The Origins of Common Identity: Division, Homogenization Policies and Identity Formation in Alsace-Lorraine

Sirus Dehdari, Kai Gehring

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Abstract

We exploit the quasi-exogenous division of the French regions Alsace and Lorraine after the Franco-Prussian War in 1870 due to disagreements in the German leadership to provide evidence of group identity formation within historically homogeneous regions. People in the treated area, which was exposed to repressive homogenization policies aimed to suppress group identity, express a stronger regional identity and support more regional autonomy today. Using a regression discontinuity design at the municipal level, we find that support for two crucial referenda, which would have increased regional autonomy, subscription rates to regional newspapers, and regionalist party votes are significantly higher in the treated area. The results are robust across different specifications and bandwidths, and not driven by language differences, large agglomerations or distance to foreign countries. The differences in regional identity are strongest for the first two age cohorts after World War II and become weaker for later generations.

JEL-Codes: D910, H700, H800, N400, Z190.

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

Sirus Dehdari
IIES, Stockholm University / Sweden
sirus.dehdari@iies.su.se

Kai Gehring
University of Zurich / Switzerland
mail@kai-gehring.net

1   Introduction

The formation of a common group identity at the regional or country level is a highly important, yet poorly understood aspect of human behavior. One reason for the difficulty to understand and disentangle the factors influencing the identity formation process is that laboratory experiments can only study groups of limited size and rely on artificial manipulations to some degree. Observational studies almost always struggle with distinguishing the effect of certain policies or shocks from other factors which are specific to a certain region or country. This paper aims to provide causal evidence by using a natural experiment that divided historically homogeneous regions in a quasi-exogenous way to study how the associated differences in exposure to repressive policies influenced identity formation.

The emergence of separatist movements all over the world and the negative consequences associated with a lack of common identity, for instance in Africa, clearly demonstrate how important a better understanding of identity formation is. Insufficient alignment of identities and stronger regional, rather than national identity fuel separatism in regions like Catalonia, Belgium, and Scotland. Arbitrarily determined national borders are associated with ethnic identities being strong and common national identity weak in Africa, often leading to violent struggles for autonomy and inferior development in Africa or the Middle East (e.g., Besley and Reynal-Querol, 2014; Michalopoulos and Papaioannou, 2016, 2014).[1] At the same time, there are culturally seemingly heterogeneous countries like Switzerland or the United States, which exhibit a strong sense of common identity.

Secessionism and separatist conflict can be driven by economic factors (Gehring and Schneider, 2016) and cultural factors (e.g., modeled as preference heterogeneity in Bolton and Roland, 1997 and Alesina and Spolaore, 1997). This paper relates to the latter explanation, aiming to better understand the sources of these cultural differences, more specifically the perceived (mis-)alignment of preferences exemplified in (the lack of) a common identity. It is widely believed that historical shocks and state policies are crucial in explaining identity formation, but conclusive causal evidence is lacking. Tilly (1975) thought of war and conflict as a source of state formation, but focused on the cooperation between leaders and capital to form a state.

While group identity and its strength is thought to be influenced by shared history and shared ethnic or social traits, these are neither necessary nor sufficient to form a stable group identity. Recent evidence shows that heterogeneity within groups is on average much larger than heterogeneity between groups (Desmet et al., 2017). Social psychology argues for the importance of group members having the collective perception of belonging to a joint group (Turner, 1982), created by emphasizing factors that are common to the group. Accordingly, we build on Shayo (2009) and model common identity as the degree to which an individual perceives her preferen using the entire borderces, values and norms to be aligned with her region, nation, or other groups. We then study how the division of the border regions Alsace and Lorraine between France and Germany following

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[1] See, for example, Jega (2000) for the importance of identities in explaining the legitimacy problems many African states face when trying to establish and maintain economic and political institutions. Michalopoulos and Papaioannou (2013) provide evidence that pre-colonial institutions matter as well. Rohner et al. (2013) show that conflict affects ethnic identities in Uganda.

the Franco-Prussian War in 1870-71 affected the formation of identity in the occupied (treated) area compared to the untreated area over the long term. People in the treated area experienced a change in nation status twice and were exposed to the suppression of their group identity through intrusive homogenization policies.

To illustrate the channels and potential mechanisms, we use a simple model to describe how a temporary historical shock can lead to persistent differences in regional identity, but not necessarily in national identity. This is in line with prior evidence showing that policies threatening the cultural identity of a group or perceived as discriminatory can lead to a "backlash" (Fouka, 2016). In the case of Alsace-Lorraine (AL), historians describe a strong feeling of regional identity, which is seen as a plausible reaction to the intrusive homogenization policies enforced by the German and later the French government between 1870 and the 1950s (Carrol and Zanoun, 2011; Höpel, 2012; Rothenberger, 1975). Although historical evidences emphasizes the role of homogenization policies, other features of the shock (like the alteration in nation-status and occupation) could also contribute to its effect on identity. Our sole assumption is that the combination of these shocks was perceived as a threat to group identity, and that suppression was higher in the treated compared to the untreated départments. We assess whether this led to an "alienation" of the affected citizens (Goodfellow, 1993, p.454) and a potential "backlash". Such a reaction is hypothesized by the *rejection-identification* hypothesis in social psychology (Branscombe et al., 1999), but also relates to the theory of "oppositional identities" (Bisin et al., 2011) in economics.

Our identification strategy relies on the exogenous division of AL. Both Alsace and Lorraine were integrated into France for more than a century when the peace treaty ending the Franco-Prussian War (July 19, 1870 to May 10, 1871) established the annexation of most of Alsace and parts of Lorraine by the victorious Germans. The annexed part of the region, to which we henceforth refer as Alsace-Lorraine or the treated area, remained German for nearly 50 years, until it became French again after World War I (WWI). During that time AL was exposed to more intrusive homogenization policies by both the German and later the French central state than the counterfactual non-annexed areas of the same regions. Historical evidence clearly documents harsh measures to homogenize and suppress regional associations, parties or newspapers (Callender, 1927). Important pillars of these policies were also, among others, the denial of full democratic representation (Carrol, 2010), the continued use of an intrusive "dictatorship paragraph" by the Germans (Carrol, 2010), and the imposition of a *Frenchness Commission* after WWI (Harvey, 1999), as well as restrictions on the use of local dialects (Callender, 1927) by the French government after WWI. More details are provided in, e.g., Carrol and Zanoun (2011); Höpel (2012); Rothenberger (1975) and Vajta (2013).

All available evidence suggests that the exact location of the border was exogenous to our outcome, which enables us to isolate the effects of the historical shock on identity formation from possible pre-existing differences. The main reasons for the unexpected final border demarcation were the opposing interests regarding its exact location between the cautious German chancellor Bismarck on the one hand, and his more aggressive military leaders as well as *Kaiser* Wilhelm I on the other hand. Bismarck wanted to restrain territorial expansion to the alemannic-dialect speaking

Figure 1: Geographical location of the treated and untreated area

Notes: The map shows national borders and the division of Alsace and Lorraine after 1871. The treated area is shaded in light grey, and the untreated control area in dark grey.

parts of Alsace and Lorraine (Lipgens, 1964), while the military lead by the charismatic General Helmuth von Moltke wanted to extend the German territory as far as possible.[2]

These conflicting interests on the German side and the intense negotiations with the French leader Adolphe Thiers resulted in the compromise spliting Alsace and in particular Lorraine rather arbitrarily (Förster, 1990; Lipgens, 1964; Messerschmidt, 1975; Ziekursch, 1930). As an example of the complex nature of these negotiations, Bismarck was willing to "save Metz for France", and considered keeping the French part of Lorraine altogether a "folly of the first order" (Wawro, 2005 p.206). Moltke and the Kaiser Wilhelm I refused to return it however, as the military considered taking Metz one of their great achievements and a return a "national humiliation". Moreover, Thiers succeeded in stretching the border a little further towards Germany by offering the German military to hold a victory parade through the Champs Elysees in Paris.[3] We also use evidence from 1789 to show that there were no apparent pre-treatment differences in regional identity. A crucial advantage of the setting is that today and for now more than half a century both treated and control area again belong to the same country.

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[2] The literature indicates that General von Moltke had from the onset of the war planned to march as far into France as possible and capture decisive strategic positions (Förster, 1990). The conflict continued when the conditions for the French defeat were negotiated and documented in the peace treaty on February 26, 1871. In line with certain German intellectuals, the military leadership tried to legitimize territorial gains with social-Darwinistic theories which regarded states as species struggling for space with other nations (Heffernan, 2001). Another motivation (for the standpoint) of the military was to capture more ground to weaken the arch-enemy in anticipation of the plausible next conflict. Bismarck on the other hand feared that excessive annexations might increase the risk of a new conflict.

[3] After elections in both French and German-occupied parts of France lead to the anti-war conservative party winning 500 out of 676 seats, their leader Adolphe Thiers negotiated with Bismarck for 5 days. The result was in its details unpredictable and the planned border changed frequently during the negotiation process. For example, Bismarck was willing to "save Metz for France", and considered keeping the French part of Lorraine altogether a "folly of the first order" (Wawro, 2005 p.206). Moltke and the Kaiser Wilhelm I refused to return it however, as the military considered taking Metz one of their great achievements and a return a "national humiliation" (Wawro, 2005 p.206). The final result was a compromise between both positions and it is documented that, at least partly, "Bismarck, [...], quite uncharacteristically wilted under the pressure" (Wawro, 2005 p.305). The northern border thus rather arbitrarily divides the former duchy of Lorraine in two parts.

Using detailed survey evidence, we find that people in the treated area state an overall higher regional identity. This is also exemplified in clear shifts in policy preferences. The treated subjects are, on average, more in favor of shifting policy competences to the regional authorities, giving more autonomy to the regional government and determining education policies at the regional level. Even though there is no particular reason to expect a bias driven by geography, this difference between groups might be biased by other influencing factors that differ between treated and control area and influence regional identity. For that reason, we proceed and use municipal level voting outcomes in two crucial referenda which would have increased regional autonomy and made it easier for regions to express their identity. As an additional alternative measure, we use household subscription shares of regional newspapers as a signal of regional attachment and as a potential mechanism of persistence. We also test for differences in nationalism and voter turnout to further verify the survey results.

The RDD results support the survey evidence and show about 4 percentage points higher support in the referenda in the treated area compared to the counter-factual non-treated areas. There is also no difference in nationalism at the former border, and turnout is in all cases comparable on both sides of the former border. The difference in the Yes-vote share is both sizable and economically significant as it would have changed the majority outcome in the region. The differences remain significant across different bandwidths for both referenda in 1992 and 2005, and are virtually identical when we concentrate only on the within-Lorraine comparison. This is in line with the survey results and further indicates that the intrusive policies trying to suppress regional identity have in fact strengthened it. We find a similarly clear discontinuity in subscription rates to regional newspapers, which we use as an alternative proxy for regional identity. Regional newspapers also display an identifiable conscious investment in regional culture and a relevant transmission mechanism.

The first pitfall is the possibility that even with an exogenous division, the treated area might differ due to, for instance, geographical proximity to Germany, which affects trade, commuting patterns and media exposure. Nevertheless, our results hold when we reduce the bandwidth to 10 kilometers, i.e. when comparing municipalities which are direct neighbors, and also when we control for distance to Germany and major cities. We also address potential overlaps with the historical language border, which divides the formerly German-dialect from the French speaking parts, by geo-referencing the historical language border at the municipal level (Callender, 1927; Harp, 1998). Excluding all historically German-dialect speaking areas does not affect the estimated causal effect for either of the two referenda and for regional newspapers. We also find no support for other alternative explanations like a permanent change in the socio-economic structure of the population, specific laws in the treated area or religiosity.

Our research adds and relates to different strands of literature. First, the literature on identity economics (e.g, Akerlof and Kranton, 2000; Bordalo et al., 2016; Kranton, 2016) and on the persistence and transmission of culture, identities and values (e.g, Bisin and Verdier, 2000, 2010; Gennaioli and Rainer, 2007; Guiso et al., 2016; Giuliano and Nunn, 2016; Nunn and Wantchekon, 2011; Voigtländer and Voth, 2012 and Tabellini et al., 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 next generation via parental investment. The minority group in our setting is the treated area as opposed to first the German and then French majority, who both try to assimilate them by force. Bisin et al. (2011) explicitly model a mechanism that can explain how oppositional identities can persist and Fouka (2016) provides a model how both vertical (parental investment) and horizontal (schooling) socialization influence the strength and transmission of a group identity. Our results can be interpreted as in line with both mechanisms, as we also document how a "discriminated" group intensifies their identity as a response.

In addition, there is a large literature on identity in different disciplines of social science, 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, but that the collective perception of social unity can be sufficient to form a group (Turner, 1982). This is also the base of the identity definition in Shayo (2009), which we adapt. It can account for strong group identities despite large preference heterogeneity within groups (Desmet et al., 2017). In social psychology, the social identity model (Tajfel et al., 1971) argues that group identity "has primarily a perceptual or cognitive basis" and that "awareness of a common category membership" is a necessary and sufficient condition for individuals to act as a group. It seems plausible that the intrusive assimilation policies strengthened the awareness of Alsatians and Lorrainians of their cultural distinctiveness.

Leed (1981) argues that fighting together against a common enemy in a conflict induces people to form a common identity, by increasing the perceived importance of connecting experiences and traits. In the case of Alsace-Lorraine, a plausible explanation is that the exposure to intrusive and discriminating policies creates an incentive for parents to invest in teaching regional culture to their children, which persistently increased the salience of attributes common to the inhabitants of the region. The idea that feeling rejected or suppressed by a majority increases group identification also relates to the rejection-identification hypothesis in social psychology (Branscombe et al., 1999). It argues that the perceived common identity, between an individual and a group, can be changed not only by changing actual norms or preferences, but also by adapting the importance that an individual assigns to different attributes.

We also relate to an emerging literature in economics examining the use and effect of different policies on identity formation and nation building. Alesina and Reich (2013) model when and which assimilation policies are used to instill a common identity, creating the distinction between benevolent and intrusive ("odious") policies. Our results are in line with some existing evidence of how intrusive policies can backfire and increase the affected group's identity. Dell and Querubin (2017) use exogenous variation in US bombing patterns in Vietnam, and document that more bombing increased communist military activities, lowered civic engagement and worsened attitudes towards the central government and the US. Carvalho (2013) suggests that banning veils on Muslim women can actually lead to higher religiosity, hence a stronger religious identity.

There is also a related strand of literature studying schooling as a specific mechanism through which the state can influence identity formation (e.g., Bandiera et al., 2017; Lott, 1999; Ortega and Tangerås, 2008). Carvalho and Koyama (2016) provide a model of how an education system

that marginalizes a certain identity can cause cultural resistance on part of the marginalized group. Regarding empirical papers, studies of compulsory language laws in schools are closely related in many respects. Aspachs-Bracons et al. (2008) and Clots-Figueras and Masella (2013) find that within Catalonia, the forced imposition of Catalan is related to an increase in Catalan identity measured by various proxies. Fouka (2016), in contrast, provides evidence on how the forced imposition of the English language on German pupils in US states after WWI is related to an increase in German identity and a decrease in common identity, as measured via volunteering rates in WWII.

A plausible explanation for these differences is that learning Catalan in schools in Catalonia was not perceived as oppositional to the identity of migrants to the region, whereas in the US case, and in our setting, policies were clearly perceived as discriminatory. This is in line with explaining 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 research design compared to these papers exploits the exogenous border creation within a region, which allows us to compare people who formerly possessed the same identity as a counter-factual.

The long run persistence of the treatment effect in our setting - over more than five decades - is not unusual and in line with other papers documenting persistence in culture over periods stretching more than a century. These differences are, for instance, associated with outcomes like stated preferences regarding trust (Becker et al., 2015) and different proxies of civic capital (Guiso et al., 2016), but also with revealed preferences like cheating in a trust game (Lowes et al., 2017), follow traditional practices (Giuliano and Nunn, 2016), and differences in homicide rates among Scottish-Irish settlers in the US South (Grosjean, 2014). Our results provide correlational evidence on stated preferences identity and policy competence allocation, which is in line with causal evidence revealed in two referenda, through regional newspaper subscriptions and mostly in regionalist party success.

The paper is structured as follows. Section 2 explains the historical background of Alsace and Lorraine, as well as presenting our theoretical framework and survey evidence. Section 3 introduces the municipal level data and identification strategy, whilst Section 4 presents the main results. Section 5 discusses potential threats to identification and alternative explanations for our findings, Section 6 discusses mechanisms and persistence and Section 7 concludes the paper.

2 Historical background, theoretical framework and survey evidence

2.1 Homogenization policies and the history of Alsace and Lorraine

As John Stuart Mill stated, a certain degree of homogeneity is necessary as "unassimilated democratic states will tend to dissolve into as many democracies as there are nations within them" (cited by Conversi, 2004, p.35). Gellner and Breuilly (2008) argue that in an industrial society, different ethnicities, cultures, and in particular languages act as barriers that reduce efficiency, as they in-

crease the costs of communication and reaching agreement. France is a particularly well-suited place to study homogenization policies and attempts to form a common identity. It is nearly universally recognized as the birthplace of nationalism and the first attempts of nation building (Conversi, 2008). Starting with French absolutism, the French revolution (see, e.g., Hobsbawm, 1990, 1994; Conversi, 2004) and Napoleon's systematic attempt to enforce a national identity, France serves as a prime example of the formation of a group identity.

Homogenization policies to build a common identity are still a highly relevant issue in many modern states today, as Lott (1999) shows in a cross-country and the specific South African context. The central role of language can be traced back to Johan Gottfried Herder (1724-1804), who argued that language is essential to create a common national identity, and is also highlighted by Gellner and Breuilly (2008). Generally, homogenization policies include more benevolent measures like lowering the costs of travel and exchange through institutions and improved infrastructure, but also the imposition of a state religion, the prohibition of regional cultures and in extreme cases genocide and the extermination of certain groups (e.g., Tilly, 1975). Conversi (2008, p.1289) describes the nation building process as a "top-down process entailing assimilation and the forced erosion of cultural differences", which can lead to existing ethnic and regional identities being perceived as oppositional to national identity.

To put our natural experiment into perspective, it is helpful to discuss some important aspects of the history of Alsace and Lorraine. Both regions have been autonomous political entities as far back as the 7th century. After the Treaty of Verdun, Lorraine became a part of Middle Francia and Alsace of East Francia. Under Charles the Bald, all of modern Lorraine became a part of the Duchy of Lotharingia, while Alsace in 929 was incorporated into the Duchy of Swabia in East Francia. From 1542 onwards, the actual administration was in the hands of dukes, counts or fiscal agents called *nuntii camerce*. Over the centuries, both regions thus developed strong common regional identities with specific traditions and norms. After the Thirty Years' War (1618-1648) all of Alsace and the cities of Metz, Verdun and Toul were ceded to France in the Treaty of Westphalia. The rest of Lorraine was given to the French Crown through the Treaty of Vienna (1738) and effectively became French in 1767. At the time of the Franco-Prussian War in 1870/71, Alsace and Lorraine had thus been a part of France for more than a century and were exposed to the same policies by Napoleon and other central French leaders.

The peace treaty of Versailles (1871) then stipulated that most of Alsace and an eastern part of Lorraine were ceded to the newly created German state. The southern part of the new national border between France and Germany partly followed the western border of the former Duchy of Alsace, while the northern part divided Lorraine in two. As described above, disagreements between Bismarck and his military leaders and the "Kaiser", and the complex negotiation process with France resulted in a quasi-random final border demarcation (see Figure 2b).[4] Older maps from previous

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[4] There were strategic considerations involved, mostly regarding certain fortresses or positions like Belfort. The strategic importance of locations could be related to geological features, but, as we show, there are no indications that they are linked to prior differences the relative strength of regional compared to national identity and no discontinuities in ruggedness or elevation.

Figure 2: Historical maps: before, during and after German occupation
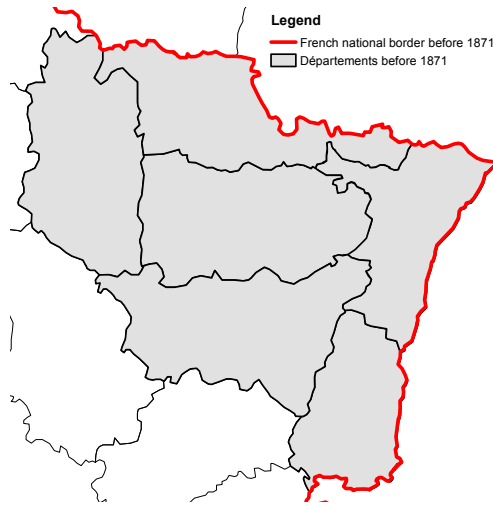
(a) France before German occupation (1870)
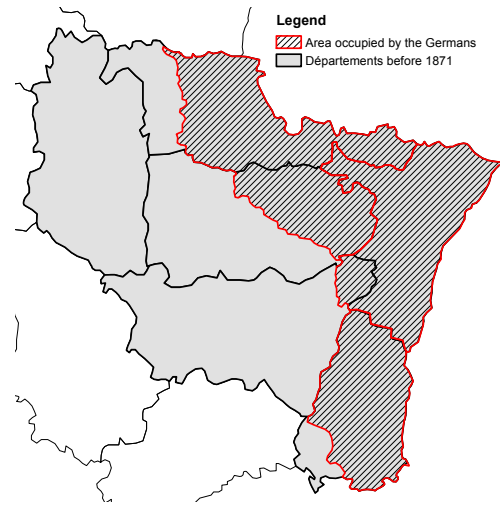
(b) France after German occupation (1871)
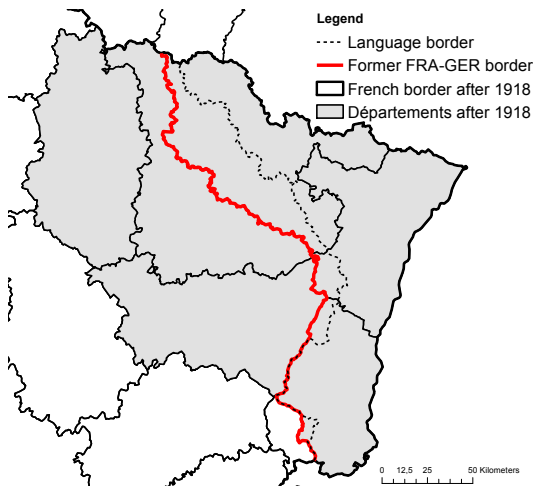
(c) France after German occupation (1871) and former language border.

(d) France after the occupied region was returned (1918)

Notes: Bas-Rhin and Haut-Rhin compose Alsace, and Moselle was the treated part of Lorraine. Meuse and Meurte-et-Moselle are the untreated part of Lorraine and Vosges serves as a counterfactual for Alsace.

centuries show that there was no apparent overlap between any historical borders and the border we use (see Online Appendix, Figures A1 - A4).

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 existing) départements Haut-Rhin and Bas-Rhin, respectively. In Lorraine, the district *Lothringen* was created from parts of the former départements *Moselle* and *Meurthe*, and corresponds to todays département *Moselle* (see Figure 2). The treated region was never recognized as an integrated part of the German Em-

pire – instead it was an imperial territory under the direct authority of Kaiser Wilhelm I due to the suspicious stance towards the loyalty of the new citizens (Carrol and Zanoun, 2011). It had, for instance, no representatives in the *Bundesrat* or the *Reichstag* (Vajta, 2013). As part of the "Kulturkampf", government regulations restricted particular types of education (Silverman, 1966) and restrictions on the press were not lifted until 1898. The government also kept the French dictatorship paragraph of 1849 in force, that allowed house searches, expelling agitators and prohibiting political organizations (Carrol, 2010). In terms of public education policy, Strasbourg University was reopened as "Kaiser-Wilhelm-Universität" with the specific aim to replace regional traditions and assimilate the annexed region (Höpel, 2012).

France regained control of the lost provinces after the Treaty of Versailles (1919), which it kept with the exemption of World War II (WWII), when both areas like other parts of France were occupied by Germany. The process of reintegration into France is sometimes described as even more repressive than the German occupation (Anderson, 1972; Harvey, 1999). It implemented its own intrusive policies in an attempt to realign the preferences and values of the lost citizens. The Germanic dialect, which was the mother tongue of a majority of the population, was no longer allowed to be taught in school, and German was removed as an official language (German as a second language was not taught 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. Moreover, France consequently replaced bureaucrats and local teachers with external bureaucrats who were not familiar with the local circumstances and traditions. Overall, the treated area experienced repeated occupation and repression, and historians highlight and document the central role of homogenization policies in the process of forming a strong feeling of regional identity. Thus, the treated area was not only once, but twice subject to more intrusive homogenization policies than the non-annexed parts of Alsace and Lorraine.

2.2 Theoretical framework

This section introduces a simple model of cultural transmission with multiple identities. 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 everyone possesses multiple identities, for instance, as a citizen of her municipality, region or country. An important feature of these multiple identities is that they are not necessarily substitutes, at least not perfect substitutes. Our model relates to Bisin et al. (2011) to the extent that children's identity is influenced by both parents and other outside factors (in their case, peer effects, in our case, public schooling). For tractability reasons, we focus on schooling as one plausible government-led identity

transmission mechanism (cf. Lott, 1999) and parenting as exemplary for private investments in identity formation. As in Bénabou and Tirole (2011) people care about identity and respond to threats by adjusting their identity investments.

The model will help to explain the way in which an exogenous shock on how the central state, e.g. through public schooling, treats regional identity can lead to persistent differences in identities. Every individual is a member of two groups, her region and a nation. People gain utility from feeling closer to their region, which is their closest reference group, but also from a common national identity with the other regions, which lowers transaction costs. Identity formation is affected by public schooling, which is modeled as an exogenous decision imposed by the nation state and by parental investment. Public schooling can also more generally be thought of as representing the set of state policies that influence identity formation, but cannot be influenced by parents. As in (Doepke and Zilibotti, 2017), parents can be thought of as combining Beckerian altruism about the future economic well-being of their children with a paternalistic value assigned to their own (regional) identity. They maximize utility when determining parental investment, weighting the benefits of common identities against the costs of teaching common traditions and norms. We model these costs as a one-time fixed cost. The model could be extended to include variable costs or the time spent on teaching or cover more general functional forms, but this would add another layer of complexity and is not necessary to understand the main mechanisms.

The game then unfolds in three stages. In **Stage 1** (until 1870/71), both areas are exposed to the same public schooling policy. Because they belong to one homogeneous region, there is no reason to expect differences in parental decisions on how much to invest in transmitting traditions and norms to their children. In **Stage 2** (1871 – ~1950), people in the treated area are exposed to intrusive policies and repression, exemplified by a public schooling policy that does not teach regional culture sufficiently. If their utility from regional identity is high enough, they choose to pay the fixed costs of learning how to transmit regional culture to their children themselves. Lastly, in **Stage 3** (after ~1950), the temporary shock is over and public schooling teaches regional and national culture at similar levels in both areas. However, the optimal level of transmitting regional culture through direct parental investment will be higher in the treated area if parents chose to invest the fixed costs during the treatment period and transmit that skill to their children.

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 $j \in \{R, N\} = \boldsymbol{J}$, 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. In our specific case, one item could be thought of as preferences about beverages: in the treated area, there supposedly is a stronger preference for drinking beer, where as in the area that remained French wine is the drink of choice. 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 compared to standard models in the size of nations literature. Desmet et al. (2017) show using the World Value Surveys that within-group variation in values and preferences, which they term *culture*, is larger than between-group differences. 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 a region differ in their shared history, in the spoken dialect, local cuisine or music from other regions in the country. The degree to which this affects common national identity, however, depends on how much people emphasize these differences compared to other regions. We make some simplifying assumptions in the following, but this formula links our model and its implications directly to this important literature.

Individuals benefit from a strong common regional identity, as it helps them to feel socially compatible with fellow group members in their region of residence. A higher perceived distance to the average group member of the region lowers individuals' regional identity and can make them feel "isolated". The cost associated with isolation is not only psychological: a lack of social compatibility can also hurt business and/or employment opportunities. The same holds for a common national identity. For instance, if someone does not know how to comply with national traditions, it will be more difficult to find a job in the regional public administration (if that is controlled by the central state) or to trade with other regions.

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 flambe". The vector $\boldsymbol{\omega_R}$ 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.[5] 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

[5] 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.

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 $\omega_o + \sum_{j \in \boldsymbol{J}} \omega_j = 1$, where ω_o is the sum of the weights put on the remaining attributes.[6]

When deciding how to invest in the education of their children, parents maximize the expected utility their children derive from a joint regional and national identity. We choose a specific 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 representative parent based on the weights of their child as

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

with $0 < \alpha < \frac{1}{2}$. This means parents assign positive utility to their children sharing their regional identity (ω_R), but they also take into account the potential benefits the children will have from alignment with the rest of the nation (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 parents to actively be involved in influencing their children's identities. This cost is given by C.

The transmission of weights (ω_R and ω_N) is influenced by parental investment and public schooling. Hence, the ω_j of a child is a function of the traditions the parents chose to transmit and the traditions transmitted via public schooling. Just like parents, public schooling can spend time on teaching both regional and national culture, as well as on other subjects unrelated to identity. The weights of the child 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 time invested by parents and public schooling. Let $t_R^S + t_N^S \leq 1$, but in most situations it is more realistic to think of it as smaller that one as schooling also spends time on teachings subjects like math or sciences. For parents, we assume $t_R^P + t_N^P = 1$ for simplicity if the benefits from teaching regional or national culture exceeds the costs, as discussed below. The total amount of teaching decides the magnitude of the sum of the weights ω_R and ω_N, which translates into the weights children will put on these sets of attributes and the strength of their identities.[7]

When parents choose t_R^P and t_N^P, they weight the benefits of transmitting regional or national

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[6] 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.

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

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. One central, but according to us, plausible assumption is that children who repeatedly experienced a tradition within their own family inherit the ability to teach it to their own children. Accordingly, $\tau_j = 0$ if parents were themselves exposed to $t_j^P > 0$.[8]

The (fixed) cost of teaching for parents is then given by the following cost function:

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

If time is the limiting factor, teaching one culture also creates opportunity costs reflecting less time spent on transmitting other traditions. With the public schooling parameter exogenously given, plugging in the expressions for the weights into the utility function maximized by the parents gives

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

where $B(t_R^P, 1 - t_R^P)$ is the benefit from teaching. The optimal choice of parents 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 parental 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 teaching the optimal level exceeds the utility from not teaching 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 the parents will invest time in learning how to teach and transmit 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 parents will only invest time in learning how to teach and then transmit **regional** traditions.

---

[8] 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 teach j culture. We assume that engaging in a joint tradition as a family has a different effect than being told about a tradition in school. Observing parents and copying behavior arguably has a large influence on education style, notwithstanding exceptions where children deliberately deviate from their parents behavior.

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 the parents will only invest time in learning how to teach and then transmit **national** traditions.
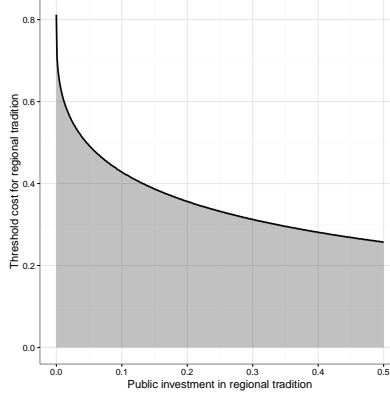
Case 4 If $U(0,0) = \max U(t_R^P, 1 - t_R^P)$, then $t_R^P = t_N^P = 0$. This means the parents will not invest time in learning how to teach and then transmit any traditions.

Figure 3: Threshold costs for teaching regional tradition

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

Figure 3 shows the distribution of costs for which it is optimal for parents to invest time in teaching regional traditions and culture. A decrease in t_R^S makes teaching regional traditions the best choice for parents along a larger range of parameter values. We can now use this framework to analyze the natural experiment, which can best be described in the three stages introduced above.

Stage 1

In the first stage, public schooling policy is identical in both areas. Parents decide to teach either regional or national traditions, both traditions, or none of them. The optimal choice of teaching depends on *i)* the public investment in teaching regional and national traditions, and *ii)* the cost of learning to teach 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 parents 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 parents to invest time in regional and national traditions, respectively. Parents invest time if the costs of doing so are lower than 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, parents decide to spend all their time teaching 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 public investment in regional traditions becomes high enough, for instance comparable to stage 1, parents in the untreated area are not willing to bear the cost 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, parents 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. parents put enough value and time on regional culture so that their children acquire and imitate this behavior.

In the first years after French re-annexation, homogenization policies remained focused on eliminating and suppressing regional culture. Nevertheless, after some years, public schooling policy was adapted and permitted the teaching of regional culture and dialect again. We assume that at some point, ω_R^S and ω_N^S became comparable again between the treated and untreated area. As soon as the former treated area Alsace-Lorraine was fully accepted as a part of France, it received the same curriculum and public schooling as the rest of France.[9] That means, children in both areas are taught the same level of French national identity via the public schooling system. It would be misleading to pick a precise date, but it is plausible that the differences disappeared in the period after WWII in the early 1950s.

It appears that France managed to minimize the extent to which French and regional identity are still perceived as oppositional over the years since adapting or stopping intrusive policies. Temporary differences in national identity should thus disappear over time, at least for the generations born after the treatment period (stage 2) ended. The equilibrium level of national and regional identity in both areas depends on the parameters values. There are parameter values and functional forms U and C^P for which it is optimal to give up regional culture altogether and it is possible that some parameters change over time. We focus on the difference between treated and untreated area caused by the shock, hence we assume that changes after the shock affected both areas similarly. This is plausible as school curricula are set by the French central state, and changes are implemented in all of France. Moreover, our identification strategy assumes that prior to the shock (stage 1) people in

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[9] The one remaining difference are classes in religion. Students in the treated area still receive a few hours of religious classes in school today. We will demonstrate later that this is orthogonal to our outcome variables.

both the treated (T) and untreated (U) area had comparable identities.

2.3 Survey evidence

To get a sense of identity before 1871, we make use of the fact that Louis XVI, shortly before the French revolution, felt the need to assess the loyalty of his citizens. These data, known as the "Cahiers de doléances", specifically ask about the relative strength of regional compared to national identity. They were aggregated and transformed to a scale between 1 and 3 originally by Hyslop (1968) and have recently been used to assess the effect of state capacity on identity formation (Johnson, 2015). Following Johnson, we exclude the clergy, which was more driven by religious policy, and include the second (nobility) and third (other citizens) estate as well as the category "unified orders". The average response for all four departments within Lorraine is exactly or very close to 2, as Table 1 shows, and there is no statistically significant difference between Moselle and the rest of Lorraine.

Table 1: National identity in 1789 (Cahiers de doléances)

	Mean	Std. dev.	Obs.
Lorraine	2.021	0.541	24
Moselle	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. rest	-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 (1934), where the value 3 corresponds to "National patriotism strongest (to King, King and Nation, Nation etc.)", 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 (1934) Created these values at the level of selected importance municipalities to based on more disaggregate reports in verbal form.

[a] Heteroscedasticity-consistent standard errors.

We hypothesized that the historical shock(s) and the associated intrusive and discriminatory policies under German and French rule led to an increase in regional identity. The French adapted their policies after WW2 and mostly stopped the intrusive approach to suppress regional culture in the treated area in the 1950s. To assess the long run effects of the shock(s), we can rely on large scale survey evidence from the "Observatoire Interégional du Politique" surveys carried out in 1999, 2001 and 2003. We are interested in the perceived common identity of the average individual in the treated area compared to the untreated area. We compute these comparisons for the whole region of Alsace and Lorraine as well as only within Lorraine. In almost all items, the sign and significance of the differences is identical for both comparisons (see Online Appendix, Table A8). We condition on age, gender, employment status and education in all comparisons.

Table 2: Survey results

Panel **A**: Identity				
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
Panel **B**: Democracy and level of political decision-making				
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 Interrgional du Politique (OIP) 1999, 2001, and 2003, using respondents in all of Alsace and Lorraine. Identity is measures on a 4-point Likert-scale. 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.

Looking at Panel A of Table 2, people in the treated area today clearly express a significantly stronger common regional identity. 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 Alsace and Lorraine exhibit a ratio that is 24 percent of a standard deviation higher than in the control areas. In addition, we can use these very detailed surveys to analyze the consequences of these differences in identity in depth. Models on secessionism suggest that besides economic concerns (Boix et al., 2011; Gehring and Schneider, 2016), (perceived) preference heterogeneity is the major factor influencing preferences for union or secession. The survey provides clear evidence that the identity differences in Alsace-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 relatively more positive perception how well regional compared to national democracy works. Asked whether they would be concerned that more regional autonomy would increase inequality between regions, a significantly lower share of people is concerned.

We also create three comprehensive proxy variables regarding the transfer of policy competences 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 one particular question. Online Appendix Figures A4 through A7 list the individual questions in each sub-category.The average individual in the treated area favors transferring policy competences from the national to the regional level as well as more regional autonomy significantly more often. In addition, education policy is particularly interesting,

as common state education is a major mechanism to impose an identity and influence which and how traditions and culture are taught. Again, treated subject express clearly more favorable views towards setting educational policy and standards at the regional level.

The next section proceeds with municipal level data on different proxies for regional identity to overcome the two shortcomings in our results so far. First, we so far rely on stated instead of revealed preferences. Second, even though the demarcation line is exogenous to our outcome, omitted factors like the distance to Germany or other factors related to location could bias our results.

3 Municipal level data and identification strategy

3.1 Data

France is divided into 22 regions, which consist of 96 départments. The départments are further divided into 323 arrondisements and 1995 cantons. The latter two sub-units are however of lesser importance, and do not possess the status of a legal entity. We focus on the smallest unit, which is the municipality level. Out of the 3320 municipalities in Alsace and Lorraine, we have data on 3143 obtained from *www.data.gouv.fr*. From the *National Institute of Statistics and Economic Studies* (INSEE), we use data on municipality characteristics like the age composition and education. Electoral data, such as voter turnout and referenda results, are obtained from the *Center for Socio-Political Data* (CDSP). Table A11 shows summary statistics for our variables of interest in the full sample of municipalities in Alsace and Lorraine. Online Appendix Tables A3 and A12 show definitions and sources, as well as descriptive statistics for the variables.

3.2 Identification strategy

Our treatment variable is a deterministic function of the geographical location of a municipality, with a discontinuity in treatment at the threshold defined by the former border dividing Alsace and Lorraine. The causal interpretation draws on studying municipalities close to the former border using a RDD approach. Formally, we estimate the coefficients from the following regression model:

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

where y_i 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. The linear term measures the direct distance from the municipality centroid to the former national border. $\boldsymbol{z}_c$ comprises the distances to the city of Metz, city of Strasbourg, city of Nancy, and to the current French-German border.[10] $p(\cdot)$

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[10] We find no discontinuity for any of these measures, suggesting that they are orthogonal to our treatment variable. Excluding them from the regression model does not change our estimates notably, but slightly decreases estimation efficiency (see Online Appendix Figure A9). Including a function of the geographical location of the of observation, combined with latitude and longitude as main effects and their interaction like Dell (2010) does not alter our estimates substantially (Online Appendix Figures A11 and A12.)

is a function of the distance to the 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. Online Appendix Figures A8 through A16 present estimates across different bandwidths, and when using higher order polynomials and other alternative specifications.[11] All results are in line with those presented here.

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

$$\beta = \lim_{x_c \to 0^+} \mathbf{E}\left[y_c \,|x_c\right] - \lim_{x_c \to 0^-} \mathbf{E}\left[y_c \,|x_c\right], \tag{2}$$

where x_c is the distance to the border normalized at 0, meaning 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, $\mathbf{E}\left[y_c \,|x_c\right]$, being continuous, the treatment effect is equal to the difference in outcome at the border between municipalities in the treated and untreated region. Assuming that all other factors relevant in explaining the outcome are continuous at the historical French-German border, the untreated municipalities reasonably close to the border can be treated as counter-factuals for the treated municipalities. We address this by formally testing for discontinuities in covariates.

In addition, causal identification of the treatment effect assumes that the treatment is orthogonal to potential outcomes. Similar to Dell (2010) and Dell et al. (forthcoming), we test for discontinuities in geographic factors, which are plausibly not affected by the treatment and thus capture potential pre-treatment imbalances and signal potential problems. Specifically, we use the mean of terrain ruggedness, elevation, and soil suitability for production of potatoes and wheat. The data on terrain ruggedness is from Nunn and Puga (2012), but we use it on a more disaggregated level to calculate the average ruggedness index.[12] We also use raw elevation data from the NASA Shuttle Radat Topography Mission (SRTM) data set.[13]

Data on potato and soil suitability, which we choose as the two crops which are likely to be the most important ones, comes from the Global Agro-Ecological Zones database (GAEZ), provided by the International Institute for Applied Systems Analysis (IIASA) in collaboration with the Food and Agriculture Organization of the United Nations (FAO) (IIASA/FAO, 2012). To best approximate pre-"Green Revolution" growing conditions in 19th and early 20th-century Europe we choose a medium input intensity and irrigation.[14] There is no discontinuity for any of these variables at the border/threshold, as shown in Table 3.

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[11] 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.

[12] http://diegopuga.org/data/rugged/.

[13] These data may be accessed at the web page of ESRI.

[14] These data can be accessed at http://www.fao.org/nr/gaez/en/.

Table 3: Pretreatment variables balance test

Variable	Ruggedness		Elevation	
	(1)	(2)[a]	(3)	(4)[a]
Treatment	-0.063	0.001	-31.008	-12.694
	(0.174)	(0.149)	(24.888)	(20.052)
	[0.715]	[0.997]	[0.213]	[0.527]
Obs.	604	899	604	1071
Dist	10 km	15.21 km	10 km	18.37 km
	Potato		Wheat	
Variable	(1)	(2)[a]	(3)	(4)[a]
Treatment	39.470	0.743	57.079	7.260
	(72.005)	(52.593)	(110.804)	(77.642)
	[0.584]	[0.989]	[0.607]	[0.926]
Obs.	604	1394	604	1450
Dist	10 km	24.64 km	10 km	25.68 km

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* and *Wheat* 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. ***, ** and * indicate statistical significance at 1%, 5% and 10% levels, based on Conley standard errors.
[a] Estimates from using one half of the optimal IK bandwidth.

3.3 Outcome variables

Our main measures of regional identity are municipal level data on agreement in two referenda in 1992 and 2005, with subscription shares of regional newspapers as an alternative outcome. All measures have some advantages and some disadvantages, but we will show that we find similar results using all measures, which are all in line with the survey results. First, we describe the referenda in 1992 and 2005 and their relation to regional identity in more detail.

Treaty of Maastricht, 1992

The Maastricht Treaty included several reform proposals about the institutional and political structure of the European Union (EU). Several member states, including France, held a referendum to ratify the treaty. Among others, it created the current three pillars of the EU, introduced a proposed debt limit on member states and a common monetary system. The crucial aspect for us, however, is how it changed the role of regions in the EU by fostering 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 of decision-making at the lowest feasible level of authority in the EU (Treaty on the European Union, 1992), which often meant at the regional instead of the national level. Research in political science demonstrates how it allows 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). Subsidiarity is a "stimuli for regionalism, emboldening regional leaders to assert their territorial autonomy, to travel with the attitude and air of a head of state, to open quasi-embassies ('information offices') in multiple countries, and to sign high profile agreements with other regions" (Downs, 2002, p.73).

The treaty clearly resulted in the shifting of some national powers to subnational authorities (Jeffery, 2000), visible in legal rules and political institutions (Mandrino, 2008; Tatham, 2008). In addition to the subsidiarity principle, the Treaty established a *Committee of the Regions* as part of the European institutional structure. This undermines the dominance of the national level (Jeffery, 2015) and "created a political space for regions" (Fitjar, 2010, p.528). Moreover, it established "extra-national channels for subnational political activity" (Hooghe and Marks, 1996, p.73) like regional embassies directly in Brussels. Overall, the literature and press agrees that "the Maastricht Treaty strengthened the role of subnational authorities by establishing channels for them to influence EU decisions" (Chacha, 2013, p.208).

This dimension of the decision was regarded as "one of the most important consequences" (Hooghe and Marks, 1996, p.73), and the EU as "moving towards a Europe of the regions" (Chacha, 2013 p.208). This attitude was also visible in the reaction of regionalist parties throughout Europe, who "perceive the EU as an ally against the central state" (Jolly, 2007, p.4). EU integration was seen as reducing the costs of regional autonomy (Hooghe and Marks, 2008), and allow regions to bypass national governments and deal with Brussels directly (Tatham, 2010). For that reason, regionalist parties "favor European integration because it creates a more favorable political opportunity structure for their subnational autonomy movements." (Jolly, 2007, p.124) and in "the early 1990s there was a convergence of regional party support for a Europe of the Regions" (Hepburn, 2008, p.1). The moderate regionalist Alsatian party *Le parti Alsacien*, for instance, campaigns on its website for an "independent Alsace in a federal European Union".

Constitution for Europe, 2005

The second referendum about the so-called *Constitution for Europe* was again perceived as helping regions in their scope of decision-making and possibility to express regional identity. This is perhaps best visible by the official assessments of the regional and local authorities associations, which were publicly available and communicated to voters (CEMR, 2004, source of all following citations). They regard the text as a "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".

The importance of identity was explicitly mentioned, recognized by regional representatives 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. Moreover, the Committee of the Regions was given an institutional right to "bring matters before the European Court of Justice on the basis of a breach of the principle of subsidiarity", and involved in certain legislative acts of the European Parliament. The widespread opinion was that the constitution establishes "the regions and municipalities acting as intermediaries between the individual and the European institutions". The UK Foreign Office, for instance, emphasizes the "stronger role" of regional governments, and the newspaper *Le Monde* the importance of the

subsidiarity principle for regions.[15]

Using these two referenda has several important advantages. The data are available at the municipal level, it provides a continuous outcome measure at the municipal level, and the voting decision was a way to reveal preferences that was open to every citizen. The decision was important and thus has a political cost to it, but there was no binding monetary constraint preventing certain groups or parts of the population to abstain from voting. We use data on voter turnout to examine whether potential discontinuities are representative of the underlying population. One obvious caveat with the referenda is that both decisions obviously cover other important aspects of European integration as well. This could be problematic for two potential issues.

First, if regional and European identity are systematically misaligned, the final voting decision would necessarily convey useful information about regional identity. Fortunately, this does not seem to be an issue. Several papers in the political science literature have shown that regional and European identity overlaps and strongly positively correlates using data from the European social survey and Eurobarometer (Chacha, 2013; Jolly, 2007). This overlap is also clearly visible in the support of regionalist parties for the two treaties and the EU in general (Jolly, 2007). Fitjar (2010) uses Eurobarometer data to show that "people who support the EU are likely to identify more strongly with their region". We can use our own survey data to show that there is also a strong overlap and positive correlation in our sample regions. Online Appendix Figure A9 shows that almost 80 percent of the people who express a stronger European identity in the treated area also have a stronger regional identity.

Second, if people in the treated area could profit differentially from these other aspects of European integration. This second issue overlaps with a potential concern regarding the survey results: the treated area is, for instance, geographically closer to Germany, Switzerland and Luxembourg. We address this through the geographical RDD, which in the most rigid specification will compare municipalities that are very close to each other. For that reason, we will argue and show that potential benefits from regional autonomy, European integration and exchange with other countries should not differ between the treated and control municipalities. Finally, we will show results using subscription shares of regional newspapers as an alternative measure of regional identity (available for Lorraine).

National identity/nationalism

In addition, we use the strength of the extreme right-wing populist *Front National* (National Front) candidate Jean-Marie Le Pen at an election close to our two main outcome variables as a proxy variable to verify whether there really are no differences in national identity. Clearly, a stronger national identity does not necessarily lead to higher support for a right-wing party. Nevertheless,

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[15] see *White paper on the Treaty establishing a Constitution for Europe*, 2004, http://www.statewatch.org/news/2004/sep/uk-gov-wp-eu-con.pdf, last accessed 02.07.2018 and *Le Monde*, 2005, http://www.lemonde.fr/international/article/2005/05/16/a-bruxelles-les-institutions-regionales-sont-favorables-a-la-constitution_650224_3210.html?xtmc=europe_subsidiarite&xtcr=5, last accessed 02.03.2018.

Figure 4: Maps of outcomes, 2007 presidential election

(a) Share Le Pen 2007

(b) Turnout 2007
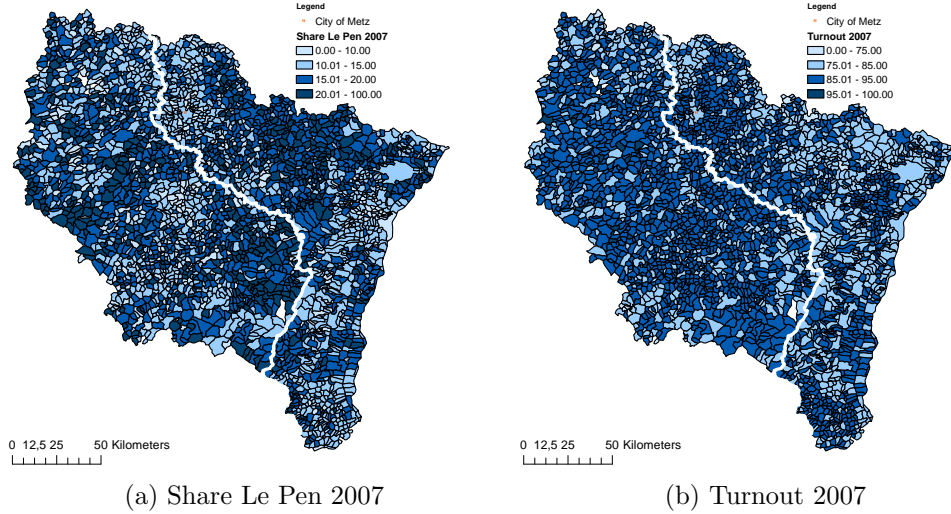
Notes: Municipal level averages for share of votes for Le Pen and turnout in 2007. The white solid line indicates the former border dividing the region. Darker shades reflect higher values in the outcomes.

for it to be an informative proxy requires only that voters with a stronger national identity are, all else equal, more likely to vote for the nationalistic *Front National*. We use 2007 because for that year we have the first-round data available for all municipalities, for previous elections we could only access it for municipalities larger than 3500 inhabitants. In our robustness section, we use data from tweets supporting the French team during the World Cup 2014 as an alternative outcome.

Online Appendix Table A13 shows ordinary least squares estimates of β from (1), without and with controls, to get a first feel for the data, as well as enabling us to later compare the coefficients with the causal RD specifications, and to assess the external validity of RD estimates. The OLS results suggest a correlation between treated status and a stronger regional identity, a somewhat weaker national identity but no relationship with turnout. Figures 4, 5 and 6 illustrate the election and referenda results as well as turnout in 1992, 2005, and 2007. There is no clear pattern for neither turnout in the 2007 presidential election (Figure 4b), nor support for Front National in 2007 (Figure 4a). At the same time, Figure 5a and 6a clearly show that *Share Yes 1992* and *Share Yes 2005* are higher in the treated, which is to the right side of the former French-German border. For turnout in both referenda, there is no obvious difference (Figures 5b and 6b). The next section presents these estimates from the RD specifications to allow a causal interpretation.

# 4   Main results

4.1   Referenda and nationalism

Our baseline RD estimation shows estimated treatment effects on all six outcome variables from Figures 4 through 6 for bandwidths at 10, 15 and 20 kilometers from the former French-German border. In addition, we include one specification using one half of the optimal IK bandwidth, as

Figure 5: Maps of outcomes, 1992 referendum
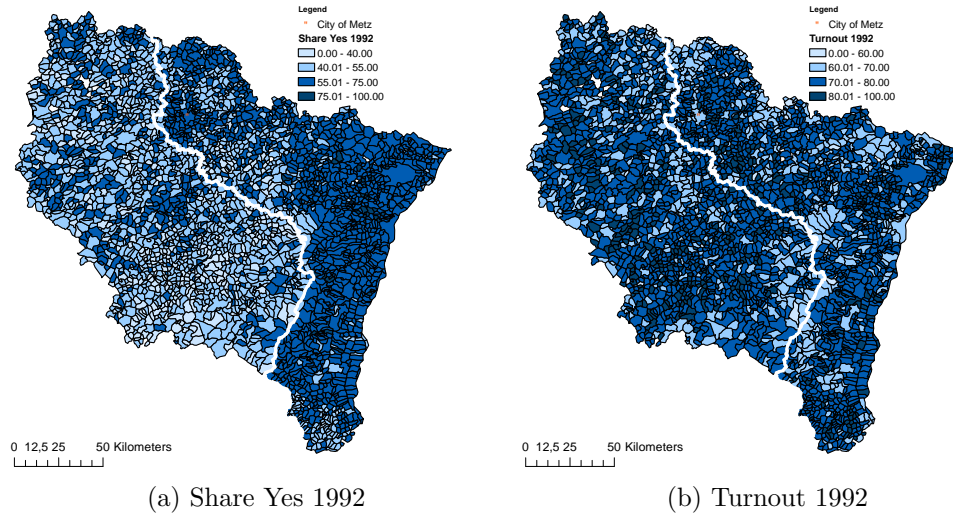
(a) Share Yes 1992

(b) Turnout 1992

Notes: Municipal level averages for share of yes votes and turnout in 1992 and 2005. The white solid line indicates the former border dividing the region. Darker shades reflect higher values in the outcomes, and indicate a lower common national identity.

Figure 6: Maps of outcomes, 2005 referendum
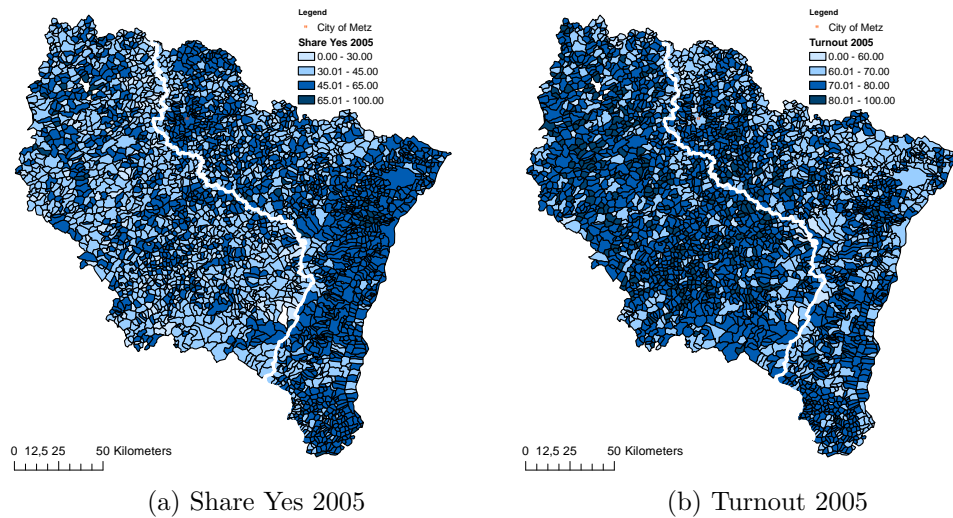
(a) Share Yes 2005

(b) Turnout 2005

Notes: Municipal level averages for share of yes votes and turnout in 1992 and 2005. The white solid line the former border dividing the region. Darker colors reflect higher values in the outcomes, and indicate a lower common national identity.

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explained by Imbens and Kalyanaraman (2011). 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 on the other side of the former border. This should eliminate all concerns regarding comparability, as distance to a specific country or city is virtually identical.

Panel A in Table 4 shows that the estimated treatment effect is positive and statistically significant for *Share Yes 1992* and *Share Yes 2005* across all bandwidths. It ranges from 4.4 percentage points to 5.4 percentage points in 1992, and 3 to 3.9 percentage points in 2005. Figure A6 (a, b) in the Online Appendix shows the discontinuities graphically when fitting a second order polynomial for the whole border: the jump at the border is clearly visible. The coefficient in 1992 is very similar to the OLS estimate; the one in 2005 only somewhat smaller.[16] Accordingly, the simple OLS estimation seems to have overestimated the actual effect, but not by much. This also supports a causal interpretation of the prior survey results that due to a lack of precise geographical information essentially relied on a comparison of group means. Repression and more intrusive homogenization policies trying to suppress regional culture seems to have backfired and strengthened the common regional identity.

With regards to national identity, we find no evidence for differences, as can be seen in Panel A of Online Appendix Table A14. The estimated discontinuity in the vote share of nationalist leader Le Pen in the 2007 presidential election at the former border is not significantly different for any of the reported bandwidths. This non-finding again supports the results from the surveys. There are no significant differences in any of the turnout variables (Panel B, D and F in Table A14). This demonstrates that the significant differences for *Share Yes 1992* and *2005* are not caused by voters systematically abstaining from voting. In the following, we concentrate on the two referenda results.

As mentioned above, the causal interpretation of the coefficients rests on the assumption that the untreated municipalities can be viewed as counter-factuals for the treated communes. One potential concern is that treated Alsace might, for historical and linguistic reasons, be different from the untreated neighboring département of Vosges and the conditional expectation of our outcomes as a function of distance not continuous at the border. Based on the literature on the determinants of voter preferences and turnout (e.g., Franklin, 2004), we examine potential discontinuities in income, age, education and occupation, which could plausibly be related to these differences and our outcomes. Note that this is not a test of *pre-treatment differences*. All variables might be affected by the treatment and act as channels via which the treatment affects the outcome. Nonetheless, we can rule out potential confounders in case of non-significant differences.

We present results for yearly median income, mean age, as well as differences in education and occupation, for three comparisons: one for the whole border, one focusing on the southern border between Haut-Rhin and Bas-Rhin as parts of Alsace, and Vosges, and one for the within-Lorraine comparison with Moselle on one side, and Meurthe-et-Moselle and Meuse on the other.

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[16] One explanation for the smaller coefficient in 2005 could be that the promises for more regional autonomy were perceived as less credible by some voters in the 2000s compared to the 1990s (Hepburn, 2008). However, the coefficient has to be set in relation to average agreement as well, which was lower in 2005.

Table 4: Discontinuities in share of Yes votes, 1992 and 2005

Panel **A**: Whole border: Alsace and Lorraine

	Share Yes 1992				Share Yes 2005			
Variable	(1)	(2)	(3)	(4)[a]	(5)	(6)	(7)	(8)[a]
Treatment	4.353	5.546	5.384	4.794	2.957	2.956	3.895	2.796
	(1.748)	(1.506)	(1.322)	(1.098)	(1.742)	(1.478)	(1.348)	(1.438)
	[0.013]	[<0.001]	[<0.001]	[<0.001]	[0.090]	[0.046]	[0.004]	[0.052]
Obs.	604	887	1150	1706	603	886	1149	970
Dist	10 km	15 km	20 km	30.44 km	10 km	15 km	20 km	16.69 km

Panel **B**: Within Lorraine

	Share Yes 1992				Share Yes 2005			
Variable	(1)	(2)	(3)	(4)[a]	(5)	(6)	(7)	(8)[a]
Treatment	3.752	5.026	4.346	4.742	3.810	3.757	4.892	3.664
	(1.841)	(1.611)	(1.440)	(1.340)	(2.092)	(1.775)	(1.646)	(1.763)
	[0.042]	[0.002]	[0.003]	[<0.001]	[0.069]	[0.035]	[0.003]	[0.038]
Obs.	394	583	744	947	394	583	744	627
Dist	10 km	15 km	20 km	26.61 km	10 km	15 km	20 km	16.43 km

Panel **C**: Within Lorraine (exl. German-speaking communes)

	Share Yes 1992				Share Yes 2005			
Variable	(1)	(2)	(3)	(4)[a]	(5)	(6)	(7)	(8)[a]
Treatment	4.126	5.279	4.574	4.430	3.830	3.774	4.817	3.453
	(1.850)	(1.617)	(1.436)	(1.298)	(2.117)	(1.774)	(1.644)	(2.018)
	[0.026]	[0.001]	[0.002]	[0.001]	[0.071]	[0.034]	[0.003]	[0.088]
Obs.	385	553	684	886	385	553	684	410
Dist	10 km	15 km	20 km	30.98 km	10 km	15 km	20 km	10.74 km

Notes: Panel A: discontinuity at the former French-German border using municipalities in all of Alsace and Lorraine. Panel B: discontinuity at the former French-German border using municipalities in Moselle, Meurthe et Moselle, and Meuse. Panel C: discontinuity at the former French-German border using municipalities in Moselle, Meurthe et Moselle, and Meuse, excluding German-dialect speaking communes. Conley standard errors in parentheses and p-values in brackets.

[a] Estimates from using one half of the optimal IK bandwidth.

As Online Appendix Table A16 demonstrates, none of the measures exhibit a discontinuity when using the entire border. However, when comparing Alsace with Vosges, there are statistically significant differences in median income and mean age. Accordingly, we focus on the comparisons within Lorraine for the remaining part of the analysis. Table 5 demonstrates that there are no discontinuities in any category within Lorraine. This means that any effects we measure are not driven by a different composition of the electorate, possibly due to the treatment, but rather by a direct persistent effect of the more intrusive policies on attitudes and preferences.[17]

As we can see from Figure A6 (c, d) in the Online Appendix, the RD plot suggests a clear discontinuity when applying a first-order polynomial and looking only at within-Lorraine. Panel B in Table 4 also presents the estimated treatment effects on *Share Yes 1992* and *Share Yes 2005* when focusing only on the within-Lorraine comparison. It is interesting to observe that the coefficient estimates do not change much in size compared to Panel A, when Alsace was still included. For 1992, it changes for the 10 km bandwidth from 4.353 to 3.752, and for 2005 from 2.957 to 3.810. In both cases they remain significant at the five, respectively ten percent level. Note that when using the still conservative half IK-bandwidth the null-hypotheses of no differences is rejected more clearly at the 1 percent and 5 percent level. Putting this into relation to the average share of yes votes in the whole country, this equates to an increase of about 7 percent and 8 percent in the yes votes. This would have been sufficient to change the average vote from disapproval to approval in the area close to the border.[18] Thus,the positive effect of intrusive homogenization policies on regional identity can still be found nearly a century after legally integrating the department into France, and within a region that shares a common history and culture.

Figure A7 in the Online Appendix depicts the individual coefficients and confidence intervals across bandwidths ranging from 10 to 50 kilometers. 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 also becomes larger in size. While we do not want to stretch this too far, it is an indication that we need not be too concerned about the local nature of the estimated average treatment effect. Section 5 will examine threats to identification and whether differences in the potential other advantages and disadvantages of the 1992 and 2005 referenda might bias their use a measuring causal differences in regional identity. Before that, we provide results using an alternative measure of regional identity.

4.2 Regional newspaper subscriptions

An alternative measure of regional identity is useful to confirm our prior results, but also to examine to what degree the strengthening of regional identity was a pure psychological, in other terms unconscious, reaction to the exposure to repression and intrusive policies. This would to some

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[17] Note that when the sample is restricted to include municipalities only in Moselle, Meurthe et Moselle and Meuse, we do still not find any statistically significant effects on the vote share for Jean-Marie Le Pen or turnout in 1992, 2005, and 2007 (see Online Appendix Table A18.)

[18] The average percent of yes votes in 1992 in the non-treated area within 10 kilometers from the border is approx. 49. This means the estimated treatment effect would have shifted the balance in favor of more EU integration.

Table 5: Post-treatment covariate balance test, within Lorraine

| | Median income 2008 | | Mean age 2006 | |
Variable	(1)	(2)[a]	(3)	(4)[a]
Treatment	0.236	0.086	0.059	0.022
	(1.015)	(0.990)	(0.641)	(0.486)
	[0.816]	[0.931]	[0.927]	[0.963]
Obs.	311	387	394	752
Dist	10 km	12.56 km	10 km	20.23 km
	Education 1999		Occupation 2006	
Variable	(1)	(2)[a]	(3)	(4)[a]
Treatment	0.002	0.004	0.009	0.002
	(0.006)	(0.004)	(0.016)	(0.014)
	[0.696]	[0.353]	[0.589]	[0.911]
Obs.	394	1044	394	576
Dist	10 km	30.04 km	10 km	14.80 km

Notes: Testing for discontinuities in covariates using municipalities in Moselle, Meurthe et Moselle, and Meuse. Education refers to the share of people above 18 with a high school degree and occupation relative to the share of blue-collar workers in the total population (the Online Appendix provides alternative operationalizations). 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 one half of the optimal IK bandwidth.

degree be in contrast to our framing of affected subjects' conscious decision to invest more in maintaining their regional identity. It is altogether plausible that psychology and unconscious changes in attitudes matter, but based on our model we think that deliberate choices play an important part. This is historically supported by the creation of separatist parties during the treatment period, as well as by the foundation of newspapers publishing in the local language and the engagement in civic organizations. All this is clearly a risky and costly behavior, in which people voluntarily engaged to maintain regional identity and traditions. Even today, there is a large range of associations engaged in preserving regional culture. Conceptually, it is of course impossible to completely rule out that an initial psychological shock *caused* a change in preferences, and all following actions are the *result* of this unconscious change. With this caveat in mind, we find it plausible that economically costly decisions can reveal a deliberate choice of citizens to invest in their regional identity.

The literature proposes and uses different measures of identity, depending on the availability of data.[19] Subscriptions to regional newspapers are a suitable proxy for several reasons. First, subscribing to a regional newspaper has a social signaling component towards others about one's

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[19] The name choice of parents is often considered a useful proxy for the transmission of identity. In the case of France, however, census data are confidential for hundred years, so that no data after our treatment period exists. We compared the 50 most common names 2014 at the department level between Moselle and the rest of France, and found very few differences. This is in line with anecdotal evidence not suggesting particular Lorrainian names today. Using associations in a systematic way, in an RDD, is not a valid comparison as the rules regarding the registration and documentation of associations differ between the treated and control departments in Lorraine. Local festivities are a potentially interesting idea. The available lists of festivities, however, make it very hard to decide whether a festival is concerned with regional culture or just music or French culture in general. Separatist parties and newspapers existed only in the treated area during the treatment period, so a comparison speaks in favor of the hypothesis, but is econometrically uninformative. We will pick up on this last point later.

interest in the region and its culture. Second, regional newspapers contain sections reporting on events in the region and regional culture that are absent in national newspapers. Accordingly, people with a stronger regional identity and higher interest have more incentives to buy the newspaper. Third, subscriptions are not only another useful proxy for regional identity, but can also help us to understand potential mechanisms. Parents interested in having their children developing a regional identity can regard the subscription as an investment, so they can be seen as a proxy for the channel in our model.

Table 6: RD results: Regional newspaper subscription shares

	Share households with subscription of "Le Republicain Lorraine"			
Variable	(1)	(2)	(3)	(4)[a]
Treatment	10.155	10.132	9.872	9.858
	(1.417)	(1.234)	(1.129)	(1.106)
	[<0.001]	[<0.001]	[<0.001]	[<0.001]
Obs.	394	583	744	841
Dist	10 km	15 km	20 km	23.12 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 one half of the optimal IK bandwidth.

Figure 7: RD plot, Share households with subscription of "Le Republicain Lorraine"
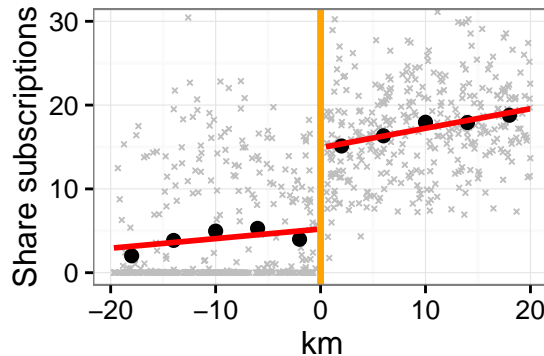
Notes: RD plots using only municipalities within Lorraine. Fitted line based on 1st degree polynomial. Black dots represent means using 5 km bins.

The downside is that this kind of data is often not collected at a fine-grained level, and commercially important or confidential. We managed to get access to municipal level data for subscriptions to the Lorrainian newspaper "Le Republicain Lorraine", but only for the year 2014. This is 10 years after the second referendum and differences might have diminished over time. The newspaper is politically non-partisan, positioned neither as extreme left or right. A comparison at the former border is valid as citizens in all villages in the region (formerly treated and untreated) today have the possibility to buy this regional or a national newspaper, and the newspaper is sold at the same price everywhere.

Table 6 shows a clear discontinuity in subscription rates at the former 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 at the 1 percent level in all specifications, and the clear discontinuity is also graphically visible in Figure 7 and in the map in Online Appendix Figure A17). Online Appendix Figure A14a shows that the effect size is also barely affected by different bandwidth choices and other alterations. As the newspaper seems to have more regional offices in the treated area, we are a bit worried about supply-side explanations (even if supply is also driven by differences in demand). However, we also got access to data on the number of points of sale in 2014, and controlling for this number does not substantially change the results (Online Appendix Table A25). Overall, this finding further increases our confidence that the prior results using the referenda really document differences in regional identity. Nevertheless, we treat it with caution as we do not possess data about the full universe of newspaper subscriptions. The next section continues by examining the robustness of our main results.

5   Alternative explanations

So far, we have found a clear causal link between being in the treated area and higher support in two crucial referenda that would have increased regional autonomy as well as more regional newspaper subscriptions. The treatment of being exposed to a period of more repressive policies (including occupation, a change in nation status and intrusive homogenization policies) led to the formation of a stronger regional identity, which as the survey results show led to a preference for more regional decision-making. Nonetheless, it is important to be aware of potential caveats and problems. This section discusses alternative explanations to this interpretation, including threats to identification and the interpretation of what constitutes the treatment. Note that some threats affect regional identity measured both using the referenda and newspapers, while others only relate to potentially different benefits from other aspects of the referenda, but should not affect the newspaper proxy.

5.1   Results are due to linguistic differences

As outlined above all available historical evidence indicates that the exact location of the former border was exogenous to our outcome. Nevertheless, one concern regarding the interpretation of our results is whether the border coincides with differences between German and French dialect speakers. This would be a concern if German dialect speakers were more likely to develop a stronger regional identity due to the linguistic divide between them and the rest of France. German dialect (mostly Alsatian and Moselle Franconian) speakers might also be exposed to a larger extent to German media or exhibit different trading patters (Egger and Lassmann, 2015). Although linguists describe the use of the German Alemannic dialect as steadily declining and now being mostly used by older generations (Vajta, 2013), it would be reassuring if we could separate the treatment effect from linguistic differences.

For that matter, we trace back the historical language border, which separates Romance and Germanic dialect speaking people. It was formed in the 8th century and was barely moved until well into 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 rely on Harp (1998) and overlay his map with the municipality boundaries to georeference the border along the French municipality boundaries (see also similar maps in Callender, 1927; Heffernan, 2001). Figure 2c shows the resulting language border.[20] It is apparent that for Haut-Rhin in Alsace these two borders coincide for significant parts, whereas this is not the case for Haut-Rhin and Lorraine.

To address a potential correlation between spoken (or formerly spoken) dialect and agreement as our proxy for regional identity, we exclude all German-dialect speaking municipalities and re-estimate the treatment effect at the former border. The estimates in Panel C of Table 4 reinforce our hypothesis of persistently stronger regional identity. In 1992 the effect remains significant at the 5 percent and 1 percent level for the 10 and 20 kilometers bandwidth, and in 2005 at the 10 percent and 1 percent level, respectively. The same holds true for regional newspaper subscriptions (see Online Appendix Table A24). Accordingly, the results hold even when comparing only directly neighboring municipalities in the same historical region speaking the same dialect.

5.2 Placebo test - Alsace and Lorraine versus the rest of France

Historical accounts indicate that Alsace and Lorraine were comparably well integrated into France prior to the Franco-Prussian War. The distinction between the treated and control area is then based on differences in policy exposure between the occupied and non-occupied area within the same regions. We use a *placebo test* with the referenda results at the more Western border of the whole historical regions of Alsace and Lorraine with the rest of France to get an idea of the validity of this approach. If the complete region was already exhibiting a stronger regional identity previously, we might also expect a discontinuity here. Table 7 shows no significant differences at any bandwidth, neither in 1992, nor in 2005. In addition, the size of the point estimates is much smaller and the signs change between different bandwidths, indicating no stable relationship. Our main results accordingly seem neither driven by being closer to the next national border, nor by differences existing prior to the treatment.

5.3 The role of World War II

It is not absolutely clear how to interpret the role of WWII. During WWII, the treated and untreated area were occupied by Germany for most of the time. German policies were surely repressive, but the suppression of regional identity and traditions was not the main objective and the suppression of French identity happened in all occupied parts of France. Neither the treated nor control area belonged to the self-governed Vichy part of France, which is good as the border between the Vichy-regime and the occupied zone is related to resistance activities (Ferwerda and Miller, 2014) that

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[20] We provide the best approximation of the border without dividing municipalities and creating any systematic errors. In case of a division, we choose the shortest path around the municipality. For another similar depiction of the language border see Dunlop (2013).

Table 7: Border between Alsace and Lorraine, and the rest of France

Variable	(1)	(2)	(3)	(4)[a]
	Panel **A**: Share Yes 1992			
Treatment	-3.168	-0.649	0.058	-0.591
	(2.040)	(1.728)	(1.465)	(0.777)
	[0.121]	[0.707]	[0.968]	[0.446]
Obs.	404	606	814	5340
Dist	10 km	15 km	20 km	109.34 km
	Panel **B**: Share Yes 2005			
Variable	(1)	(2)	(3)	(4)[a]
Treatment	0.208	1.045	1.496	-1.103
	(2.006)	(1.666)	(1.453)	(0.788)
	[0.917]	[0.531]	[0.303]	[0.161]
Obs.	405	608	816	5117
Dist	10 km	15 km	20 km	104.85 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 one half of the optimal IK bandwidth.

could have affected common identity. 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 this 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.[21] 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, which helped to calm down the tensions and which we regard as the end of the treatment period.

Based on the results in Vlachos (2016) 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. As there is no difference in support for nationalist leader Jean-Marie Le Pen, 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 5 shows no such a difference.

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[21] 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.

5.4 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 half the optimal IK bandwidth (see Online Appendix Section B). 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.[22]

5.5 Migration into and out of the treated area

An concern is the role of migration out of 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 WWI. However, as mentioned above, a large share of those immigrants were forced to leave again after the French re-annexation (approximately 100,000, 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 with a similar purpose, which was to take up posts in local administration and schools to replace regional traditions and influence with a strong national identity. Again, as these were French citizens from other regions, they should exhibit a weaker regional identity. Accordingly, this would also bias against our main results and is no concern with

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[22] 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.

regard to the correct sign of the point estimates. In terms of migration affecting the composition of the treated and control group, it is reassuring to remember that there are no differences 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 estimate changes in population at the municipal level. The results in Table A22 show no significant discontinuities for any measure at the border. Still, as the point estimates are negative we also employ the population changes as additional control variables in our main specification. Table A23 shows that this does not affect our results.

5.6 Local laws and their effects

The treated areas in Alsace and Lorraine enjoy, to a slight and diminishing degree, the freedom to deviate from certain rules imposed by the central state. These exceptions are known as the *local laws* and were first made permanent in 1924 as part of the French central government attempts to appease the hostile atmosphere after re-annexing the area. Certain forms of German law were also superior to the existing French rules (Glenn, 1974), and French law then actually incorporated particular parts of the German system. More details are provided by Chemin and Wasmer (2009). Some differences still exist with regard to a small number of welfare policies (including payments to sick employees), which are still more generous in Alsace-Lorraine and include two additional days of vacation. Other differences exist with regard to personal bankruptcy law and voluntary associations.

The sheer existence of this set of local rules works 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 for our results would be if the local laws decisively influence a third factor which drives the measured differences in regional identity instead of suppression. However, Glenn (1974, p.772) stated already that "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 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.

To test the extent to which the remaining exceptions led to potentially problematic differences in the socio-economic environment, we run RD regressions on variables for which we have measures at the local level and that could plausibly be influenced by the local laws. This includes items in the categories occupation, 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 A15 shows that for the 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. The last two columns show that industrial companies are positively correlated with agreement in the referenda; even significantly so for the 1992 referendum. Accordingly, while the one significant

difference might well be by chance only, it would bias against our main results.[23]

5.7 Other

We discuss four alternative explanations in more detail in the Online Appendix A to save space. Outliers within Lorraine, more specifically, the large urban agglomeration of Metz could be an issue as historically, cities 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 estimates.

Another concern and one distinct feature in which the local laws differ from the rest of France is 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). We show that in France (for both referenda) there is no relationship between religiosity as well as religious denomination and regional identity or (general support for the European Union). We also explain why differences in the benefits from trade are not a plausible explanation. Lastly, we present suggestive evidence of the relative importance of homogenization policies in strengthening regional identity, by comparing referenda results on both sides of the historical language border.

6 Mechanisms and persistence

6.1 Persistence and regionalist parties

After examining the causal interpretation and robustness of our results, we are reassured by the fact that we find comparable results using expressive survey evidence, yes vote shares in two different referenda and a discontinuity in regional newspaper subscriptions. Important remaining questions are the persistence of the differences and potential mechanisms. Regarding persistence, based on the detailed historical evidence, it is plausible that the "treatment period" (the treated area being exposed to more intrusive policies) ends after WWII in the 1950s. The Bordeaux Trial in 1953, with the convictions of soldiers from Alsace-Lorraine who fought for the German side, can be thought of as potentially reactivating memories of the past suppressive policies. Most historians agree that policies largely converged and there was no further specific suppression or discrimination against

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[23] 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 departments (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.

people in the treated area in the following years. The measurement of our main outcome, in contrast, is in 1992 and 2005. Although there is no historical evidence of it, other events taking place between the end of the treatment and the other measurements could explain our results.

We remedy this concern in two ways. First, we can exploit the fact that President Charles De Gaulle hold a referendum in 1969, which was explicitly about decentralization and establishing the regions as an important political unit in the constitution (Bon, 1970). Regions were supposed to take control of public utilities, housing and urbanization and enabled to borrow money. Furthermore, they would be independent contractual parties, set up public organizations, and be part of an adapted second chamber representing the territorial collectivities. In the end, 52.4 percent of French voters rejected the proposal and De Gaulle resigned immediately afterwards.

We found two reliable sources of results at the department level. The yes-vote share out of all eligible voters shown in Figure A22 in Alsace was above 50 percent of eligible voters, and between 40 and 45 percent in neighboring Vosges. In treated Moselle it was between 45 and 50 percent, and in the untreated neighboring Meurte-et-Moselle only between 30 and 35 percent. Exact numbers from a local newspaper source about yes and No-votes show a yes share out of valid votes in Moselle of 59.8 percent and 43.5 percent. Even though not at the municipal level data, the differences are apparently striking and strongly suggest a difference in regional identity already in 1969. Other electoral maps in the Online appendix Figure A23 show no differences in abstentions and no comparable difference in regular presidential elections one year before.[24]

Second, we examine whether the observable differences are a result of the complete treatment period, which would make them quite specific, or if shorter periods of intrusive policies are already sufficient to create a "backlash". There is some anecdotal evidence that suppressive policies already contributed to the creation of a stronger regional identity prior to WWII (Goodfellow, 1993; Harvey, 1999). This was visible in periods of public protest, the establishment of regional organizations and newspapers (Callender, 1927), but also politically. Regionalist parties are also interesting to answer whether there already was a stronger regional identity during the treatment period, but also as a potential mechanism of persistence. Conceptually, although our model focuses on investments by parents in the tradition of economic models like Bisin and Verdier (2000), an extended model could also include regional political parties as a means for citizens to both express and transmit regional identity.

Regionalist parties emerged and enjoyed great electoral success during German occupation. In particular in the first years of very intrusive policies, but also still after 1890, with a vote share of between 30.2 percent and 56.6 percent (Hiery, 1870). After the end of WWI, the regional parliament proclaimed a sovereign state of Alsace-Lorraine on November 11, 1918, which was however not accepted by France. The interwar period under French rule also featured successful regionalist parties in the treated area, but not in the control areas. Historians and political scientists classify most of these parties after WWI as aiming for more regional autonomy, rather than for a return to Germany (Rothenberger, 1975). The Independent Regional Party for Alsace-Lorraine, for instance,

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[24] Another referendum in 1972 about EU enlargement shows a similar pattern, suggesting that the perceived role of the EU as fostering regional autonomy was already visible in the 1960s.

received 11.5 percent of the votes in Bas-Rhin in 1928. Zanoun (2009) suggests that "autonomists were also present in the Moselle and like their Alsatian counterparts they demanded autonomy for Alsace-Lorraine". It is hard to assess to which degree this was based on facts, but support for regionalist parties collapsed before World War II, as the parties were perceived as being associated with Nazi-Germany. These accusations seem to have been 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 and the latter around 15 percent of the votes in the 2010 regional elections, while the party "Vosges d'abord" in the neighboring untreated département has 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". Within Moselle, the combined average vote share was low at 2.1 percent, but still nearly twice as much compared to the 1.1 percent in the untreated neighboring Meurte-et-Moselle.

We can also evaluate these average differences more systematically for the 2015 regional elections, where all moderate regionalist parties in Alsace and Lorraine ran on a joint list. Within Lorraine, the differences in the averages are also visible in a RDD. Using a bandwidth of 15kms or half the efficient bandwidth yields a causal effect of about 0.4-0.5 percentage points. It becomes insignificant with the 10km bandwidth, possibly due to the overall tiny vote shares within Lorraine. When taking account of Alsace as well, the differences are much larger, between 1.2 and 2.3 percentage points, and significant at least at the five-percent level at all bandwidth. This further supports our prior results, including the survey answers about more regional political autonomy. The fact that the differences are much larger when including Alsace suggest a role of parties in maintaining identity differences or reflects the more distinct Alsatian culture.

6.2 Regional identity over time

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 policy preferences. An exception are preferences about the level of political decision-making, which was reflected in the survey results about more regional decision-making. Conditional on there being on average no discontinuities in other observable variables, this leads to the question which mechanisms caused the differences to persist over time. One factor could be the local laws. Although not associated with systematic observable differences today, their mere existence can serve as a symbol distinguishing the region from the rest of the country. Secondly, as we argued above, regional newspapers are an important transmission channel, providing, for instance, more

Table 8: Vote share for regionalist parties

		Panel **A**: Alsace and Lorraine		
Variable	(1)	(2)	(3)	(4)[a]
Treatment	1.153	2.340	2.232	2.181
	(0.583)	(0.535)	(0.496)	(0.518)
	[0.049]	[<0.001]	[<0.001]	[<0.001]
Obs.	604	887	1150	994
Dist	10 km	15 km	20 km	17.01 km
		Panel **B**: Within Lorraine		
Variable	(1)	(2)	(3)	(4)[a]
Treatment	0.082	0.429	0.421	0.484
	(0.262)	(0.230)	(0.214)	(0.183)
	[0.755]	[0.062]	[0.050]	[0.008]
Obs.	394	583	744	1105
Dist	10 km	15 km	20 km	32.71 km

Notes: Results from the 2015 regional elections. Discontinuity at the former border including all municipalities in both Alsace and Lorraine (Panel **A**), and municipalities only within Lorriane (Panel **B**). Conley standard errors in parentheses and *p*-values in brackets.
[a] Estimates from using one half of the optimal IK bandwidth.

information about regional culture and events celebrating regional traditions and values.[25]

In our model, treated citizens were more likely to privately build up the skills to teach their own children regional traditions during the treatment period,; after public schooling returns back to similar levels, this leads to a difference in regional identity. To understand this mechanism and persistence over time better, and as the RDD provides no reason to expect a systematic bias, we return to the survey results from section 2.3. 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 makes no clear predictions regarding the net difference for those experiencing the treatment period themselves (Fouka, 2017 suggests that reactions during a period of suppression can differ from its long term effects). We can assume that public schooling returns to comparable levels in the control and treated area starting with the second group, and the differences should begin to emerge or become stronger.

The left side of Figure 8 shows that the treatment effects on regional identity for the group who began primary schooling prior to 1945, and thus experienced repression themselves, are already positive. The effect is statistically significant at conventional levels for regional identity, and borderline significant in relation to the strength of national identity. It becomes stronger and clearly significant for the following age cohorts who began attending primary school between 1946 and 1964 and then weakens for age cohorts who began primary schooling later.

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[25] 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 also related to WWI or WWII which makes a distinction difficult.

Figure 8: Identity differences by age cohort

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 integrate this. 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 compete on the national job market, i.e. increasing economic returns to national identity. The differences are still much more clearly visible when also looking at younger survey participants in Alsace (Figure A25), potentially reflecting the stronger status of regionalist parties or the more distinct Alsatian culture.

7 Concluding remarks

Our paper uses a natural experiment, which is rather unique in offering variation in exposure to suppressive policies within historically homogeneous regions, where both treated and control area are again today observable in a comparable institutional environment. We show evidence using both stated preferences from a large scale survey, as well as revealed preferences in overall three different referenda, regional newspaper subscriptions and regionalist party support. People who themselves or whose ancestors were more likely exposed to occupation and repressive policies express a stronger regional identity today and stronger preferences for regional decision-making. There are potential alternative explanations, but we argue and provide extensive evidence that the most plausible interpretation is a backlash against repressive policies trying to suppress regional identity.

This shows that the suppression of a group identity can achieve the opposite of what the policies aimed for: Strengthening the common identity of the suppressed group. It supports and complements Fouka (2016)'s study on the negative effect of intrusive homogenization policies on German

immigrants in the United States, which lead to less intergroup marriages and a lower likelihood to volunteer for the US Army. Similarly, we provide the first causal evidence at the regional level that exposure to state suppressions of a regional group leads to a stronger regional identity and a preference for more regional decision-making. Obviously, this is only evidence for one case particularly suitable for a causal empirical analysis. Still, we hope the insights can help us to better understand a much larger number of cases, historically and today, where data limitations or a lack of variation does not allow causal inference.

What can we learn from these results for policies and future research? It is important to take into account whether identities are perceived as aligned or misaligned, and to what degree they constitute substitutes. In our case, people with a stronger regional identity do not necessarily state a weaker national identity. This can be easily modeled 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 account for the fact that overall within group heterogeneity is found to be larger than between group differences (Desmet et al., 2017), but nonetheless we observe strong existing group identities. 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). Our simple theoretical model highlights investments in teaching and maintaining regional identity as one mechanism of persistence. A more detailed investigation of those mechanisms is an important avenue for future research.

These results are also important for analyzing separatism and the number and size of nations. In the most prominent economic models (Alesina and Spolaore, 1997), separatist tendencies are fueled by economic (e.g. regional resources Gehring and Schneider, 2016) and by culture reasons relating to preference heterogeneity. We argue that common group identity is best understood as perceived preference homogeneity in such a setting, and is an important factor in explaining separatism. In line with this, survey participants with a stronger regional identity also want more regional independence and decision-making. 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 generally 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 group identity and from an overarching common national identity. Policies can be so intrusive or the disadvantages of not teaching children the national identity instead can be so high that existing group identities disappear. To end on a more positive note, our results 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 sub-identities and an institutional setup which allows for enough regional autonomy.

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

Sirus Dehdari*
IIES, Stockholm University

Kai Gehring†
University of Zurich

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*sirus.dehdari@iies.su.se

†mail@kai-gehring.net

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A.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 4 and 5 in the main text suggests that the area surrounding Metz does in fact 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 (Online Appendix Table A19 uses 5 or 10 kilometers from Metz as an alternative cut-off). Depending on bandwidth length, this means that between 30 and 38 municipalities are excluded. Table A17 presents the results for the analysis within Lorraine including German-dialect speaking municipalities (Panel A), and excluding them (Panel B). Compared to the results in Table 7, the point estimates are very similar and still statistically significant at least at the 5 percent level (Panel B).

A.2   Religiosity and EU support

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 department level for all of France to assess the relationship between religion and voting in the EU referendum. Table A20 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*, *Moslem* 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.

A.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 A7). 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 6 are neither always positive, nor significant, differences in trade benefits do not seem to be problematic.

A.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 in Table A21 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.

B 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 A2

C Tables

Table A1: Twitter data, within Lorraine

Dep. Variable:	Share Tweets Germany		Share Tweets France	
Variable	(1)	(2)[a]	(3)	(4)[a]
Treatment	2.955	0.023	0.092	-0.526
	(2.103)	(0.947)	(0.570)	(0.833)
	[0.162]	[0.981]	[0.872]	[0.528]
Obs.	169	267	169	307
Dist	10 km	15.64 km	10 km	19.12 km

Notes: Testing for discontinuities in the share of tweets about teh German and French national football team using municipalities in Moselle, Meurthe et Moselle, and Meuse. The dependent variable is coded as the number of tweets about Germany during World Cup 2014 in Brazil, divided by the total number of tweets in each municipality. 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 one half of the optimal IK bandwidth.

Table A2: 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	Réveillre	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
		Grokreutz	Mustafi
		Draxler	Ginter
		Kramer	

Table A3: Variable description and sources

Variable	Definition	Source
Dependent Variables		
Share Yes 1992	Share of Yes votes in the 1992 referendum (Maastricht Treaty)	Centre de donnes socio-politiques (CDSP)
Share Yes 2005	Share of Yes votes in the 2005 referendum (European Constitution Treaty)	Centre de donnes socio-politiques (CDSP)
Share of Le Pen votes, 1992	Share of votes for Jean-Marine Le Pen in the 2007 presidential election (first round)	Centre de donnes socio-politiques (CDSP)
Turnout, 1992	Voter turnout in the 1992 referendum (Maastricht Treaty)	Centre de donnes socio-politiques (CDSP)
Turnout, 2005	Voter turnout in the 2005 referendum (European Constitution Treaty)	Centre de donnes socio-politiques (CDSP)
Turnout, 2007	Voter turnout in the 2007 presidential election (first round)	Centre de donnes socio-politiques (CDSP)
Subscription regional newspaper	Subscriptions to "Le Republicain Lorraine"/No.households in 2014	*Le Republicain Lorraine*
Share Tweets Germany	Number of tweets about Germany during the 2014 World Cup	*Twitter*
Share Tweets France	Number of tweets about France during the 2014 World Cup	*Twitter*
Pre-treatment variables		
Ruggedness	Index of variance of elevation in each commune	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
Covariates		
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.

Table A4: 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
Democrazy 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
Democary 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 domaines 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 A5: 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. 1 = "Strongly in favor" and 4 = "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 evironmental 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 A6: 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 A7: 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
Proud of French history	"How proud are you of the History of France?"	1 = Very proud to 4 = Not proud at all	ISSP 2003 National Identity II
Proud of French sport achievements	"How proud are you of France's achievements in sports?"	1 = Very proud to 4 = Not proud at all	ISSP 2003 National Identity II
Proud of French science/technology	"How proud are you of France's scientific and technological achievements?"	1 = Very proud to 4 = Not proud at all	ISSP 2003 National Identity II
More power to UN	"Thinking about the United Nations, which comes closest to your view?"	1 = The UN has too much power to 3 = The UN has too little power	ISSP 2004, Citizenship
Intervention of the UN	"Which of these two statements comes closer to your view?"	1 = If a country seriously violates human rights, the UN should intervene, 2 = Even if human rights are seriously violated, the country's sovereignty must be respected, and the UN should not intervene	ISSP 2004, Citizenship

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.

Table A8: Survey results, focusing on within Lorraine

Panel **A**: Identity				
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
Panel **B**: Democracy and policy competences				
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 in Lorraine (the table in the main text includes both 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.

Table A9: Overlap strength of regional and European identity in treated compared to control areas (A+L)

		Regional identity / National identity		
		Lower	Higher	Sum
European identity / National identity	Lower	11.08%	36.99%	48.07%
	Higher	7.47%	44.46%	51.93%
	Sum	18.55%	81.45%	100%

Identity differences treated compared to control area (conditional on stating stronger EU identity)
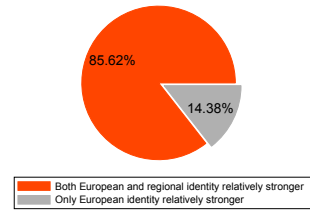
85.62%

14.38%

- Both European and regional identity relatively stronger
- Only European identity relatively stronger

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 A10: Overlap strength of regional and European identity in treated compared to control areas (L)

		Regional identity / National identity		
		Lower	Higher	Sum
European identity / National identity	Lower	13.71%	43.39%	57.1%
	Higher	7.58%	35.32%	42.9%
	Sum	21.29%	78.71%	100%

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. Data is from the OIP 1999, 2001, and 2003, using respondents only in Lorraine.

Table A11: Descriptive statistics for outcome variables and treatment

Variable	Mean	Std. dev.	Min.	Max.
Treatment	0.52	0.50	0.00	1.00
Yes 92	53.91	11.39	0.00	86.25
Yes 05	45.51	9.96	6.67	81.01
Le Pen 07	15.98	5.36	0.00	55.56
Turnout 92	74.40	6.04	52.44	100.00
Turnout 05	73.28	6.40	50.79	100.00
Turnout 07	86.29	4.16	63.38	100.00

Notes: Descriptive statistics for the binary treatment variable, *Share Yes 1992* and *Share Yes 2005*, in the respective referenda, and *Share Le Pen 2007* is the share of voters voting in favour of Jean-Marie Le Pen in the 2007 presidential election (first round), whereas *Turnout 1992, 2005*, and *2007*, refers to turnout in the respective year.

Table A12: 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
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 pretreatment 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.

Table A13: OLS estimates using all municipalities in Alsace and Lorraine

	A: Share Le Pen 2007		**B**: Turnout 2007	
Variable	(1)	(2)	(3)	(4)
Treatment	-0.691	-0.969	-1.412	0.223
	(0.236)	(0.450)	(0.175)	(0.313)
	[0.003]	[0.031]	[<0.001]	[0.477]
Obs.	3142	3142	3142	3142
Controls	No	No	No	No
	C: Share Yes 1992		**D**: Turnout 1992	
Variable	(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
	E: Share Yes 2005		**F**: Turnout 2005	
Variable	(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 Le Pen 2007*, *Share Yes 1992* and *Share Yes 2005*, the coefficients indicate both lower levels of national identity and 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. To put things into perspective, the coefficient of *Share Yes 1992* is 4.865 percentage points, which equates to almost 10 percent of the average share of yes votes in the whole region (Panel C, specification (2)). For *Share Yes 2005*, it is approximately 15 percent of the average share (Panel E, specification (2)). *Share Le Pen 2007* is 6 percent lower in the treated region than the average vote share, according to Panel A, specification (2). The small differences in turnout in 2005 and 2007 become insignificant when we add controls (Panel B, D, and E). The coefficient for *Turnout 1992* changes signs when controls are added.

Table A14: RD results: Nationalism (Le Pen) and turnout, whole border

	Panel **A**: Share Le Pen 2007				Panel **B**: Turnout 2007.			
Variable	(1)	(2)	(3)	(4)[a]	(5)	(6)	(7)	(8)[a]
Treatment	-0.236	-0.232	-0.288	-0.267	0.446	0.089	0.232	0.481
	(0.852)	(0.692)	(0.644)	(0.686)	(0.701)	(0.611)	(0.544)	(0.453)
	[0.782]	[0.737]	[0.655]	[0.697]	[0.525]	[0.884]	[0.670]	[0.289]
Obs.	603	886	1149	897	603	886	1149	1637
Dist	10 km	15 km	20 km	15.18 km	10 km	15 km	20 km	29.17 km
	Panel **C**: Turnout 1992				Panel **D**: Turnout 2005			
Variable	(1)	(2)	(3)	(4)[a]	(5)	(6)	(7)	(8)[a]
Treatment	-0.529	-0.288	-0.458	-0.243	0.219	-0.573	-1.238	-0.475
	(1.077)	(0.889)	(0.793)	(0.981)	(0.994)	(0.874)	(0.801)	(0.732)
	[0.623]	[0.746]	[0.564]	[0.804]	[0.826]	[0.512]	[0.122]	[0.517]
Obs.	604	887	1150	719	603	886	1149	1368
Dist	10 km	15 km	20 km	12.13 km	10 km	15 km	20 km	24.33 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 one half of the optimal IK bandwidth.

Table A15: Covariate balancing

Variable	$\hat{\beta}_{10km}$	$\hat{\beta}_{1/2IK}$[a]	Dep. var: Yes 92	Dep. var: Yes 05
Occupation				
Workers, 2006	0.009	0.002	-10.519	-9.359
	[0.589]	[0.911]	[< 0.001]	[< 0.001]
Farmers, 2006	0.003	-0.001	-24.457	30.485
	[0.724]	[0.942]	[< 0.001]	[< 0.001]
Artisans, 2006	-0.002	-0.003	-4.197	2.824
	[0.650]	[0.354]	[0.046]	[0.046]
Executives, 2006	-0.007	-0.005	29.686	58.089
	[0.355]	[0.496]	[< 0.001]	[< 0.001]
Intermediate prof., 2006	-0.006	-0.013	9.230	11.015
	[0.541]	[0.159]	[< 0.001]	[< 0.001]
Economic activity				
Companies, 2011	-3.729	1.461	0.020	0.041
	[0.316]	[0.621]	[0.014]	[0.014]
Commercial est., 2011	-0.855	7.146	-0.008	0.020
	[0.770]	[0.003]	[0.224]	[0.224]
Industrial est., 2011	-3.344	-1.916	0.037	0.012
	[0.007]	[0.040]	[< 0.001]	[< 0.001]
Building est., 2011	1.028	-0.105	-0.053	-0.100
	[0.523]	[0.931]	[< 0.001]	[< 0.001]
Public est., 2011	-0.699	0.694	0.043	0.003
	[0.358]	[0.261]	[0.001]	[0.001]
Public goods				
Theatre rooms	-0.003	-0.000	-0.334	-0.116
	[0.299]	[0.867]	[0.305]	[0.305]
Athletic centers	-0.025	0.059	0.129	0.025
	[0.617]	[0.138]	[0.367]	[0.367]
Multisport fac.	-0.615	-0.840	0.467	0.196
	[0.141]	[0.033]	[< 0.001]	[< 0.001]
Swimming fac.	-0.007	-0.022	-0.010	-0.137
	[0.633]	[0.445]	[0.901]	[0.901]
Psychiatric est.	0.003	0.006	1.433	0.968
	[0.810]	[0.532]	[0.075]	[0.075]
Service houses	-0.017	-0.018	-0.271	0.052
	[0.137]	[0.039]	[0.260]	[0.260]
Healthcare (short)	-0.002	0.003	0.433	0.122
	[0.645]	[0.553]	[0.708]	[0.708]
Healthcare (medium)	-0.007	-0.002	0.684	1.004
	[0.733]	[0.926]	[0.008]	[0.008]
Healthcare (long)	-0.002	-0.000	2.227	1.669
	[0.911]	[0.998]	[0.045]	[0.045]
Post offices	-0.074	-0.012	0.504	-0.919
	[0.186]	[0.721]	[< 0.001]	[< 0.001]
Elementary schols	-0.205	0.011	0.842	0.381
	[0.311]	[0.934]	[< 0.001]	[< 0.001]
Highschools	-0.002	0.011	2.351	1.496
	[0.729]	[0.181]	[0.006]	[0.006]
Vocational training	0.001	-0.002	2.141	0.485
	[0.870]	[0.794]	[< 0.001]	[< 0.001]
Tech. vocational training	0.002	0.004	0.265	0.942
	[0.356]	[0.244]	[0.213]	[0.213]
Demographics				
Population density	-77.246	147.944	0.001	0.000
	[0.287]	[0.079]	[< 0.001]	[< 0.001]

Notes: This table demonstrates the balancing in our respective samples, using 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 systematical differences. 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 one half of the optimal IK bandwidth.

Table A16: Covariate balance test: 4 categories

Panel **A**: Alsace and Lorraine

	Median income 2008		Mean age 2006		Education 1999		Occupation 2006	
Variable	(1)	(2)[a]	(3)	(4)[a]	(5)	(6)[a]	(7)	(8)[a]
Treatment	1.138	1.133	-0.353	-0.408	0.002	0.001	0.009	0.006
	(0.947)	(0.873)	(0.541)	(0.366)	(0.005)	(0.004)	(0.014)	(0.011)
	[0.230]	[0.195]	[0.515]	[0.265]	[0.621]	[0.847]	[0.515]	[0.578]
Obs.	507	744	604	1338	604	1311	604	950
Dist	10 km	14.96 km	10 km	23.57 km	10 km	23.17 km	10 km	16.27 km

Panel **B**: Alsace vs. Vosges

	Median income 2008		Mean age 2006		Education 1999		Occupation 2006	
Variable	(1)	(2)[a]	(3)	(4)[a]	(5)	(6)[a]	(7)	(8)[a]
Treatment	4.627	4.009	-1.414	-0.932	0.010	0.018	0.016	0.013
	(1.135)	(0.910)	(0.841)	(0.561)	(0.008)	(0.005)	(0.026)	(0.020)
	[<0.001]	[<0.001]	[0.094]	[0.098]	[0.257]	[<0.001]	[0.526]	[0.510]
Obs.	196	374	210	504	210	796	210	332
Dist	10 km	19.30 km	10 km	24.77 km	10 km	36.03 km	10 km	16.59 km

Panel **C**: Within Lorraine

	Median income 2008		Mean age 2006		Education 1999		Occupation 2006	
Variable	(1)	(2)[a]	(3)	(4)[a]	(5)	(6)[a]	(7)	(8)[a]
Treatment	0.236	0.086	0.059	0.022	0.002	0.004	0.009	0.002
	(1.015)	(0.990)	(0.641)	(0.486)	(0.006)	(0.004)	(0.016)	(0.014)
	[0.816]	[0.931]	[0.927]	[0.963]	[0.696]	[0.353]	[0.589]	[0.911]
Obs.	311	387	394	752	394	1044	394	576
Dist	10 km	12.56 km	10 km	20.23 km	10 km	30.04 km	10 km	14.80 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 one half of the optimal IK bandwidth.

Table A17: Excluding Metz

		Panel **A**: Share Yes 1992		
Variable	(1)	(2)	(3)	(4)[a]
Treatment	4.082	4.928	3.953	3.458
	(1.940)	(1.672)	(1.481)	(1.372)
	[0.036]	[0.003]	[0.008]	[0.012]
Obs.	355	516	646	789
Dist	10 km	15 km	20 km	26.89 km

		Panel **B**: Share Yes 2005		
Variable	(1)	(2)	(3)	(4)[a]
Treatment	4.283	3.455	4.409	3.461
	(2.087)	(1.723)	(1.596)	(1.811)
	[0.041]	[0.045]	[0.006]	[0.057]
Obs.	355	516	646	453
Dist	10 km	15 km	20 km	13.11 km

Notes: Excluding all municipalities in Metz agglomeration, comparing only within Lorraine and excluding German-dialect speaking communes. Conley standard errors in parentheses and *p*-values in brackets.
[a] Estimates from using one half of the optimal IK bandwidth.

Table A18: Le Pen and Turnout (within Lorraine)

Variable	**A**: Share Le Pen 2007				**B**: Turnout 2007			
	(1)	(2)	(3)	(4)[a]	(5)	(6)	(7)	(8)[a]
Treatment	-0.486	-0.385	-0.482	-0.600	0.387	-0.173	-0.552	-0.666
	(0.961)	(0.808)	(0.774)	(0.816)	(0.862)	(0.763)	(0.694)	(0.674)
	[0.613]	[0.634]	[0.534]	[0.463]	[0.654]	[0.821]	[0.427]	[0.324]
Obs.	394	583	744	562	394	583	744	786
Dist	10 km	15 km	20 km	14.56 km	10 km	15 km	20 km	21.14 km

Variable	**C**: Turnout 1992				**D**: Turnout 2005			
	(1)	(2)	(3)	(4)[a]	(5)	(6)	(7)	(8)[a]
Treatment	-0.861	-1.145	-1.646	-0.934	0.804	-0.650	-2.413	-1.777
	(1.229)	(1.056)	(0.967)	(1.132)	(1.222)	(1.124)	(1.092)	(1.128)
	[0.484]	[0.278]	[0.089]	[0.410]	[0.511]	[0.563]	[0.027]	[0.116]
Obs.	394	583	744	470	394	583	744	652
Dist	10 km	15 km	20 km	12.10 km	10 km	15 km	20 km	17.29 km

Notes: RD estimates for within Lorraine. Controls added. Conley standard errors in parentheses and *p*-values in brackets.
[a] Estimates from using one half of the optimal IK bandwidth.

Table A19: Excluding Metz (within Lorraine)

A: Excluding communes within 5 km from Metz

		Share Yes 1992				Share Yes 2005		
Variable	(1)	(2)	(3)	(4)[a]	(5)	(6)	(7)	(8)[a]
Treatment	3.822	5.130	4.335	4.774	4.000	3.832	4.875	4.325
	(1.850)	(1.620)	(1.445)	(1.382)	(2.082)	(1.770)	(1.643)	(1.731)
	[0.040]	[0.002]	[0.003]	[0.001]	[0.055]	[0.031]	[0.003]	[0.013]
Obs.	392	577	737	878	392	577	737	671
Dist	10 km	15 km	20 km	24.53 km	10 km	15 km	20 km	17.86 km

B: Excluding communes within 10 km from Metz

		Share Yes 1992				Share Yes 2005		
Variable	(1)	(2)	(3)	(4)[a]	(5)	(6)	(7)	(8)[a]
Treatment	3.940	4.864	3.834	3.639	4.450	3.415	4.157	4.951
	(1.889)	(1.647)	(1.478)	(1.442)	(2.033)	(1.699)	(1.567)	(1.477)
	[0.038]	[0.003]	[0.010]	[0.012]	[0.029]	[0.045]	[0.008]	[0.001]
Obs.	372	548	693	766	372	548	693	783
Dist	10 km	15 km	20 km	22.41 km	10 km	15 km	20 km	22.99 km

Notes: Metropolitan areas might have a different history, or a very different composition of the population today. Metz is the largest metropolitan area in the Lorraine region. These specifications exclude all communes within 5 and 10 kilometres from Metz. Controls added. Conley standard errors in parentheses and *p*-values in brackets.
[a] Estimates from using one half of the optimal IK bandwidth.

Table A20: Share of Yes votes and religion

	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 pool referenda. OLS estimates using aggregate survey results on département-level. *Attend* 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.

Table A21: Heterogeneous treatment effect

| | Panel **A**: Share Yes 1992 | | | |
Variable	(1)	(2)	(3)	(4)[a]
Treatment	10.000	9.815	9.777	9.733
	(1.421)	(1.247)	(1.149)	(1.191)
	[<0.001]	[<0.001]	[<0.001]	[<0.001]
Obs.	385	553	684	608
Dist	10 km	15 km	20 km	17.16 km
	Panel **B**: Share Yes 2005			
Variable	(1)	(2)	(3)	(4)[a]
Treatment	2.622	4.360	4.552	2.789
	(1.075)	(0.976)	(0.902)	(1.161)
	[0.015]	[<0.001]	[<0.001]	[0.017]
Obs.	535	734	955	446
Dist	10 km	15 km	20 km	7.94 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.
[a] Estimates from using one half of the optimal IK bandwidth.

Table A22: 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	-2.309	-0.494	-0.007
	(6.117)	(6.747)	(6.582)	(6.489)
	[0.329]	[0.732]	[0.940]	[0.999]
Obs.	394	581	740	855
Dist	10 km	15 km	20 km	23.56 km
	Panel **B**: Population difference 1936 to 1946			
Variable	(1)	(2)	(3)	(4)[a]
Treatment	-4.525	-4.018	-3.866	-4.543
	(3.632)	(2.894)	(2.571)	(2.725)
	[0.213]	[0.166]	[0.133]	[0.096]
Obs.	393	581	741	654
Dist	10 km	15 km	20 km	17.40 km
	Panel **C**: Population difference 1916 to 1946			
Variable	(1)	(2)	(3)	(4)[a]
Treatment	-13.061	-6.966	-2.662	-6.173
	(10.206)	(11.342)	(11.130)	(11.220)
	[0.201]	[0.539]	[0.811]	[0.582]
Obs.	393	580	739	879
Dist	10 km	15 km	20 km	24.48 km

Notes: All estimates include population differences for communes 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 one half of the optimal IK bandwidth.

Table A23: RD results, controlling for population change 1936-1946 (within Lorraine)

	Panel **A**: Share Yes 1992			
Variable	(1)	(2)	(3)	(4)[a]
Treatment	3.619	4.957	4.355	4.721
	(1.809)	(1.604)	(1.437)	(1.338)
	[0.046]	[0.002]	[0.003]	[<0.001]
Obs.	393	581	741	944
Dist	10 km	15 km	20 km	26.61 km
	Panel **B**: Share Yes 2005			
Variable	(1)	(2)	(3)	(4)[a]
Treatment	3.640	3.580	4.804	3.498
	(2.101)	(1.785)	(1.653)	(1.773)
	[0.084]	[0.045]	[0.004]	[0.049]
Obs.	393	581	741	625
Dist	10 km	15 km	20 km	16.43 km

Notes: Discontinuity at the former French-German border using municipalities in Moselle, Meurthe et Moselle, and Meuse. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, distance to Nancy, and municipal-level population change 1936 to 1946. Conley standard errors in parentheses and p-values in brackets.

[a] Estimates from using one half of the optimal IK bandwidth.

Table A24: Newspaper subscription shares: excluding Metz, and discontinuity at language border

Variable	(1)	(2)	(3)	(4)[a]
Panel **A**: Former border: excluding Metz				
Treatment	7.980	7.667	6.927	8.145
	(1.527)	(1.361)	(1.315)	(1.538)
	[<0.001]	[<0.001]	[<0.001]	[<0.001]
Obs.	259	365	455	257
Dist	10 km	15 km	20 km	9.86 km
Panel **B**: Language border				
Variable	(1)	(2)	(3)	(4)[a]
Treatment	-0.763	0.088	0.110	-0.464
	(0.954)	(0.804)	(0.801)	(0.981)
	[0.424]	[0.913]	[0.891]	[0.636]
Obs.	291	394	490	262
Dist	10 km	15 km	20 km	8.86 km
Panel **C**: Former border: exl. German-speaking municipalities				
Variable	(1)	(2)	(3)	(4)[a]
Treatment	10.000	9.815	9.777	9.733
	(1.421)	(1.247)	(1.149)	(1.191)
	[<0.001]	[<0.001]	[<0.001]	[<0.001]
Obs.	385	553	684	608
Dist	10 km	15 km	20 km	17.16 km

Notes: Discontinuity in newspaper subscription shares at the former French-German border using municipalities in 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 one half of the optimal IK bandwidth.

Table A25: RD results: Subscription shares of regional newspaper, controlling for the number of sales points

Variable	(1)	(2)	(3)	(4)[a]
Share households with subscription of "Le Republicain Lorraine"				
Treatment	9.880	9.958	9.979	10.026
	(1.376)	(1.218)	(1.112)	(1.090)
	[<0.001]	[<0.001]	[<0.001]	[<0.001]
Obs.	394	583	744	841
Dist	10 km	15 km	20 km	23.12 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 one half of the optimal IK bandwidth.

D Figures

Figure A1: 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 A2: Map of Lotharingia around 1000 A.D., zoomed in with 1870 border
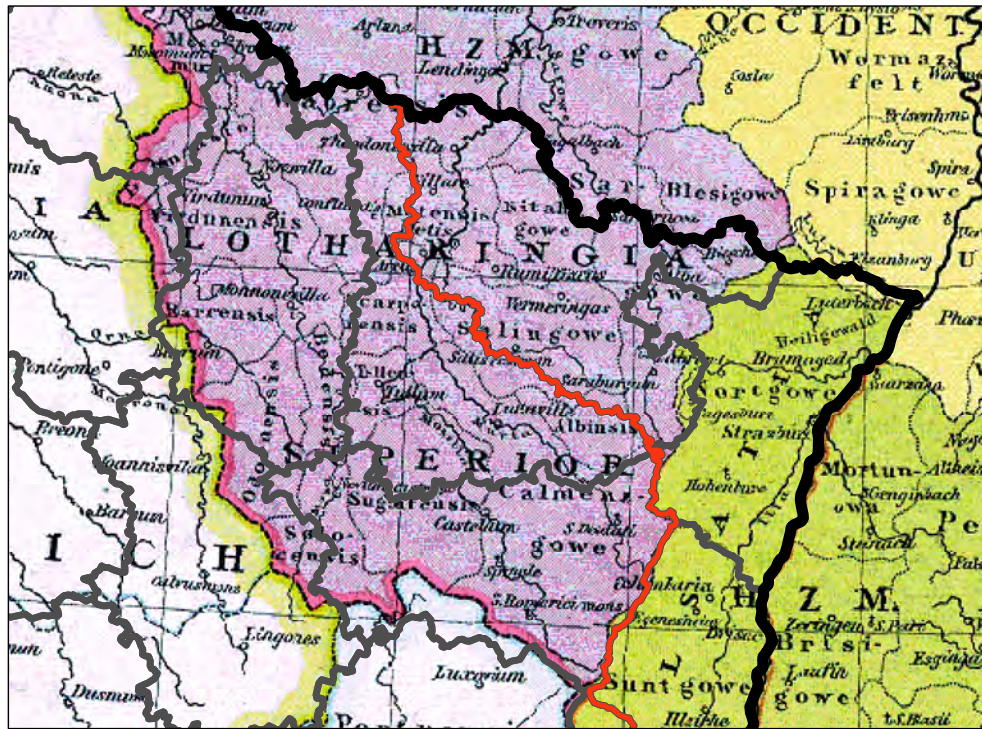
Legend

━━ French National Border   ━━ Border Alsace-Lorraine   ▭ French Department Border

Notes: Map depicting the former Duchy of 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 A3: 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 A4: 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 Evchs de Metz, Toul et Verdun. Divise par Baillages, Dans laquelle se trouve Comprise la Gnralit de Metz* created by Robert de Vaugondy, Didier (1723-1786) Dezauche, Jean-Claude (1745-1824) in 1756. The original is in the *Bibliothque nationale de France, dpartement 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.

Figure A5: RD plots, whole border and within Lorraine
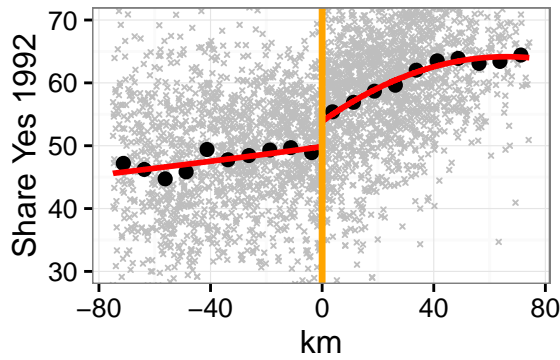
(a) Share Yes 1992
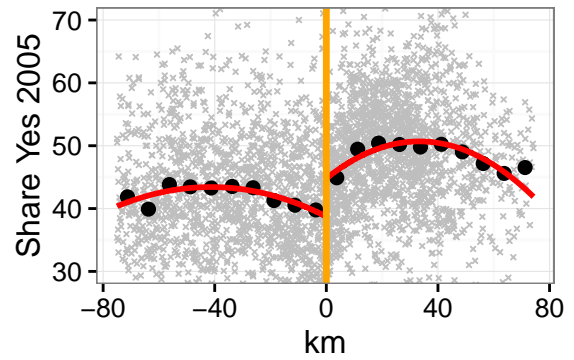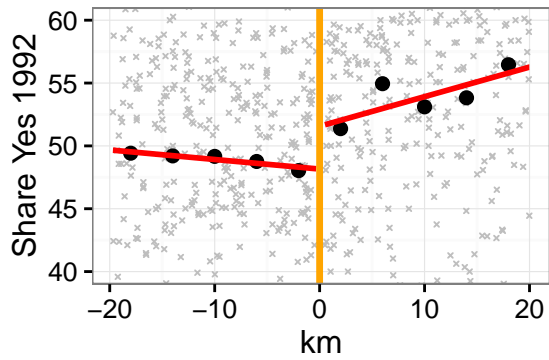
(b) Share Yes 2005

(c) Share Yes 1992
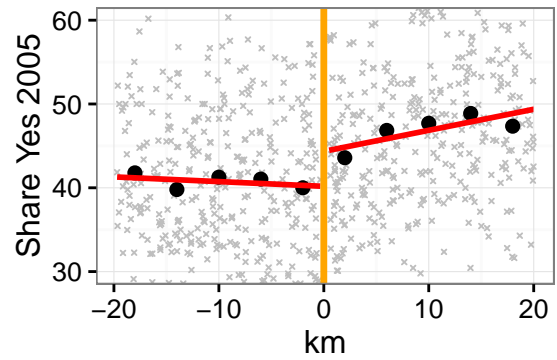
(d) Share Yes 2005

Notes: RD plots, a) and b) using all municipalities in Alsace and Lorraine, c) and d) using only municipalities within Lorraine. Fitted line based on 2nd degree polynomial. Black dots represent means using 5km bins.

Figure A6: RD plots, within Lorraine
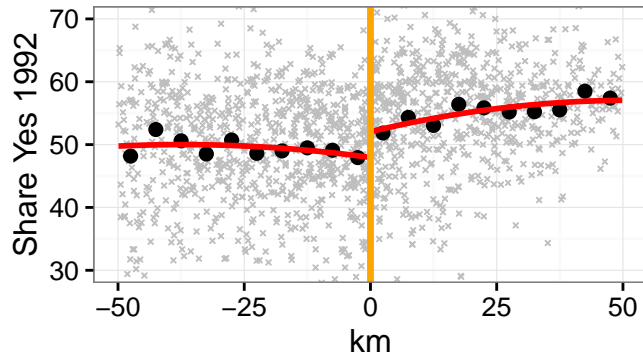
(a) Share Yes 1992
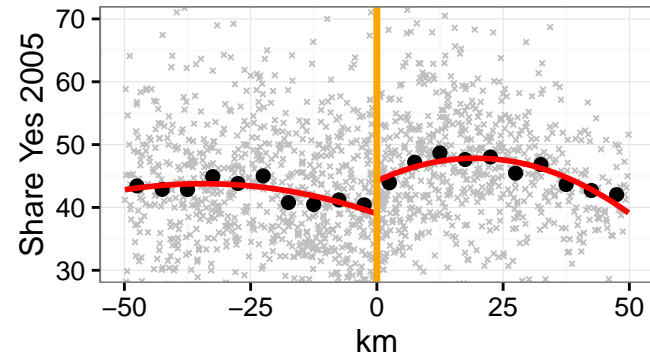
(b) Share Yes 2005

Notes: RD plots, within Lorraine. Fitted line based on 2nd degree polynomial. Black dots represent means using 5km bins. Our main specifications are based on local linear models, the fitted lines are for illustrative purposes here.

Figure A7: Estimation plots, within Lorraine
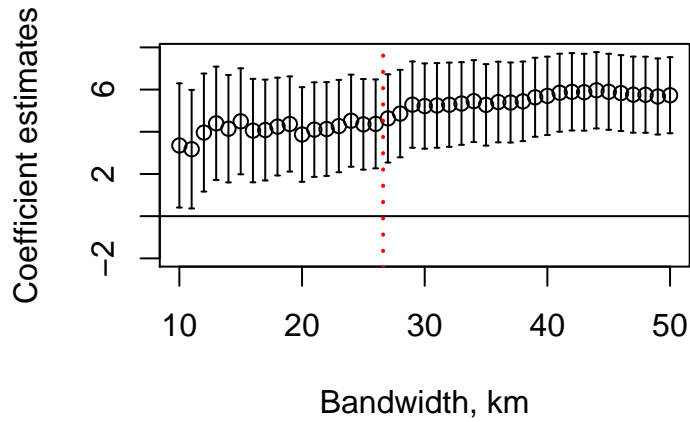
(a) Referendum 1992
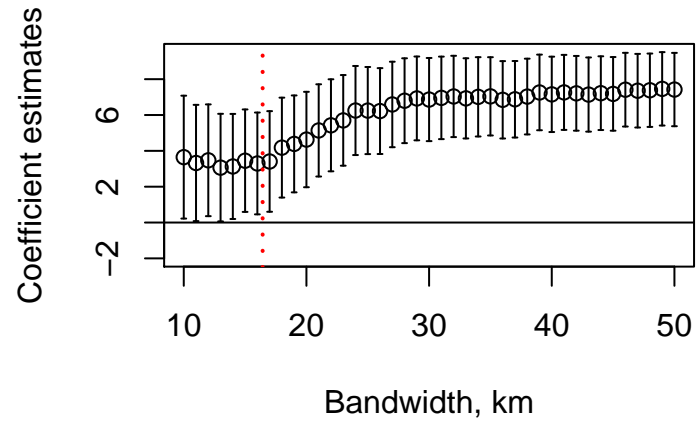
(b) Referendum 2005

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

Figure A8: Estimation plots, whole border
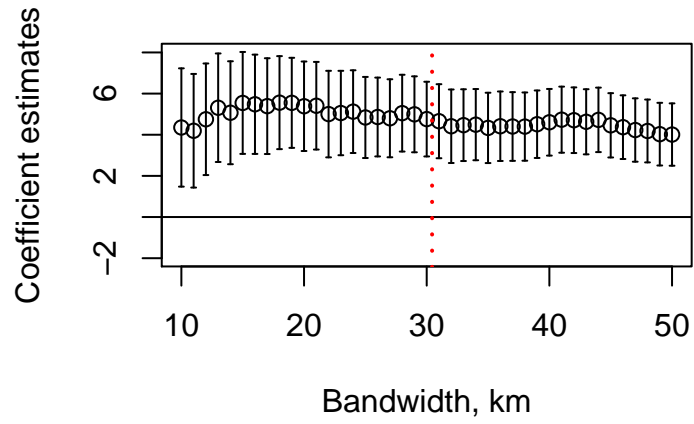
(a) Referendum 1992
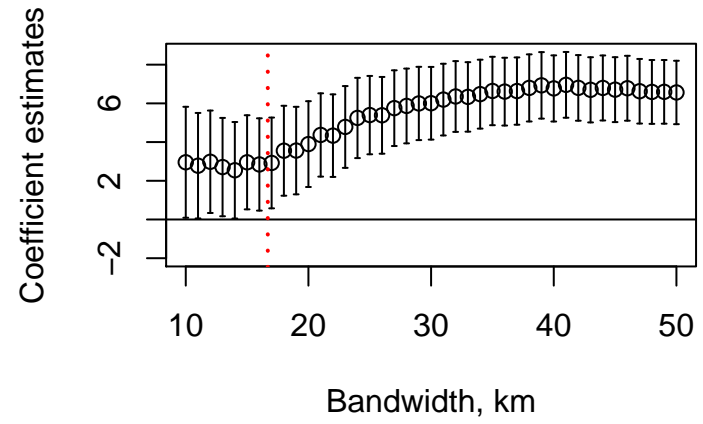
(b) Referendum 2005

Notes: Estimates of treatment effect, bandwidthsvarying between 10 to 50 kilometres, for the whole border. Local linear regressions, i.e. using a 1st degree polynomial. Dashed vertical line at one half of the IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors).
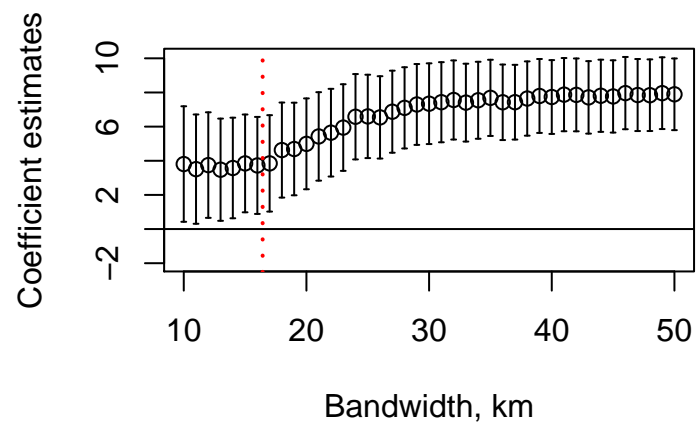
Figure A9: Estimation plots, no controls
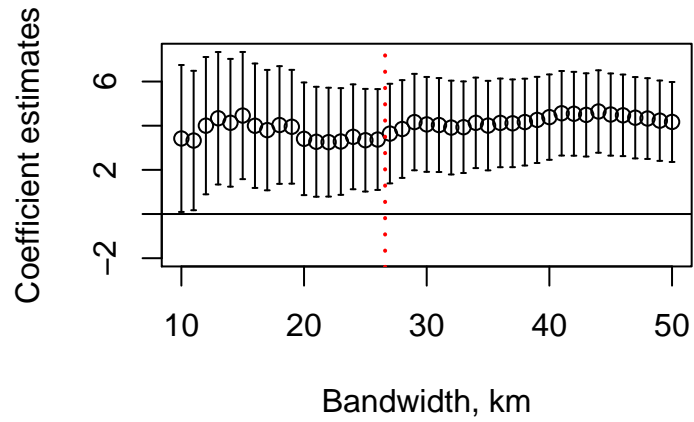
(a) Referendum 1992
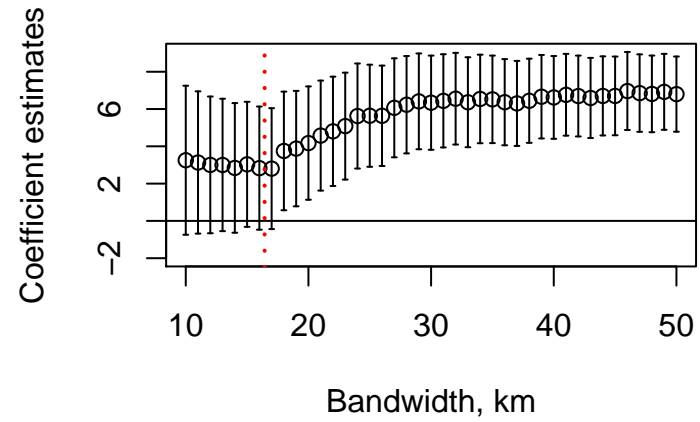
(b) Referendum 2005

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 one half of the IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors).

Figure A10: Estimation plots, 2nd degree polynomial
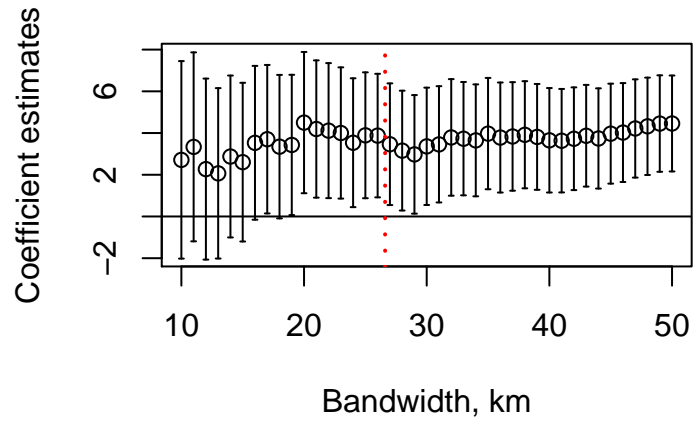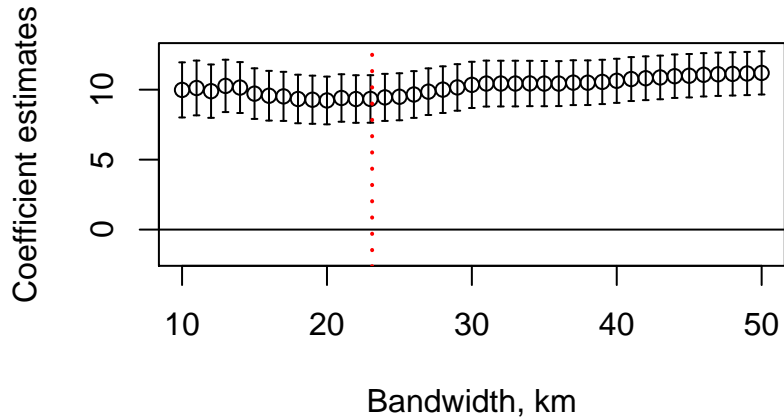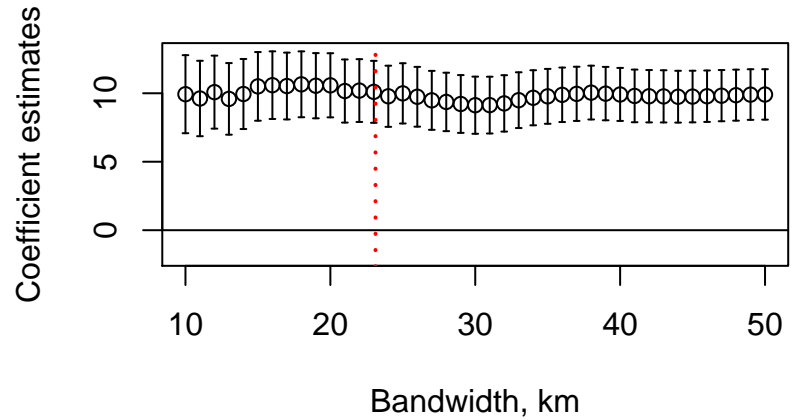

(a) Referendum 1992
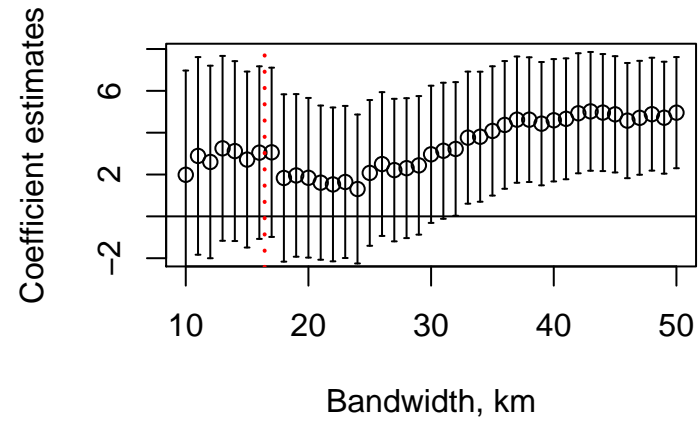
(b) Referendum 2005

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, within Lorraine. These regressions are based on a 2nd degree polynomial. Dashed vertical line at one half of the IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors). Our preferred specification chooses a very small bandwidth, and the local linear regression design. These graphs show that for larger bandwidths we get comparable results using higher order polynomials. The coefficient estimates are similar and results become significant with larger bandwidths at conventional levels as we would expect.

Figure A11: Estimation plots, controlling for longitude and latitude
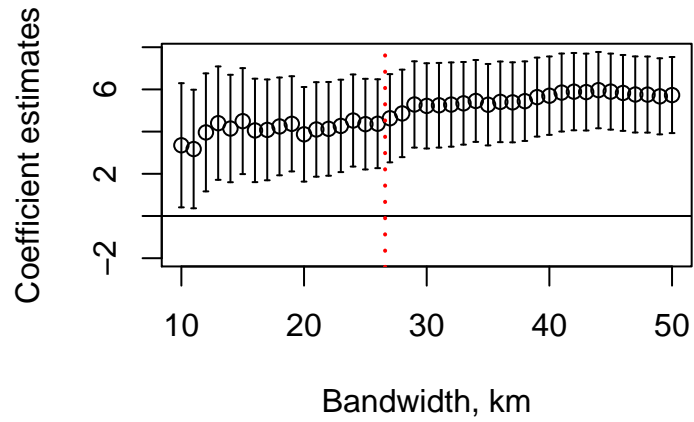
(a) Referendum 1992
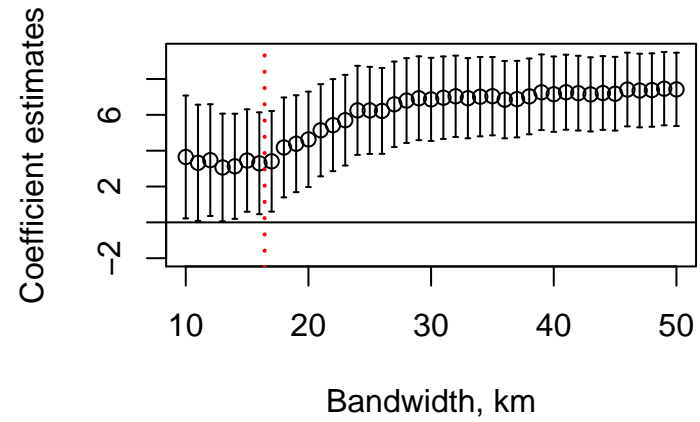
(b) Referendum 2005

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 one half of the 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 A12: Estimation plots, controlling for longitude, latitude and their interaction
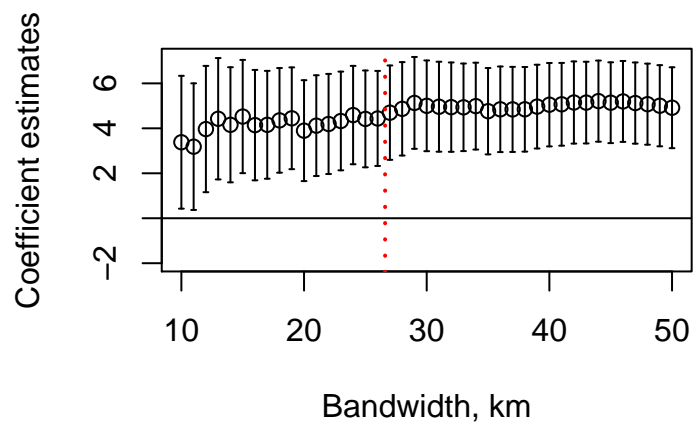
(a) Referendum 1992
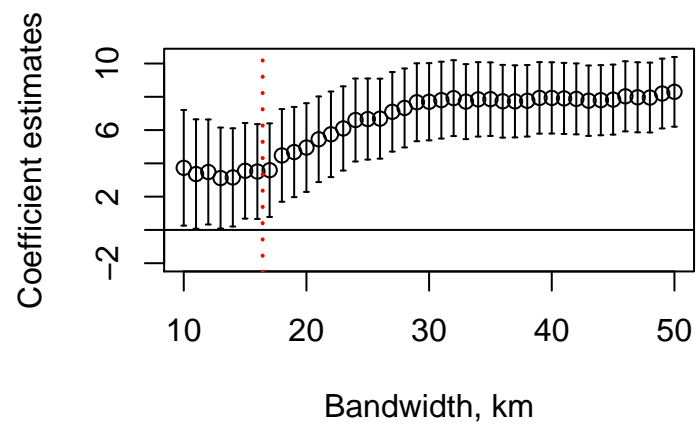
(b) Referendum 2005

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, within Lorraine, controlling for longitude, latitude and their interaction. Dashed vertical line at one half of the 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 A13: 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 former/historical language border. Dashed vertical line at one half of the 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.

Figure A14: Estimation plots, newspaper subscription shares, 1st and 2nd degree polynomial

(a) 1st degree polynomial

(b) 2nd degree polynomial

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, within Lorraine. These regressions are based on a 1st degree polynomial (a) and 2nd degree polynomial (b). Dashed vertical line at one half of the IK bandwidth. Solid vertical lines represent 90% confidence intervals (based on Conley standard errors). Our preferred specification chooses a very small bandwidth, and the local linear regression design. These graphs show that for larger bandwidths we get comparable results using higher order polynomials. The coefficient estimates are similar and results become significant with larger bandwidths at conventional levels as we would expect.

Figure A15: Estimation plots, newspaper subscription shares, controlling for longitude, latitude and their interaction
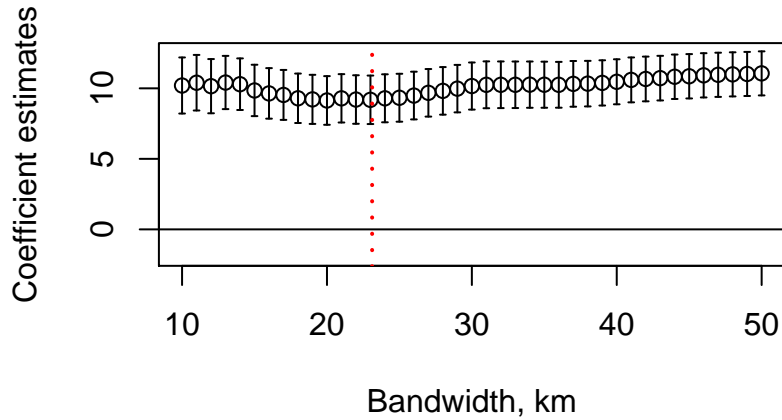
(a) Controlling for longitude and latitude
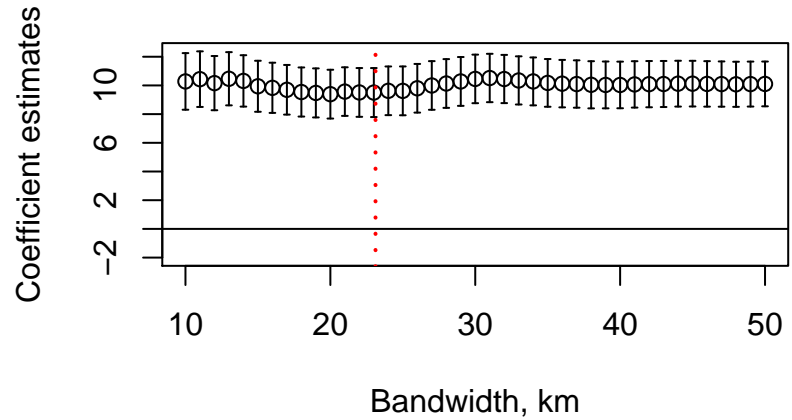
(b) Controlling for longitude and latitude, and interaction

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, within Lorraine, controlling for longitude, latitude and their interaction. Dashed vertical line at one half of the 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 A16: Estimation plots, newspaper subscription shares, controlling for distance to language border
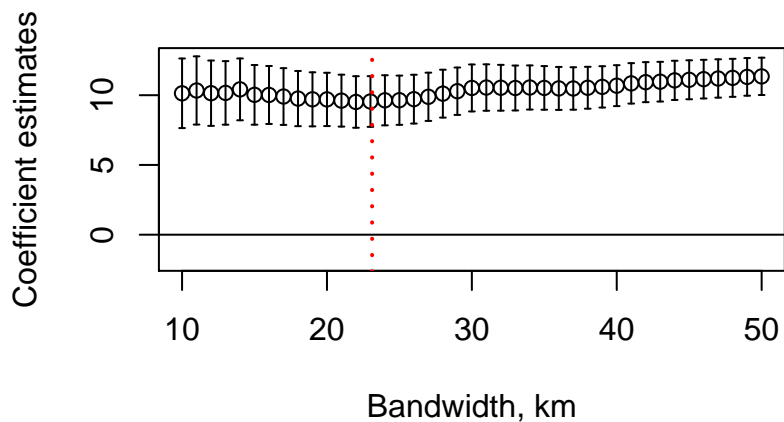
(a) No controls
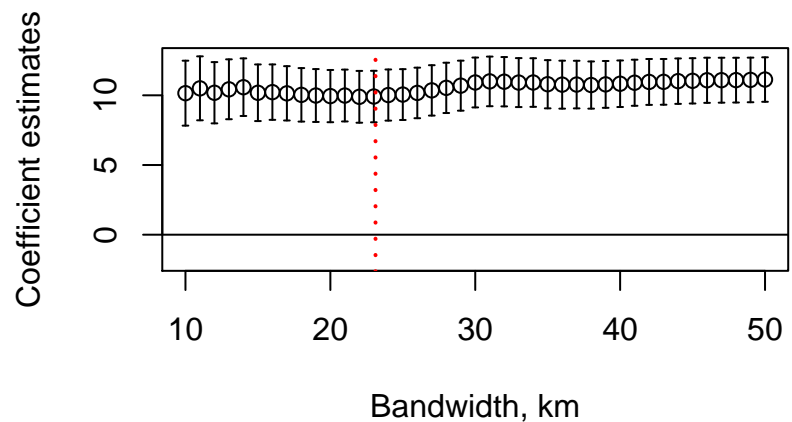
(b) Controlling for distance to language border

Notes: Estimates of treatment effect, bandwidth of 10 to 50 kilometres, within Lorraine, controlling for distance to the former/historical language border. Dashed vertical line at one half of the 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.

Figure A17: Newspaper subscription shares
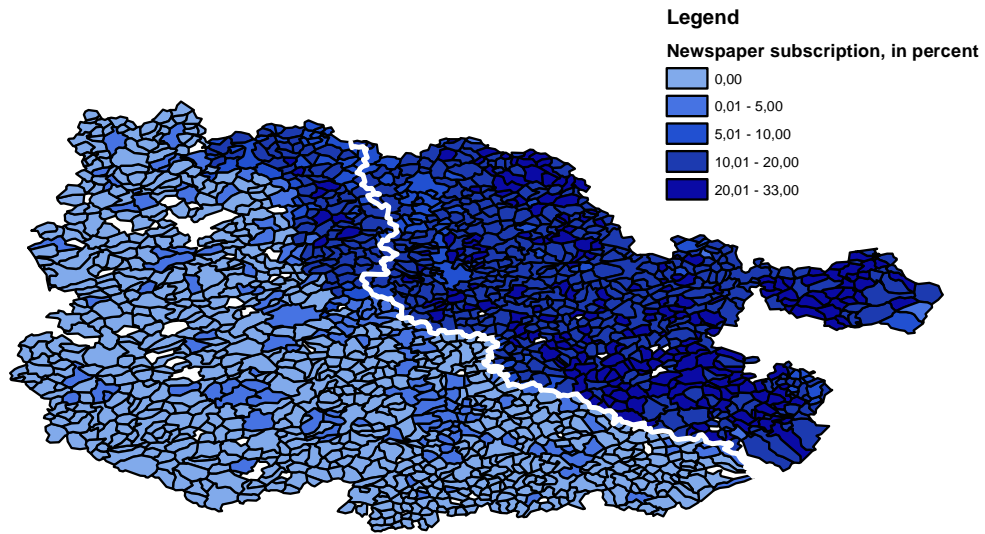
Notes: Municipal level averages share of newspapers subscribers to *Le Republicain Lorraine*. The white solid line the former border dividing the region. Darker colors reflect higher shares, and indicate a higher regional identity.

Le Republicain Lorraine

Figure A18: Subscription page Le Republicain Lorraine (1)
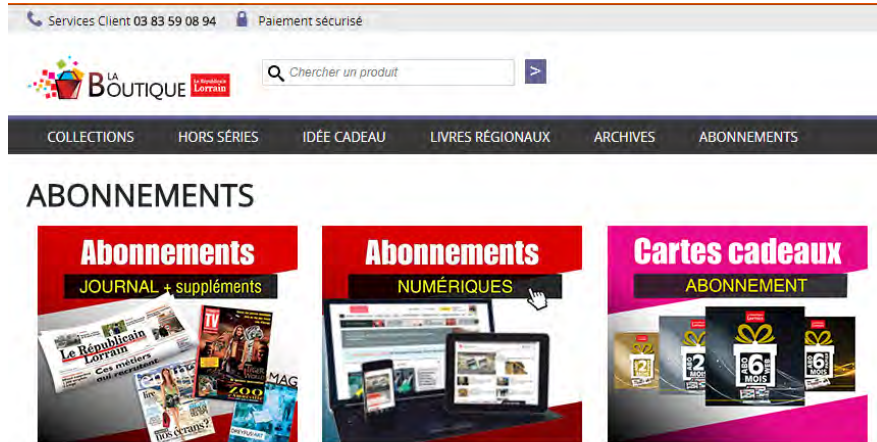
Notes: This is from the subscription page of the newspaper. We use the number of all subscriptions, but our source suggested that almost all subscriptions were still print subscriptions in 2014.

Figure A19: 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 A20: 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 A21: Homepage (regional) Le Republicain Lorraine

Notes: This screenshot shows an example of the regional news contained in the newspaper (Date: 2017.19.10).

Figure A22: Agreement referendum about establishing regions as political entity, 1969
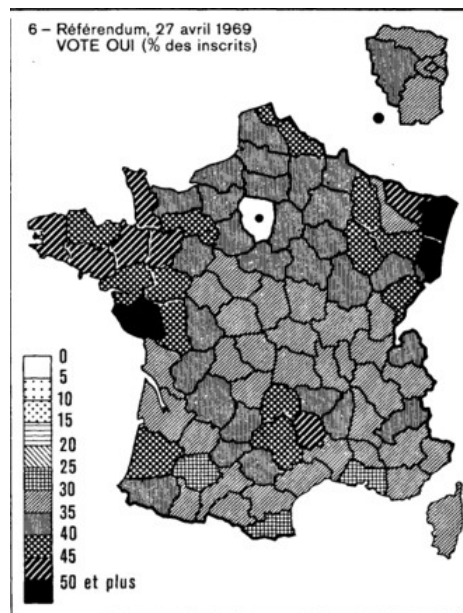
Notes: Referendum on creating regions as political entity (1969). Vote shares out of all eligible voters, i.e. out of yes votes, no votes, blanks and abstentions. There is no comparable map showing only the yes share out of valid votes, but the Online Appendix shows maps of abstentions that do not differ between departments. *Source:* Lancelot and Lancelot (1970).
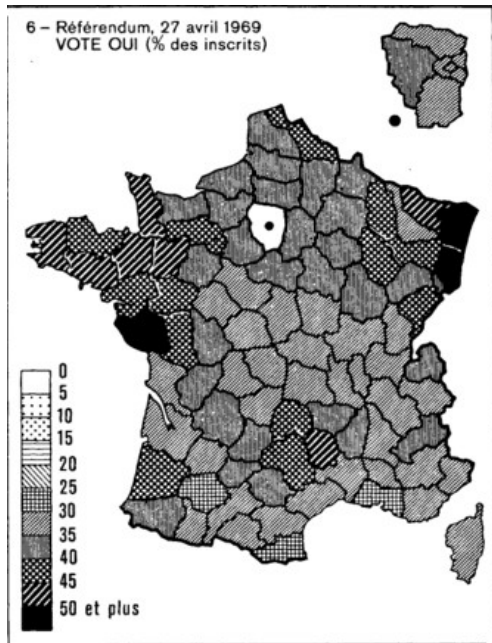
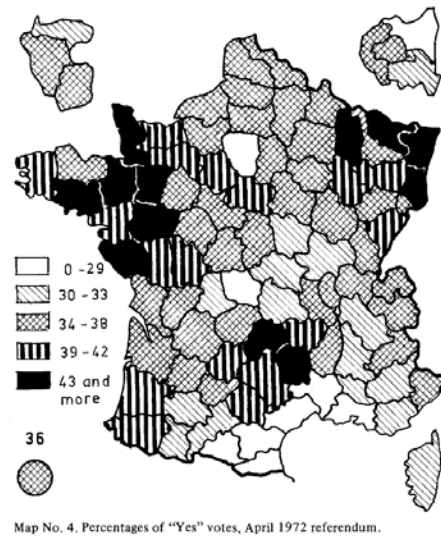Figure A23: Election and referendum results, 1968 and 1969
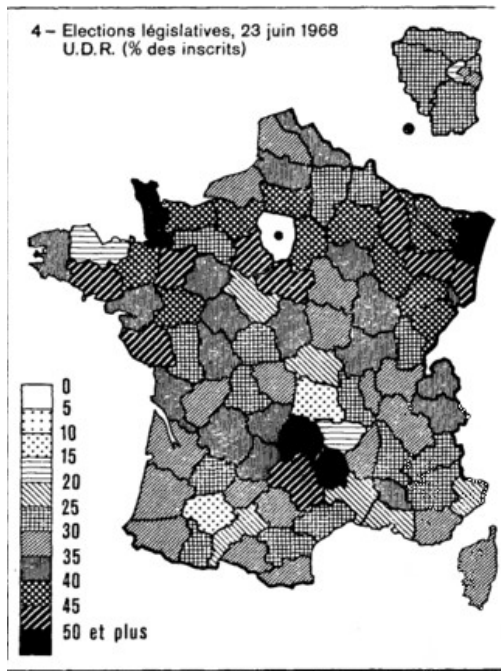
(a) Legislative election 1968
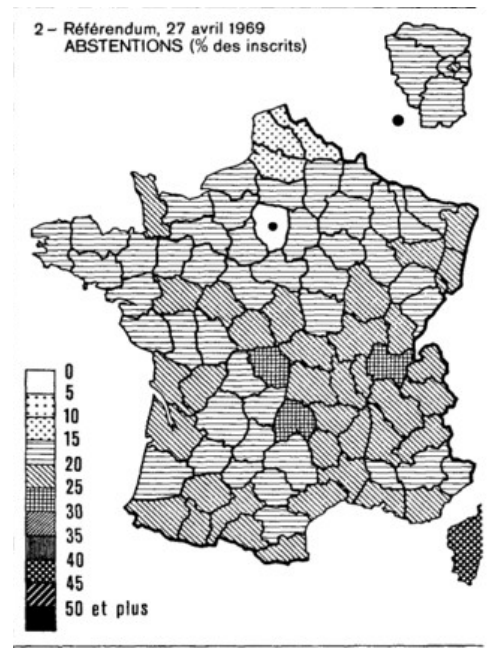
(b) Abstention 1969 referendum


(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).

Figure A24: Vote shares for regionalist parties

Legend

Vote share for regionalist parties, as percent

- 0,00 - 1,00
- 1,01 - 2,00
- 2,01 - 5,00
- 5,01 - 10,00
- 10,01 - 36,73
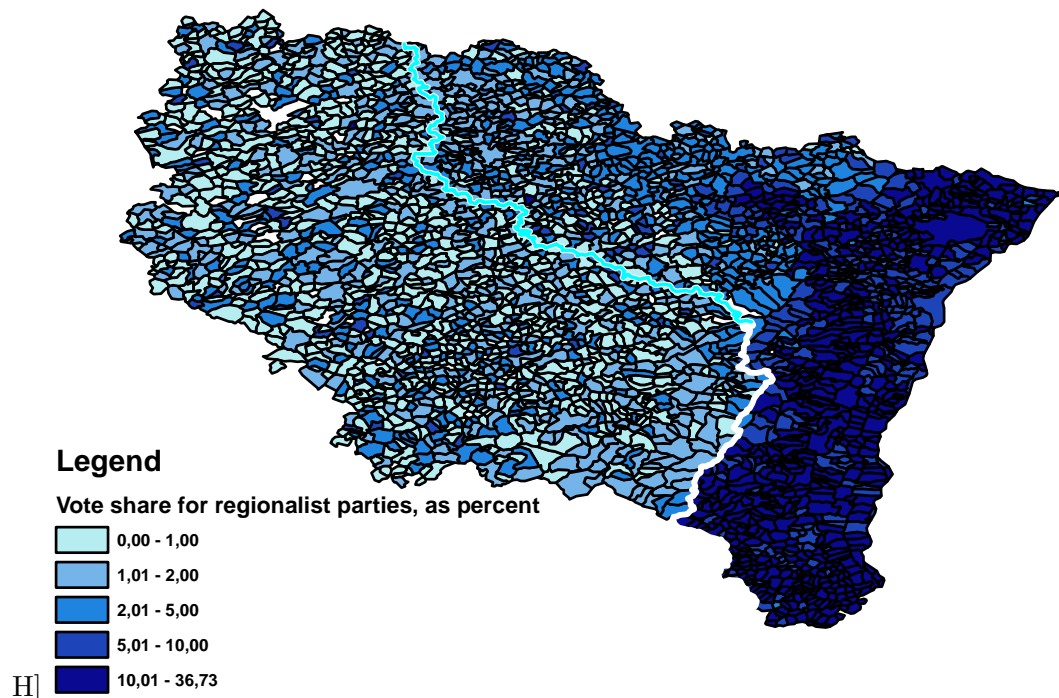
Notes: Municipal level vote shares for the list "Non à l'ACAL, Oui à nos régions!" in the 2015 regional elections. The list comprised of the parties "Unser Land", "Parti des Mosellans", and "Parti Lorrain". The white solid line represents the former border dividing the region. Darker colors reflect higher shares, and indicate a higher regional identity.

Figure A25: Identity differences by age cohort, Alsace and Lorraine
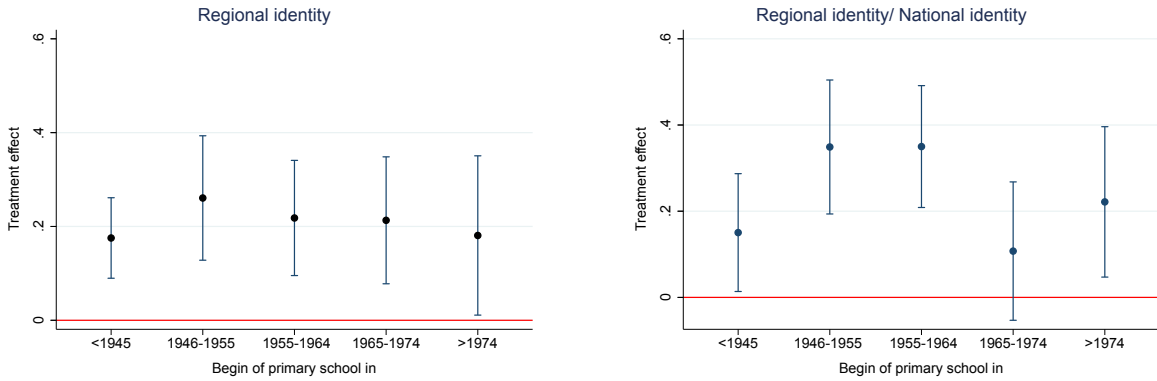
Notes: Using survey results for all of Alsace and Lorraine. The treatment effects refer to the parameter Δ which is part of the equation: $y_i = \pi + \Delta_g \times Age_g \times Treatment_i + \Gamma'_i \lambda + \eta_i$, where $Treatment_i = \mathbf{1}$[individual in treated region] and Γ comprises controls for (reported) age, employment status and sex. g indicates to which age cohort an individual belongs. The age cohorts are selected so 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, using respondents in Alsace and Lorraine.

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