agitators, and the prohibition of political organizations (Carrol, 2010). When Strasbourg University was reopened as "Kaiser-Wilhelm-Universität", its aim was to replace regional traditions and to homogenize the annexed region (Höpel, 2012).

France regained control of the "lost provinces" in Alsace and Lorraine after the Treaty of Versailles (1919). The homogenization policies aimed at realigning the preferences and values of the lost

⁵ A short exemption was WWII, when both areas, together with other parts of France, were occupied by Germany.

Table 1: Overview of policy categories and examples (see details in Table A8)

Policy category	Example
Language policies	1920: French becomes the only language taught in school (Grasser, 1998).
Media	1927/ 28: Banning of three autonomist journals, the "Volksstimme", the "Zukunft" and the "Wahrheit" (Goodfellow, 1993).
Social, political, military freedom, equality	1927/28: Colmar trials: 15 prominent autonomists are arrested and tried for participation in a plot to separate Alsace from France (Goodfellow, 1993).
Separation and segregation	1918: Locals are classified according to an identity-card system. Lower classification leads to, e.g. travel bans (Harvey, 1999).
Regional institutions and administrative personnel	1924: Ministerial Declaration by Premier Edouard Herriot imposes a centralized administration, French laws and intuitions (Carrol and Zanoun, 2011).

citizens by France are described as even more repressive than the German ones (Anderson, 1972; Harvey, 1999). For instance, German was removed as an official language, though it was the mother tongue of a majority of the population. Furthermore, it was prohibited to teach in the Germanic dialect; teaching German as a second language also remained banned in schools until the early 1950s. The families of the about 200,000 Germans who had settled in the region after 1871 were deported in order to “remove any trace of German influence” (Carrol and Zanoun, 2011, p.469).

Moreover, a special commission, called *Commissions de Triage*, was formed to ascertain the “Frenchness” of the population in the re-annexed area (Carrol and Zanoun, 2011). Municipal names, street names and family names were almost all changed to French. Between 1926 and 1930, several newspapers promoting the regional cause were forbidden, and members of regionalist parties were put into jail. France consequently replaced bureaucrats and local teachers with external bureaucrats who were not familiar with the local circumstances and traditions. While historians suggest that these policies contributed to the formation of a stronger regional identity (Harvey, 1999), the next section will provide a simple model and definition to put these events into perspective.

2.2 Theoretical framework

This section introduces our definition of group identity and describes a simple model of cultural transmission with multiple identities and the model’s predictions (Online Appendix Section A presents the formal model). Most existing models describe a setting where people have to choose between different, potentially oppositional, identities, but cannot hold more than one identity. Our setting requires a model where each person possesses multiple identities, such as being a citizen of her municipality, region or country. An important feature of these multiple identities is that they are not necessarily substitutes for each other, or at least not perfect substitutes.

Our approach relates to the literature on the size of nations, which models common identity or the

lack of it as preference heterogeneity, as well as to the literature on identity formation (Akerlof and Kranton, 2000) and oppositional identities (Bisin et al., 2011). We want to emphasize a definition of a common identity that builds on Shayo (2009), and relies on the *perceived* heterogeneity or distance to other members of a group. Hence, the common identity of an individual i and a group $j \in \{R, N\} = \mathbf{J}$, with R and N corresponding to *Region* and *Nation*, depends on the perceived distance to the average group member:

$$h^{i,j} = 1 - \left(\sum_{k \in K} \omega_k (p_k^i - p_k^j)^2 \right)^{1/2},$$

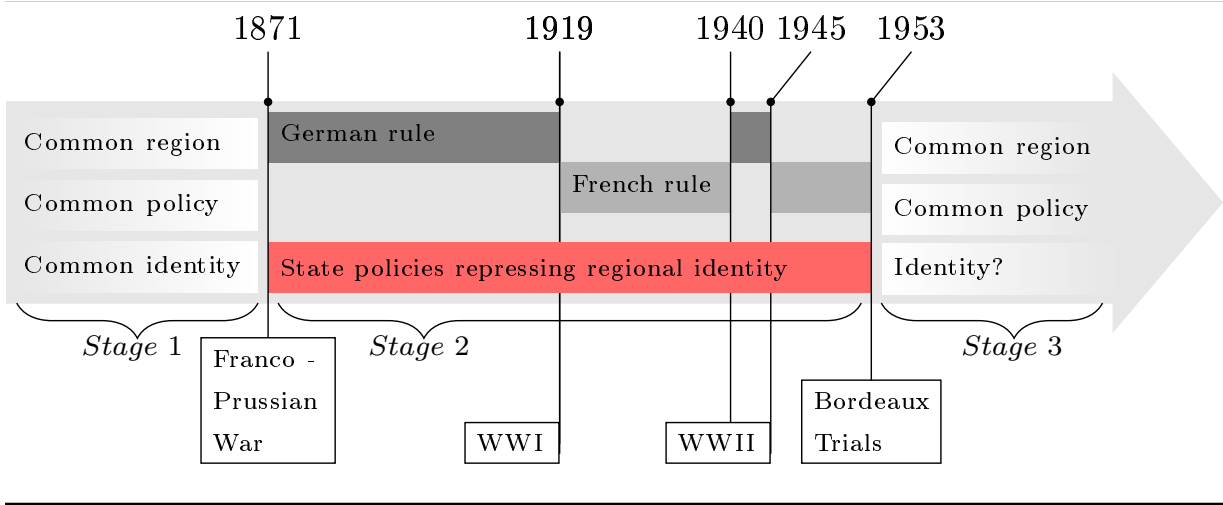
where p_k^i represents the preferences (or traditions, values and norms) of individual i regarding an attribute indexed k , p_k^j represents the preferences of the average member of the region or the nation, and K is the set of all attributes. An important part of this heterogeneity function are the ω_k , which can be understood as attention weights. Higher weights indicate that the tradition, value or norm k has a larger influence on the strength of common identity.

These weights are an important distinction as compared to standard models. Desmet et al. (2017) use the World Value Surveys to show that within-group variation in values and preferences is larger than between-group variation. Accordingly, the fact that strong group identities (e.g., regional or ethnic) nevertheless exist is only feasible when recognizing that it is the perception of heterogeneity that matters. The intuition of this approach is easy to understand. People from different regions differ in their shared history, in the spoken dialect, local cuisine or music. Still, the degree to which this affects common national identity depends on how much people emphasize the traits that differ relative to the traits they share with people from other regions.

Our model illustrate how a temporary historical shock can lead to persistent differences in regional identity, but not necessarily in national identity. Every individual is a member of two groups: region and nation. Regional agents –parents and regional citizens –as well as the central government can influence the strength of regional and national identity through investments. We assume the preferences p_k to be fixed, thus what the investments can achieve is a subsequent change in the weights ω_k . The nation-state chooses exogenously how much to invest in regional and national identity, for instance through public schooling (similar to Bisin et al., 2011). Regional agents respond to the choice of the central state, and select the best combination of regional and national identity investments. An investment in regional identity increases the weight put on an attribute that individuals from the region share, e.g. a tradition, value, or common history.

Regional agents combine Beckerian altruism about the future economic well-being of children with a paternalistic value assigned to their own regional identity (cf. Doepke and Zilibotti, 2017; Bénabou and Tirole, 2011). A strong common regional identity can help individuals to feel socially compatible with fellow group members. The cost associated with a lack of regional identity are not only psychological, in that a lack of social compatibility can also hurt business and employment opportunities. Of course, the same holds for national identity. If someone does not know how to comply with national traditions, it is more difficult to find a job in the centrally controlled public

Figure 3: Timeline of events treated vs. control areas



administration and to trade with other regions in the same country.

We make two key assumptions. First that regional actors invest in technologies to transmit regional culture, and second that these investments have a fixed cost component, which has to be paid only once. In other words, one generation can set up an organization or learn how to privately teach a regional tradition, and the next generation inherits this ability.⁶ It is well documented for Alsace-Lorraine that regional actors set up organizations like regionalist parties and newspapers (Goodfellow, 1993). Moreover, immigrants in foreign countries engage in efforts to teach their children the culture of their home country. It is plausible that setting up an organization has a fixed cost component, and that a regional tradition that was actively practiced during one's childhood is easier to teach. For instance, once a regionalist party has been founded, future generations can benefit from the existing organizational and physical structure of the party.

The game then unfolds in three stages, resembling the historical events as illustrated in Figure 3. In **Stage 1** (until 1870/71), both areas are exposed to the same public schooling policy. Because they belong to homogeneous regions, there is no reason to expect differences in regional agents' decision on how much to invest in infrastructure that facilitates the transmission of regional or national traditions and norms to future generations. In **Stage 2** (1871 – ~1953), people in the treated area are exposed to intrusive policies, exemplified by a public schooling policy that represses regional culture or at least teaches it less than in the counterfactual untreated area. If their utility from regional identity is high enough, regional agents invest a fixed cost, for instance in establishing organizations or in creating technologies to transmit regional identity to future generations. If schools no longer teach children a regional tradition like a song or dance, parents have to choose whether to invest in the ability to teach their children themselves. Alternatively, regional agents can cooperate to set up a regional party, association, or newspaper, which fosters regional culture.

⁶ For simplicity, these costs are modeled as a one-time fixed cost, but the model could be extended to include variable costs. This could be the time spent on teaching children a regional tradition or attending regionalist party event.

Finally, in *Stage 3* (after ~ 1953), the temporary shock is over and public schooling returns to teaching regional and national culture at similar levels in both areas. Nonetheless, the optimal level of investing in regional identity transmission remains higher in the treated area if regional agents choose to invest the fixed costs in Stage 2. As long as regional agents have no incentive to invest in the ability to teach national traditions, national identity should eventually converge back to the same level in the treated and non-treated area.

The model thus requires that, at some point, policies converge after the treatment period has ended with regard to the teaching of regional and national traditions. In fact, public schooling policy was slowly adapted after WWII and once again permitted the teaching of regional culture and dialect. The Bordeaux Trial in 1953, with the convictions of soldiers from Alsace-Lorraine who fought for the German side, can be thought of as a last event potentially reactivating memories of suppressive policies. Today, the treated area uses the same school curricula as the rest of France, and is fully accepted as a part of the country.⁷

3 Data, measures, and identification strategy

3.1 Data

France is divided into 22 regions, which consist of 96 départements. These are further divided into 323 arrondissements and 1,995 cantons, but those two sub-units are of lesser importance and do not possess the status of a legal entity. The lowest unit are the 3,320 municipalities in Alsace and Lorraine. For our regression discontinuity estimations, we focus on this municipality level, using shapefiles from www.data.gouv.fr. The *National Institute of Statistics and Economic Studies* (INSEE) provides data on municipality characteristics like age composition, commercial activity and education. Electoral data, such as voter turnout, election results, and referenda results, are obtained from the *Center for Socio-Political Data* (CDSP). In addition, we use survey results at the département level from a large scale survey, the *Observatoire Interrégional du Politique* carried out in 1999, 2001 and 2003. In contrast to all other French surveys, it offers a sufficiently large number of observations at the département level.

We present both results on differences in stated versus revealed preferences. Stated preferences have the obvious advantage that we can use direct questions asking people about the strength of their respective identities. However, those are "costless" answers, and might thus exaggerate existing differences or yield biased estimates. A measure of revealed preferences is ideally a costly decision, where a representative sample of the population in the treated and untreated area face a decision that signals the strength of regional identity. In addition to survey evidence, we benefit from the fact that France repeatedly held nationwide referenda that directly touched upon questions relating to

⁷ Note that the equilibrium level of national and regional identity in both areas depends on the objective functions of the parents and other regional agents, as well as the cost of transmitting traditions. There can be functional forms and costs, for which it is optimal to give up regional culture altogether. Also note there is one remaining difference with regard to schooling. Students in the treated area still receive a few hours of religious classes in school today. We will demonstrate that this is unrelated to our outcome variables.

the political influence of regions, the recognition of regional culture, and regional decision-making.

Our main measure of regional identity at the municipal level is the agreement in three referenda from 1969, 1992, and 2005. The referenda are a good measure as they were important decisions with a political cost to them, and contain no binding monetary constraint preventing certain groups or parts of the population from voting. We use data on voter turnout to verify that the results are representative of the underlying population. With regards to national identity, we can use a clear measure of stated national identity in surveys. In our robustness section, we also use data from tweets supporting the French national team during the soccer World Cup 2014 as an alternative. Regarding mechanisms, we present results about regionalist parties and regional newspaper subscriptions. The following paragraphs describe the indicators, which capture revealed preferences.

Referendum on Regionalization (De Gaulle), 1969

First, we use a referendum that President Charles De Gaulle held in 1969, which explicitly focused on decentralization and establishing regions as an important political unit in the French constitution (Bon, 1970). Regions were supposed to take control of public utilities, housing, urbanization, and be able to borrow money on their own. Furthermore, they would be independent contractual parties, be able to set up public organizations, and be part of an adapted second chamber representing the territorial collectivities. De Gaulle justified the referendum by saying that, whenever possible, decision-making should happen closer to the citizens. Moreover, he stated that the regions' cultural importance should be reflected politically. In the end, 52.4 percent of French voters rejected the proposal and De Gaulle resigned immediately afterwards. We digitized newspapers from April 1969, which we then transcribed and matched to the current municipalities for the three Lorrainian départements.⁸ For Alsace, we rely on département level results, which are available for free nationwide.

Referendum on Maastricht Treaty, 1992

The Maastricht Treaty included several reform proposals about the institutional and political structure of the European Union (EU). The important aspect is that, assuming equal benefits and equal costs from EU reform at the border, the treaty was expected to enhance the role of regions in the EU by fostering both regional decision-making and the expression of regional identity. The treaty was a huge step forward for regions in the institutional landscape in Europe. It formally introduced the principle of subsidiarity, which codified the aim that decision-making should be at the lowest feasible level of authority in the EU (Treaty on the European Union, 1992). In addition, it established a *Committee of the Regions* as part of the European institutional structure, which “created a political space for regions” (Fitjar, 2010, p.528). Based on this, the perception of the treaty at that time was that it would allow regions to “seek a greater voice in EU affairs” and “reignite calls for decentralization and regional autonomy” (Chacha, 2013, p.209; Scott et al., 1994).

⁸ We are very thankful to the director of the Lorrainian departmental archive, Jean-Eric Jung.

Referendum on Constitution for Europe, 2005

The Treaty establishing a Constitution for Europe would have been a large step towards more European integration. For instance, it aimed to introduce majority voting in more areas and establish a single constitutional text. Again, our use of the referendum results at the municipality level assumes that, at the treatment border, the costs and benefits of these integration steps are the same. The one exception is that the treaty's effect on the scope of regional decision-making and the ability to express regional identity will be different if regional identity is stronger in the treated area. Official assessments of the regional and local authorities associations, which were publicly available and communicated to voters (CEMR, 2004, source of all following citations), regard them as “an achievement for regional and local authorities”, which would “strengthen the role of local and regional governments”. An important point was the reinforcement of the subsidiarity principle and “greater recognition to the role of regional authorities” as well as “respect for regional and local self-government as part of national identities”. Cross-border regions were introduced as a new way of representing common regional interests formerly divided by nation-states.

The widespread opinion in 1992 and 2005 was that the EU was “moving towards a Europe of the regions” (Chacha, 2013 p.208). EU integration was seen as reducing the costs of regional autonomy and allowing regions to bypass national governments and deal with Brussels directly. For that reason, regionalist parties “favor European integration because it creates a more favorable political opportunity structure for their subnational autonomy movements” and “perceive the EU ‘as an ally against the central state’” (Jolly, 2007, p.110 & 124). The moderate regionalist Alsatian party *Le parti Alsacien*, for instance, campaigns on its website for an “independent Alsace in a federal European Union”.

Regional newspaper subscriptions and regionalist parties

In addition, we use data on regional newspaper subscriptions and regionalist parties to examine potential mechanisms. These variables capture investments in transmitting and maintaining regional identity made by regional agents, as discussed in Section 2.2. Although we use them to measure mechanisms, the share of households that subscribe to regional newspapers and the vote share of regionalist parties is itself of course also a proxy for regional identity. We received access to municipal level data for subscriptions to the Lorrainian newspaper “Le Republicain Lorraine”, but only for the year 2014, nine years after the third referendum. Regionalist party results are from the 2015 regional elections, where all moderate regionalist parties in Alsace and Lorraine ran on a joint list.

Out of all measures, the first referendum in 1969 has the advantage that it clearly focuses on fostering regions as an important political unit in France, thus clearly relating and measuring differences in regional identity. As explained above, the two referenda in 1992 and 2005 were both also clearly related to the political recognition of regions and more regional decision-making, and perceived as such by the population. It is reassuring that there the strong overlap between regional and European identity is not only documented by other studies (Chacha, 2013), but also visible in our data (see Table A21). Moreover, département level data shows that, already in 1972, a referendum

Table 2: Variables, level of aggregation and region in order of appearance

#	Content	Preferences	Year(s)	Level	Paper	Appendix ^a
1	Geographic variables	-	-	Mun ^b	L ^c	A+L ^c
2	Cahiers de doléances	Stated	1789	Dep ^b	L	A+L
3	Survey I	Stated	1999, '01, '03	Dep	L	A+L
4	Referendum	Revealed	1969	Mun	L	-
5	Referenda	Revealed	1992,'05,'07	Mun	L, A+L	-
6	Regional Newspaper	Revealed	2014	Mun	L	-
7	Regionalist parties	Revealed	2015	Mun	A+L	-
8	Survey II	Stated	1999, '01, '03	Dep	L, A+L	L, A+L

Notes: This table provides an overview about the main variables in order of appearance throughout the paper. Preferences are distinguished between revealed and stated preferences, the level of aggregation is either département or municipality. The last two columns show where we use variables for either only Lorraine or for both Alsace and Lorraine. The table refers to the main regressions, robustness tests for different variables at various levels are shown in the Appendix in addition.

^a Appendix = Online Appendix. Figures and Tables with "A"+Number.

^b Levels are either Mun = municipality or Dep = département

^c Regions refer to L = Lorraine or A+L = Alsace and Lorraine, respective to which data is presented in the main paper or the online appendix

about EU expansion yielded a comparable vote pattern in the region than the 1969 referendum on the establishment of regions (Figure A11d). Nonetheless, as those two referenda also relate to broader questions about the European Union, we show that treated and control municipalities at the border do not differ in other factors that might make European integration more or less beneficial.

We also compute geographical characteristics to evaluate the exogeneity of the border. The data on terrain ruggedness is from Nunn and Puga (2012), but we use it at a more disaggregated level. Raw elevation data comes from the NASA Shuttle Radar Topography Mission (SRTM) data set. Data on soil suitability for potatoes and wheat, the two most important crops, comes from the FAO's Global Agro-Ecological Zones database (GAEZ). To best approximate pre-“Green Revolution” growing conditions in 19th and early 20th-century Europe, we choose a medium input intensity and irrigation.⁹

Most of the outcome measures are available for both Alsace and Lorraine, except the referendum in 1969 and the regional newspapers. Table 2 shows their availability and usage. Table A6 shows summary statistics for our variables of interest in the full sample of municipalities in Alsace and Lorraine. Tables A1 and A7 show definitions and sources, as well as descriptive statistics for the variables. The next section begins by focusing on Lorraine, which provides a better counter-factual, due to the exact location of the border being more clearly exogenous. Later, we show that the results hold when including Alsace. This is reassuring with regard to the external validity of the results, and allows us to compare the two regions with regard to the mechanisms.

⁹ Ruggedness: <http://diegopuga.org/data/rugged/>. Elevation: accessed through the web page of ESRI. Soil Suitability: <http://www.fao.org/nr/gaez/en/>.

3.2 Identification strategy

Our treatment variable in the municipal level regression is a deterministic function of the geographical location of a municipality. We then test for a discontinuity at the threshold defined by the treatment border dividing the treated from the control area in Alsace and Lorraine. The causal interpretation draws on studying municipalities close to the former border using a RDD. Formally, the following regression model:

$$y_c = \alpha + \beta Treatment_c + p(\text{distance to border}_c) + z'_c \gamma + \epsilon_c, \quad (1)$$

where y_c is the outcome variable of interest for municipality c , $Treatment_c$ is a dummy taking the value 1 for municipalities in the formerly occupied region, and 0 otherwise. $p(\cdot)$ allows for different functional form of the running variable, which measures the direct distance from the municipality centroid to the former national border. z_c comprises the distances to the city of Metz, city of Strasbourg, city of Nancy, and the current French-German border. As suggested by [Gelman and Imbens \(2017\)](#), we include a linear term for the distance, allowing its coefficient to vary on either side of the border. This means that we estimate a local linear regression model according to (1) close to the former border, using a uniform kernel density function, for different bandwidths. Figures [A21](#) through [A27b](#) present estimates from plausible alternative specifications.¹⁰ All results from those specification are in line with those presented in the main paper.

The treatment effect in (1), β is given by

$$\beta = \lim_{x_c \rightarrow 0^+} \mathbf{E}[y_c | x_c] - \lim_{x_c \rightarrow 0^-} \mathbf{E}[y_c | x_c], \quad (2)$$

where x_c is the distance to the border normalized at 0. This means that the distance for municipalities in the treated region is equal to the actual distance, while it is equal to the actual distance multiplied by minus one for municipalities in the untreated region. Under the assumption of the conditional expectation function, $\mathbf{E}[y_c | x_c]$, being continuous, the treatment effect is equal to the difference in the outcomes at the border between municipalities in the treated and untreated area. This assumes that all other factors relevant in explaining the outcome are continuous at the border and that the treatment is orthogonal to potential outcomes. We address this by formally testing for discontinuities in geographic factors, which are not affected by the treatment. Specifically, we show that there is no discontinuity in terrain ruggedness, elevation, and soil suitability for the production of potatoes, wheat, and barley (Table [A14](#) and Figure [A8](#)).¹¹

Moreover, to get a sense of identity before 1871, we make use of the fact that Louis XVI, shortly

¹⁰ [Dell \(2010\)](#) discusses why a semi-parametric approach could be superior when the geospatial data is not precise in terms of geographical location. In our case, we do not have data on individuals and, for instance, their addresses. Instead, our outcome variables measure the municipality level aggregate of individual actions, and we approximate their location in relation to the former border by the distance from the municipality centroid.

¹¹ We find no discontinuity for any of these measures, suggesting that they are orthogonal to our treatment variable. Figure [A18](#) to [A27](#) show that the results are not affected when (i) omitting controls, controlling for (ii.) border segments and (iii.) distance to the language border, controlling for (iv.) longitude, latitude, as well as (v.) both and their interaction to compare only actual neighboring municipalities.

before the French revolution, wanted to assess the loyalty of his citizens. This data, known as the “Cahiers de doléances”, specifically asks about the relative strength of regional identity compared to national identity. This was originally text data, which was transformed to a numerical scale between 1 and 3, and aggregated to between 4 and 8 units per département [Hyslop \(1968\)](#). Following [Johnson \(2015\)](#), we exclude the *first estate*, clergy, which was more driven by religious policy. We include the *second estate*, nobility, the *third estate*, other citizens, as well as the category *unified orders*. If assessments for more than one estate are available, we take the arithmetic average. [Table 3](#) shows that the average response for all four départements within Lorraine is equal or approaching 2, and that there is no statistically significant difference between Moselle and the untreated départements.

Table 3: National vs. Regional identity in Lorraine in 1789 (Cahiers de doléances)

	Mean	Std. dev.	Obs.
Lorraine (average)	2.021	0.541	24
Moselle (treated)	2.000	0.816	7
Meurthe-et-Moselle	2.000	0.598	8
Meuse	2.000	0.000	4
Vosges	2.100	0.224	5
	Difference	Std. dev. ^a	Obs.
Moselle vs. untreated	-0.029	0.349	24

Notes: National identity in 1789 based on Cahiers de doléances for each département in Lorraine (and Vosges). The measures are based on an index created by [Hyslop \(1968\)](#), where the value 3 corresponds to "National patriotism strongest", 2 corresponds to "Mixed loyalties: national patriotism combined with regionalism or class spirit, or both.", and 1 corresponds to "Other loyalties, regional, or class, or both, outweigh national patriotism". [Hyslop \(1968\)](#) computed these values at the level of selected important city areas based on more disaggregate reports in verbal form. We assign the city areas to current départements.

^a Heteroscedasticity-consistent standard errors.

4 Main results

4.1 Survey evidence

We begin by considering survey evidence on stated differences in identity. The *Observatoire Interrégional du Politique* (OIP) surveys include direct questions proxying for the perceived common identity of the average individual. The parameter of interest Δ comes from the equation:

$$y_i = \pi + \Delta Treatment_i + \Gamma'_i \lambda + \eta_i, \quad (3)$$

where $Treatment_i = \mathbf{1}$ [individual in treated area], and Γ contains controls for age, education, employment status, and gender. As the geographic precision of the survey is the département, our estimation compares the conditional means of regional and national identity in the treated and the untreated area.

According to [Table 4](#), people in the treated area clearly express a significantly stronger common

regional identity today. In contrast, there is no difference in common French identity. We also compute the ratio of regional relative to national identity, and standardize this variable to ease interpretation. People in the treated areas of Lorraine exhibit a ratio that is 14 percent of a standard deviation higher. It is interesting that there is no difference with regard to national identity, emphasizing the importance of our model and definition where identities need not to be substitutes. This is the comparison within Lorraine, Table A19 shows that the differences remain similar, but larger in magnitude when including Alsace.

Table 4: Survey results, Lorraine

Survey question	Mean, control	Δ	P-value	No. obs.
Feel close to region (Regional identity)	3.362	0.154	<0.001	1314
Feel close to nation (National identity)	3.635	0.028	0.409	1313
Regional identity/National identity (standardized)	-0.138	0.138	0.011	1311

Notes: Sources are the Observatoire Interrégional du Politique (OIP) 1999, 2001, and 2003, using respondents in Lorraine, at the département level. Identity is measured on a 4-point Likert-scale. Table A19 shows similar results for all of Alsace and Lorraine. A positive Δ indicates that people in the treated region agree more with the statement.

Note that the survey results measure differences in stated preferences instead of in revealed preferences, and could be affected by omitted variables. If, for instance, the proximity to neighboring countries correlates with regional identity, this could affect the results, as the treated area is closer to neighboring countries. The next section proceeds with municipal level data on three outcomes revealing regional identity, and resolves concerns about omitted variables through a geographic RD design.

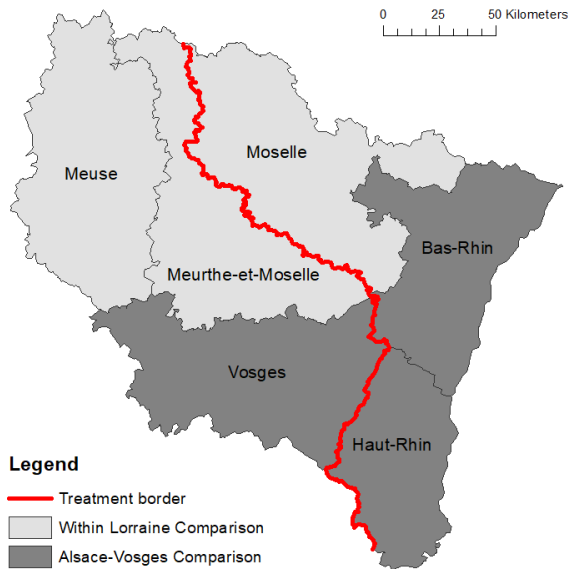
4.2 Referenda results

Figure 4 provides maps of the referenda results from 1969, 1992, and 2005. Figures 4b (available within Lorraine only), 4c and 4d show higher agreement to the referenda that would strengthen regional decision-making powers in the treated area to the right of the former border.¹² It is important to note that there are no obvious visible differences in turnout for all three votes (see Figure A12). Moreover, Figure A11c shows no comparable pattern of support for De Gaulle in the 1968 presidential election, suggesting that preferences about him as a person do not explain the differences in 1969.

Table 5 shows OLS estimates of the differences in outcomes between the treated and the untreated areas, including controls. Including all municipalities in the regions enables us to assess the external validity of the following RD estimates. Although the RDD has advantages in most dimensions, potential sorting is more likely to be an issue at the border because the costs of moving to neighboring municipality are lower. The OLS specifications avoid this problem. If both approaches yield similar

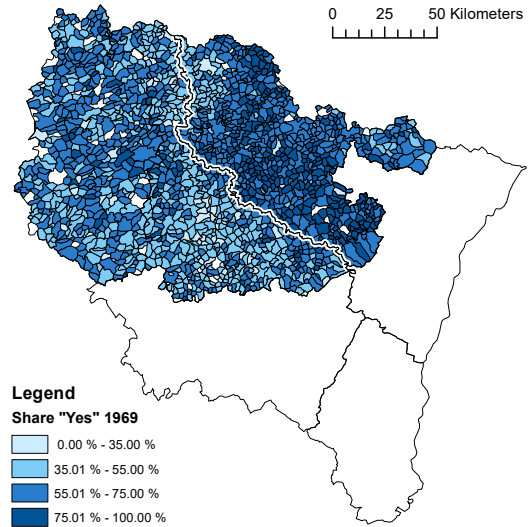
¹²Figure A11a shows at the département level that the comparison for 1969 using Alsace suggests a similar, if not larger, difference. The yes-vote share out of all eligible voters was above 50 percent in Alsace and between 40 and 45 percent in neighboring Vosges.

Figure 4: Maps of municipal level outcomes of referenda in 1969, 1992 and 2005



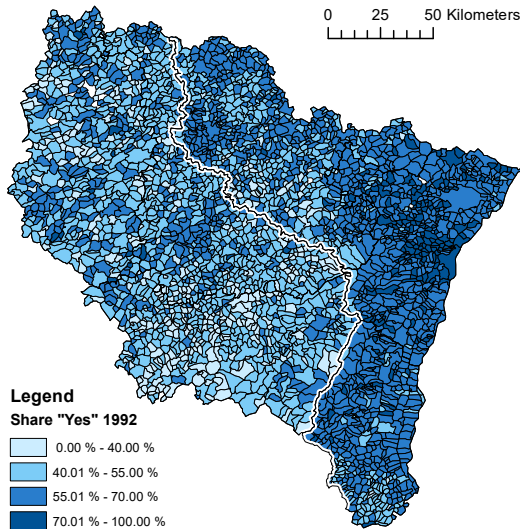
Notes (a): The light grey area is the comparison within the historical region of Lorraine, where the border is clearly exogenous. The dark grey area includes Alsace and Vosges as its comparison, where the border partly coincides with the historical language border.

(a) Within Lorraine and Alsace



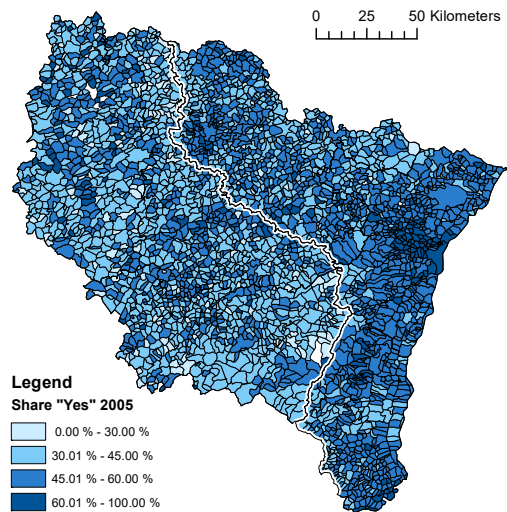
Notes (b): Share of yes votes in Charles De Gaulle's 1969 referendum on more regional decision-making. Results were digitized from historical newspapers and assigned to current municipalities. The treatment border is highlighted in white. Darker shades reflect higher values. Figure A11a shows no comparable differences in prior support for De Gaulle.

(b) Share "Yes" 1969 (Regional identity)



Notes (c): Share of yes votes in the referendum in 1992 on the Maastricht treaty. The treatment border is highlighted in white. Darker shades reflect higher values. Figure A12c shows no differences in turnout between both areas.

(c) Share "Yes" 1992 (Regional identity)



Notes (d): Share of yes votes in the referendum in 2005 on the constitution for Europe. The treatment border is highlighted in white. Darker shades reflect higher values. Figure A12d shows no differences in turnout between both areas.

(d) Share "Yes" 2005 (Regional identity)

results, we can not only disregard worries about sorting, but also have more faith in the causal interpretation of the département level survey results.

For *Share Yes 1969*, *Share Yes 1992*, and *Share Yes 2005*, the coefficients indicate stronger regional identity in the treated area. The interpretation of the regression coefficient for the treatment variable is the average difference in percentage points between treated and untreated municipalities. It is illustrative to relate them to the average vote share of the whole region. For instance, the coefficient of *Share Yes 1969* is 14.1 percentage points, which equates to almost 24 percent of the average yes-vote share of 59.2 in all of Lorraine. The coefficient of *Share Yes 1992* is 4.2 points, almost 10 percent of the average yes-vote share, and the 6.2 in *Share Yes 2005* correspond to about 15 percent.¹³

Table 5: OLS estimates using municipalities in Lorraine

Dep. Variable:	Share Yes 1969 (2)	Share Yes 1992 (3)	Share Yes 2005 (4)
Treatment	13.595 (1.443) [<0.001]	5.917 (0.985) [<0.001]	6.633 (1.070) [<0.001]
Adj. R-squared	0.272	0.095	0.048
Obs.	1612	1743	1747

Notes: OLS estimates using whole sample of municipalities in all départements in Lorraine. The outcomes are the share of Yes votes in the 1969 referendum, in the 1992 referendum, and in the 2005 referendum. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, distance to Nancy. Conley standard errors are displayed in parentheses and *p*-values in brackets.

Accordingly, the OLS estimates are in line with our predictions and the survey results concerning to regional identity. Now we turn to the RDD results. Our baseline RD estimation shows estimated treatment effects on all three outcome variables from Figure 4 for bandwidths of 10, 15 and 20 kilometer. In addition, we include one specification using the optimal IK bandwidth (Imbens and Kalyanaraman, 2012). For all outcomes, this is larger than 20 kilometers, suggesting that smaller bandwidths are rather conservative. The closest choice of 10 kilometers basically compares only municipalities directly at the border with their direct neighbors. This should eliminate all concerns regarding comparability, as distances to neighboring countries or cities are virtually identical.

Table 6 shows that the estimated treatment effect on regional identity effect remains positive and statistically significant for *Share Yes 1969*, *Share Yes 1992* and *Share Yes 2005* across all bandwidths. The coefficient for 1969, which provides the clearest measure of regional identity, is about 13 percentage points at the smallest bandwidth of 10 kilometers. This reflects the mid range reaction at a time when the population still contained both individuals who experienced repression, as well as individuals who grew up later and were affected only indirectly through the investments

¹³ Supporting our interpretation of the 1992 and 2005 referenda as signaling differences in regional identity, there is also a highly significant correlation between stating a stronger than average regional and stating a stronger European identity, in Alsace and Lorraine as well as in France overall (Table A21); 85 percent of respondents stating a stronger European identity also express a stronger regional identity.

in regional identity by previous generations. The significant and strong effects in the two referenda later document persistence and indicate that the stronger regional identity is indeed transmitted across generations. It ranges from 4.4 percentage points to 5.4 percentage points in 1992, and 3 to 3.9 percentage points in 2005. Thus, the simple OLS estimation seems to have overestimated the actual effect, but not by much. This supports the causal interpretation of the survey results, which relied on a comparison of group means at the département level. The occupation and the associated attempts to suppress regional culture lead to a persistent increase in the suppressed group’s regional identity. Panel A in Figure 5 shows the clear jump at the border for all three referenda results; Figure A14 shows the plots with a 50km bandwidth; Figure A15 shows the plot with a second order polynomial. In all specifications the jump at the border is always clearly visible.

Table 6: Discontinuities in referenda results, using municipalities in Lorraine

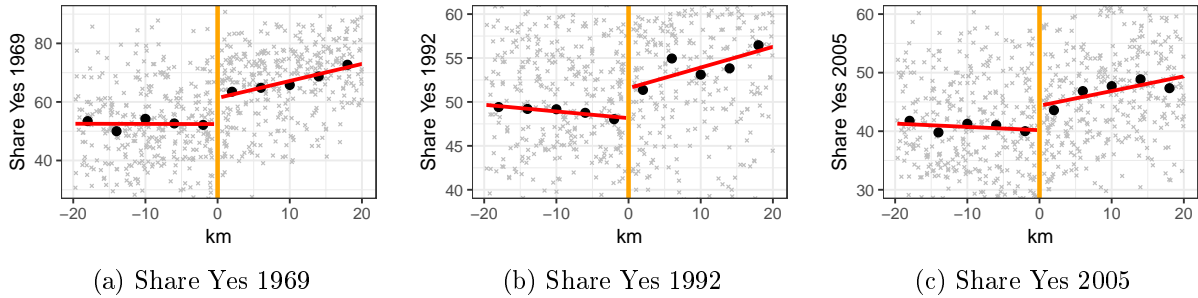
Dep. Variable:	Share Yes 1969			
	(1)	(2)	(3)	(4) ^a
Treatment	12.799 (2.623) [<0.001]	9.771 (2.249) [<0.001]	9.086 (2.084) [<0.001]	10.211 (1.848) [<0.001]
Obs.	374	547	692	1055
Dist	10 km	15 km	20 km	33.99 km
Dep. Variable:	Share Yes 1992			
	(1)	(2)	(3)	(4) ^a
Treatment	3.752 (1.841) [0.042]	5.026 (1.611) [0.002]	4.346 (1.440) [0.003]	5.751 (1.133) [<0.001]
Obs.	394	583	744	1517
Dist	10 km	15 km	20 km	53.22 km
Dep. Variable:	Share Yes 2005			
	(1)	(2)	(3)	(4) ^a
Treatment	3.810 (2.092) [0.069]	3.757 (1.775) [0.035]	4.892 (1.646) [0.003]	7.448 (1.392) [<0.001]
Obs.	394	583	744	1109
Dist	10 km	15 km	20 km	32.86 km

Notes: Discontinuity at the treatment border using municipalities in Lorraine. The outcomes are the share of Yes votes in the 1969 referendum, in the 1992 referendum, and in the 2005 referendum. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, distance to Nancy. Conley standard errors are displayed in parentheses and p -values in brackets.

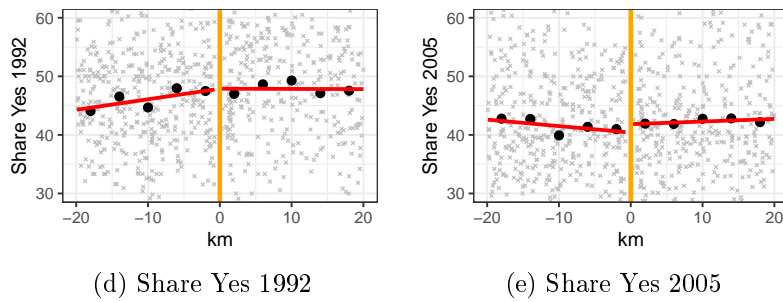
^a Estimates from using the optimal IK bandwidth.

Figure 5: RD plots for voting outcomes 1969, 1992 and 2005

Panel A: Regional identity at the treatment border

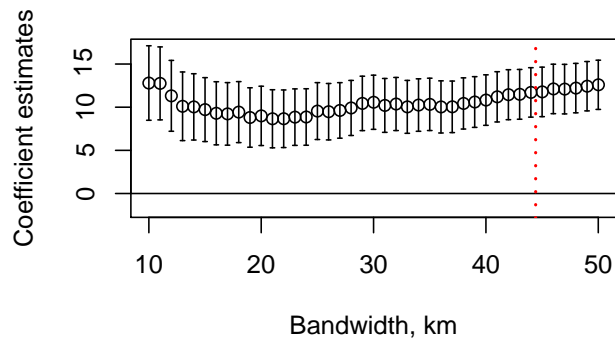


Panel B: Regional identity at a placebo border



Notes: (a), (b), (c): RD plot using municipalities in Lorraine, 20 kilometer distance to the treatment border, with first degree polynomial fit varying on each side. Dots represent binned means using 4 kilometer bins. (d), (e): RD plots using municipalities within 50 kilometers of the border separating non-annexed Lorraine from rest of France.

Figure 6: Estimation plots for 1969 referendum, within Lorraine



Notes: Estimates of treatment effect, bandwidths ranging between 10 and 50 kilometers, within Lorraine, fitted using first degree polynomial. Dashed vertical line at optimal IK bandwidth. Solid vertical lines represent 90 percent confidence intervals (based on Conley standard errors).

Historical evidence suggests that Alsace and Lorraine were as well integrated into France prior to the Franco-Prussian War as other regions. We implement a *placebo* test using the 1992 and 2005 referenda results in the regions geographically west of the control area, and check for a discontinuity at the border between this western part of Lorraine and the rest of France to further validate this. If the complete region was already exhibiting a stronger regional identity previously, we would expect a discontinuity here. Figure 5, Panel B, however, clearly illustrates that in contrast to Panel A there is no discontinuity at this placebo border. Table A12 shows the absence of discontinuities in the corresponding regression table. Table A30 shows another placebo test using the pre-1870 département border within Moselle, and also finds no significant discontinuities.

Although Table 6 indicates already that the choice of the bandwidth does not affect our results, Figure 6 clarifies this further. It depicts the individual coefficients and confidence intervals across all plausible bandwidths ranging from 10 to 50 kilometers for the 1969 referendum. The effect size varies little and is always positive. As we would expect, the estimation becomes more precise as we increase the bandwidth, and the coefficient remains remarkably stable. Figure A18 to A27 show the same plot for the 1992 and 2005 referenda. Moreover, they show that the results are not affected when using no control variables, or when additionally controlling for (ii.) border segments, (iii.) distance to the language border, (iv.) longitude, latitude, as well as (v.) longitude, latitude and the interaction between the two.

The causal interpretation of the coefficients rests on the assumption that the untreated municipalities can be viewed as counter-factuals for the treated communes. We want to remedy one potential concern by considering potential post-treatment discontinuities in socio-demographic characteristics. Note that those factors might be affected by the treatment and act as channels through which the treatment affects the outcome. Based on the literature on the determinants of voter preferences and turnout (e.g., Franklin, 2004), we examine potential discontinuities in yearly median income, mean age, education, and occupation. Table A17 shows that there are no discontinuities within-Lorraine.

In a next step, we want to examine whether we can find the same results when including Alsace in the analysis. The treatment border in Alsace partly follows linguistic differences, hence the counterfactual municipalities in Vosges might differ with regard to the traditional dialect and culture. Table A17 indicates that at the border the treated municipalities in Alsace are richer and slightly younger on average. However, when looking at the extended RDD results in Table 7, we find that the treatment effects when including Alsace are of a similar magnitude and remain statistically highly significant.

Table 7: Discontinuities in referenda results, Alsace and Lorraine

Dep. Variable:	Share Yes 1992		Share Yes 2005	
	(1)	(2) ^a	(3)	(4) ^a
Treatment	4.353 (1.748) [0.013]	3.787 (0.859) [<0.001]	2.957 (1.742) [0.090]	6.443 (1.090) [<0.001]
Obs.	604	2781	603	1849
Dist	10 km	60.88 km	10 km	33.37 km

Notes: Discontinuity at the treatment border in Lorraine. The outcomes are the share of Yes votes in the 1992 referendum, and in the 2005 referendum. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, distance to Nancy. Conley standard errors are displayed in parentheses and p -values in brackets.

^a Estimates from using the optimal IK bandwidth.

5 Mechanisms, persistence and policy preferences

5.1 Mechanisms

After documenting that there is a causal effect of occupation, repression and the associated homogenization policies on regional identity, we are interested in potential mechanisms. It is plausible that the exposure during the treatment period unconsciously changed the attitudes of treated individuals, which affects potentially unobservable aspects of raising their children (Dohmen et al., 2012). Moreover, people in the treated area could also consciously have decided to invest in instruments that help to express, strengthen and transmit regional identity. The theoretical model in Section 2.2 focuses on investments made by regional agents, for instance by founding regional organizations like clubs, political parties, and media outlets.¹⁴ We cannot reliably compare clubs as the legal rules for establishing and registering a club differ between the treated and control area, and the available information about festivities does not reliably identify those related to regional culture. However, we can exploit information about regionalist parties and regional media usage. Note that logically all discontinuities reflecting potential mechanisms can also be considered as outcomes (and are thus bad controls in a regression using the other outcomes), which is why we are not able to estimate how much any particular mechanism has contributed to the differences.

Regionalist parties are also interesting with regard to the chronological order of cause and effects. Fouka (2017) finds that, in her sample of German immigrants exposed to repressive policies in the US, the observed increase in common group identity occurs only after the treatment ended (Fouka, 2018). Accordingly, we are also interested in whether the effects that we document begin to materialize during or after the treatment. Historical evidence indicates that the repressive policies already triggered an increase in regional identity during the treatment period (Goodfellow, 1993; Harvey, 1999). This could be observed through periods of public protest, the establishment of

¹⁴ Ochsner and Roesel (2017) suggests that war memorials and statues also function as a technology to transmit a common history. There are some well-known statues in Lorraine that might reactivate the memory of repressive policies, but they are mostly related to WWI or WWII, which makes a distinction difficult.

regional newspapers (Callender, 1927), and the emergence and success of regionalist parties.

Regionalist parties

Regionalist parties emerged and enjoyed great electoral success during German occupation, with a vote share of between 30.2 percent and 56.6 percent (Hiery, 1870). The success of regionalist parties continued during the interwar period under French rule. The Independent Regional Party for Alsace-Lorraine, for instance, received 11.5 percent of the votes in Bas-Rhin in 1928. Zanon(2009, p.62) suggests that “autonomists were also present in the Moselle and like their Alsatian counterparts demanded autonomy for Alsace-Lorraine.” Accordingly, the historical evidence indicates that both German and French policies triggered investments in the creation of regionalist parties that then enjoyed electoral success. There were no comparable successful parties during the treatment period in the untreated area. It is also important to note that historians classify the vast majority of these parties after WWI as aiming for more regional autonomy, rather than for a return to Germany (Rothenberger, 1975). After the end of WWI, the regional parliament even proclaimed a sovereign region of Alsace-Lorraine. This, however, was not accepted by the French government.

Support for regionalist parties collapsed in the build-up to WWII, as the parties were perceived as being associated with Nazi-Germany. These accusations under French rule were apparently more widespread in Lorraine and less in Alsace, where a larger share suffered under the intrusive French language policies and saw regionalist parties as fighting to reestablish bilingualism. Up until today, political regionalism is much stronger in Alsace than in Lorraine, where support for regionalist parties never recovered to pre-war levels. Alsace features two regionalist parties, the right-wing “Alsace d’abord” and the moderate “Le Parti Alsacien/Unser Land”. Both are rather successful, the former winning about 9 percent and the latter winning around 15 percent of the votes in the 2010 regional elections. In contrast, the party “Vosges d’abord” in the neighboring untreated département enjoyed little electoral success. In upper Lorraine, the “Parti des Mosellans” and the more established “Parti Lorrain” are the remaining regionalist parties, campaigning for a strong Lorraine region in a “Europe of the Regions”.

The 2015 regional elections allow us to evaluate remaining differences between the treated and untreated area systematically, as all moderate regionalist parties in the region formed a joint list. Within Lorraine, the combined average vote share is 2.1 percent, nearly twice as much compared to the 1.1 percent in the untreated neighboring Meurthe-et-Moselle. The difference in the averages is also visible in using the RDD. With a bandwidth of 15 or 20 kms and with the efficient bandwidth, the causal effect is about 0.4-0.5 percentage points. It remains positive, however, becomes insignificant with the 10km bandwidth. When including Alsace the differences are more pronounced. This is in line with the historical evidence cited above about the difficulties initially strong regional parties faced in Lorraine. The share is between 1.2 and 2.5 percentage points higher in the treated area, with p-values smaller than 0.05 for all bandwidths. Hence, regionalist parties are one plausible mechanism through which the stronger regional identity in the treated area has been maintained.

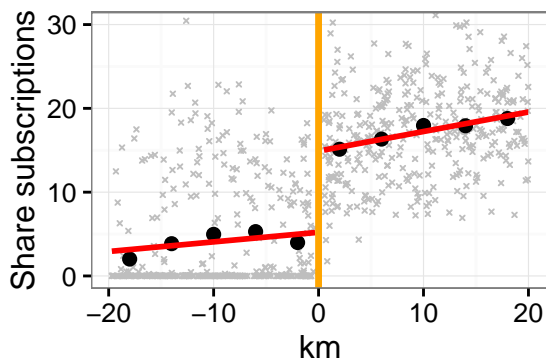
Regional newspaper subscriptions

In addition to regionalist parties, we analyze the share of households subscribing to the regional newspaper “Le Republicain Lorraine”. We received access to data from one Lorrainian regional newspaper for the year 2014, allowing us to compare the treated and the untreated area within Lorraine. No Alsatian regional newspaper is widely enough read in the département of Vosges to allow for a meaningful comparison. Newspapers are particularly interesting as a transmission mechanism. They not only provide information to the parents within a household and work as a signal of regional attachment to other households, but also can be used as a useful instrument to transmit regional culture to children.

Table 8 shows a clear discontinuity in subscription rates at the treatment border. At the 10 kilometer bandwidth, the share of subscribers out of all households is around 10 percentage points higher on the treated side. The result is highly significant with p-values below 0.01 in all specifications, and the clear discontinuity is also graphically visible in Figure 7 and in the map in Figure A29). Table A10 shows that the effect size is not driven by differences in the spoken dialect. We can also try to disentangle supply and demand side explanations by controlling for the number of points of sale in 2014 (there are more regional offices in the treated area). Conditioning on supply side differences barely affects the point estimates, suggesting that demand side differences dominate (Table A31).

To sum up, there are identifiable differences in two plausible and relevant mechanisms. Regionalist parties are an important instrument to express regional identity, and also to maintain and popularize the importance of regional culture. This channel seems relevant for both regions, but stronger for Alsace. Within Lorraine, we find strong and sizeable differences in subscription rates to regional newspapers. We cannot estimate which share of the differences in the survey questions and in the referenda can be explained by those mechanisms in a precise econometric way, but the size of the effects is sufficiently high to be considered a relevant transmission channel.

Figure 7: RD plot, share households with subscription of “Le Republicain Lorraine”



Notes: RD plots using only municipalities within Lorraine, with first degree polynomial fit varying on each side. Black dots represent means using 4 km bins, our most conservative strategy is also relevant with regard.

Table 8: RD results: Regional newspaper subscription shares, and regionalist parties

Panel A: Share households with subscription of “Le Republicain Lorraine”, within Lorraine				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	10.155	10.132	9.872	11.005
	(1.417)	(1.234)	(1.129)	(0.964)
	[<0.001]	[<0.001]	[<0.001]	[<0.001]
Obs.	394	583	744	1392
Dist	10 km	15 km	20 km	46.23 km
Panel B: Regionalist parties, within Lorraine				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	0.082	0.429	0.421	0.553
	(0.262)	(0.230)	(0.214)	(0.178)
	[0.755]	[0.062]	[0.050]	[0.002]
Obs.	394	583	744	1666
Dist	10 km	15 km	20 km	65.42 km
Panel C: Regionalist parties, All of Alsace and Lorraine				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	1.153	2.340	2.232	2.497
	(0.583)	(0.535)	(0.496)	(0.411)
	[0.049]	[<0.001]	[<0.001]	[<0.001]
Obs.	604	887	1150	1885
Dist	10 km	15 km	20 km	34.01 km

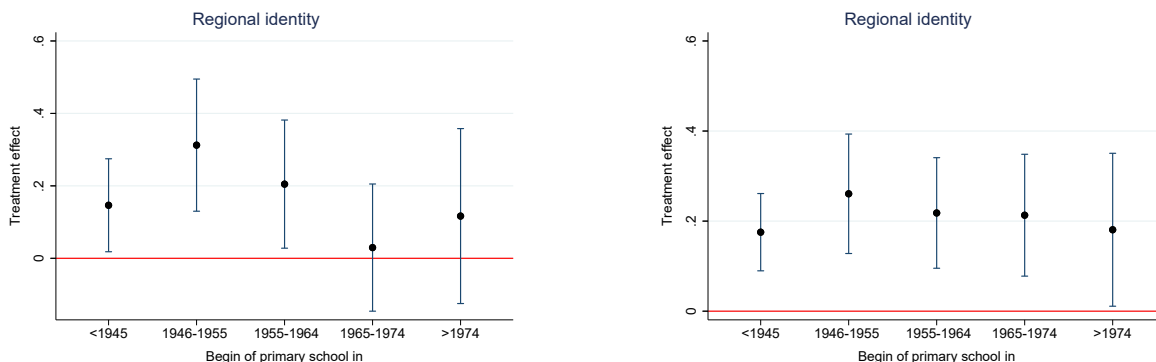
Notes: Discontinuity at the treatment border. The outcome in Panel **A** is the share of households subscribing to the regional newspaper “Le Republicain Lorraine”, within Lorraine for 2014. The vote share for regionalist parties is the outcome in both Panel **B** and **C** for the regional elections 2015. The former uses municipalities only in Lorraine, while the latter uses all municipalities in Alsace and Lorraine. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, and distance to Nancy. Conley standard errors in parentheses and p -values in brackets.

^a Estimates from using the optimal IK bandwidth.

5.2 Regional identity over time

In our model, treated regional agents were more likely to invest in the skills or organizations to teach regional traditions during the treatment period; after public schooling returns back to teaching national and regional identity to the same level in both treated and control area, this investment leads to a persistent difference in regional identity. To understand this mechanism and persistence over time, we return to the survey results from section 4.1. Note that, although this is at the departmental level, the prior results provide no reason to expect a systematic bias. We re-estimate regression models on regional identity, but now interact the treatment effect with dummy variables for different age cohorts, with the untreated subjects as the left-out reference category. The age cohorts are selected so that the second group started primary schooling after WWII. The model we use to explain persistence makes no clear predictions regarding the net difference for those experiencing the treatment period themselves, but predicts differences for later age cohorts if public schooling returns to comparable levels in the control and treated area.

Figure 8: Identity differences by age cohort



(a) Treatment effect in Lorraine

(b) Treatment effect in Alsace and Lorraine

Notes: The treatment effects refer to the parameter Δ in the equation: $y_{ig} = \pi + \sum_g \Delta_g \times Age_g \times Treatment_{ig} + \Gamma'_i \lambda + \eta_{ig}$, where $Treatment_{ig} = \mathbf{1}[\text{individual in treated region}]$ and Γ comprises controls for (reported) age, employment status and sex. g indicates to which age cohort an individual belongs, the group of untreated participants act as the baseline category. Age cohorts are selected such that the second group started schooling after the end of treatment and the end of WWII. A positive Δ indicates that people in the treated region exhibit a higher value compared to the control area. Sources are the Observatoire Interrégional du Politique (OIP) 1999 and 2001.

The left-hand side of Figure 8 shows the results within Lorraine, and the right-hand side graph shows results within Alsace and Lorraine combined. The results show several interesting patterns. First, the treatment effect is positive for all age cohorts. Second, the effect is already positive for the age cohort who began primary schooling prior to 1945, and thus certainly experienced repression themselves. Third, it is strongest for the age cohort who began attending primary school between 1946 and 1964 and declines for later cohorts. Fourth, it remains stable and statistically significant when considering Alsace and Lorraine, but is much smaller for the last two age cohorts within Lorraine. Given that the local dialect is also barely used anymore among younger age cohorts today, our prior results suggest that the stronger presence of regionalist parties in Alsace might explain the stronger persistence when including Alsace.¹⁵

5.3 Effects on policy preferences

In contrast to studies assessing the effect of, for instance, exposure to the rule of law (Lowes et al., 2017), differences in regional identity should not generally result in strong discrepancies in factors like rule-following behavior or risk aversion. We would, however, expect differences with regard to regional decision-making and preferences about the allocation of political competencies that relate to regional culture. Models on the size of nations like Alesina and Spolaore (1997) suggest that besides economic concerns (Boix et al., 2011; Gehring and Schneider, 2016), the (perceived) preference

¹⁵ Figure A13 shows similar results when measuring regional identity relative to national identity. Note that a potential dynamic extension of the model, where parents also face a variable cost of teaching with a time-varying α parameter for the relative return to identity, could explain a decline over time. If parents reduce the value they assign to regional culture over time, it can become no longer optimal to teach it at home even without the fixed costs component: the differences between treated and control area would disappear over time. Reasons could, for instance, be a larger share of children moving out of the region to study or work, increasing the economic returns to national identity.

heterogeneity is the major factor influencing preferences about secession versus autonomy. We also use the OIP surveys to measure the consequences of a stronger regional identity. Table 9 provides clear evidence that the identity differences in Alsace and Lorraine also affect policy preferences in line with size-of-nation models. People in the treated area feel better informed about regional policies and have a more positive perception of regional democratic processes. When asked whether they would be concerned that more regional autonomy would increase inequality between regions, a significantly lower share of the population is concerned.

We also create three comprehensive proxy variables regarding the transfer of policy competencies to the regional level, more regional autonomy, and the allocation of responsibility for education policy. Each proxy is the average of several survey items in the OIP survey, to make sure differences are not caused by different understandings of any one particular question. Figures A2 through A5 list the individual questions in each sub-category. The average individual in the treated area favors transferring policy competencies from the national to the regional level as well as more regional autonomy significantly more often. Education policy is particularly interesting, as common state education is a major mechanism of imposing an identity, and influences how traditions and culture are taught. Again, treated subjects express clearly more favorable views towards setting educational policy and standards at the regional level. Table A22 shows very similar results focusing only on Lorraine.

Table 9: Survey results: policy preferences

Survey question	Mean, control	Δ	P-value	No. obs.
Democracy works well in France	2.536	-0.035	0.324	2606
Democracy works well within region	2.630	0.188	<0.001	2575
Well informed about regional policies	2.704	0.172	<0.001	2604
In favor: transfer policy competence to region (avg. 10)	3.031	0.078	0.002	1218
In favor: allow more autonomy at reg. level (avg. 5)	2.134	0.132	<0.001	2619
Educ. policy should be set at reg. level (avg. 5)	2.855	0.124	0.002	1204
Concerned reg. admin. would increase interreg. inequality	3.208	-0.314	<0.001	1204

Notes: Sources are the Observatoire Interrégional du Politique (OIP) 1999, 2001, and 2003, using respondents in all of Alsace and Lorraine, on département level. The Online Appendix shows similar results for within-Lorraine only. The parameter Δ comes from the equation: $y_i = \pi + \Delta Treatment_i + \Gamma_i' \lambda + \eta_i$, where $Treatment_i = \mathbf{1}$ [individual in treated region] and Γ comprises of controls for (reported) age, employment status and sex. A positive Δ indicates that people in the treated region agree more with the statement. Avg. "x" indicates that the factor is composed of "x" underlying survey items. The underlying survey questions are shown in Table A2.

6 Robustness: Alternative explanations

This section discusses alternative explanations to this interpretation, including threats to identification and the interpretation of what constitutes the treatment.

6.1 Results are due to linguistic differences

One concern regarding the interpretation of our results is that the border – mostly in Alsace – coincides with differences between German dialect speakers – mostly Alsatian and Moselle Franconian – and French dialect speakers. German dialect speakers might develop a stronger regional identity due to the linguistic divide between them and the rest of France, could be exposed to a larger extent to German media, or exhibit different trading patterns (Egger and Lassmann, 2015). Although linguists describe the use of the German Alemannic dialect as steadily declining and now as being mostly used by older generations (Vajta, 2013), we trace back the historical language border to separate the treatment effect from linguistic differences. We rely on Harp (1998) and overlay his map with the municipality boundaries to georeference the border along the French municipality boundaries. Figure 2c shows the resulting language border.¹⁶

To address a potential correlation between spoken (or formerly spoken) dialect and agreement as our proxy for regional identity, we then exclude all German-dialect speaking municipalities and re-estimate the treatment effect within Lorraine. The estimates in Table 10 remain comparable in size and highly significant and reinforce our hypothesis of a persistently stronger regional identity. Accordingly, the results hold even when comparing only directly neighboring municipalities in the same historical region speaking the same dialect.

Table 10: Discontinuities in referenda results, within Lorraine, excluding German-speaking municipalities

Dep. Variable:	Share Yes 1969		Share Yes 1992		Share Yes 2005	
Variable	(1)	(2) ^a	(3)	(4) ^a	(5)	(6) ^a
Treatment	13.019 (2.645) [<0.001]	9.407 (1.960) [<0.001]	4.126 (1.850) [0.026]	4.089 (1.234) [0.001]	3.830 (2.117) [0.071]	5.015 (1.592) [0.002]
Obs.	366	923	385	1269	385	720
Dist	10 km	39.41 km	10 km	61.96 km	10 km	21.48 km

Notes: Discontinuity at the treatment border using municipalities in Lorraine, excluding German-speaking municipalities. The outcomes are the share of Yes votes in the 1969 referendum, in the 1992 referendum, and in the 2005 referendum. Conley standard errors in parentheses and *p*-values in brackets.

^a Estimates from using the optimal IK bandwidth.

¹⁶ See also a similar maps in Callender, 1927. The border was formed in the 8th century and barely moved until the 19th century. Callender (1927, p.430) cites the Count Jean de Pange who traces the border back to barbaric invasions and stated that “in Lorraine the limits of the languages bear no relation to the topography of the country. They form an irregular fringe, [...] these limits, arbitrarily traced by historical accident, have not appreciably altered in fifteen centuries.” We provide the best approximation of the border with the municipality polygons and choose the shortest path around the municipality.

6.2 Regional identity higher in border départements

When comparing regional identity in the treated and the untreated areas, we are also comparing citizens of two different départements. Figure 2d demonstrates how the former French-German border coincides with the border between the départements of Moselle and Meurthe-et-Moselle, and that Moselle is closer to the country border and further away from Paris. One concern is that citizens in départements bordering a foreign country are simply more in favor of the EU, or have a stronger regional identity, due to their distance to Paris. Although our RDD only compares municipalities at the border between two départements, one might worry that the policies conducted at the département-level result in differences in regional identity even at the border. For instance, if border départements are better at providing public goods, their citizens might develop a stronger bond to their local government, and thus feel more close to their region. We argue that it is unlikely that these concerns influence our results. First of all, the amount of policy competence at the département level is limited (see Table A16). Second, if there indeed exist differences in, for instance, public good provision or other policies affecting socio-demographic characteristics, we would have detected discontinuities in any of the large set of covariates we examine at the border, as seen in Table A17. Third, we examine differences in the survey questions presented in Tables 4 and 9 between départements bordering a foreign country, and their direct adjacent neighbor. These estimates, presented in Table A29, show that for all but one survey question, there are no statistically significant differences between border départements and their adjacent neighbors.

In this table, we have also included one question capturing how satisfied respondents are with the projects undertaken by their regional council, as well as two questions on general views about the EU. Again, one might suspect that the policies implemented by border départements are more aligned with EU policies in general. As we can see in Table A29, there are no statistically significant differences in the two questions regarding satisfaction with the EU, or with the regional council.¹⁷

Similarly, we can compare the referenda results in 1992 and 2005 at the border separating all border départements from their adjacent neighbors.¹⁸ We are interested in comparing the discontinuity at this border with the estimated treatment effects reported in Table 6. We want to investigate whether our results are merely driven by the fact that the treated département of Moselle differs from its neighbors due to bordering a foreign country. As discussed above, since the estimated treatment effect within Lorraine only considers municipalities that are similar in all observable factors, we might worry that policies conducted in Moselle differ from those in the neighboring untreated départements.

We estimate equation (1) using only municipalities in border départements and their immediate neighbors, including the same set of controls as for the estimates presented in Table 6. Since this border is much longer than the treatment border and covers all of France, we also control for the

¹⁷ It is worth mentioning that although these estimates are not statistically significantly different from zero, some are also not statistically distinguishable from the estimates from the within Lorraine comparison.

¹⁸ Since we only have data on the 1969 referendum for Lorraine, we are unable to do any other comparison using these data.

geographical coordinates of the municipality centroids.¹⁹ Figure A17 compares the discontinuities at the border dividing all border départements from their neighbor départements one degree removed from the border (red dots) with the estimated treatment effects within Lorraine (red squares) for bandwidths of 10, 15, and 20 kilometers. In all but one case, there is no statistically significant discontinuity at the border separating border départements from rest of France. Although the 90 percent confidence intervals partly overlap, the magnitude of the treatment effect within Lorraine is much larger.

6.3 Migration into and out of the treated area

Another concern is the role of migration to the treated area, and emigration to other parts of France or destinations like the US. Migration mostly happened at two distinct points in time; when Germany annexed the area and when France took it back. First, after 1870, the Germans imposed a requirement that everyone who wanted to remain in the area had to give up her French nationality and opt for German citizenship. Earlier expectations of a large exodus of more than 130,000 people (Vajta, 2013) declined to less than 50,000 when it became clear that this would mean having to leave the region. In addition, Germans migrated or were sent to work in the area between 1870 and the end of WWI in 1918. However, as mentioned above, a large share of those immigrants were forced to leave again after the French re-annexation of the area (Harvey, 1999). Nevertheless, a certain share of those Germans or their offspring remain in the area. Conceptually, this should bias against our results, as German immigrants are less likely to exhibit a strong Alsatian or Lorrainian identity.

Second, there was a smaller in magnitude inflow of French people from other regions after WWI and the re-annexation. To some degree, they took up posts in the local administration and schools to replace regional traditions and culture with a strong national identity. Again, as these were French citizens from other regions, they should exhibit a weaker regional identity and also bias against our results. In terms of migration affecting the composition of the treated and control group, it is reassuring to remember that there are no discontinuities in the socio-economic structure of the population today. Nevertheless, we use a digitized version of census data for the years 1916 to 1946 to compute changes in population at the municipal level. The results in Table A26 show no significant discontinuities for any of these measures at the border. Table A27 shows that employing these changes as additional control variables also does not affect our results.

6.4 Local laws and their effects

Since 1924, the treated areas in Alsace and Lorraine enjoy the freedom to deviate from certain rules imposed by the central state. The deviations, known as the *local laws*, were limited to selected areas and further diminished over time. Glenn (1974, p.772) stated that, already by the 1970s, “local doctrine is generally of declining importance. There are few, if any, local jurists remaining (...) and the local law is taught only in two or three optional courses (...)”. Moreover, French courts refused to make any reference to German jurisprudence and interpret local laws according to French standards

¹⁹ Figure A23 shows this does not change much.

and principles. Accordingly, the visibility of the laws and their potential influence on the salience of regional “uniqueness” was most likely much higher for the first generations after WWII than for more recent generations. Still, some differences exist with regard to a small number of welfare policies (including payments to sick employees), which remain more generous in Alsace-Lorraine and include two additional days of vacation. Other differences exist with regard to personal bankruptcy law and the aforementioned voluntary associations.

The sheer existence of this set of local rules can work as a mechanism to maintain regional identity. In terms of our model, they could increase the salience of items that all people in the treated area have in common. A potential concern would be if the local laws decisively influence a third factor that drives the measured differences in regional identity and is unrelated to occupation and the suppression of group identity. To test the extent to which the remaining exceptions led to potentially problematic differences in the socio-economic environment, we run RD regressions on all available municipal level variables that could plausibly be influenced by the local laws. This includes items in the categories work occupations, economic activity, public goods and population density. In a second step, we assess how these are correlated with our main outcome in the RDD. Table A18 shows that, for about 25 tests of covariates, only one turns out to be significant when using the 10 km bandwidth; there seems to be a somewhat smaller number of industrial companies in the treated area. Based on this, the last two columns show that industrial companies are positively correlated with agreement in the referenda. Accordingly, while the one significant difference could be coincidental, it would bias against our main results.²⁰

6.5 Other

We discuss four alternative explanations in more detail in the Online Appendix D. Outliers within Lorraine, could be an issue; large urban agglomerations like Metz historically enjoyed greater autonomy and might have developed a stronger identity. Moreover, people residing in cities are often diverse and likely to support more European integration for reasons unrelated to regional identity. Even though we already control for distance to major cities, we also show that excluding municipalities belonging to the metropolitan area of Metz does not affect our most conservative estimates within Lorraine. We also discuss the role of the German occupation during WWII, and show why it does not affect the interpretation of our results.

Another aspect in which the local laws differ from the rest of France is religion. Historically, the church played a larger role in the average citizen’s life in the treated area until after WWI, and still does, to a smaller degree, today. In contrast to the rest of France, pupils in the area are still

²⁰ Another potentially biasing factor in the referenda could be differences in European Union fund receipts if the treated area would receive significantly more money which could directly affect the likelihood to vote yes or indirectly through potential growth effects (Becker et al., 2010). However, the funds are allocated to regions, not départements (the respective categories in the 2014-2020 period are “Lorraine et Vosges - ERDF/ESF” and “Lorraine - Rural Development”). The whole region is responsible for the within-region allocation and there is no reason to assume that municipalities just right of the former border in the treated area would be awarded more funds. In the 2007-2013 period, neither Lorraine nor Alsace were eligible under the convergence, competitiveness or employment objective. For the 2000-2006 period receipts per capita in the treated part of Alsace Lorraine were 100€ compared to 180€ in the untreated area.

subjected to compulsory religious classes at school (usually two hours per week). We show that in France (for both referenda) there is no relationship between religiosity as well as religious denomination and regional identity or support for the European Union. We also explain why differences in the benefits from trade are not a plausible explanation. Finally, we discuss the relative importance of homogenization policies in strengthening regional identity, and the unsuccessful attempts to "Germanize" the individuals in the treated area.

7 Concluding remarks

Our paper uses a unique natural experiment that offers variation in the exposure to occupation and the suppression of regional identity within historically homogeneous regions. The setting allows us to observe both a treated and control area in the same institutional environment today. To the best of our knowledge, this is the first causal evidence of the effect of forceful integration and the often associated homogenization policies on the identity of a suppressed group in their home region. Studying minority groups within their home region in larger nation-states is relevant for a large range of regions, not only regions like the Kurdish part in Turkey, Iran, and Iraq, the Xinjiang Uyghur region in China, Chechnya and Crimea in Russia, but also minority regions in established democracies like the Basque country and Catalonia in Spain.

Our results show that regional identity, both using stated and revealed preferences, is stronger today in the treated part of the regions Alsace and Lorraine in France. This is in line with and complements evidence by Fouka (2018) on the negative effect of intrusive homogenization policies on German immigrants in the United States. In contrast to her study, instead of observing immigrants as a selected share of the initial population, we capture the full population in their home region. We show historical evidence that conscious investments in regional identity in the form of establishing newspapers and parties began already during the treatment period. Our data then allows us to trace the medium term effect in 1969, about 15 years after the end of the treatment, as well as about half a century later. Our survey data also suggest that a positive treatment effect is already visible for age cohorts who were themselves exposed, as well as for later generations.

Our evidence on potential mechanisms suggest that regionalist parties played an important role, somehow more so in Alsace than in Lorraine. Within Lorraine, we show that in treated municipalities households more often subscribe to a regional newspaper, which signals regional attachment and provides information about regional traditions and culture to both parents and children. Moreover, we show that a stronger regional identity has important policy implications in line with size-of-nations models. Treated individuals both express more satisfaction with regional democracy, and prefer more regional-decision making and a shift of policy competencies about policies like education to the regional level.

What can we learn from these results for policies and future research? It is important to take into account to what degree identities constitute substitutes and are perceived as aligned or oppositional. Our study demonstrates that people with a stronger regional identity do not necessarily have a weaker

national identity. We show how this can be integrated into theoretical models using our adapted conceptualization of common identity, which relies on the salience or weights put on attributes that an individual has in common with the rest of the group. This definition can also explain why there are strong existing group identities even though actual within-group heterogeneity is larger than between-group differences (Desmet et al., 2017). When people hold multiple identities, whether the state can impose a new identity depends on the degree to which it is perceived as oppositional to the existing identity (relating to, e.g., Benjamin et al., 2010; Carvalho and Koyama, 2016).

The results are also important for analyzing separatism and the number and size of nations (Alesina and Spolaore, 1997), where separatist tendencies are explained by economic, e.g. regional resources (Gehring and Schneider, 2016), and cultural reasons relating to preference heterogeneity. We argue that a common group identity is best modeled as *perceived* preference homogeneity. Cases like Catalonia, where central government policies are perceived as discriminatory or repressive towards a particular region and fuel existing separatist tendencies, suggest a similar mechanism.

Finally, it is important to stress that the strengthening of group identity is not necessarily the deterministic outcome or natural reaction to suppressive policies. Our model provides some guidance in that respect. Whether parents or other members of the suppressed groups are willing to invest in the skills to maintain their traditions depends on the relative utility they derive from their own group identity and from an overarching common national identity. Central state policies can be so repressive that existing group identities disappear. Yet, our results also suggest that a joint identity embracing existing groups can be built up without necessarily replacing existing identities. This, however, requires the central authority to accept regional identities and an institutional setup that allows for sufficient regional autonomy.

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Online Appendix to “The origins of common identity: Division, homogenization policies and identity formation in Alsace-Lorraine”

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A Theoretical framework

The common identity of an individual i and a group $j \in \{R, N\} = \mathbf{J}$, with R and N corresponding to *Region* and *Nation*, depends on the perceived distance to the average group member:

$$h^{i,j} = 1 - \left(\sum_{k \in K} \omega_k (p_k^i - p_k^j)^2 \right)^{1/2},$$

where p_k^i represents the preferences (or traditions, values and norms) of individual i regarding an attribute indexed k , p_k^j represents the preferences of the average member of the region or the nation, and K is the set of all attributes. An important part of this heterogeneity function are the ω_k , which can be understood as attention weights. Higher weights indicate that the tradition, value or norm k has a larger influence on the strength of common identity.

Assume for simplicity that the attributes in K can be categorized in a number of subsets: K_R , K_N , and K_o . K_R are those attributes that the individual has in common with the other people in his region, for instance speaking the local dialect or in Alsace cooking the local specialty “tarte flambée”. The vector ω_R comprises of the weights for all attributes belonging to K_R . For these attributes, we assume $p^i - p^R = 0$, meaning that individuals within a region share the attributes.¹ We use the scalar $\omega_R = \sum_{k \in K_R} \omega_k$ as the sum of all weights put on common regional culture.

K_N are the attributes that the individual has in common with the rest of the nation. In France, consider common history or traditions that are widely shared, for instance celebrating the 14th of July, the French language or French cuisine. As with regional attributes, the scalar $\omega_N = \sum_{k \in K_N} \omega_k$ is the sum of all weights put on national culture. The remaining attributes are represented by K_o and are neither clearly aligned with the region nor the nation, for example preferences about social or economic questions that show a lot of variation both within regions and nations. Other identities relating to, for instance, their municipality can also be thought of as based on attributes contained in K_o , but we focus on regional and national identity as the main distinction between treated and control area. All weights sum up so that $\omega_o + \sum_{j \in \mathbf{J}} \omega_j = 1$, where ω_o is the sum of the weights put on the remaining attributes.²

Regional agents, for instance parents, but also other regional citizens, decide whether and how much to invest in influencing the identity formation of children. They do so by maximizing the expected utility that future generations derive from their regional and national identity. We choose a specific functional form for the sake of easier exposition and drop the i subscript for individuals, as we focus on differences between people in the treated and untreated area, equivalent to using one representative citizen for each area. Hence, we can write the utility of a *regional agent* based on the weights of future generations as

$$U = \omega_R^\alpha + \omega_N^\alpha - C,$$

¹ This is a simplifying assumption that makes the following comparisons much clearer. One could instead define the set of common regional or national attributes as those with a distance lower than some positive threshold value.

² We assume the p 's to be fixed, and only ω to vary. In other words, we assume that perceived distance to other group members rests on underlying differences which an individual herself cannot influence. Of course, there are exceptions in reality but it is also true that many attributes that are crucial for common identities rest on such factors like place of birth, joint mother tongue or skin color. What varies is whether these differences are relevant when individuals assess their degree of common identity with a particular group. Take for instance the controversial case of Crimea in Ukraine: Before the tensions between Russia and the Ukraine there was no strong separatist movement in the region. Russia's claim to the region is based on the existence of a Russian speaking minority and a common history, and an important policy aim was to increase the salience of these attributes among people in the region.

with $0 < \alpha < \frac{1}{2}$. This means that a positive utility is assigned to individuals sharing the regional identity (ω_R), but the potential benefits of alignment with the rest of the nation is also taken into account (ω_N), as argued above. We assume α to be the same for both identities but this could easily be adapted. Accordingly, both identities are to some degree substitutes, but the optimal choice will usually be to possess some regional and some national identity as $\alpha < \frac{1}{2}$. As we describe below in detail, it is costly for *regional agents* to actively be involved in influencing individuals' identities. For simplicity, this cost is modeled as C . Our analytical results would hold, however, also with any cost function that has a fixed cost component.

The transmission of weights (ω_R and ω_N) is influenced by investment in regional identity and public schooling. Hence, the ω_j of an individual is a function of the traditions *regional agents* chose to transmit and the traditions transmitted via public schooling. Just like *regional agents*, public schooling can spend time on teaching both regional and national culture, as well as on other subjects unrelated to identity. The weights of an individual when growing up are then formed as $\omega_j = \frac{t_j^P + t_j^S}{2}$ for $j = \{R, N\}$, with t_j^P and t_j^S denoting the investments made by the regional community (i.e., by parents and other regional actors) and public schooling by the central nation-state. Let $t_R^S + t_N^S \leq 1$, but in most situations it is more realistic to think of it as smaller than one as schooling also spends time on teachings subjects like math or sciences. For *regional agents*, we assume $t_R^P + t_N^P = 1$ for simplicity if the benefits from transmitting regional or national culture exceeds the costs, as discussed below. The total amount of investments in transmitting regional identity decides the magnitude of the sum of the weights ω_R and ω_N , which translates into the weights individuals will put on these sets of attributes and the strength of their identities.³

When *regional agents* choose t_R^P and t_N^P , they weight the benefits of transmitting regional or national culture against a (fixed) costs $C_j^P \tau_j \geq 0$. Take for instance the ability to teach regional music or dances to children. Parents need to learn the text or moves and how to convey this information or skill, which is an important fixed cost. Alternatively, consider the foundation of a regionalist party: *regional agents* need to make an initial investment in the appropriate organizational structure and physical infrastructure for the party to function. Accordingly, we make one central, but plausible, assumption. Individuals who engaged in actively practicing a tradition themselves within their own family inherit the ability to teach it to their own children. This means that if one generation paid the fixed costs, the next generations do not have to bear the fixed cost component of learning how to transmit the tradition. This argument is maybe even more obvious when considering regional organizations, like regionalist parties, clubs or newspapers or other associations. All of those clearly have a fixed cost component of being established. Even if there is some depreciation, the next generation(s) will face lower costs if the older generations did already set up these organizations. Accordingly, $\tau_j = 0$ if individuals were themselves exposed to $t_j^P > 0$.⁴

The (fixed) cost of influencing identity for *regional agents* is then given by the following cost function:

$$C = C(t_R^P, 1 - t_R^P) = \begin{cases} C_R^P \tau_R & \text{if } t_R^P = 1 \\ C_N^P \tau_N & \text{if } t_N^P = 1 \\ C_R^P \tau_R + C_N^P \tau_N & \text{if } 0 < t_R^P < 1 \\ 0 & \text{if } t_R^P = t_N^P = 0 \end{cases}$$

If time is the limiting factor, transmitting one tradition also creates opportunity costs reflecting less

³ This means that all attributes belonging to ω_j (for $j \in \{R, N\}$), receives equal weights of $\omega_j/|K_j|$. The weight put on the remaining attributes is given by $\omega_o = 1 - \omega_R - \omega_N$.

⁴ The complete notation including the subscript i for individuals is $\tau_j = \mathbf{1}[i \in T], \forall i \in I$ and $T \subset I$. I is the set of all individuals, and T is the subset of individuals that did not inherit the ability to transmit j culture.

time spent on transmitting other traditions. With the public schooling parameter selected by the central nation-state exogenously given, plugging in the expressions for the weights into the utility function maximized by the *regional agents* gives

$$\begin{aligned} U(t_R^P, 1 - t_R^P) &= \left(\frac{t_R^P + t_R^S}{2} \right)^\alpha + \left(\frac{(1 - t_R^P) + t_N^S}{2} \right)^\alpha - C(t_R^P, 1 - t_R^P) \\ &= B(t_R^P, 1 - t_R^P) - C(t_R^P, 1 - t_R^P), \end{aligned}$$

where $B(t_R^P, 1 - t_R^P)$ is the benefit from transmitting traditions. The optimal choice of *regional agents* is a function of the degree to which regional and national culture is taught by the public schooling system, the utility they derive from both identities and the costs associated with transmission. This leads to an optimal investment of $t_R^{P*} = \left(\frac{1 + t_N^S - t_R^S}{2} \right)$, conditional on being incentive-compatible, i.e. if the utility from transmitting the optimal level exceeds the utility from not transmitting at all. Let $\tilde{B}(t_R^P, 1 - t_R^P) = B(t_R^P, 1 - t_R^P) - B(0, 0)$ denote this excess utility. The first number in the parentheses here and in the following refers to regional traditions, and the second number to national traditions. Consider four different cases:

Case 1 If $\tilde{B}(t_R^{P*}, 1 - t_R^{P*}) \geq C(t_R^{P*}, 1 - t_R^{P*})$ for $0 < t_R^{P*} < 1$, then $t_R^P = t_R^{P*} = \left(\frac{1 + t_N^S - t_R^S}{2} \right)$ and $t_N^P = t_N^{P*} = 1 - \left(\frac{1 + t_N^S - t_R^S}{2} \right)$. This means that *regional agents* will invest in transmitting both **regional** and **national** traditions.

Case 2 If $\tilde{B}(t_R^{P*}, 1 - t_R^{P*}) < C(t_R^{P*}, 1 - t_R^{P*})$ and $U(1, 0) > U(0, 1)$, and $\tilde{B}(1, 0) \geq C(1, 0)$, then $t_R^P = 1$ and $t_N^P = 0$. This means the *regional agents* will only invest in transmitting **regional** traditions.

Case 3 If $\tilde{B}(t_R^{P*}, 1 - t_R^{P*}) < C(t_R^{P*}, 1 - t_R^{P*})$ and $U(1, 0) < U(0, 1)$, and $\tilde{B}(0, 1) \geq C(0, 1)$, then $t_R^P = 0$ and $t_N^P = 1$. This means that *regional agents* will only invest in transmitting **national** traditions.

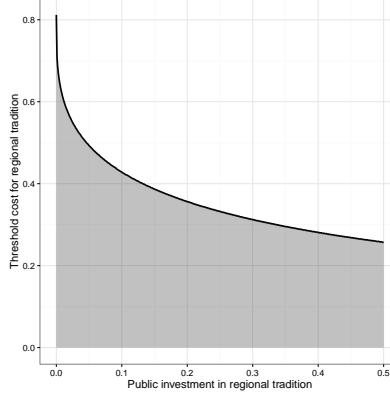
Case 4 If $U(0, 0) = \max U(t_R^P, 1 - t_R^P)$, then $t_R^P = t_N^P = 0$. This means the *regional agents* will not invest anything in transmitting any traditions.

Figure A1 shows the distribution of costs for which it is optimal for *regional agents* to invest in infrastructure that facilitates the transmission of regional traditions and culture. A decrease in t_R^S makes transmitting regional traditions the best choice for agents along a larger range of parameter values. We can use this framework to analyze the natural experiment, which can best be described in the three stages introduced in the paper.

Stage 1

In the first stage, public schooling policy is identical in both areas. *regional agents* decide to invest either in emphasizing regional or national traditions, both traditions, or none of them. The optimal choice of transmission depends on *i*) the nation-state's public investment in teaching regional and national traditions, and *ii*) the cost of learning to influence and transmit regional and national traditions. For public investments $t_{R,stage1}^S, t_{N,stage1}^S$, there exist costs $C_R^P > \bar{C}_{R,stage1}^P$ and $C_N^P > \bar{C}_{N,stage1}^P$ such that *regional agents* decide not to invest in teaching any traditions, where \bar{C}_R^P and \bar{C}_N^P are the maximum allowed (threshold) costs for *regional agents* to invest time in regional and national traditions, respectively. *Regional agents* invest time if the costs of doing so are lower than

Figure A1: Threshold costs for teaching regional tradition



Notes: The solid black line indicates the threshold costs \bar{C}_R^P of investments in transmitting regional culture and traditions. The gray area represents those parameter constellations where the costs are lower than the threshold costs, so that regional agents will invest in transmitting regional traditions. The less regional traditions are taught in public schools, the higher the costs regional agents are willing to pay to maintain regional culture and traditions.

the threshold cost $\bar{C}_{R,stage1}^P$ and $\bar{C}_{N,stage1}^P$ for the respective traditions. We assume that in the first stage, the costs are above the threshold in the treated and control area so that parents decide not to learn and teach privately.

Stage 2

After occupation and reflecting the intrusive policies, public schooling in the treated area does not teach regional traditions any more, so that $t_{R,stage2}^S = 0$ in the treated region. This increases the threshold cost and it is now optimal for parents to invest in teaching regional traditions for a larger range of costs C_R^P . As national traditions are still taught to a high degree by the state, *regional agents* decide to spend all their time teaching and transmitting regional traditions and $t_{R,stage2}^P = 1$. In the control area there was no comparable shock, and public and private investments remain unchanged.

Stage 3

In the third stage, the temporary shock is over and $t_{R,stage3}^S$ reverts to the same level in both the treated and the untreated area. If nation-state public investment in regional traditions reverts back to a high enough level, for instance comparable to stage 1, *regional agents* in the untreated area are not willing to bear more costs of learning the regional traditions as $C_R^P > \bar{C}_{R,stage3}^P$. However, if regional traditions were taught and transmitted in the treated area during stage 2, for instance through regional organizations, *regional agents* in the area do not have to bear the fixed costs ($\tau_j = 0$) and they choose $t_R^P = t_R^{P*} > 0$. Accordingly, a higher level of teaching regional culture can persist after the shock is over. This difference persists for the first generation; its long term persistence depends on whether $t_j^P > 0$, i.e. *regional agents* put enough value and time on regional culture so that their children acquire and imitate this behavior.

Note: Our model does not rule out that central-states can be successful in completely eradicating regional culture and identity. If the benefits from national identity are high enough (or the costs of not having it sufficiently), *regional agents* would rationally decide not to invest in maintaining regional traditions. Another, more positive, possibility that could easily be integrated is the degree to which national and regional identity are perceived as oppositional. If the central state chooses less intrusive measures of integration, like better infrastructure, bilingual teaching or better transport

connections, both regional and national identity could persist and prosper. There is a theoretical upper limit due to time and monetary constraints, but those constraints do not seem to be major factors explaining identity conflicts in contrast to aspects where two identities seem incompatible. France provides a good example of that. After the central state relaxed its policies in the 1950s, reported tensions disappeared and our results show that national identity is equally strong in the treated and untreated area today, even though regional identity is stronger in the treated area.

B Descriptives

Table A1: Variable description and sources

Variable	Definition	Source
<i>Dependent Variables</i>		
Share Yes 1969	Share of Yes votes in the 1969 constitutional referendum	<i>L'Est Republicain</i>
Share Yes 1992	Share of Yes votes in the 1992 referendum (Maastricht Treaty)	Centre de données socio-politiques (CDSP)
Share Yes 2005	Share of Yes votes in the 2005 referendum (European Constitution Treaty)	Centre de données socio-politiques (CDSP)
Turnout, 1969	Voter turnout in the 1969 constitutional referendum	<i>L'Est Republicain</i>
Turnout, 1992	Voter turnout in the 1992 referendum (Maastricht Treaty)	Centre de données socio-politiques (CDSP)
Turnout, 2005	Voter turnout in the 2005 referendum (European Constitution Treaty)	Centre de données socio-politiques (CDSP)
Subscription regional newspaper	Subscriptions to "Le Republicain Lorraine"/No.households in 2014	<i>Le Republicain Lorraine</i>
Share Tweets Germany	Number of tweets about Germany during the 2014 World Cup	<i>Twitter</i>
Share Tweets France	Number of tweets about France during the 2014 World Cup	<i>Twitter</i>
<i>Pre-treatment variables</i>		
Ruggedness	Index of variance of elevation in each municipality	Global elevation data set
Elevation	Raw elevation data	NASA SRTM data set
Potato	Soil suitability for production of potatoes (medium input intensity and irrigation)	IIASA/FAO, 2012
Wheat	Soil suitability for production of wheat (medium input intensity and irrigation)	IIASA/FAO, 2012
Barley	Soil suitability for production of barley (medium input intensity and irrigation)	IIASA/FAO, 2012
<i>Covariates</i>		
Median income	Median income in 2008	INSEE
Mean age	Mean age in 2006	INSEE
Education	Share of people with a high school degree	INSEE
Occupation	Share of blue-collar workers	INSEE
Workers, 2006	Share of workers in 2006	INSEE
Farmers, 2006	Share of farmers in 2006	INSEE
Artisans, 2006	Share of artisans in 2006	INSEE
Executives, 2006	Share of executives in 2006	INSEE
Intermediate prof., 2006	Intermediate professionals in 2006	INSEE
Companies, 2011	Number of companies per capita in 2011	INSEE
Commercial est., 2011	Number of commercial establishments per capita in 2011	INSEE
Industrial est., 2011	Number of industrial establishments per capita in 2011	INSEE
Building est., 2011	Number of building establishments per capita in 2011	INSEE
Public est., 2011	Number of public establishments per capita in 2011	INSEE
Theatre rooms, 2013	Number of theatre rooms per capita in 2013	INSEE
Athletic centers, 2013	Number of athletic centers per capita in 2013	INSEE
Multisport fac., 2013	Number of multisport facilities per capita in 2013	INSEE
Swimming fac., 2013	Number of swimming facilities per capita in 2013	INSEE
Psychiatric est., 2013	Number of psychiatric establishments per capita in 2013	INSEE
Service houses, 2013	Number of service houses per capita in 2013	INSEE
Health care, 2013 (short)	–	INSEE
Health care, 2013 (medium)	–	INSEE
Health care, 2013 (long)	–	INSEE
Post offices, 2013	Number of post offices per capita in 2013	INSEE
Elementary schools, 2013	Number of elementary schools per capita in 2013	INSEE
High schools, 2013	Number of high schools per capita in 2013	INSEE
Vocational training, 2013	Number of secondary schools with vocational training per capita in 2013	INSEE
Tech. vocational training, 2013	Number of secondary schools with technical vocational training per capita in 2013	INSEE

Notes: Variable description and source for all variables used in the paper and this Online Appendix. XXX

Table A2: Survey questions (i.)

Variable	Question	Categories/Scale	Source
Regional identity	"Could you tell me whether you feel very attached, rather attached, not very attached or not attached at all to [name of region]?"	4 = very attached; 3 = rather attached; 2 = not very attached; 1 = not attached at all	OIP 99/2001 Q2a3
National identity	"Could you tell me whether you feel very attached, rather attached, not very attached or not attached at all to France?"	4 = very attached; 3 = rather attached; 2 = not very attached; 1 = not attached at all	OIP 99/2001 Q2a2
European identity	"Could you tell me whether you feel very attached, rather attached, not very attached or not attached at all to Europe?"	4 = very attached; 3 = rather attached; 2 = not very attached; 1 = not attached at all	OIP 99/2001 Q2a1
Regional relative to National identity (standardized)		Relation of two identities, standardized with standard deviation 1 and mean 0	OIP 99/2001
European relative to national identity (standardized)		Relation of two identities, standardized with standard deviation 1 and mean 0	OIP 99/2001
Democracy works well within France	"Personally, do you reckon the democracy in France to function very well, fairly well, not very well or not well at all?"	4 = very well; 3 = fairly well; 2 = not very well; 1 = not well at all	OIP 99/2001 Q4
I feel well informed about regional policies	"You personally, do you think that you are well or badly informed about the actions of the regional council of [name of region]?"	4 = very well; 3 = rather well; 2 = rather badly; 1 = very badly	OIP 99/2001 Q14
Democracy works well within the region	"And in [name of region], do you reckon the democracy to function very well, fairly well, not very well or not well at all?"	4 = very well; 3 = fairly well; 2 = not very well; 1 = not well at all	OIP 99/2001 Q5
I am concerned regional administration would increase interregional inequality	"If the region takes action in all those domains instead of the state, are you concerned about the development of interregional inequality?"	4 = Yes, very much so; 3 = Yes, somewhat; 2 = No, not very much; 1 = No, not at all	OIP 2003 Q11a2

Notes: Description of survey questions from the Observatoire Interrégional du Politique (OIP) 1999 and 2001. The values of the categories are reversed compared to the original question categories. Questions were originally in French and have been translated.

Table A3: Survey questions (ii.)

Variable	Question	Categories/Scale	Source
Power_Transfer_Region	"Are you in favor of the transfer of all the power and means of the state to the regions?" (Average across 10 policy dimensions)	Value between 1 and 4. 4 = "Strongly in favor" and 1 = "Strongly against"	
1	"Are you in favor of the transfer of all the power and means of the state to the regions regarding the choice in setting up high schools?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2001 Q36a1
2	"Are you in favor of the transfer of all the power and means of the state to the regions regarding the management of high school teachers?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2001 Q36a2
3	"Are you in favor of the transfer of all the power and means of the state to the regions regarding the management of administrative personnel in high schools?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2001 Q36a3
4	"Are you in favor of the transfer of all the power and means of the state to the regions regarding the definition of school programmes and certificates?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2001 Q36a4
5	"Are you in favor of the transfer of all the power and means of the state to the regions regarding the choice in setting up university centers in the region?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2001 Q36a5
6	"Are you in favor of the transfer of all the power and means of the state to the regions regarding the choice of high school creation?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2001 Q36a6
7	"Are you in favor of the transfer of all the power and means of the state to the regions regarding environmental policies like water policy?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2001 Q36a7
8	"Are you in favor of the transfer of all the power and means of the state to the regions regarding cultural policies like heritage conservation?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2001 Q36a8
9	"Are you in favor of the transfer of all the power and means of the state to the regions regarding sport policies?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2001 Q36a9
10	"Are you in favor of the transfer of all the power and means of the state to the regions regarding the support of social housing?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2001 Q36a10

Notes: Description of survey questions from the Observatoire Interrégional du Politique (OIP) 2001. The values of the categories are reversed compared to the original question categories. Questions were originally in French and have been translated.

Table A4: Survey questions (iii.)

Variable	Question	Categories/Scale	Source
Autonomy_Region	"Could you tell me whether reforms empowering the regional councils are a very good thing, a rather good thing, a rather bad thing or a very bad thing for the years to come?" (Average across 5 areas)	Value between 1 and 4. 1 = "It's a very bad thing." and 4 = "It's very good thing."	
1	"Here are a certain number of reforms that are under way or under discussion. Could you tell me, for each one of these, whether it is a very good thing, a rather good thing, a rather bad thing or a very bad thing for the years to come? - Authorizing the regional councils to adapt the national laws and regulations in their respective regions, under the control of the Parliament."	4 = A very good thing; 3 = A rather good thing; 2 = A rather bad thing; 1 = A very bad thing	OIP2001 Q35a1
2	"Here are a certain number of reforms that are under way or under discussion. Could you tell me, for each one of these, whether it is a very good thing, a rather good thing, a rather bad thing or a very bad thing for the years to come? - Authorizing the regional councils to negotiate and manage the European funding without state involvement."	4 = A very good thing; 3 = A rather good thing; 2 = A rather bad thing; 1 = A very bad thing	OIP2001 Q35a2
3	" Here are a certain number of reforms that are under way or under discussion. Could you tell me, for each one of these, whether it is a very good thing, a rather good thing, a rather bad thing or a very bad thing for the years to come? - Giving the regional councils more freedom in deciding over their financial resources without depending on the state."	4 = A very good thing; 3 = A rather good thing; 2 = A rather bad thing; 1 = A very bad thing	OIP2001 Q35a3
4	"Here are a certain number of reforms that are under way or under discussion. Could you tell me, for each one of these, whether it is a very good thing, a rather good thing, a rather bad thing or a very bad thing for the years to come? - Developing the study of regional languages at school."	4 = A very good thing; 3 = A rather good thing; 2 = A rather bad thing; 1 = A very bad thing	OIP2001 Q35a4
5	"Here are a certain number of reforms that are under way or under discussion. Could you tell me, for each one of these, whether it is a very good thing, a rather good thing, a rather bad thing or a very bad thing for the years to come? - Assigning new fields of competence to the regional councils."	4 = A very good thing; 3 = A rather good thing; 2 = A rather bad thing; 1 = A very bad thing	OIP2001 Q35a5

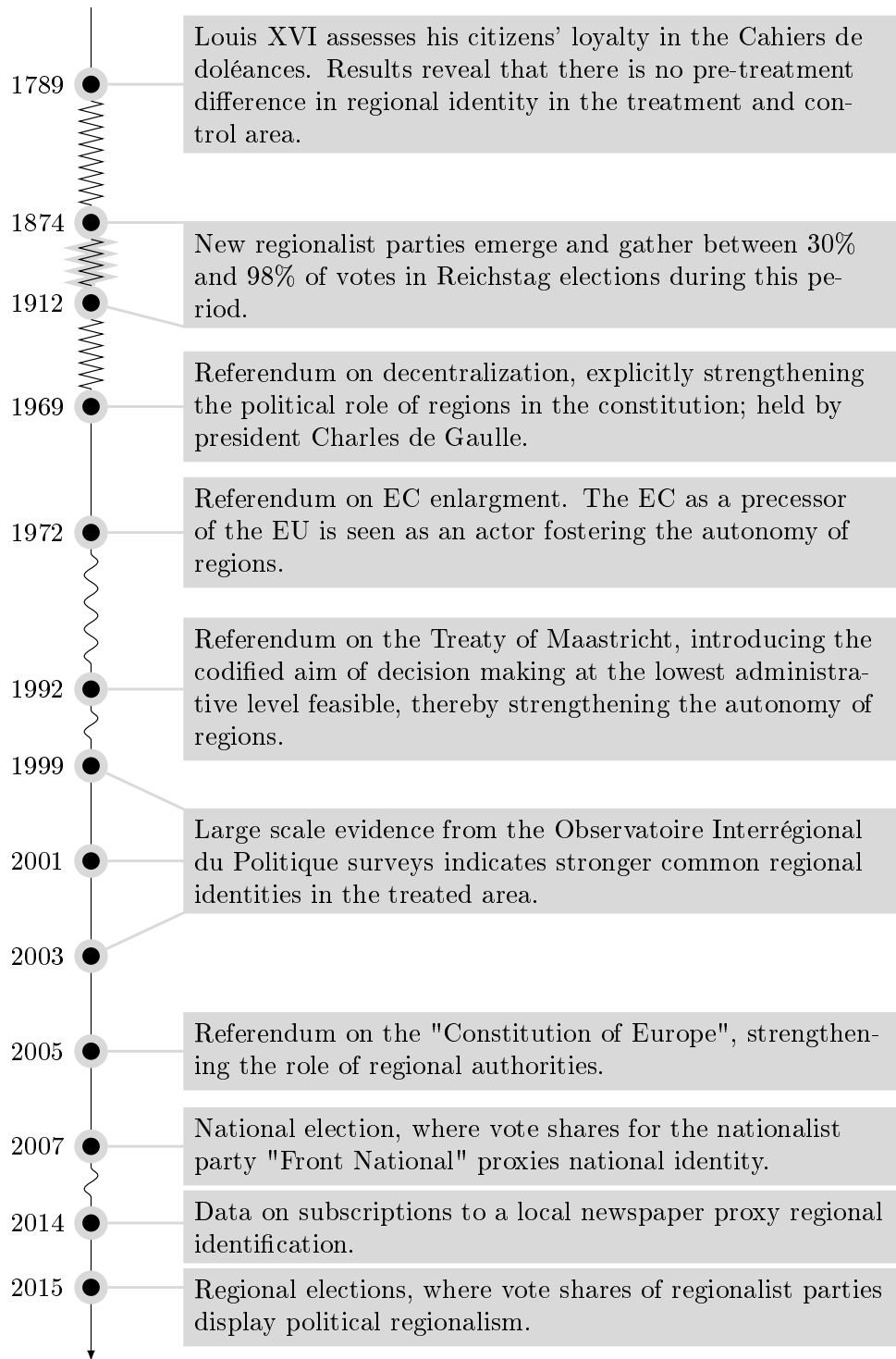
Notes: Description of survey questions from the Observatoire Interrégional du Politique (OIP) 2001. The values of the categories are reversed compared to the original question categories. Questions were originally in French and have been translated.

Table A5: Survey questions (iv.)

Variable	Question	Categories/Scale	Source
Education_Region	"Are you in favor of the transfer of all the power and means of the state to the regions regarding education policy and standards?" (Average across 5 questions)	Value between 1 and 4. 1 = "Strongly against" and 4 = "Strongly in favor"	
1	"Are you in favor of the transfer of all the power and means of the state to the regions in the following field: - The choice in setting up high schools?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2003 Q12a1
2	"Are you in favor of the transfer of all the power and means of the state to the regions in the following field: - The management of high school teachers?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2003 Q12a2
3	"Are you in favor of the transfer of all the power and means of the state to the regions in the following field: - The management of administrative personnel in high schools?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2003 Q12a3
4	"Are you in favor of the transfer of all the power and means of the state to the regions in the following field: - The definition of school programmes and certificates?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2003 Q12a4
5	"Are you in favor of the transfer of all the power and means of the state to the regions in the following field: - The choice in setting up university centers in the region?"	4 = Strongly in favor; 3 = Somewhat in favor; 2 = Somewhat against; 1 = Strongly against	OIP2003 Q12a5
Opinion on Democracy in EU	"And in the European Union, do you consider democracy to work very well, rather well, not very well or not well at all?"	4 = Very well; 3 = Rather well; 2 = Not very well; 1 = Not well at all	OIP 2000 Q10
Opinion on France in EU	"Generally, do you think that fact that France is part of the European Union is a good or a bad thing?"	1 = Good thing!; 0 = Bad thing	PEF 2002 V2 Q242
Opinion on Regional Council	"Would you say that the project of the Regional Council of [respondent's region] is going more in the right or more in the wrong direction?"	1 =Right direction; 0 = Wrong direction	OIP 99/2001 Q9/Q10

Notes: Description of survey questions from International Social Survey Programme (ISSP) 2003, National Identity (II), and ISSP 2004, Citizenship, and the Observatoire Interrégional du Politique (OIP) 2003. The values of the categories are reversed compared to the original question categories. Questions were originally in French and have been translated.

Figure A2: Timeline of outcomes



Notes: Distances on the straight parts of the timeline are proportional to years. The curled line is proportional to five years and the zigzag line is proportional to 25 years.

Table A6: Descriptive statistics for outcome variables and treatment

Variable	Mean	Std. dev.	Min.	Max.
Treatment	0.52	0.50	0.00	1.00
Yes 69	59.69	14.28	5.65	94.74
Yes 92	53.91	11.39	0.00	86.25
Yes 05	45.51	9.96	6.67	81.01
Newspaper subscriptions	14.62	7.63	0.00	32.90
Turnout 69	84.59	7.56	7.41	100.00
Turnout 92	74.40	6.04	52.44	100.00
Turnout 05	73.28	6.40	50.79	100.00

Notes: Descriptive statistics for the binary treatment variable, *Share Yes 1969*, *Share Yes 1992* and *Share Yes 2005*, in the respective referenda, and share of newspaper subscriptions, whereas *Turnout 1969*, *1992*, and *2005*, refers to turnout in the respective year.

Table A7: Descriptive statistics for RDD control and pre-treatment variables

Variable	Mean	Std. dev.	Min.	Max.
Distance to Metz	83.47	44.39	1.60	203.16
Distance to Strasbourg	107.53	50.32	0.02	223.02
Distance to Nancy	73.97	34.89	0.06	164.98
Distance to Germany	50.87	35.48	0.33	141.55
Elevation	300.51	119.71	110.12	1045.90
Ruggedness	0.73	0.68	0.01	5.18
Potato	7091.57	474.12	3665.80	7848.00
Wheat	6104.37	326.52	3873.60	6687.00
Barley	6099.83	323.85	3873.6	6687
Median income 2008	31.56	6.00	17.69	53.55
Mean age 2006	39.60	3.01	28.26	63.07
Education 1999	0.20	0.07	0.00	0.58
Occupation 2006	0.19	0.07	0.00	0.50

Notes: Descriptive statistics for variables used as covariates (for variables used in the main paper) and pre-treatment variables. Distances are in kilometers. Potato and wheat refer to the suitability of the soil to grow the respective crop, based on FAO data. Other variables were chosen with the aim to have the date date closest to our main outcome variables.

C Overview of repressive policies

Table A8: Detailed Overview of Repressive Policies in Alsace and Lorraine

Time Period	Ruled By	Policy	Policy Category	Source
1871-1902	Germany	Reactivation of the 1849 “dictatorship paragraph”: permitted house searches, the expulsion of agitators and prohibiting political organizations.	Social, political, military freedom, equality	Carrol (2010); Grasser (1998)
Beginning 1871/72	Germany	Bismarcks <i>Kulturkampf</i> : government seriously restricted Catholic education as well as the Catholic press. Moreover, some religious orders were expelled from the Reichsland.	Regional institutions and administrative personnel	Silverman (1966)
May 1872	Germany	Strasbourg University is reopened as “Kaiser-Willhelm-Universitaet”.	Language	Höpel (2012)
Oct. 1872	Germany	Introduction of obligatory military service.	Social, political, military freedom, equality	Grasser (1998)
1873	Germany	French is prohibited to be taught in schools.	Language	Grasser (1998)
1878	Germany	Legislation to restrict the political participation of the people.	Social, political, military freedom, equality	Carrol (2010)
1882	Germany	The use of French is prohibited in the Delegation.	Language	Grasser (1998)
1887	Germany	Choral and gymnastic societies are banned as they are seen as opportunities for the coming-together of pro-French minded people.	Social, political, military freedom, equality	Carrol (2010)
1890 onward	Germany	Unwelcome legislation (e.g. German trade regulations) is introduced in Alsace-Lorraine.	Regional institutions and Administrative Personnel	Höpel (2012)
1890 onward	Germany	German becomes the only official language and district and county councils become obliged to embrace German as their only language.	Language	Grasser (1998)
Until 1898	Germany	Restrictions are imposed on the press.	Media	Silverman (1966)
1914	Germany	Citizens sympathizing with the French are taken in “protective detention” without trial.	Separation and segregation; Social, political, military freedom, equality	Harvey (1999)

1917/18	France	Approximately 100 000 Germans are deported.	Separation and segregation	Carrol and Zanoun (2011), Callender (1927)
1918	France	Establishment of French Currency.	Regional institutions and administrative personnel	Callender (1927)
Dec. 1918	France	An identity-card system is implemented: Locals are classified and receive a specific civil status according to the origin of their parents. Lower classification is often associated with discrimination.	Separation and segregation	Harvey (1999)
Dec. 1918 to Oct. 1919	France	“Commissions de Triage” are established: Designed to assert the Frenchness of the population in re-annexed areas, individuals suspected of faulty loyalties are investigated and either exonerated, placed under surveillance, taken into custody or expelled from France. In this context, some pro-German Alsatiens are forcefully emigrated.	Separation and segregation; Social, political, military freedom, equality	Carrol and Zanoun (2011); Harvey (1999)
1920	France	French becomes the only language to be taught in schools. The so-called ”direct method”, where students are immersed in the French language with no reference to German, leads to considerable difficulties for a majority of French-speaking Alsatiends.	Language	Grasser (1998); Goodfellow (1993)
1920s	France	French becomes the official legal language. Due to this, many bureaucrats, who had previously built their career under the German system, are in danger of losing their jobs or being denied promotions as the French government now regards them as incompetent or politically problematic.	Language	Goodfellow (1993)

June 1924	France	The Ministerial Declaration by Premier Edouard Herriot introduces a centralised French administration as well as all French laws and institutions into the recovered territories. The Declaration also introduces the separation of church, secular education and a number of anti-clerical laws.	Regional institutions and administrative personnel	Carrol and Zanoun (2011); Goodfellow (1993)
1925	France	The post of Commissioner General is abolished and the regional government returned to the Government of Paris	Regional institutions and administrative personnel	Callender (1927)
1927/28	France	Three autonomist journals become banned as they are seen to have had a central role in a campaign against the French: The "Volksstimme" ("voice of the people"), the "Wahrheit" ("truth") and the "Zukunft" ("future").	Media	Goodfellow (1993)
1927/28	France	Colmar trials: 15 prominent autonomists are arrested and tried with the reason given that they had participated in a plot to separate Alsace from France. 4 of the 15 are sentenced to 1 year in prison, while 5 are sentenced to be exiled.	Social, political, military freedom, equality	Goodfellow (1993)
1939	France	15 autonomists are arrested for relations with the enemy. One autonomist leader is later executed by a fire squad in 1940 in Champigneulle.	Social, political, military freedom, equality	Goodfellow (1993)
1940	Germany	The French language is prohibited from use and street signs must be renamed in German. French names must be replaced by German equivalents.	Language	www.nithart.com; Encyclopédie
1940	Germany	Germans prohibit the Alsatian dialect as it is regarded as a means of protest against the Nazi-government.	Language	Encyclopédie
1940	Germany	Germans prohibit typically Alsatian gatherings and celebrations as they are seen as expressions of specifically regional culture and therefore against the Germanisation efforts of the Nazi regime.	Social, political, military freedom, equality	Encyclopédie

1940	Germany	German is made the official language of the administration.	Language	Grasser (1998)
1945-1952	France	Teaching of German is de jure prohibited in schools, de facto this is applied in about half of the schools.	Language	www.alsace-lorraine.org ; Anderson (1972)
1953	France	Bordeaux trials: 13 Alsatian <i>malgré-nous</i> are sentenced to death due to their involvement in the massacre of Oradour-sur-Glane.	Social, political, military freedom, equality	Boswell (2008) Collins (2007)

Notes: Encyclopédie refers to www.encyclopedie.bseditions.fr.

D Alternative explanations

D.1 Support driven by urban agglomerations

Another potential concern is whether the effect is driven by outliers. More specifically, it might be driven by urban agglomerations for two potential reasons. Historically, cities enjoyed greater autonomy and might have developed a stronger local identity relative to national identity. Moreover, cities today attract people from a diverse set of places, who could on average be more likely to support the EU. A visual inspection of the maps in Figures A12a and 4c in the main text suggests that the area surrounding Metz does in these cases feature high shares of yes votes. We test whether this is a problem by excluding municipalities belonging to the metropolitan area as defined by INSEE (Table A9 also uses 10 or 15 kilometers from Metz as an alternative cut-off). Depending on bandwidth length, this means that between 30 and 38 municipalities are excluded. Table A10 presents the results for the analysis of newspaper subscriptions within Lorraine excluding Metz (Panel A). All point estimates are very similar and still statistically significant.

D.2 Religiosity and EU support, relevant for 1992 and 2005 referenda

One distinct feature in which the local laws strongly differ from the rest of France is with regard to religion. Historically, the church played a larger role in the average citizens life in the treated area until after WWI, and still does to some degree until today. In contrast to the rest of France, pupils in the area are still subjected to compulsory religious classes at school (usually two hours per week). This is not uncommon in other European countries, for instance, many of the southern German states feature a similar policy. Usually these classes are not dogmatic, but transmit information about religions in general, of course still with an emphasis on Christianity. If religion or religious denomination is related to a more favorable attitude towards the EU, part of the effect we measure and attribute to differences in exposure to intrusive policies might be driven by differences in religious identity.

However, the available literature indicates no direct relationship between religious attachments and European integration and “even indirect effects of religion on Euroscepticism are small or appear to cancel each other out” (Boomgaarden and Freire, 2009, p.1). To the opposite, albeit minimally, it is argued that “actors such as religious parties and the churches have strayed from the integrationist path and contributed to Euroscepticism” (Minkenberg, 2009, p.1190).

To make sure this is really no concern, we examine the purported relationship in a more systematic way as well. In the specific French context, there are no municipal level measures on religious affiliation and the share of people who consider themselves secular, due to the specific secular constitution and approach in France. Nonetheless, we can use outcomes aggregated at the département level for all of France to assess the relationship between religion and voting in the EU referendum. Table A11 shows results for two variables that measure the intensity of religiousness and religious denomination. *Attendance* measures how often subjects attend religious services, both as a continuous variable and coded as a set of dummies with *never attending* as the reference category. Denomination relates to the share of people who perceive themselves as *Roman Catholic*, *Protestant*, *Christian Orthodox*, *Jewish*, *Muslim* or *other faiths*, with *no religious affiliation* as the reference category.

The results show no difference for *Attendance* in both 1992 and 2005. With *Attendance* coded as individual dummies, there is also no stable relationship. Only very enthusiastic churchgoers have a marginally significant positive correlation compared to those who never attend in 2005, but not in 1992. The pattern is similar for denomination. The only positive correlation which is significant at the 10 percent level is with *Protestant* in 1992, but it also disappears in 2005. Overall, this supports

the existing literature that religion does not play a major role for attitudes towards the EU. Thus, the concern that religious differences would contaminate our main results appears unfounded.

D.3 Differences in benefits from trade

One of the main benefits of more integration that is usually mentioned is increased gains from trade stemming from lower trade costs (Alesina and Spolaore, 1997). Accordingly, we need to assume that these benefits are comparable close to the border. Clearly, distance to the respective neighboring states correlates with trade costs; municipalities that are closer to the country borders could benefit more from increased trade and thus exhibit higher agreement to more EU integration. At the same time, relying less on trade with the rest of France and more on exports could also foster a stronger regional relative to national identity. There are two ways to evaluate whether this is problematic in our cases.

Firstly, our smallest bandwidth is 10 kilometers only, so that it seems implausible that the relatively small additional distance between treated and control municipalities affects trade costs sufficiently to explain the results. Moreover, our estimates are robust to controlling for distance to the German as well as to other borders. Secondly, the point estimates of the treatment effect barely change when we increase the bandwidths and include more municipalities (Figure A3). Thirdly, if distance to the border has a significant effect, we would expect to see a significant, or at least positive difference between former Lorraine and the rest of France as well. As the differences in Table A12 are neither always positive, nor significant, differences in trade benefits do not seem to be problematic.

D.4 The relative importance of homogenization policies

By design of the experiment we exploit, it is impossible to exactly distinguish the effect of homogenization policies from the effect of occupation and repression in general. It seems plausible that repression itself provokes a backlash, but the historical literature specifically emphasizes the crucial role of homogenization policies steered at suppressing regional identity (e.g. De La Valette, 1925; Goodfellow, 1993; Harp, 1998; Harvey, 1999; Heffernan, 2001; Zanoun, 2009). Even more than German policies, French policies after World War I clearly aimed at eliminating all signs of regional particularities that were deemed dangerous. Many of these policies plausibly affected the Alemanic-dialect speaking areas more severely, for instance repeated prohibitions of specific newspapers and parties associated with the usage of the German language.

As intrusive French homogenization policies comprised the second and more recent part of the treatment period, there could be a stronger treatment effect on the German-dialect speaking part of Lorraine. Panel B and C in Table A13 indeed shows a significantly higher share of yes votes on the German speaking side in both 1992 and 2005. Of course, this heterogeneous treatment effect could partly be driven by other unobserved differences due to language. Accordingly, while keeping the caveats in mind, this is suggestive evidence supporting the important role of homogenization policies in creating the backlash.

D.5 The role of World War II

It is not absolutely clear how to interpret the role of WWII. During most of the war, the treated and untreated area were occupied by Germany. German policies were surely repressive, but the suppression of regional identity and traditions was not the main objective and a potential suppression of French identity took place in all occupied parts of France. Neither the treated nor control

area belonged to the self-governed Vichy part of France. We are thus reluctant to emphasize the role of WWII, even though it was clearly a drastic shock influencing the lives of many people.

Nonetheless, one concern is that the shock was stronger in the treated area, as a sizable number of young men were drafted into the German military and exposed to different and potentially more intense war experiences. This difference in exposure probably led to a final phase of perceived alienation and repression, because the French central government sentenced some of these so-called *malgré-nous* who were in the *Waffen-SS* to death in the Bordeaux Trial in 1953 for their involvement in war crimes. This punishment was perceived as unfair and caused massive public outrage and protest, because it did not take the historical circumstances into account.⁵ It was probably the last major part of a set of policies which was imposed by the national majority in disregard of the local preferences and opinions. By 1964, all French citizens who had collaborated with the Nazis including the convicts from the Bordeaux trials had benefited from a general amnesty.

Based on the results in Vlachos (2017), using variation within Alsace, the only outcome correlated significantly with a higher share of war veterans is higher support for candidates of the right-wing National Front. In an earlier version of this paper (Dehdari and Gehring, 2016), we show that there is no difference in support for nationalist leader Jean-Marie Le Pen in the 2007 presidential election.⁶ Thus, there does not seem to be a problematic discontinuity with regard to WWII exposure at the border we exploit. Finally, the composition of the population might have been affected differently, but Table A17 and A18 indicate no problematic differences.

D.6 The influence of Germanization

Although feeling more German would not directly explain a stronger regional identity, being exposed to German ideas, newspapers and institutions for nearly fifty years could affect preferences. In our model, however, there is no reason to expect a persistently stronger German identity after the occupation ended. Although identities based on different levels (regional, national) need not to be substitutes, national identities probably are to some degree. Accordingly we would expect that a stronger German identity is related to a weaker French identity. Although we find no such difference in the survey results, we also code a variable based on tweets issued using Twitter about the French and German national football team during the World Cup in 2014 as a robustness test. When using this as an alternative measure of German and French national identity at the local level within Lorraine, we find no significant difference at the 10 kilometers and at the optimal IK bandwidth (see Online Appendix Section L). The analysis rests on relatively few tweets, but the results are in line with the survey evidence and suggest no difference in German or French national identity.⁷

⁵ Nearly all mayors of towns in Alsace attended a public protest walk in Strasbourg. For alternative versions and views about the actions and historical circumstances see <http://www.scrapbookpages.com/Oradour-sur-Glane/Story/index.html>.

⁶ Results available upon request.

⁷ The historical and sociological literature also argues that although citizens accepted their legal belonging to Germany, they did so “without feeling German themselves” (Höpel, 2012, p.37). De La Valette (1925) refers to a disillusioned German journalist saying “Alsace does not want us; the Alsatians are lost to us”. Carrol (2010, p.66) cites a government official stating that “Prussian methods had failed to instil alien national sentiments into the minds of a people who were proud of their history”. It also seems to be partly misleading to frame the regionalist parties in the 1920s and 30s as pro-German. The “Landespartei” is described as “referring in its manifesto to the right of peoples to self-determination and looked forward to the day when a ‘free Alsace- Lorraine’ would be the mediator between France and Germany in a United States of Europe” (Anderson, 1972). Similarly, the UPR called for “administrative decentralization, a regional elected council and the recognition of bilingualism” rather than for a return to Germany.

Table A9: Discontinuities in referenda results, within Lorraine, excluding urban agglomeration Metz

Panel A: Excluding Metz Agglomeration						
Dep. Variable:	Share Yes 1969		Share Yes 1992		Share Yes 2005	
	(1)	(2) ^a	(3)	(4) ^a	(5)	(6) ^a
Treatment	13.194	12.029	4.082	3.599	4.283	5.791
	(2.621)	(1.949)	(1.940)	(1.269)	(2.087)	(1.452)
	[<0.001]	[<0.001]	[0.036]	[0.005]	[0.041]	[<0.001]
Obs.	337	817	355	1152	355	779
Dist	10 km	34.09 km	10 km	53.78 km	10 km	26.22 km
Panel B: Excluding within 10 kilometers from Metz						
Dep. Variable:	Share Yes 1969		Share Yes 1992		Share Yes 2005	
	(1)	(2) ^a	(3)	(4) ^a	(5)	(6) ^a
Treatment	12.670	10.678	3.822	5.867	4.000	7.341
	(2.633)	(1.795)	(1.850)	(1.137)	(2.082)	(1.340)
	[<0.001]	[<0.001]	[0.040]	[<0.001]	[0.055]	[<0.001]
Obs.	372	1145	392	1436	392	1171
Dist	10 km	38.47 km	10 km	49.06 km	10 km	35.71 km
Panel C: Excluding within 15 kilometers from Metz						
Dep. Variable:	Share Yes 1969		Share Yes 1992		Share Yes 2005	
	(1)	(2) ^a	(3)	(4) ^a	(5)	(6) ^a
Treatment	12.367	10.585	3.940	5.483	4.450	7.082
	(2.668)	(1.891)	(1.889)	(1.151)	(2.033)	(1.225)
	[<0.001]	[<0.001]	[0.038]	[<0.001]	[0.029]	[<0.001]
Obs.	353	1017	372	1316	372	1339
Dist	10 km	34.56 km	10 km	44.81 km	10 km	45.98 km

Notes: Discontinuity at the treatment border using municipalities in Lorraine, excluding Metz. Panel **A** excludes all municipalities in Metz Agglomeration, Panel **B** excludes all municipalities within 10 kilometers from Metz, and Panel **C** excludes all municipalities within 15 kilometers from Metz. Outcomes are share of Yes votes in the 1969 referendum, share of Yes votes in the 1992 referendum, and share of Yes votes in the 2005 referendum. Conley standard errors in parentheses and *p*-values in brackets.

Short Interpretation: Independent cities might have developed a historically stronger regional identity. In case there would be more major cities on the treated side, and close to the border, this could bias our estimate. Excluding Metz as the major city in Lorraine does not affect the results. This does also alleviate concerns that municipal areas are more cosmopolitan and might thus agree more to the two later referenda. For the 1969 vote, the latter concern is irrelevant. For all three outcome variables, this omission does not affect our results.

^a Estimates from using the optimal IK bandwidth.

Table A10: Newspaper subscription shares: excluding Metz, and discontinuity at language border

Panel A: Excluding Metz				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	7.980	7.667	6.927	6.891
	(1.527)	(1.361)	(1.315)	(1.317)
	[<0.001]	[<0.001]	[<0.001]	[<0.001]
Obs.	259	365	455	450
Dist	10 km	15 km	20 km	19.71 km
Panel B: Effect at the language border				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	-0.763	0.088	0.110	0.245
	(0.954)	(0.804)	(0.801)	(0.809)
	[0.424]	[0.913]	[0.891]	[0.762]
Obs.	291	394	490	452
Dist	10 km	15 km	20 km	17.71 km
Panel C: Excluding German-speaking municipalities				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	10.000	9.815	9.777	10.247
	(1.421)	(1.247)	(1.149)	(1.092)
	[<0.001]	[<0.001]	[<0.001]	[<0.001]
Obs.	385	553	684	937
Dist	10 km	15 km	20 km	34.32 km

Notes: Discontinuity in newspaper subscription shares at the treatment border using municipalities in Lorraine (Moselle, Meurthe et Moselle, and Meuse), and at the language border using municipalities in Moselle. Panel **A** excludes all municipalities in the Metz agglomeration, panel **B** tests for discontinuities at the language border, and panel **C** excludes all German-speaking municipalities. Conley standard errors in parentheses and p -values in brackets.

^a Estimates from using the optimal IK bandwidth.

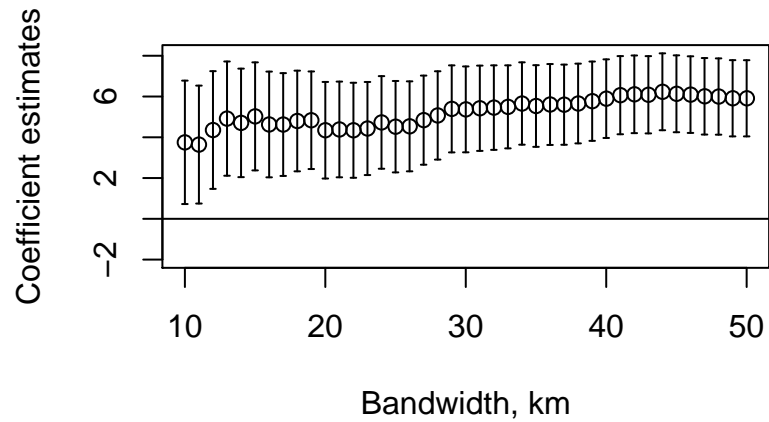
Table A11: Share of Yes votes and religion, all of France.

	Dep. Variable: Share of Yes votes 1992			Dep. Variable: Share of Yes votes 2005		
	(1)	(2)	(3)	(4)	(5)	(6)
Attendance [mean]	-1.839			-1.774		
	[0.167]			[0.113]		
Attendance: Weekly		0.114			0.099	
		[0.167]			[0.135]	
Attendance: 2-3 times a month		0.002			0.025	
		[0.983]			[0.788]	
Attendance: Once a month		-0.052			-0.097	
		[0.625]			[0.164]	
Attendance: Sev. times a year		0.057			0.054	
		[0.114]			[0.144]	
Attendance: Less freq.		0.036			-0.001	
		[0.391]			[0.988]	
Roman Catholic			0.029			0.004
			[0.291]			[0.902]
Protestant			0.353			0.146
			[0.054]			[0.321]
Christian Ortodox			0.115			0.267
			[0.846]			[0.585]
Jewish			0.847			1.095
			[0.116]			[0.278]
Moslem			-0.092			0.008
			[0.437]			[0.955]
Other Religions			-0.155			0.010
			[0.495]			[0.971]
Obs.	94	94	94	94	94	94

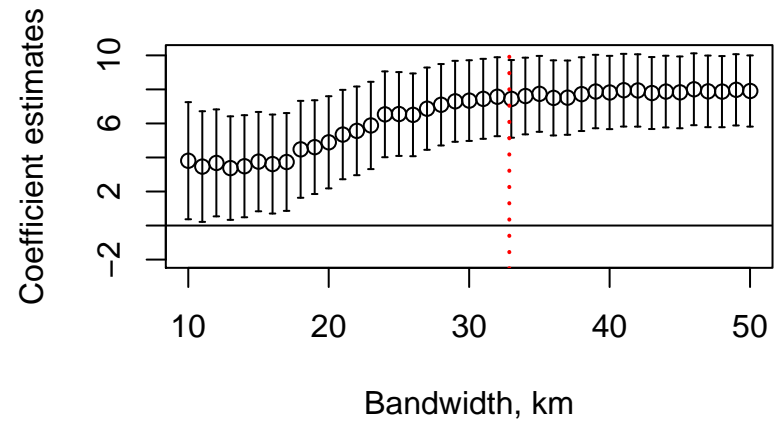
Notes: This table tests whether there is a clear relationship between religious affiliation and voting in the two referenda 1992 and 2005. The OLS estimates use aggregate survey results at the département-level. *Attendance* refers to how often the respondents attend religious services. *Never attending* is the omitted reference category for attendance, *no religious denomination* is the omitted reference category for religion. Controls: Sex, Age, Years of schooling, Urban vs Rural, Union membership, Degree, Income, and Household size. *p*-values in brackets. There is no systematic effect of religion, which is reassuring as the areas in former Alsace-Lorraine has a slightly different history with regard to schooling. Accordingly, these differences and schooling should not explain our results.

Short Interpretation: Religious beliefs and denomination could affect voting in the referenda. We show for all of France that such a relationship never shows up significantly at any level, both for intensity of belief measured by church attendance, as well as when using denomination as the variable of interest. We conclude that there are some differences with regard to the treatment of religion between the departments, but none that closely influences or could explain our result.

Figure A3: Estimation plots for 1992 and 2005 referenda, within Lorraine



(a) Share Yes 1992



(b) Share Yes 2005

Notes: Estimates of treatment effect, bandwidths varying between 10 to 50 kilometers, within Lorraine. 1st degree polynomial. Dashed vertical line at the optimal IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors).

Table A12: Placebo test: Border between Alsace and Lorraine, and the rest of France

Panel A: Share Yes 1992				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	-3.168	-0.649	0.058	3.170
	(2.040)	(1.728)	(1.465)	(0.769)
	[0.121]	[0.707]	[0.968]	[<0.001]
Obs.	404	606	814	11416
Dist	10 km	15 km	20 km	218.68 km
Panel B: Share Yes 2005				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	0.208	1.045	1.496	0.135
	(2.006)	(1.666)	(1.453)	(0.735)
	[0.917]	[0.531]	[0.303]	[0.854]
Obs.	405	608	816	10899
Dist	10 km	15 km	20 km	209.71 km

Notes: RD estimates using bandwidths of 10, 15, and 20 kilometers from the border between Alsace and Lorraine, and the rest of France. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, and distance to Nancy. Conley standard errors in parentheses and p -values in brackets.

^a Estimates from using the optimal IK bandwidth.

Table A13: Effects at the language border

Panel A: Share Yes 1969				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	-3.094	-0.595	1.486	0.169
	(2.544)	(2.182)	(1.999)	(2.100)
	[0.225]	[0.785]	[0.458]	[0.936]
Obs.	285	386	479	408
Dist	10 km	15 km	20 km	15.81 km
Panel B: Share Yes 1992				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	2.033	3.454	4.738	4.557
	(1.399)	(1.247)	(1.101)	(0.949)
	[0.147]	[0.006]	[<0.001]	[<0.001]
Obs.	534	733	954	1265
Dist	10 km	15 km	20 km	31.20 km
Panel C: Share Yes 2005				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	2.622	4.360	4.552	4.654
	(1.075)	(0.976)	(0.902)	(0.963)
	[0.015]	[<0.001]	[<0.001]	[<0.001]
Obs.	535	734	955	778
Dist	10 km	15 km	20 km	15.89 km

Notes: RD estimates using bandwidths of 10, 15, and 20 kilometers from the language border within Moselle. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, and distance to Nancy. Conley standard errors in parentheses and p -values in brackets.

Short interpretation: The differences in 1992 and 2005 could signal that individuals who spoke German would profit more from European integration, e.g. through more exchange with Germany, or were exposed to the EU friendly German media to a higher extent. We exclude those municipalities as a robustness test.

^a Estimates from using the optimal IK bandwidth.

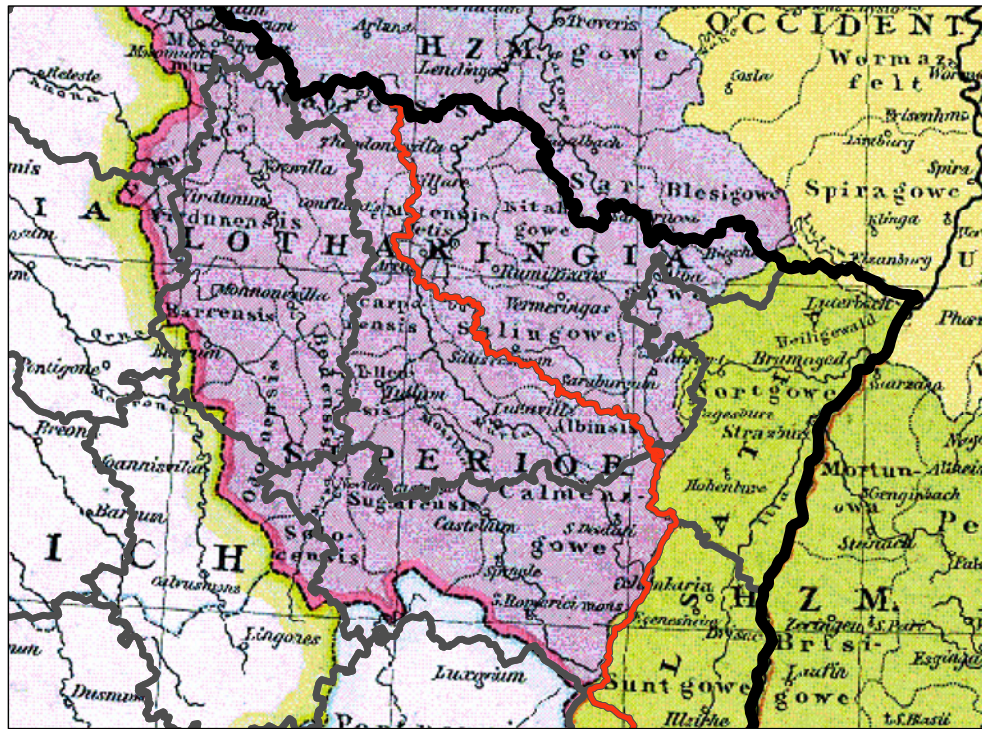
E Historical maps

Figure A4: Map of Lotharingia around 1000 A.D.



Notes: Map depicting the former Duchy of Lotharingia, around 1000: Pink= Lower Lorraine, Purple = Upper Lorraine, Orange = Frisia (effectively detached from Lotharingia). This map is used in the *Allgemeiner historischer Handatlas* by Gustav Droysen in 1886. Alsace was a part of the duchy of Swabia at that time.

Figure A5: Map of Lotharinga around 1000 A.D., zoomed in with 1870 border



Legend

- French National Border
 — Border Alsace-Lorraine
 French Department Border

Notes: Map depicting the former Duchy of Lotharinga, around 1000: Pink= Lower Lorraine, Purple = Upper Lorraine, Orange = Frisia (effectively detached from Lotharinga). This map is used in the *Allgemeiner historischer Handatlas* by Gustav Droysen in 1886. Alsace was a part of the duchy of Swabia at that time.

Figure A6: Map of Lorraine in the 1378 century



Notes: Map of Lorraine in the 14th century. This is a modified extract from the map *Deutschland beim Tode Karl IV.* by Karl Wolf in Meyers Lexikon 6. Auflage. The red line shows the border from the Franco-Prussian war, clearly not following the pre-existing borders and cutting through historical entities. Created from authors' own version of the map.

Figure A7: Map of Lorraine in the 17th century



Notes: Map of Lorraine in 1790. The map is an extract from *Carte de la Lorraine, du Barrois et des Trois Evêchés de Metz, Toul et Verdun. Divisée par Baillages, Dans laquelle se trouve Comprise la Généralité de Metz* created by Robert de Vaugondy, Didier (1723-1786) Dezauche, Jean-Claude (1745-1824) in 1756. The original is in the *Bibliothèque nationale de France, département des Cartes et plans, GE C-9972*. A scanned online version is accessible at <http://gallica.bnf.fr/ark:/12148/btv1b7710337x>. It shows the duchy of Lorraine as well as the area of the partly independent enclaves Metz, Verdun and Toul. Although it is admittedly hard to distinguish which area us belongs to which (another version is available at <http://gallica.bnf.fr/ark:/12148/btv1b53099747j/f1.item.zoom>), it is apparent that the borders do not coincide with the border drawn after the Franco-Prussian war. It is also apparent that partly independent enclaves existed on both sides of the border which we use to distinguish in a treatment and control area.

F Smoothness/ Balance tests

Table A14: Pre-treatment variables balance test, within Lorraine

Dep. Variable:	(1) Barley	(2) Wheat	(3) Potato	(4) Elevation	(5) Ruggedness
Bandwidth 10 km					
Treatment	10.799 (224.053) [0.962]	76.157 (234.694) [0.746]	66.839 (143.681) [0.455]	6.491 (7.660) [0.603]	10.914 (8.497) [0.244]
Obs.	403	403	403	408	408
Bandwidth 20 km					
Treatment	-270.251 (191.811) [0.159]	-124.417 (204.683) [0.543]	-159.527 (119.636) [0.183]	-6.532 (7.990) [0.414]	5.023 (6.274) [0.424]
Obs.	756	756	756	765	765

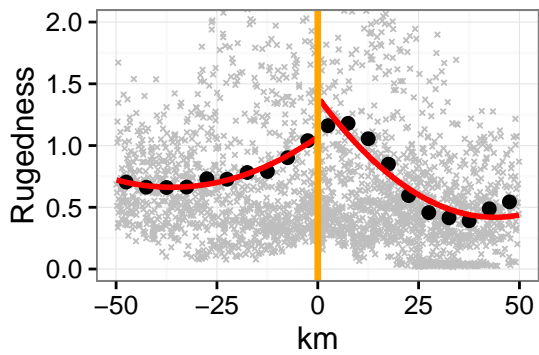
Notes: Tests for discontinuities in pre-treatment variables for the whole border. *Ruggedness* is the mean index of the variation in elevation, while *Elevation* is the mean elevation. *Potato*, *Wheat*, and *Barley* refer to the soil suitability for potato and wheat production, respectively. Details and sources are provided in the Online Appendix. Controls included are: distance to Germany (border), distance to Metz, distance to Strasbourg, and distance to Nancy. Standard errors in parentheses and *p*-values in brackets.

Table A15: Pre-treatment variables balance test, Alsace and Lorraine

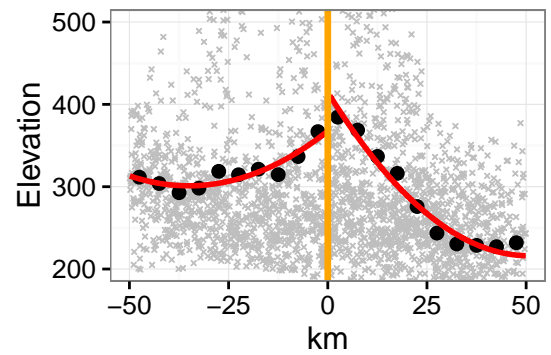
Dep. Variable:	(1) Barley	(2) Wheat	(3) Potato	(4) Elevation	(5) Ruggedness
Bandwidth 10 km					
Treatment	278.059 (242.550) [0.252]	348.124 (244.659) [0.389]	129.626 (140.356) [0.155]	-25.229 (19.798) [0.203]	-3.949 (11.726) [0.356]
Obs.	614	614	614	619	619
Bandwidth 20 km					
Treatment	-190.426 (175.961) [0.279]	-103.692 (179.980) [0.565]	-202.730** (102.171) [0.047]	-6.090 (14.113) [0.666]	5.911 (8.133) [0.467]
Obs.	1164	1164	1164	1173	1173

Notes: Tests for discontinuities in pre-treatment variables for the whole border. *Ruggedness* is the mean index of the variation in elevation, while *Elevation* is the mean elevation. *Potato*, *Wheat*, and *Barley* refer to the soil suitability for potato and wheat production, respectively. Details and sources are provided in the Online Appendix. Controls included are: distance to Germany (border), distance to Metz, distance to Strasbourg, and distance to Nancy. Standard errors in parentheses and *p*-values in brackets.

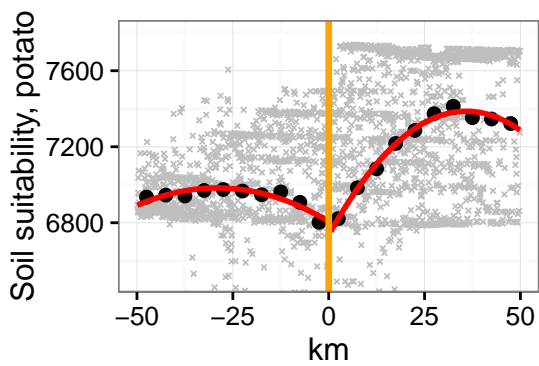
Figure A8: Discontinuities of pre-treatment variables using all of Alsace and Lorraine



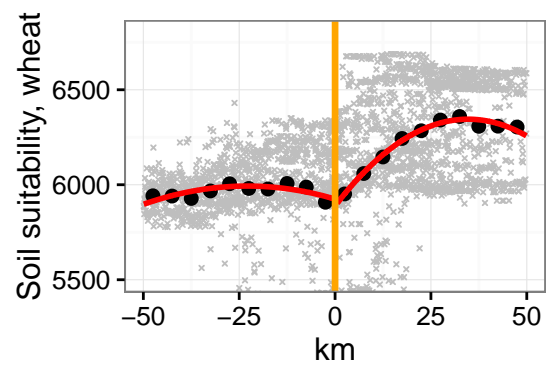
(a) Ruggedness



(b) Elevation



(c) Soil suitability, potato



(d) Soil suitability, wheat

Table A16: Division of Powers: Sub-levels of Governance in France

Level:	Central	Regional	Departmental	Municipal
	All National Policies	Regional Transport	Departmental Transport	Municipal Transport
	Defence	Education (high school), vocational training and apprenticeship	Education (ordinary secondary school), vocational training (music, dance and drama)	
	Justice	Environment	Environment (particularly protection waste and water plants)	Environment (water and waste)
	Foreign Affaires	Regional Planning	Planning (in cooperation with Region)	
	Security	Economic Development	Economic Development (rural, social, inclusion)	Housing
		Scientific Development	Public health (incl. sanitary protection & vaccination)	Public health (incl. vaccination)

Notes: This table gives an overview over the distribution of competences among the different levels of governance in France. The information is obtained from the website of the European Committee of the Regions.

Table A17: Post treatment covariate balancing: 4 main categories

Panel A : Alsace and Lorraine								
Variable	Median income 2008		Mean age 2006		Education 1999		Occupation 2006	
	(1)	(2) ^a	(3)	(4) ^a	(5)	(6) ^a	(7)	(8) ^a
Treatment	1.138	1.864	-0.353	-0.645	0.002	0.006	0.009	-0.010
	(0.947)	(0.731)	(0.541)	(0.270)	(0.005)	(0.003)	(0.014)	(0.008)
	[0.230]	[0.011]	[0.515]	[0.017]	[0.621]	[0.023]	[0.515]	[0.218]
Obs.	507	1445	604	2393	604	2368	604	1808
Dist	10 km	29.92 km	10 km	47.14 km	10 km	46.33 km	10 km	32.54 km
Panel B : Alsace vs. Vosges								
Variable	Median income 2008		Mean age 2006		Education 1999		Occupation 2006	
	(1)	(2) ^a	(3)	(4) ^a	(5)	(6) ^a	(7)	(8) ^a
Treatment	4.627	3.543	-1.414	-1.056	0.010	0.019	0.016	-0.011
	(1.135)	(0.803)	(0.841)	(0.409)	(0.008)	(0.004)	(0.026)	(0.014)
	[<0.001]	[0.094]	[0.010]	[0.257]	[<0.001]	[0.526]	[0.455]	
Obs.	196	813	210	1022	210	1284	210	727
Dist	10 km	38.61 km	10 km	49.54 km	10 km	72.07 km	10 km	33.19 km
Panel C : Within Lorraine								
Variable	Median income 2008		Mean age 2006		Education 1999		Occupation 2006	
	(1)	(2) ^a	(3)	(4) ^a	(5)	(6) ^a	(7)	(8) ^a
Treatment	0.236	0.815	0.059	-0.239	0.002	0.002	0.009	-0.013
	(1.015)	(0.868)	(0.641)	(0.382)	(0.006)	(0.003)	(0.016)	(0.010)
	[0.816]	[0.348]	[0.927]	[0.532]	[0.696]	[0.523]	[0.589]	[0.193]
Obs.	311	719	394	1284	394	1617	394	1031
Dist	10 km	25.13 km	10 km	40.45 km	10 km	60.08 km	10 km	29.60 km

Notes: Panel **A** tests for discontinuities in covariates using all départements in Alsace and Lorraine, Panel **B** uses only municipalities in Bas-Rhin, Haut-Rhin, and Vosges, while Panel **C** uses municipalities within Lorraine. Education refers to the share of people above 18 with a high school degree and occupation to the share of blue-collar workers in the total population. Controls: distance to Germany (border), distance to Metz, distance to Strasbourg, and distance to Nancy. Conley standard errors in parentheses and p -values in brackets. Strong differences would indicate problems in the exogenous nature of our treatment assignment, or the comparability of our treatment and control group. There are no clear or significant differences in these main variables.

^a Estimates from using the optimal IK bandwidth.

Table A18: Post-treatment covariate balancing: 25 categories incl. public good provision

Variable	$\hat{\beta}_{10km}$	$\hat{\beta}_{IK}^a$	Dep. var: Yes 92	Dep. var: Yes 05
Occupation				
Workers, 2006	0.009 [0.589]	-0.013 [0.193]	-10.519 [< 0.001]	-9.359 [< 0.001]
Farmers, 2006	0.003 [0.724]	-0.007 [0.262]	-24.457 [< 0.001]	30.485 [< 0.001]
Artisans, 2006	-0.002 [0.650]	-0.005 [0.060]	-4.197 [0.046]	2.824 [0.046]
Executives, 2006	-0.007 [0.355]	0.009 [0.100]	29.686 [< 0.001]	58.089 [< 0.001]
Intermediate prof., 2006	-0.006 [0.541]	0.002 [0.763]	9.230 [< 0.001]	11.015 [< 0.001]
Economic activity				
Companies, 2011	-3.729 [0.316]	1.320 [0.575]	0.020 [0.014]	0.041 [0.014]
Commercial est., 2011	-0.855 [0.770]	2.292 [0.236]	-0.008 [0.224]	0.020 [0.224]
Industrial est., 2011	-3.344 [0.007]	-0.977 [0.213]	0.037 [< 0.001]	0.012 [< 0.001]
Building est., 2011	1.028 [0.523]	0.386 [0.689]	-0.053 [< 0.001]	-0.100 [< 0.001]
Public est., 2011	-0.699 [0.358]	0.931 [0.058]	0.043 [0.001]	0.003 [0.001]
Public goods				
Theatre rooms	-0.003 [0.299]	-0.001 [0.592]	-0.334 [0.305]	-0.116 [0.305]
Athletic centers	-0.025 [0.617]	0.038 [0.370]	0.129 [0.367]	0.025 [0.367]
Multisport fac.	-0.615 [0.141]	-0.749 [0.008]	0.467 [< 0.001]	0.196 [< 0.001]
Swimming fac.	-0.007 [0.633]	-0.005 [0.861]	-0.010 [0.901]	-0.137 [0.901]
Psychiatric est.	0.003 [0.810]	0.008 [0.253]	1.433 [0.075]	0.968 [0.075]
Service houses	-0.017 [0.137]	-0.014 [0.040]	-0.271 [0.260]	0.052 [0.260]
Healthcare (short)	-0.002 [0.645]	0.001 [0.856]	0.433 [0.708]	0.122 [0.708]
Healthcare (medium)	-0.007 [0.733]	-0.002 [0.942]	0.684 [0.008]	1.004 [0.008]
Healthcare (long)	-0.002 [0.911]	-0.005 [0.653]	2.227 [0.045]	1.669 [0.045]
Post offices	-0.074 [0.186]	0.030 [0.412]	0.504 [< 0.001]	-0.919 [< 0.001]
Elementary schols	-0.205 [0.311]	0.006 [0.950]	0.842 [< 0.001]	0.381 [< 0.001]
Highschools	-0.002 [0.729]	0.009 [0.135]	2.351 [0.006]	1.496 [0.006]
Vocational training	0.001 [0.870]	0.000 [0.963]	2.141 [< 0.001]	0.485 [< 0.001]
Tech. vocational training	0.002 [0.356]	0.002 [0.427]	0.265 [0.213]	0.942 [0.213]
Demographics				
Population density	-77.246 [0.287]	91.480 [0.058]	0.001 [< 0.001]	0.000 [< 0.001]

Notes: This table demonstrates the balancing in our respective samples using all départements in Alsace and Lorraine, for different bandwidths. The time period chosen are partly determined by data availability. The different public goods and population density are all measured in the year 2011. All estimations include the same distance controls as our main specification. p -values in brackets. There are on average no systematic differences. The third and fourth column shows estimated slope coefficients from OLS when the share of Yes votes in the 1992 and 2005 referenda are regressed on all 25 covariates, including data on all French municipalities. In the cases where we find a difference in some specifications, it would bias us against our main result as the third and fourth column show.

^a Estimates from using the optimal IK bandwidth.

G Referendum 1969

In 1968 Charles de Gaulle observed widespread dissatisfaction with the political system and a growing demand for institutional change. In an attempt to satisfy this demand, he announced a constitutional referendum to be held in 1969. The main policy change proposed in the referendum was increasing the political power of regional governments. De Gaulle was convinced that increasing regions' autonomy to settle local affairs locally would restore political balance.⁸ Moreover, he believed that the provinces were still close to the heart of the french people.⁹ Figure A9 shows a sample of the newspaper we use the primary data source for the referendum outcome. Figure A9b shows samples of voting results disaggregated on the municipality level.

Figure A9: Sample from *L'Est Republicain* showing voting results



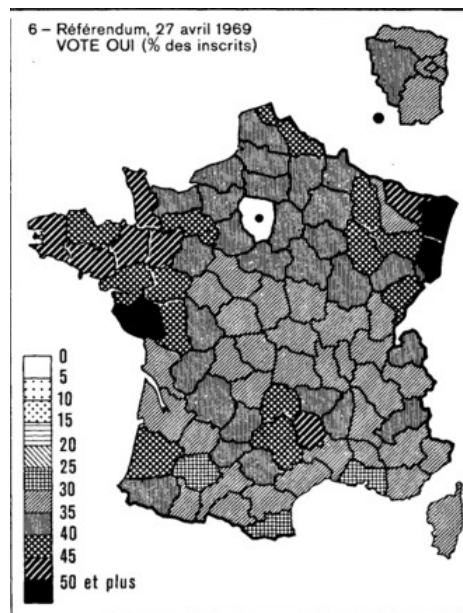
(a) *L'Est Republicain* title page

(b) Voting results on municipality level

⁸ "Rien n'est plus important pour l'équilibre moral et social de la France que l'organisation, une organisation nouvelle, des contacts et de la coopération, entre ceux qui dirigent et ceux qui sont dirigés." (De Gaulle, 1969)

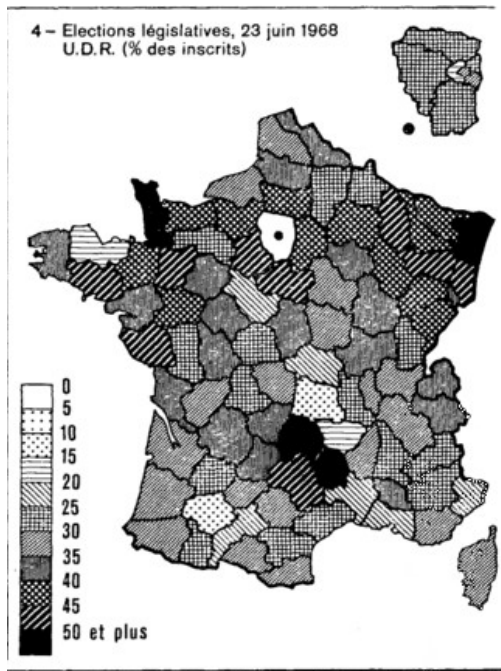
⁹ "Et cependant, bien que les régions fussent officiellement ignorées depuis, les régions, je veux dire, les provinces, fussent officiellement ignorées depuis 179 ans. Elles n'ont jamais cessé d'exister dans l'esprit et dans le coeur des français" (De Gaulle, 1969)

Figure A10: Agreement referendum about establishing regions as political entity, 1969

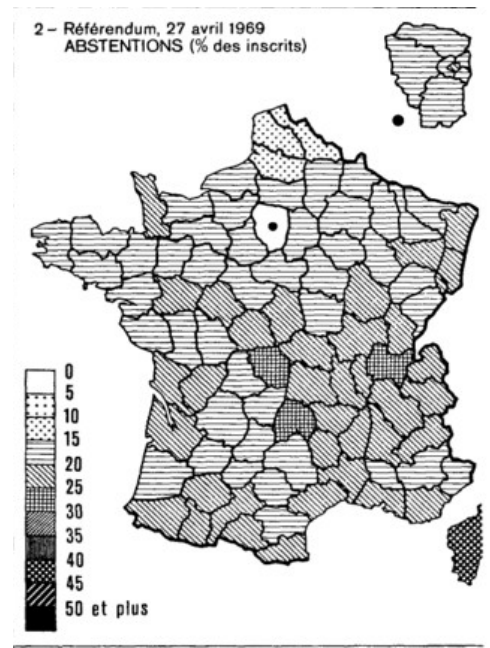


Notes: Referendum on creating regions as political entity (1969). Vote shares out of all eligible voters, i.e. out of yes votes, no votes, blanks and abstentions. There is no comparable map showing only the yes share out of valid votes, but this Online Appendix shows maps of abstentions that do not differ between départements. *Source:* Lancelot and Lancelot (1970).

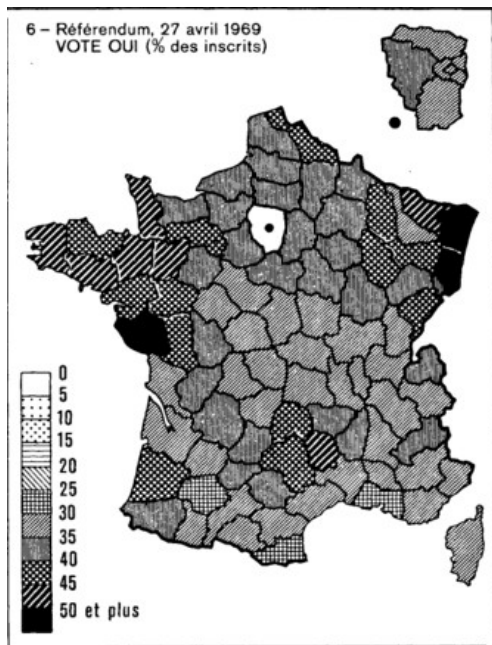
Figure A11: Election and referendum results, 1968 and 1969



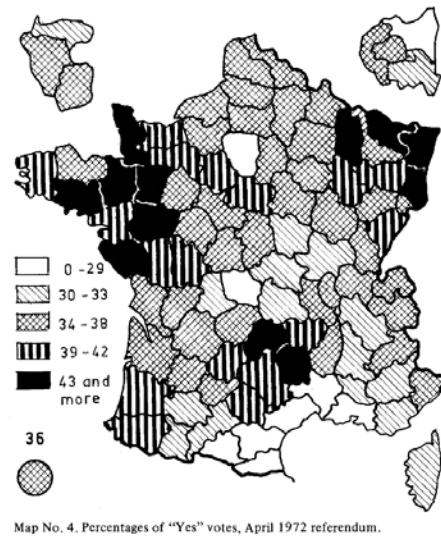
(a) Legislative election 1968



(b) Abstention 1969 referendum



(c) Share of yes votes in 1969 referendum



(d) Share of yes votes in 1972 referendum

Notes: Figure a) shows vote shares for the Gaullist right-wing party *Union for the Defense of the Republic* (U.D.R.) in the legislative elections of 1968. Figures b) and c) shows the share of absentees and share of yes votes (among all votes, including invalid/blank votes), respectively, in the 1969 constitutional referendum about decentralization and establishing the regions as an important political unit in the Constitution. Figure d) presents results for the 1972 referendum, which was about "The Treaty of Accession" the question was about whether Denmark, Ireland, Norway and the United Kingdom should be allowed to become members of the "European Communities", a predecessor of the European Union. There were no differences in vote shares for U.D.R. or share of absentees between the Moselle (treated) and Meurthe-et-Moselle (non-treated), while the share of yes votes in both the 1969 and the 1972 referenda was higher in Moselle.

Source: Figures a), b) and c) are from Lancelot and Lancelot (1970). Figure d) is from Leleu (1976).

H Additional regressions

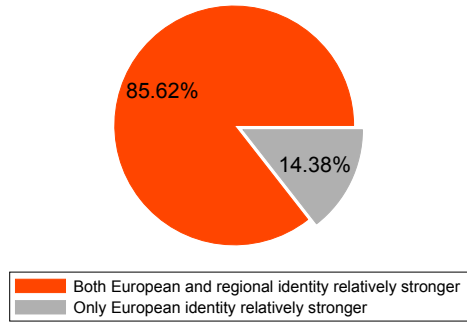
Table A19: Survey results, Alsace and Lorraine

Survey question	Mean, control	Δ	P-value	No. obs.
Feel close to region (Regional identity)	3.362	0.209	<0.001	2617
Feel close to nation (National identity)	3.635	-0.003	0.906	2617
Regional identity/National identity (standardized)	-0.138	0.226	<0.001	2614

Notes: Sources are the Observatoire Interrégional du Politique (OIP) 1999, 2001, and 2003, using respondents in all of Alsace and Lorraine, on département level. Identity is measured on a 4-point Likert-scale. The parameter Δ comes from the equation: $y_i = \pi + \Delta Treatment_i + \Gamma'_i \lambda + \eta_i$, where $Treatment_i = \mathbf{1}$ [individual in treated region] and Γ comprises of controls for (reported) age, employment status and sex. A positive Δ indicates that people in the treated region agree more with the statement.

Table A20: Overlap strength of regional and European identity in treated and control areas (A+L)

Identity differences treated compared to control area
(conditional on stating stronger EU identity)



Notes: Higher (lower) means that an individual in the treated area exhibited a higher (lower) ratio of Regional to National or European to National identity compared to the mean ratios in the untreated area. Higher is mathematically defined as larger or equal. Very few observations are exactly equal to the mean. We are mostly interested in the overlap of the two, but also the overall sum. The overlap is also visualized in the pie chart on the right. The red area indicates the share of persons which answered with both higher or equal European identity and Regional identity. Data is from the OIP 1999, 2001, and 2003, using respondents in all of Alsace and Lorraine.

Table A21: OIP Survey results, 1999 and 2001: European and regional attachments

Dep. Var: Attachment: Europe Variable	Within Lorraine		All of France	
	(1)	(2)	(3)	(4)
Attachement: Region	0.186*** (0.030)	0.185*** (0.031)	0.097*** (0.007)	0.097*** (0.007)
Obs.	1388	1388	25602	25602
Controls	No	Yes	No	Yes

Notes: Observatoire Interrégional du Politique (OIP) survey results from 1999 and 2001, asking question on how strong respondents attachment is to Europe, and respondent's Region. Attachment is based on a 1-4 scale, with 1 corresponds to *Disagree strongly*, and 4 corresponds to *Strongly agree*. Controls are age, sex, employment status, and survey year. ***, ** and * indicate statistical significance at 1%, 5% and 10% levels, based on heteroscedasticity-consistent standard errors.

Table A22: Survey results: policy preferences, within Lorraine

Survey question	Mean, control	Δ	P-value	No. obs.
Democracy works well in France	2.536	-0.023	0.616	1316
Democracy works well within region	2.630	0.111	0.008	1290
Well informed about regional policies	2.704	0.089	0.021	1308
In favor: transfer policy competence to region (avg. 10)	3.031	0.092	0.005	605
In favor: allow more autonomy at reg. level (avg. 5)	2.134	0.108	0.025	1315
Educ. policy should be set at reg. level (avg. 5)	2.855	0.112	0.024	574
Concerned reg. admin. would increase interreg. inequality	3.208	-0.172	0.037	574

Notes: Sources are the Observatoire Interrégional du Politique (OIP) 1999, 2001, and 2003, using respondents within Lorraine, on département level. The paper shows similar results for Alsace and Lorraine. The parameter Δ comes from the equation: $y_i = \pi + \Delta Treatment_i + \Gamma'_i \lambda + \eta_i$, where $Treatment_i = \mathbf{1}$ [individual in treated region] and Γ comprises of controls for (reported) age, employment status and sex. A positive Δ indicates that people in the treated region agree more with the statement. Avg. "x" indicates that the factor is composed of "x" underlying survey items.

Table A23: OLS estimates using all municipalities in Alsace and Lorraine

Variable	C: Share Yes 1992		D: Turnout 1992	
	(1)	(2)	(3)	(4)
Treatment	11.941	4.865	-0.652	2.081
	(0.473)	(0.789)	(0.262)	(0.470)
	[<0.001]	[<0.001]	[0.013]	[<0.001]
Obs.	3137	3137	3137	3137
Controls	No	No	No	No
Variable	E: Share Yes 2005		F: Turnout 2005	
	(1)	(2)	(3)	(4)
Treatment	6.990	6.185	-3.115	-0.023
	(0.434)	(0.855)	(0.276)	(0.470)
	[<0.001]	[<0.001]	[<0.001]	[0.960]
Obs.	3141	3141	3141	3141
Controls	No	No	No	No

Notes: OLS estimates using whole sample of municipalities in all départements in Alsace and Lorraine. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, distance to Nancy. Conley standard errors in parentheses and p -values in brackets. For *Share Yes 1992* and *Share Yes 2005*, the coefficients indicate a higher regional identity in the treated region. Although the interpretation of the regression coefficient for the treatment variable is the average difference in percentage points between treated and untreated municipalities, it is important to relate them to the average vote share of the whole region. The small difference in turnout in 2005 becomes insignificant when we add controls (Panel F). The coefficient for *Turnout 1992* changes signs when controls are added, and becomes insignificant in the RDD at the border.

Table A24: Discontinuities in turnout, within Lorraine

Dep. Variable:	Turnout 1969			
	(1)	(2)	(3)	(4) ^a
Treatment	2.049 (1.091) [0.061]	0.473 (1.009) [0.639]	-0.567 (0.961) [0.555]	1.265 (0.860) [0.141]
Obs.	374	549	694	900
Dist	10 km	15 km	20 km	27.55 km
Dep. Variable:	Turnout 1992			
	(1)	(2)	(3)	(4) ^a
Treatment	-0.861 (1.229) [0.484]	-1.145 (1.056) [0.278]	-1.646 (0.967) [0.089]	-0.899 (0.908) [0.322]
Obs.	394	583	744	873
Dist	10 km	15 km	20 km	24.21 km
Dep. Variable:	Turnout 2005			
	(1)	(2)	(3)	(4) ^a
Treatment	0.804 (1.222) [0.511]	-0.650 (1.124) [0.563]	-2.413 (1.092) [0.027]	-1.774 (0.898) [0.048]
Obs.	394	583	744	1153
Dist	10 km	15 km	20 km	34.58 km

Notes: Discontinuity at the treatment border using municipalities in Lorraine. Outcomes are turnout in the 2007 presidential election (first round), turnout in the 1969 referendum, turnout in the 1992 referendum, and turnout in the 2005 referendum. Conley standard errors in parentheses and p -values in brackets.

^a Estimates from using the optimal IK bandwidth.

Table A25: RD results: Turnout, Alsace and Lorraine

Variable	Turnout 1992		Turnout 2005	
	(1)	(2) ^a	(3)	(4) ^a
Treatment	-0.529 (1.077) [0.623]	0.368 (0.733) [0.616]	0.219 (0.994) [0.826]	0.500 (0.569) [0.380]
Obs.	604	1365	603	2443
Dist	10 km	24.25 km	10 km	48.66 km

Notes: RD estimates using bandwidths of 10, 15, and 20 kilometers from the former French-German border. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, and distance to Nancy. Conley standard errors in parentheses and p -values in brackets.

^a Estimates from using the optimal IK bandwidth.

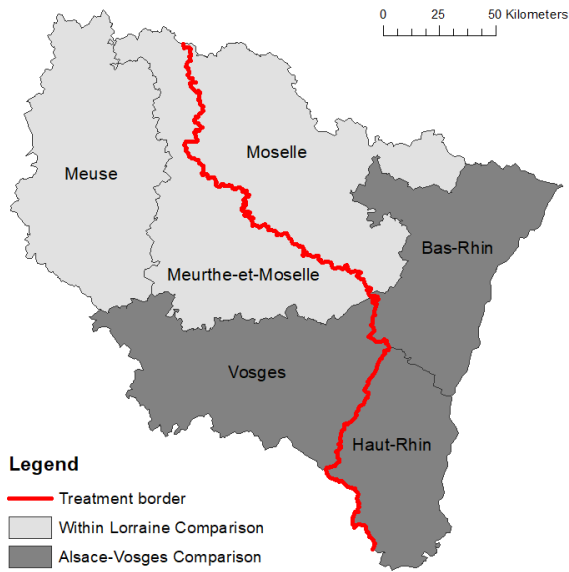
Table A26: Differences in population changes between 1916-1946 (within Lorraine)

Panel A: Population difference 1916 to 1926				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	-5.980 (6.117) [0.329]	-2.309 (6.747) [0.732]	-0.494 (6.582) [0.940]	-4.909 (5.374) [0.361]
Obs.	394	581	740	1402
Dist	10 km	15 km	20 km	47.13 km
Panel B: Population difference 1936 to 1946				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	-4.525 (3.632) [0.213]	-4.018 (2.894) [0.166]	-3.866 (2.571) [0.133]	-3.944 (2.105) [0.061]
Obs.	393	581	741	1153
Dist	10 km	15 km	20 km	34.80 km
Panel C: Population difference 1916 to 1946				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	-13.061 (10.206) [0.201]	-6.966 (11.342) [0.539]	-2.662 (11.130) [0.811]	-10.720 (9.039) [0.236]
Obs.	393	580	739	1433
Dist	10 km	15 km	20 km	48.95 km

Notes: All estimates include population differences for municipalities only within Lorraine. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, distance to Nancy. Conley standard errors in parentheses and p -values in brackets.

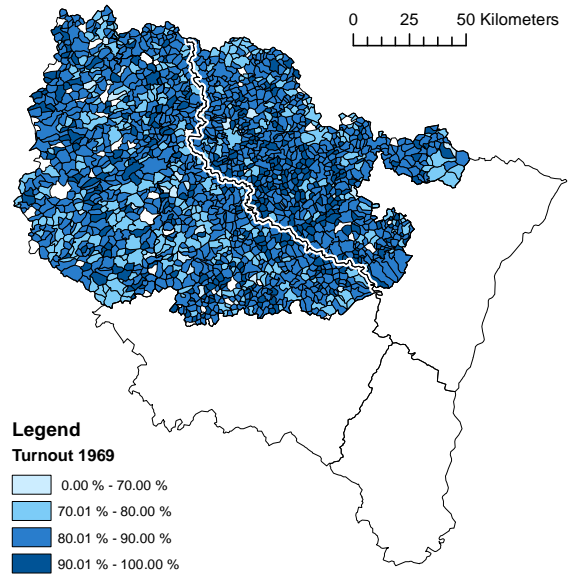
^a Estimates from using the optimal IK bandwidth.

Figure A12: Maps of municipal level turnout in referenda in 1969, 1992 and 2005; and the presidential election of 2007



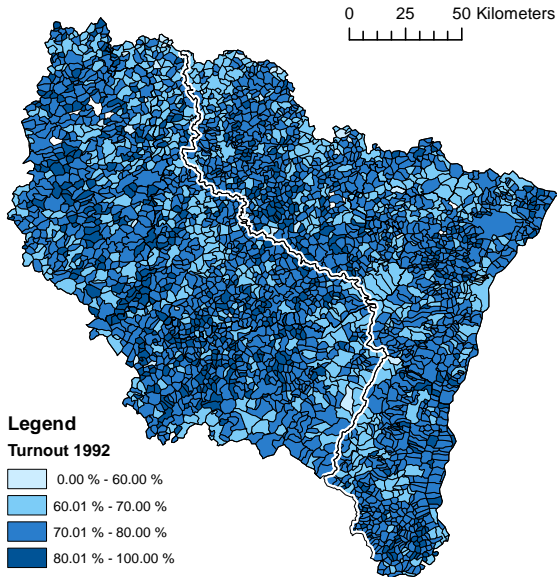
Notes (a): The light grey area is the comparison within the historical region of Lorraine, where the border is clearly exogenous. The dark grey area includes Alsace and Vosges as its comparison, where the border partly coincides with the historical language border.

(a) Within-Lorraine and Alsace



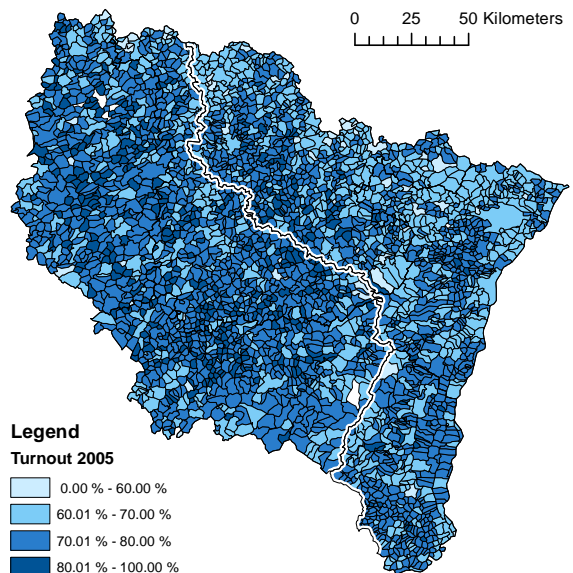
Notes (b): Turnout in the constitutional referendum in 1969. Areas where data is not available are left blank. Data is available for the départements of Meuse, Meurthe-et-Moselle and Moselle. The treatment border formerly dividing the area is highlighted in white. Darker shades reflect higher values.

(b) Turnout 1969



Notes (c): Turnout in the referendum in 1992. The treatment border formerly dividing the area is highlighted in white. Darker shades reflect higher values.

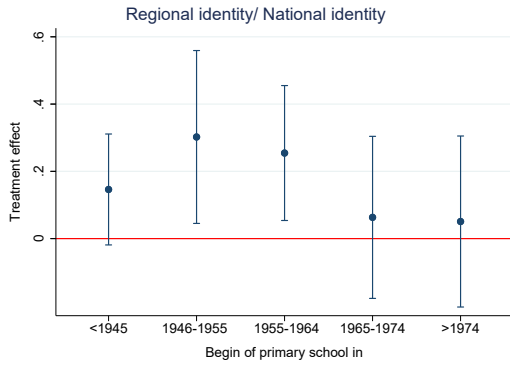
(c) Turnout 1992



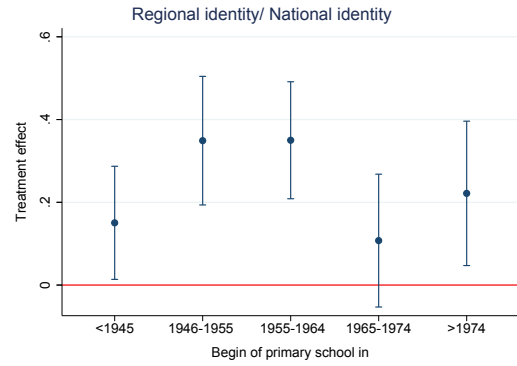
Notes (d): Turnout in the referendum in 2005. The treatment border formerly dividing the area is highlighted in white. Darker shades reflect higher values.

(d) Turnout 2005

Figure A13: Identity differences by age cohort, relative to National identity



(a) Treatment effect in Lorraine



(b) Treatment effect in Alsace and Lorraine

Notes: The treatment effects refer to the parameter Δ which is part of the equation:

$y_{ig} = \pi + \sum_g \Delta_g \times Age_g \times Treatment_{ig} + \Gamma'_i \lambda + \eta_{ig}$, where $Treatment_{ig} = \mathbf{1}$ [individual in treated region] and Γ comprises controls for (reported) age, employment status and sex. g indicates to which age cohort an individual belongs, the group of untreated participants act as the baseline category. Age cohorts are selected such that the second group started schooling after the end of the treatment and the end of WWII. A positive Δ indicates that people in the treated region exhibit a higher value compared to the control area. Sources are the Observatoire Interrégional du Politique (OIP) 1999 and 2001.

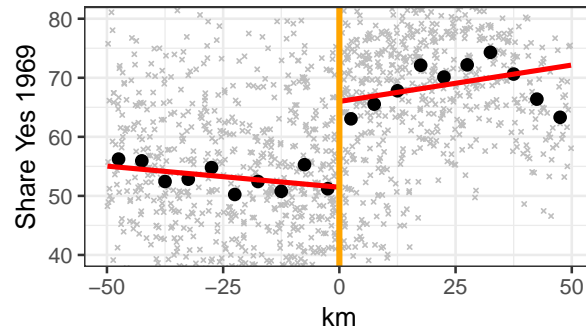
Table A27: Discontinuities in referenda results, within Lorraine, controlling for historical migration

Dep. Variable:	Share Yes 1969		Share Yes 1992		Share Yes 2005	
	(1)	(2) ^a	(3)	(4) ^a	(5)	(6) ^a
Treatment	11.937 (2.515) [<0.001]	10.809 (1.590) [<0.001]	3.637 (1.813) [0.046]	5.777 (1.124) [<0.001]	3.547 (2.064) [0.087]	7.227 (1.366) [<0.001]
Obs.	373	1260	393	1508	393	1102
Dist	10 km	44.43 km	10 km	53.22 km	10 km	32.86 km

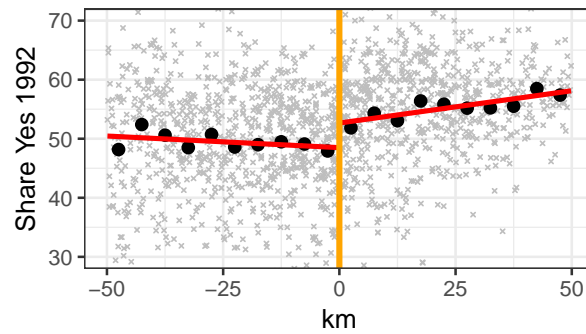
Notes: Discontinuity at the treatment border using municipalities in Lorraine, controlling for migration between 1916 and 1946 (changes in population between 1916 and 1926, between 1936 and 1946, and between 1916 and 1946). Outcomes are share of Yes votes in the 1969 referendum, share of Yes votes in the 1992 referendum, and share of Yes votes in the 2005 referendum. Conley standard errors in parentheses and *p*-values in brackets.

^a Estimates from using the optimal IK bandwidth.

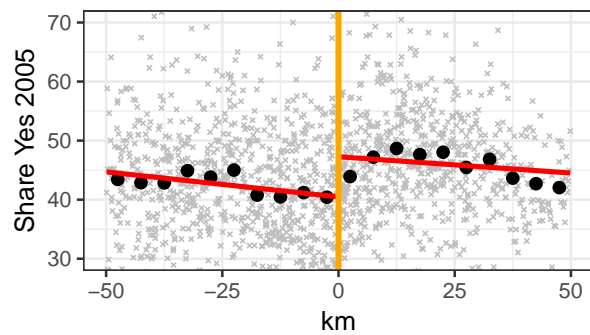
Figure A14: RD plots, within Lorraine (50 kilometers, 20km in paper), 1st degree polynomial



(a) Share Yes 1969



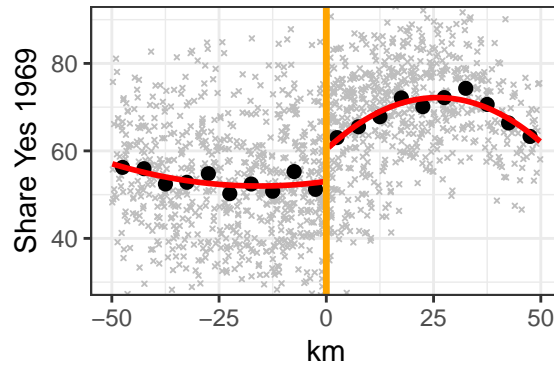
(b) Share Yes 1992



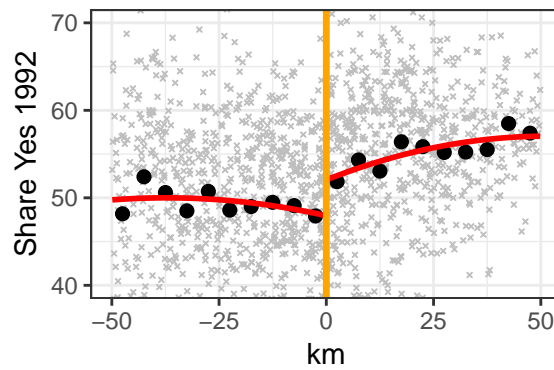
(c) Share Yes 2005

Notes: RD plots, using municipalities in Lorraine. Fitted line based on first degree polynomial. Black dots represent means using 5km bins.

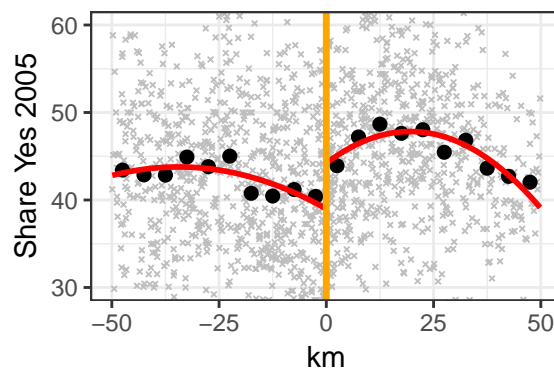
Figure A15: RD plots, within Lorraine (50 kilometers), 2nd degree polynomial



(a) Share Yes 1969



(b) Share Yes 1992



(c) Share Yes 2005

Notes: RD plots, using municipalities in Lorraine. Fitted line based on 2nd degree polynomial. Black dots represent means using 5km bins.

I Placebo regressions

Table A28: Placebo test: Border between Alsace and Lorraine, and the rest of France

Panel A: Share Yes 1992				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	-3.168	-0.649	0.058	3.170
	(2.040)	(1.728)	(1.465)	(0.769)
	[0.121]	[0.707]	[0.968]	[<0.001]
Obs.	404	606	814	11416
Dist	10 km	15 km	20 km	218.68 km
Panel B: Share Yes 2005				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	0.208	1.045	1.496	0.135
	(2.006)	(1.666)	(1.453)	(0.735)
	[0.917]	[0.531]	[0.303]	[0.854]
Obs.	405	608	816	10899
Dist	10 km	15 km	20 km	209.71 km

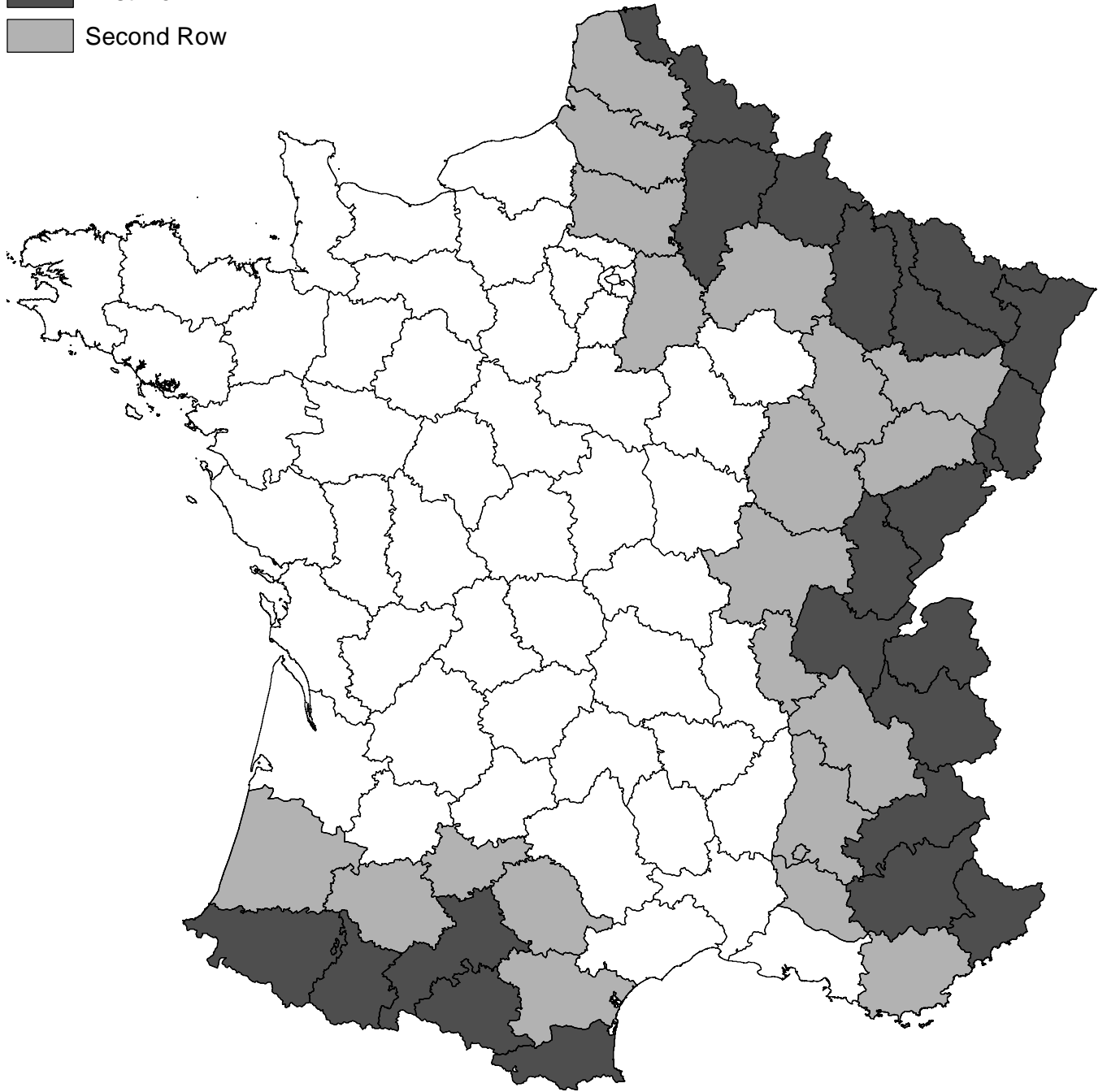
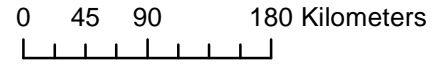
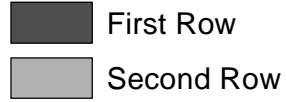
Notes: RD estimates using bandwidths of 10, 15, and 20 kilometers from the border between Alsace and Lorraine, and the rest of France. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, and distance to Nancy. Conley standard errors in parentheses and *p*-values in brackets.

^a Estimates from using the optimal IK bandwidth.

Visualization of Border Department Variables

Figure A16: Departments at the national borders: 1st and 2nd row

Periphery Departments



Notes: This is the visualization of the border variable used in the robustness section of this paper. The dummy equals 1 (dark grey) if the department is located at French national border and 0 (light grey) if the department borders one department, for which the dummy variable is 1.

Table A29: Survey results, comparing border regions with their adjacent neighbors

Survey question	Mean, control	Δ	P-value	No. obs.
Feel close to region (Regional identity)	3.355	-0.003	0.982	8108
Feel close to nation (National identity)	3.635	-0.122	0.169	8116
Feel close to the EU (EU identity)	2.621	-0.040	0.754	8027
Regional identity/National identity (standardized)	-0.046	0.044	0.694	8100
Democracy works well in France	2.526	0.095	0.472	8104
Democracy works well within region	2.622	0.181	0.139	7932
Well informed about regional policies	2.591	0.054	0.669	8058
In favor: transfer policy competence to region (avg. 10)	3.058	-0.099	0.206	3793
In favor: allow more autonomy at reg. level (avg. 5)	2.223	0.675	<0.001	8110
Opinion about project of regional council	1.895	-0.021	0.745	4635
Educ. policy should be set at reg. level (avg. 5)	2.872	0.022	0.857	3397
Concerned reg. admin. would increase interreg. inequality	3.170	-0.114	0.578	3397
Satisfaction with democracy in EU	2.274	-0.022	0.891	3218
France part of EU is a good thing	0.321	0.013	0.914	1259

Notes: Sources are the Observatoire Interrégional du Politique (OIP) 1999, 2001, and 2003, and the Panel Électoral Français 2002, using respondents in all département bordering a foreign country, and their adjacent neighbors (except départements in Alsace and Lorraine). Identity is measured on a 4-point Likert-scale. Avg. "x" indicates that the factor is composed of "x" underlying survey items. The underlying survey questions are shown in Table A2. A positive Δ indicates that respondents in a border département agree, on average, more with the statement than respondents in départements adjacent to départements at national borders.

Table A30: Placebo test: RD estimates at the pre-1870 border between historical Moselle and Meurthe, within current Moselle

Panel A: Share Yes 69								
Variable	Within current Moselle			Within current Meurthe-et-Moselle				
	(1)	(2)	(3)	(4) ^a	(5)	(6)	(7)	(8) ^a
Treatment	1.185	-2.383	-3.833	-3.923	-1.512	7.934	6.108	-6.839
	(2.558)	(2.226)	(2.081)	(2.002)	(6.570)	(6.059)	(5.789)	(4.120)
	[0.644]	[0.285]	[0.066]	[0.051]	[0.819]	[0.195]	[0.294]	[0.098]
Obs.	188	270	361	424	47	75	108	525
Dist	10 km	15 km	20 km	23.86 km	10 km	15 km	20 km	70.74 km

Panel B: Within current Moselle								
Variable	Share Yes 92			Share Yes 05				
	(1)	(2)	(3)	(4) ^a	(5)	(6)	(7)	(8) ^a
Treatment	-1.020	-0.892	1.196	0.665	-1.832	-2.947	-1.295	0.866
	(2.228)	(2.047)	(1.909)	(1.933)	(2.271)	(1.853)	(1.659)	(1.664)
	[0.648]	[0.664]	[0.532]	[0.731]	[0.421]	[0.113]	[0.436]	[0.603]
Obs.	186	270	361	340	189	273	364	462
Dist	10 km	15 km	20 km	18.74 km	10 km	15 km	20 km	25.65 km

Panel C: Within current Meurthe-et-Moselle								
Variable	Share Yes 92			Share Yes 05				
	(1)	(2)	(3)	(4) ^a	(5)	(6)	(7)	(8) ^a
Treatment	-7.063	-10.198	-8.504	-2.539	-9.075	2.516	7.873	6.737
	(8.412)	(6.030)	(4.937)	(2.479)	(5.273)	(6.121)	(5.652)	(3.249)
	[0.406]	[0.095]	[0.088]	[0.306]	[0.093]	[0.682]	[0.167]	[0.039]
Obs.	50	83	116	578	50	83	116	239
Dist	10 km	15 km	20 km	76.16 km	10 km	15 km	20 km	33.66 km

Notes: RD estimates at pre-1871 border between the départements Moselle and Meurthe. Panel A uses municipalities within modern Moselle while Panel B uses municipalities within modern Meurthe-et-Moselle. Controls added. Conley standard errors in parentheses and *p*-values in brackets.

^a Estimates from using the optimal IK bandwidth.

Interpretation: The historical border within current Moselle provides a good placebo test, as it does mostly not follow the current borders. Note that the estimates within current Meurthe-et-Moselle have different signs and switch signs for the *Share Yes 05* estimations.

J Alternative RDD specifications - bandwidth plots

This page provides an overview over the subsequently shown bandwidth plots in which we show the robustness of our results against variations in control variables and geographic areas. All plots depict all coefficient from RDD regressions varying the bandwidth smoothly between 10 and 50 kms. This ensures that our results are not driven by a too conservative or too large bandwidth choice. The results show that our findings are robust to these different bandwidth choices, and not dependent on any particular mechanisms or formula for bw determination.

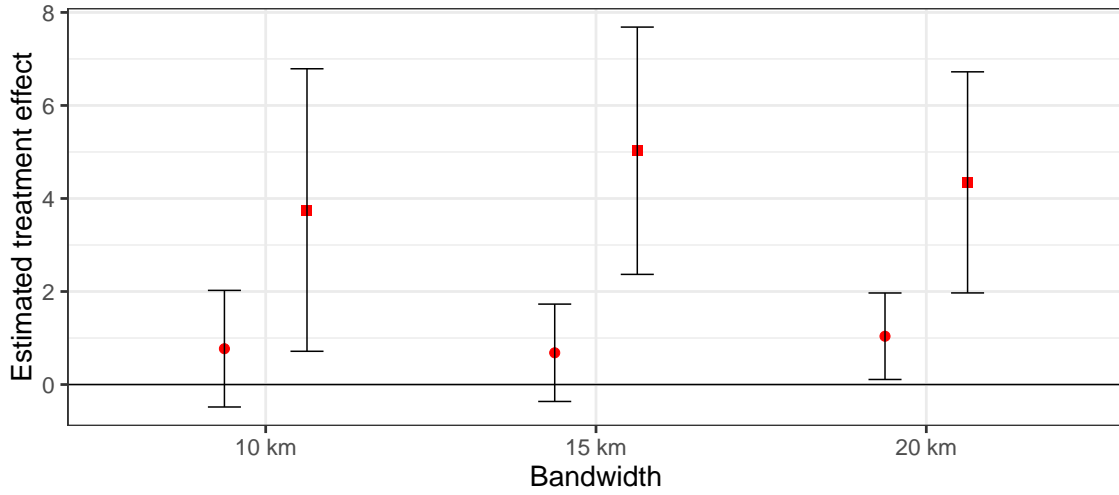
1969 referendum

- A18a Coefficient plots on the 1969 referendum including control variables, Lorraine
- A18b Coefficient plots on the 1969 referendum without control variables, Lorraine
- A19a Coefficient plots on the 1969 referendum controlling for border segments, Lorraine
- A19b Coefficient plots on the 1969 referendum controlling for the distance to the language border, Lorraine
- A20a Coefficient plots on the 1969 referendum controlling for longitude and latitude, Lorraine
- A20b Coefficient plots on the 1969 referendum controlling for longitude, latitude and their interaction, Lorraine

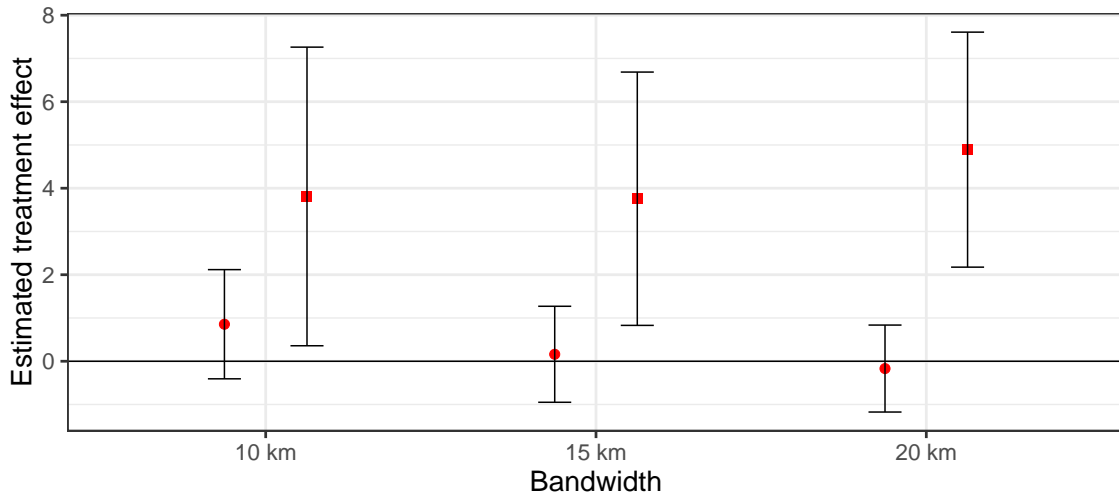
1992 and 2005 referenda

- A3a Coefficient plots on the 1992 referendum, Lorraine
- A3b Coefficient plots on the 2005 referendum, Lorraine
- A21a Coefficient plots on the 1992 referendum, Alsace and Lorraine
- A21b Coefficient plots on the 2005 referendum, Alsace and Lorraine
- A22a Coefficient plots on the 1992 referendum within Lorraine using no controls
- A22b Coefficient plots on the 2005 referendum within Lorraine using no controls
- A23a Coefficient plots on the 1992 referendum within Lorraine, controlling for longitude and latitude
- A23b Coefficient plots on the 2005 referendum within Lorraine, controlling for longitude and latitude
- A24a Coefficient plots on the 1992 referendum within Lorraine, controlling for longitude, latitude and their interaction
- A24b Coefficient plots on the 2005 referendum within Lorraine, controlling for longitude, latitude and their interaction
- A25a Coefficient plots on the 1992 referendum controlling for border segments
- A25b Coefficient plots on the 2005 referendum controlling for border segments
- A26a Coefficient plots on the 1992 referendum within Lorraine controlling for border segments
- A26b Coefficient plots for the treatment effect on the 2005 referendum controlling for border segments, Lorraine
- A27a Coefficient plots on the 1992 referendum controlling for distance to the language border, Lorraine
- A27b Coefficient plots on the 2005 referendum controlling for distance to the language border, Lorraine

Figure A17: Comparing treatment effects within Lorraine with discontinuity between border regions and their adjacent neighbors



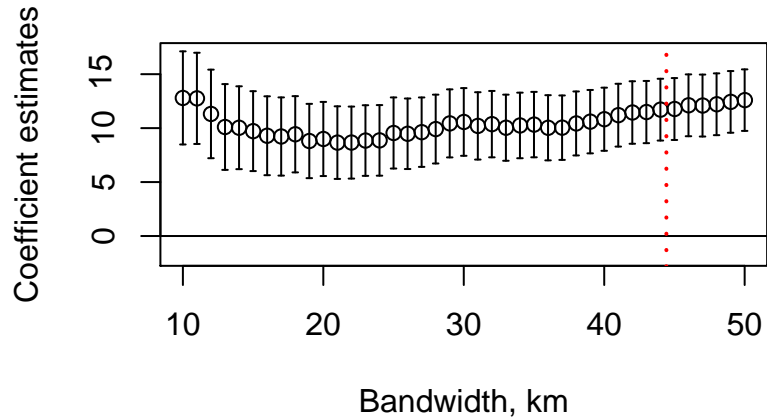
(a) Share Yes 1992



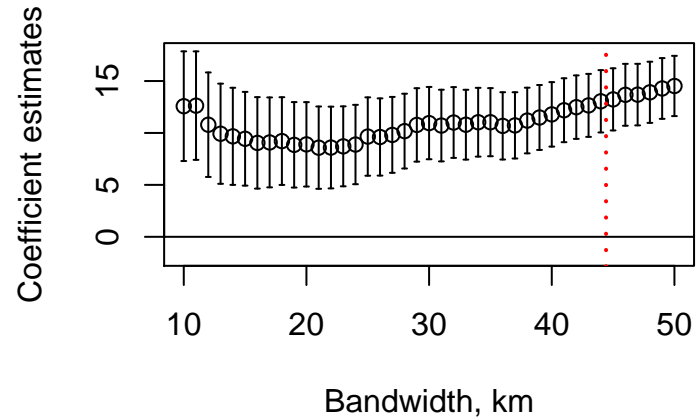
(b) Share Yes 2005

Notes: These graphs compare the estimated treatment effects within Lorraine reported in Table 6 (red squares) with estimated discontinuities at the border dividing all border départements from their adjacent neighbors (red dots). 90 percent confidence intervals, based on Conley standard errors show that in most cases, the confidence intervals overlap. However, only in a few cases do the confidence intervals for the estimated treatment effect overlap the estimates of the discontinuity at the border départements.

Figure A18: Estimation plots for 1969 referendum, within Lorraine



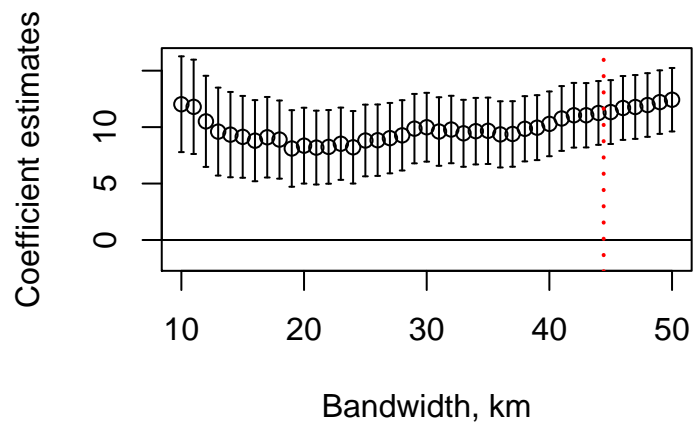
(a) Share Yes 1969



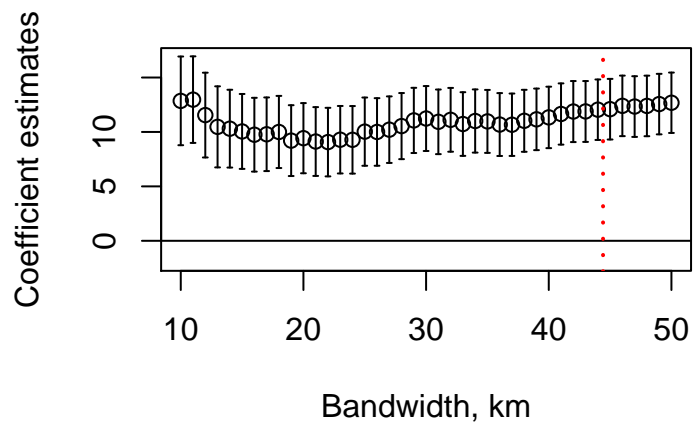
(b) Share Yes 1969, no controls

Notes: Estimates of treatment effect, bandwidths varying between 10 to 50 kilometers, within Lorraine. 1st degree polynomial. Dashed vertical line at the optimal IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors). (a) shows the results with controls, (b) without controls.

Figure A19: Estimation plots, 1969 referendum, controlling for border segments, and distance to language border



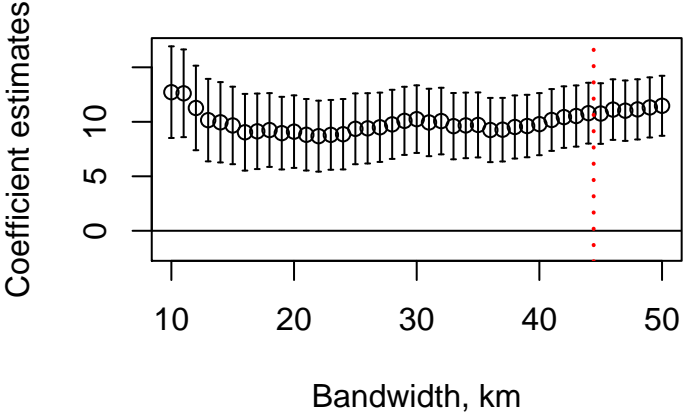
(a) Control for border segments



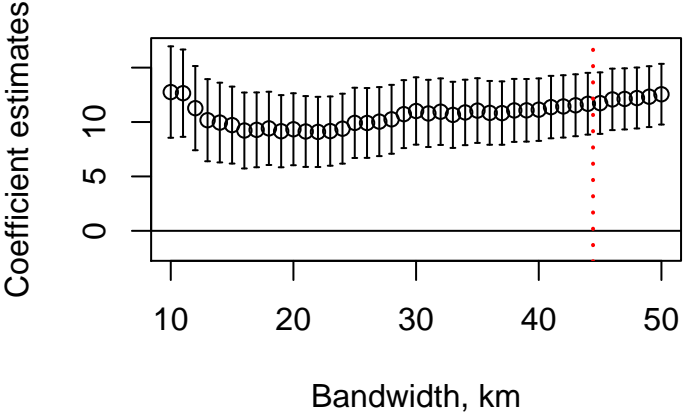
(b) Control for distance to language border

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, within Lorraine. (a) adds controls for border segments and (b) controls for distance to language border. Dashed vertical line at the optimal IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors).

Figure A20: Estimation plots, 1969 referendum, controlling for longitude, latitude and their interaction



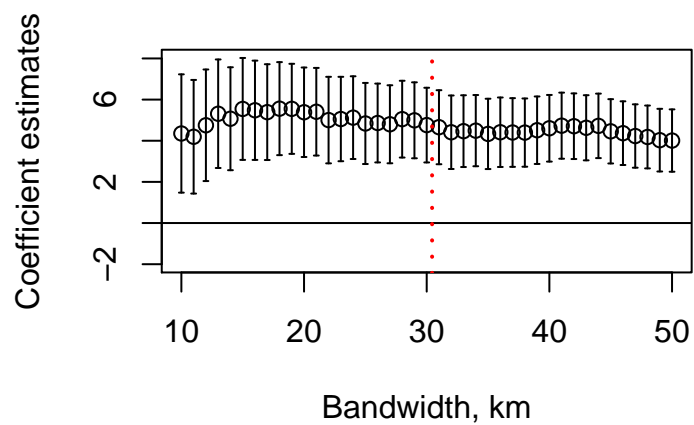
(a) Controlling for longitude and latitude



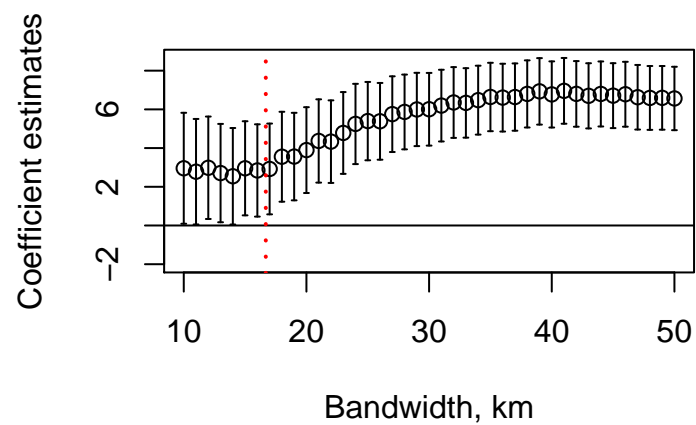
(b) Controlling for longitude and latitude, and interaction

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, within Lorraine, controlling for longitude, latitude and their interaction. Dashed vertical line at the optimal IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors). It is unclear whether controls should be included in these kind of regressions, but as the graphs show this does not affect our results.

Figure A21: Estimation plots for 1992 and 2005 referenda, whole border



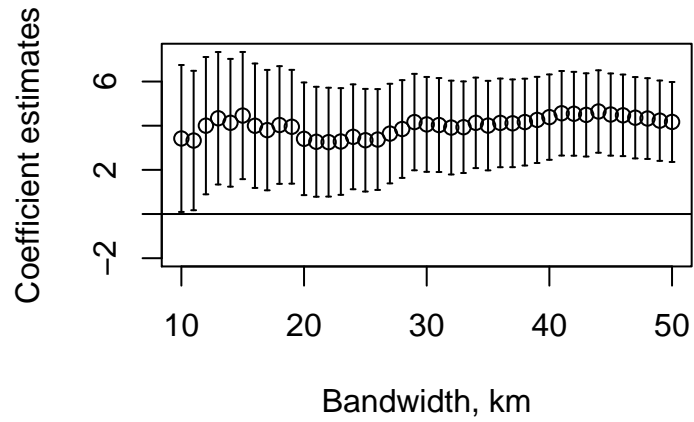
(a) Referendum 1992



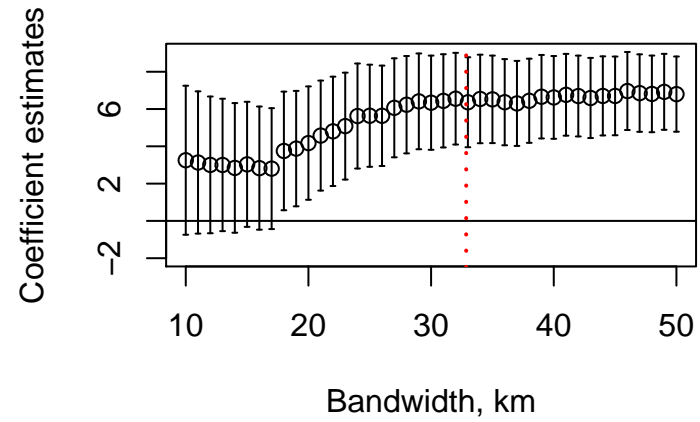
(b) Referendum 2005

Notes: Estimates of treatment effect, bandwidths varying between 10 to 50 kilometres, for the whole border. Local linear regressions, i.e. using a 1st degree polynomial. Dashed vertical line at the optimal IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors).

Figure A22: Estimation plots for 1992 and 2005 referenda, no controls



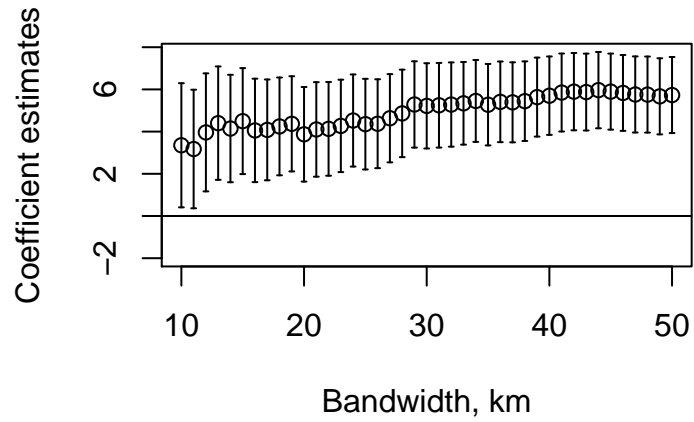
(a) Referendum 1992



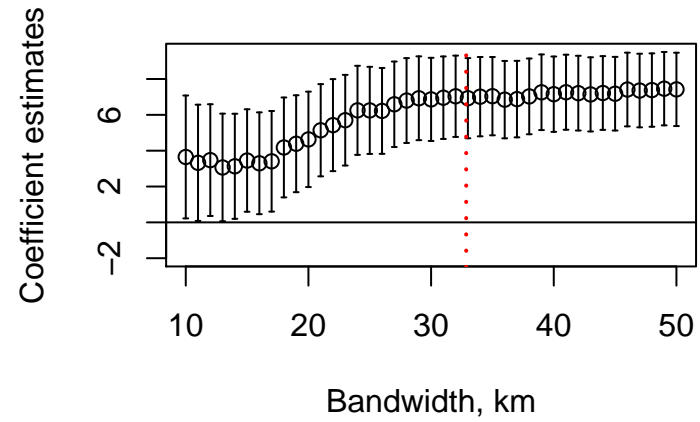
(b) Referendum 2005

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, within Lorraine. Local linear regressions, i.e. using a 1st degree polynomial. This specification is including no controls to show that these are not driving our main result. Dashed vertical line at the optimal IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors).

Figure A23: Estimation plots, controlling for longitude and latitude



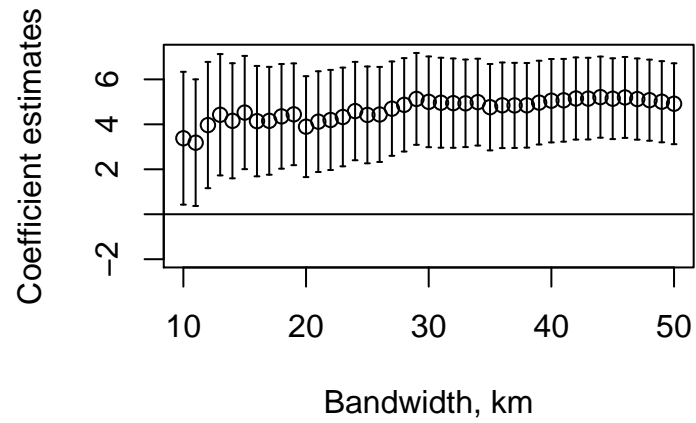
(a) Referendum 1992



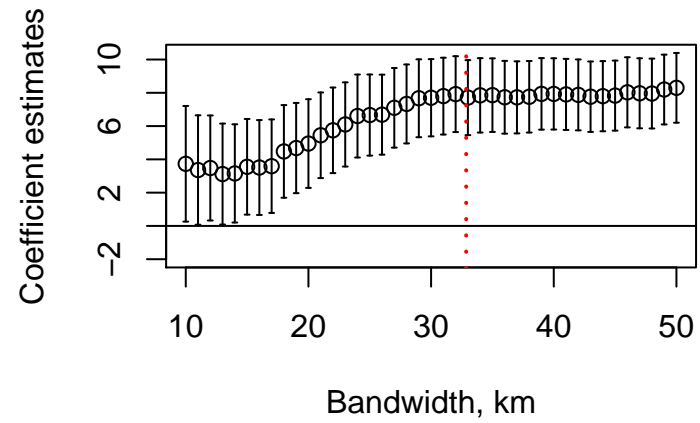
(b) Referendum 2005

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, within Lorraine. These specifications are in addition controlling for longitude and latitude. Dashed vertical line at the optimal IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors). As the graphs clearly show that the results are not substantially altered by the inclusion.

Figure A24: Estimation plots, controlling for longitude, latitude and their interaction



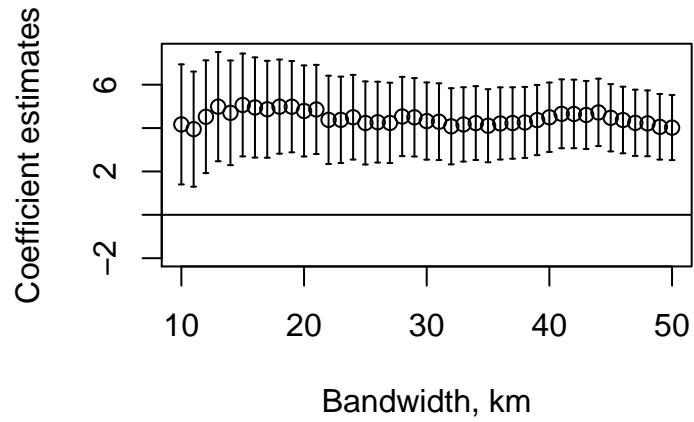
(a) Referendum 1992



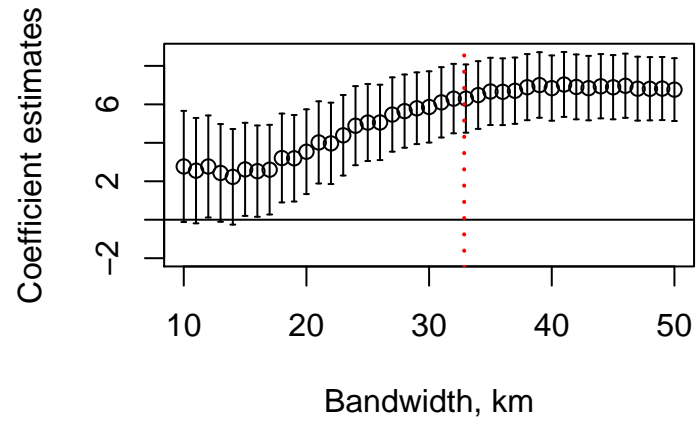
(b) Referendum 2005

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, within Lorraine, controlling for longitude, latitude and their interaction. Dashed vertical line at the optimal IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors). It is debated whether these controls should be included in these kind of regressions, but as the graphs clearly show our results are not depending on it.

Figure A25: Estimation plots for 1992 and 2005 referenda, controlling for border segments



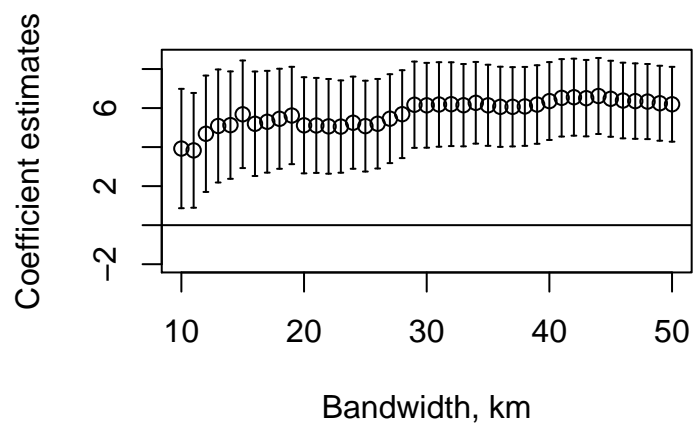
(a) Referendum 1992



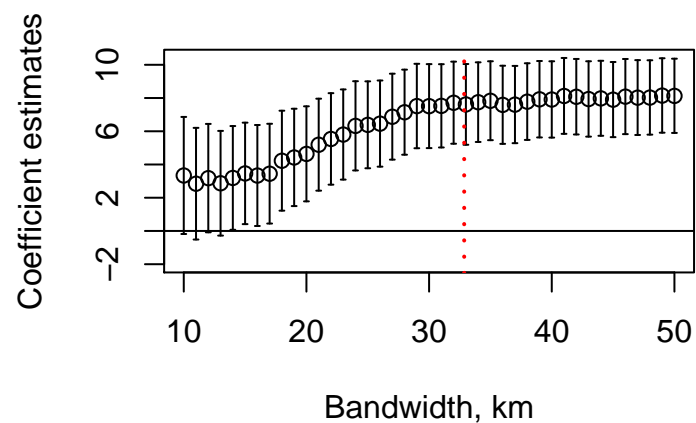
(b) Referendum 2005

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, all of Alsace and Lorraine, controlling for north, mid, and south border segments. Dashed vertical line at the optimal IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors). It is an ongoing debate whether this type of control should be included in this type of regression, but as the graphs clearly show our results are not affected by this.

Figure A26: Estimation plots for 1992 and 2005 referenda, controlling for border segments (within Lorraine)



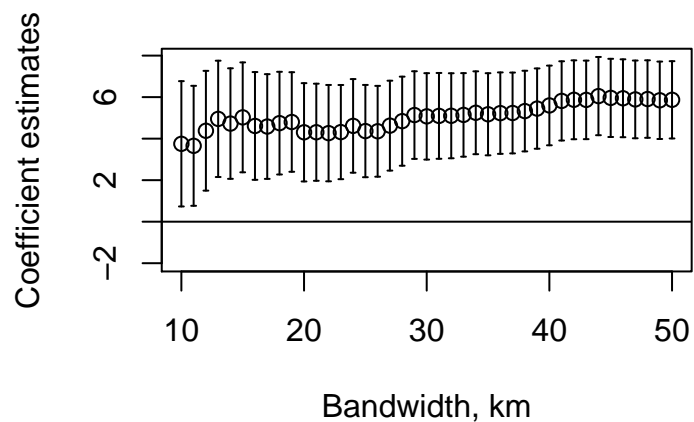
(a) Referendum 1992



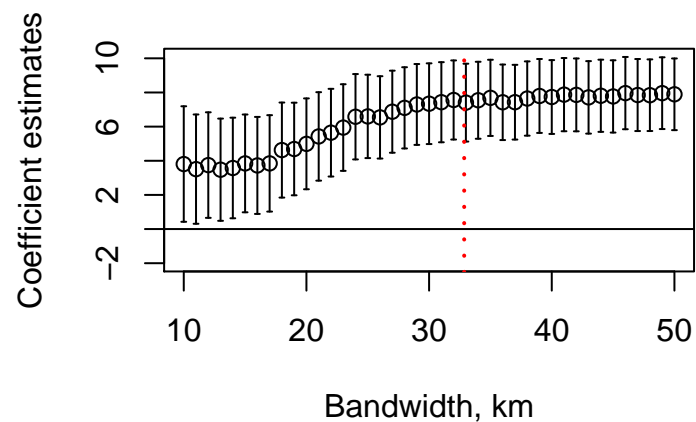
(b) Referendum 2005

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, within Lorraine, controlling for north, mid, and south border segments. Dashed vertical line at the optimal IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors). It is debated whether these controls should be included in these kind of regressions, but as the graphs clearly show our results are not depending on it.

Figure A27: Estimation plots, controlling for distance to language border



(a) Referendum 1992



(b) Referendum 2005

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, within Lorraine, controlling for distance to the historical language border. Dashed vertical line at the optimal IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors). In addition to omitting municipalities that were formerly German-speaking, this is an additional test that our results are not driven by linguistic differences. It is also an indication that the border within Lorraine was truly exogenous to our outcome (and not endogenous to pre-existing linguistic differences) as the coefficients are barely affected by including the distance.

K Mechanisms: Newspapers & regionalist parties

Table A31: RD results: Subscription shares of regional newspaper, controlling for the number of sales points

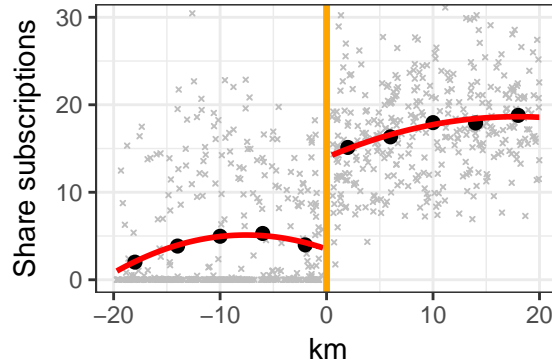
Variable	Share households with subscription of “Le Republicain Lorraine”			
	(1)	(2)	(3)	(4) ^a
Treatment	9.880	9.958	9.979	11.122
	(1.376)	(1.218)	(1.112)	(0.950)
	[<0.001]	[<0.001]	[<0.001]	[<0.001]
Obs.	394	583	744	1392
Dist	10 km	15 km	20 km	46.23 km

Notes: RD estimates using bandwidths of 10, 15, and 20 kilometers from the border between Alsace and Lorraine, and the rest of France. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, distance to Nancy, and number of sales points where the newspaper can be bought locally. Conley standard errors in parentheses and *p*-values in brackets.

^a Estimates from using the optimal IK bandwidth.

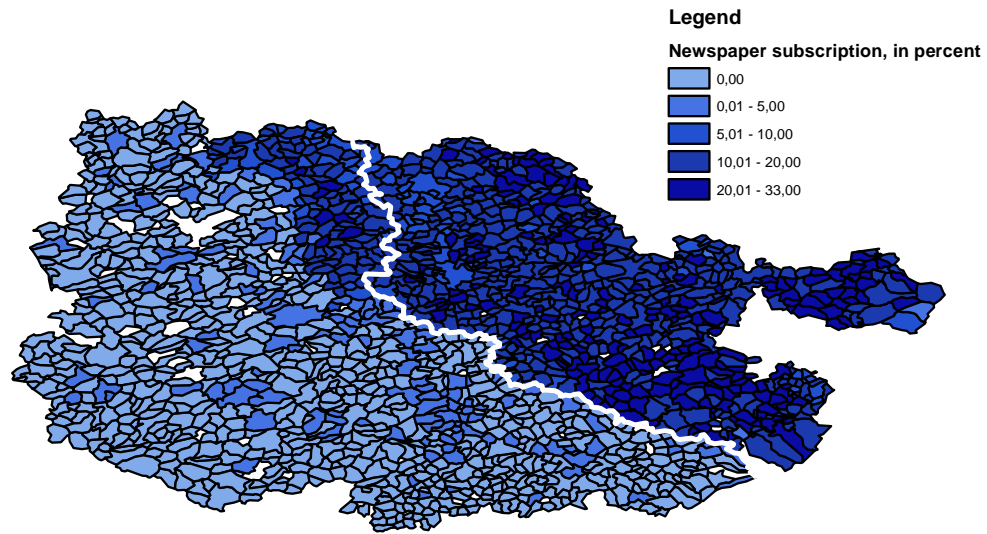
RD Plots and maps for regional newspaper subscription

Figure A28: RD plot, share of households with subscription of “Le Republicain Lorraine”, 2nd degree polynomial



Notes: RD plots using only municipalities within Lorraine. Fitted line based on 2st degree polynomial.

Figure A29: Newspaper subscription shares

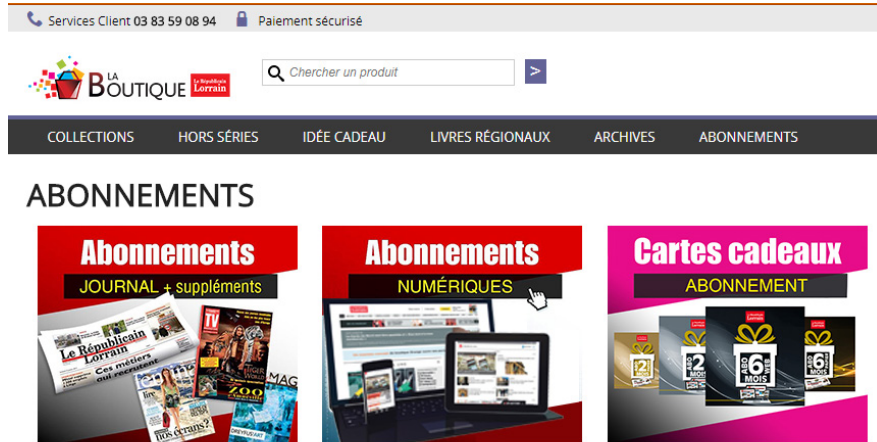


Notes: Municipal level averages share of newspapers subscribers to *Le Republicain Lorraine* within Lorraine. The white solid line indicates the treatment border that divided the region. The treated area is on the right hand side of the white line. White municipality polygons indicate missing data. Darker colors reflect higher shares, and indicate a higher regional identity.

Le Republicain Lorraine



Figure A30: Subscription page Le Republicain Lorraine (1)



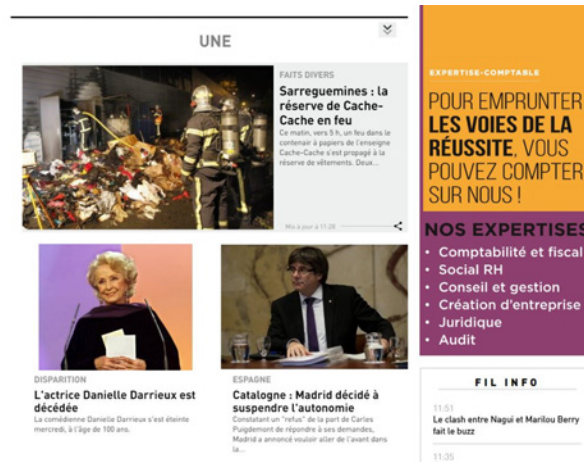
Notes: This is from the subscription page of the newspaper. We use the number of all subscriptions, but our source suggested that almost all subscriptions were still print subscriptions in 2014.

Figure A31: Subscription page Le Republicain Lorraine (2)



Notes: This is from the subscription page of the newspaper. We use the number of all subscriptions, but our source suggested that almost all subscriptions were still print subscriptions in 2014.

Figure A32: Homepage (main) Le Republicain Lorraine



Notes: This screenshot shows a random example of the main news contained in the newspaper (Date: 2017.19.10).

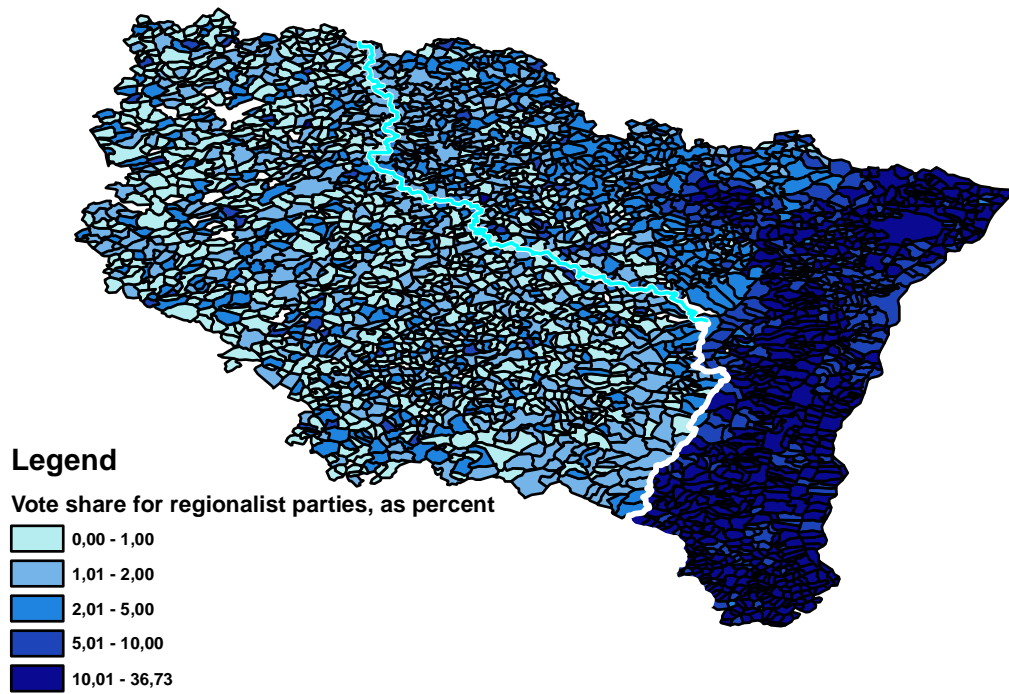
Figure A33: Homepage (regional) Le Republicain Lorraine



Notes: This screenshot shows an example of the regional news contained in the newspaper (Date: 19.10.2017).

Regionalist parties

Figure A34: Vote shares of regionalist parties



Notes: Municipal level vote shares for the list “Non à l’ACAL, Oui à nos régions!” in the 2015 regional elections. The list comprised of the parties “Unser Land”, “Parti des Mosellans”, and “Parti Lorrain”. The white solid line represents the treatment border formerly dividing the region. Darker colors reflect higher shares, and indicate a higher regional identity.

L Twitter

Georeferencing

There are two ways in which Twitter users indicate their geographic location:

1. **User-provided georeferencing:** User can tag a location in their tweet directly. This type of tweet is unreliable for research, because the location tagged doesn't necessarily coincide with the location of the person tweeting.
2. **GPS-provided georeferencing:** The GPS function in mobile phones allows Twitter messages sent via the phone to contain the coordinates of the user's location. Due to the optionality of the GPS function, only 2- 3 percent of all Twitter users can be georeferenced this way. Due to the abundance of tweets, this method still generates a large number of possible observations.

Availability of data

It is possible to collect a random selection of tweets at any given point in time via Twitter's API (Application Programming Interface).

Twitter data Lorraine

The relevant tweets were identified and analyzed in a three-step process.

1. Over the period of the Football World Cup 2014 a random sample of tweets was obtained via Twitter's API. This method resulted in 18'278 observations.
2. Because Twitter only allows for data selection in geographic areas of rectangular shape, ArcGIS was used to identify the tweets specifically located in Lorraine.
3. The content of the selected tweets were then analyzed based on a selection of keywords about the German and French national football teams. The lists of keywords are displayed in Table [A32](#).

Table A32: List of Twitter Keywords

List France		List Germany	
les Bleus	#BLEUS	mannschaft	allemagne
#SPAFRA	#FRA	DFB_Team	#GER
#ESPFRA	#UKRFRA	#GERPOL	#FRAGER
#SWEFRA	#SUIFRA	#FRADEU	#FRAALL
#SWIFRA	#ECUFRA	#TeamGermany	#DEU
Landreau	Lloris	#ALL	#HOLDEU
Ruffier	Debuchy	#NEDGER	#NEDALL
Digne	Evra	#DENDEU	#DANDEU
Koscielny	Mangala	#DANGER	#DENGER
Sagna	Sakho	#DANALL	#DENALL
Varane	Cabaye	#USAGER	#USAALL
Matuidi	Mavuba	#USADEU	#BRADEU
Pogba	Schneiderlin	#BRAALL	#BRAGER
Sissoko	Valbuena	Neuer	Wiese
Benzema	Cabella	Zieler	Badstuber
Giroud	Griezmann	Boateng	Höwedes
Rémy	Deschamps	Hummels	Lahm
Carrasso	Mandanda	Mertesacker	Schmelzer
Clichy	Mexès	Bender	Götze
Rami	Réveillère	Gündogan	Khedira
Arfa	Diarra	Kroos	Özil
M'Vila	Malouda	Reus	Schweinsteiger
Marvin Martin	Nasri	Gomez	Klose
Ribéry	Valbuena	Müller	Podolski
Ménez	Blanc	Schürrle	Löw
Boghossian	Gasset	Flick	Köpke
Raviot		Weidenfeller	Durm
		Großkreutz	Mustafi
		Draxler	Ginter
		Kramer	

M Links: Examples of other suppressed regions

- Scania, Sweden

<https://sverigesradio.se/sida/artikel.aspx?programid=83&artikel=1915851>

- Silesia, Bohemia, Kaliningrad and Danzig, Poland and the Czech Republic

<http://homepage.univie.ac.at/philipp.ther/breslau/html/Entdeutschung%20und%20Polonisierung.%20Die%20Umwandlung%20Breslaus%20in%20eine%20polnische%20Stadt.html>

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- Chechnya, Russia

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http://linguistics.berkeley.edu/ingush/ingush_people.html

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- Kurds in Turkey, Iran, Iraq and Syria

<https://www.nytimes.com/2008/02/17/magazine/17turkey-t.html?ex=1361854800&en=df64cf85326e2103&ei=5124&partner=permalink&expod=permalink>

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<https://www.economist.com/briefing/2018/05/31/china-has-turned-xinjiang-into-a-police-state-like-no-other>

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<https://www.economist.com/china/2016/09/17/the-plateau-unpacified>

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- Crimea, formerly in Ukrain, annexed by Russia 2014

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