

The origins of common identity: Evidence from Alsace-Lorraine*

Sirus H. Dehdari[†]
Uppsala University

Kai Gehring[‡]
University of Zurich, CESifo

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Abstract:

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

Keywords: Group identity, regional identity, identity formation, state formation, persistence, repression, assimilation, annexation, homogenization policies, border regions, Alsace-Lorraine

JEL: D91, H70, N40, Z19

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[†]sirus.dehdari@statsvet.uu.se

[‡]mail@kai-gehring.net

1 Introduction

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

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

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

Figure 3 shows the treated and untreated area of the Alsace and Lorraine regions. We first verify that there are no pre-treatment differences in regional and national identity, based on the *Cahiers de doléances* from 1789. Our main results using a geographical Regression Discontinuity Design (RDD) document a stronger regional identity in the treated area after that period, using municipal-level data from a referendum about higher regional autonomy in 1969 as a proxy for regional identity. We then show that this effect persists by using two related referenda in 1992 and 2005. We augment these measures of revealed preferences with survey evidence that people in the treated area state a stronger regional identity, while national identity is similarly strong in both areas.

Figure 1: Geographical location of the treated and untreated area



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

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

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

Regarding the formation of regionalist organizations, the historical evidence is detailed and clear. Many such organizations were established in the treated area already during the treatment

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

Furthermore, distinguishing the prior survey results by age cohort shows that the differences in regional identity are strongest for the two age cohorts after the treatment period ended. The differences remain stronger when incorporating Alsace in the analysis, which could be related to the stronger presence of regionalist parties or linguistic differences. Finally, we show that the differences in regional identity have important policy implications. People in the treated area show a significantly stronger preference for regional decision-making in many dimensions including schooling.

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

The natural experiment we exploit also allows us to study the same outcome variables in the same country environment, but examine people in their home region. We think the experiment is unique in the causal identification it enables us to, but historically and contemporaneously, there are many examples of regions that are a part of current nation-states and experienced, or still experience, tensions with the central state.

In Europe, examples of forceful integration into nation states range from Catalonia in Spain, to Corse in France, and Scotland in the UK. More violent examples of homogenization policies and repressive policies today are Chechnya and Crimea with their mixed populations in Russia, as well as Tibet and the Uighurs in China.¹ There are also a few selected cases where initially homogeneous

¹ The Polish regions of Silesia and Bohemia, as well as Kaliningrad and Danzig originally featured a strong influence

Table 1: Internal and external validity - types of forceful integration into nation states

Case example: Treatment consists of	Catalonia	South Tyrole	Alsace-Lorraine
Suppression of group identity during state integration	Yes	Yes	Yes
Annexation	No	Once	Twice
Mechanism	Increased investment in regional identity, set up regionalist organizations like parties, newspapers, etc.		
Result	Strong(er) regional identity, preference for regional decision-making		
Causality: counterfactual in same region	No	Yes	Yes
Causality: counterfactual in same country	Yes	No	Yes
External validity of Alsace-Lorraine case			
Threat	Test	Evidence	
Weaker National Identity	French nat. identity lower?	No difference in identity	
Stronger regional identity solely as result of switching nation twice	Timing of emergence of regionalist parties and newspapers	Strong regionalist parties already after first switch	

regions were split between different nation-states. The Kurdish region was split between Iran, Iraq and Turkey; the Austrian region Tyrol was split into Austrian Tyrol and South Tyrol in Italy; and the Basque region was split between France and Spain.

Table 1 illustrates both the possibilities for identification as well as the external validity of our natural experiment by broadly classifying those cases in three categories. Catalonia is a good example for the category of regions that experienced repression as part of the integration into a nation state. To some degree this occurred in every nation consisting of heterogeneous regions, we are interested in cases of enduring severe repression. South Tyrole is one prime example of the second category, areas that experienced repression related to a change in nation status that divided the region in two parts, usually following a war. Alsace-Lorraine more closely resembles that second category, with the additional benefit that due to the second change in nation status we can observe both parts institutional environment today.

Obviously, each case differs, and repression experienced while already being a member of a state can differ compared to being occupied and annexed after a war. Still, similar mechanisms seem to be at work in most of these cases. Citizens react to repression by forming regionalist organizations and privately investing in their regional identity as a response to repression. In both Tyrole and the Basque country, for instance, the part that arguably experienced more tensions with the central state (in Italy and Spain) also exhibit stronger regionalist parties and a stronger regional identity. The fact that our causal effect aligns with stronger regionalism in cases where we can only study

of German culture, which the central government tried to eliminate after WW2. Scania in Sweden was once Danish, and still has a distinct regional identity. Selected Sources can be found in Online Appendix, Section M.

correlations, and with the evidence on immigrants in [Fouka \(2018\)](#) is reassuring.

The one remaining limitation is to parse out the potential impact of the second change in nation status on the total treatment effect. While the second switch is inherent to the experimental design, we test whether it seems to have been a crucial aspect. A resulting clash between two competing national identities could lower the attachment of citizens to their current nation, and, if national and regional identity are substitutes, contribute to a stronger regional identity. We show, however, that French national identity is not lower in the treated area, and that national and regional identity are also not (perfect) substitutes. We also discuss and provide evidence that Germany never succeeded in installing a strong German identity in a robustness test that uses support for the German and French national soccer team during the World Cup 2014 on Twitter. Moreover, we are able to replicate our results focusing only on French-speaking areas, where it was least likely that any German homogenization succeeded. Finally, historical evidence documents the foundation of regional organizations and newspapers already during the initial German occupation ([Carrol and Zanoun, 2011](#); [Höpel, 2012](#); [Rothenberger, 1975](#)), and we use data about the share of regionalist MPs to show strong support for regionalist parties emerged only in the treated area during that time.

Our research adds and relates to different strands of literature. First, it adds to the literature on identity economics (e.g. [Akerlof and Kranton, 2000](#); [Fouka, Mazumder, and Tabellini, 2017](#); [Lowe, Nunn, Robinson, and Weigel, 2017](#)) and on the persistence and transmission of culture, identities and values (e.g. [Bisin and Verdier, 2010](#); [Gennaioli and Rainer, 2007](#); [Giuliano and Nunn, 2016](#); [Voigtländer and Voth, 2012](#) and [Tabellini, 2008](#)). Most existing models consider the case of two groups, a minority and majority group, and the choice whether to transmit certain values to the next generation via parental investment. [Bisin et al. \(2011\)](#) explain how oppositional identities can persist, and [Fouka \(2018\)](#) models how both vertical socialization (parental investment) and horizontal socialization (schooling) influence the strength and transmission of a group identity. Our results model also reflects input from these two dimensions and provides evidence on the mechanisms.

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

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

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

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

2 Historical background and theoretical framework

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

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

The peace treaty ending the Franco-Prussian War –July 19, 1870 to May 10, 1871 – then stipulated that large parts of Alsace and the eastern part of Lorraine were ceded to the newly created German state. The resulting border does not follow (i.) the existing département borders (Figure

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

2b), (ii.) any older historical border (Figures A4 - A7)³, (iii.) the historical linguistic border between French and German dialect speakers (Figure 2c). Of course, we want to better understand the reasons for this surprising decision. Luckily, historians cover the war period and negotiation process in detail.

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

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

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

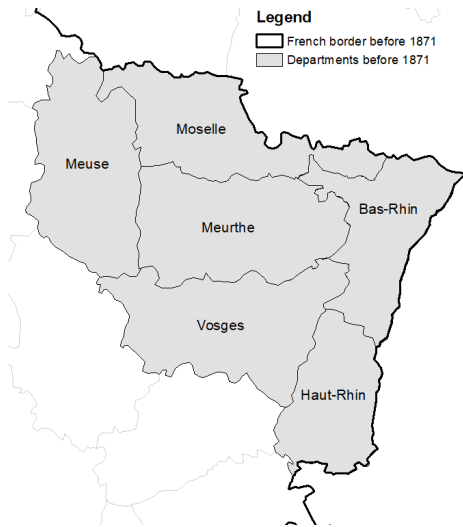
The annexed area was incorporated into the German Empire as the *Reichsland Elsass-Lothringen*. In Alsace, the départements already in place during French rule were converted into the German districts of *Oberelsass* and *Unterelsass*, corresponding to the former (and current) départements Haut-Rhin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

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

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

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

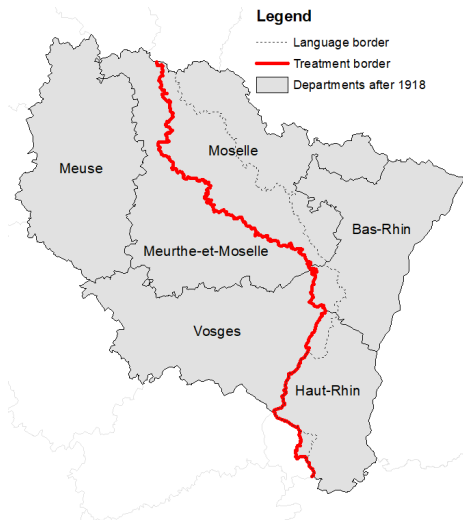
Figure 2: Historical maps: before, during and after German occupation



(a) Alsace and Lorraine: Fully integrated into France before division (1870)



(b) Alsace and Lorraine during German occupation (1871-1918)



(c) Alsace and Lorraine: Treatment border vs. French vs. Alemanic language border.



(d) Alsace and Lorraine after return to France 1918 & after treatment period (1950s - today)

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

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

Germany in 1870 or the US in 1776, such policies were a common feature of many integration processes.

Historians emphasize the homogenization policies by both Germany and France as the crucial aspect in which the treated area differed between 1870 and the 1950s (Goodfellow, 1993). Table 2 presents examples of the homogenization policies, which are divided into five categories for the sake of clarity: *Language* policies, aiming to oust local languages and foster the use of the national language; *Media* policies, restricting the freedom of press; *Social, political, military freedom, and equality* policies, aiming to restrict political rights, participation, socio-regional gatherings, and the choice to serve in the military; *Separation and segregation* policies, aiming to separate or segregate locals according to origin or nationality; and *Regional institutions and administrative personnel*, aiming at replacing regional institutions and administration. Table A8 shows a comprehensive list of both German and French policies until the early 1950s.

Table 2: Overview of policy categories and examples (see details in Table A8)

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

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

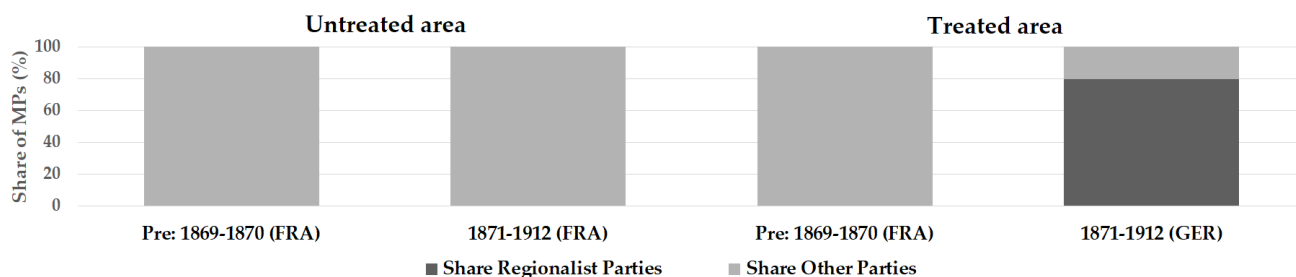
France regained control of the "lost provinces" in Alsace and Lorraine after the Treaty of Versailles (1919). The homogenization policies aimed at realigning the preferences and values of the lost

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

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

We can rule out that the long term difference in regional identity are solely caused by the fact that the treated area changed its nation status twice. Already during the German period, regional organizations like newspapers, clubs and regionalist parties (e.g. Goodfellow, 1993) were formed as a means to maintain regional identity during a time when the central state did not support or suppressed it. Regionalist parties in particular were a new phenomenon in the region. There were no MPs from such parties in the whole region before the treatment period, and there continued to be none in the untreated area. In the treated area regionalist parties, in contrast, even hold the majority of seats from the *Reichsland Elsass-Lothringen* in the German parliament. Setting up organizations like parties to maintain and strengthen regional identity is a common *technology* also used in comparable cases like South Tyrole or Catalonia.

Figure 3: Seat share of regionalist parties, pre-treatment and during German period



Notes: The bars display the share of seats of regionalist parties in the French parliament prior to the division in 1870/71, and in the French and German parliament after 1871 until 1912. Numbers are for Alsace and Lorraine before 1870, and for the *Reichsland Elsass-Lothringen* 1871-1912. The bar for 1871-1912 averages over those years; the share of regionalist MPs declines somehow over time as German policies became less repressive.

Sources: [Élections Législatives de la 3e république](#) and [Statistik des Kaiserreichs 1871–1918](#).

The next section will provide a simple model and definition to put these events into perspective, and highlight the mechanisms that can lead to persistent differences in identity.

2.2 Theoretical framework

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

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

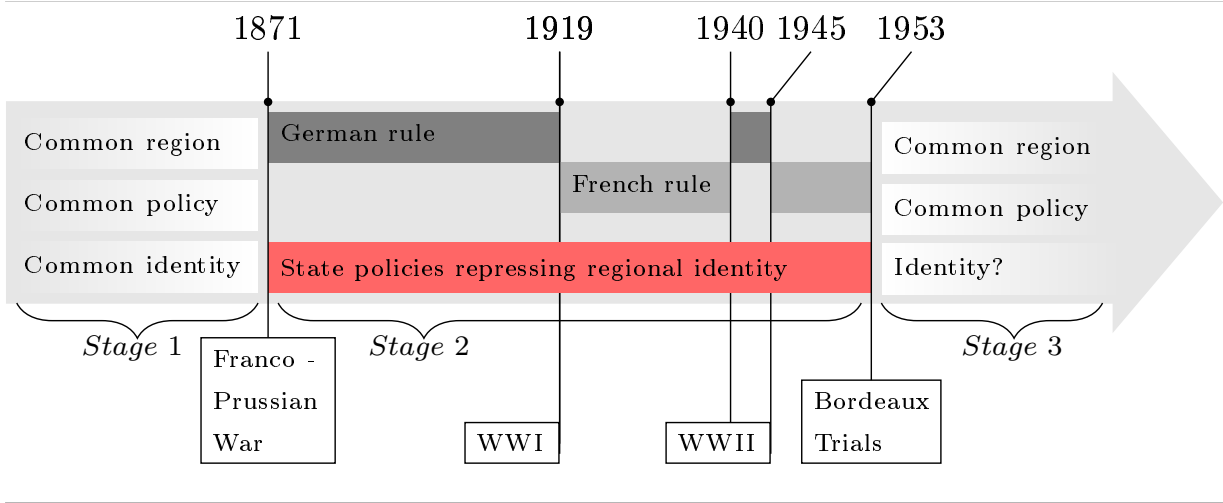
$$h^{i,j} = 1 - \left(\sum_{k \in K} \omega_k (p_k^i - p_k^j)^2 \right)^{1/2},$$

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

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

Our model illustrate how a temporary historical shock can lead to persistent differences in regional identity, but not necessarily in national identity. Every individual is a member of two groups: region and nation. Regional agents –parents and regional citizens –as well as the central government can influence the strength of regional and national identity through investments (cf. Cantoni and Yuchtman, 2013, and Cantoni et al., 2017). We assume the preferences p_k to be fixed, thus what the investments can achieve is a subsequent change in the weights ω_k . The nation-state chooses exogenously how much to invest in regional and national identity, for instance through public schooling

Figure 4: Timeline of events treated vs. control areas



(similar to Bisin et al., 2011). Regional agents respond to the choice of the central state, and select the best combination of regional and national identity investments. An investment in regional identity increases the weight put on an attribute that individuals from the region share, e.g. a tradition, value, or common history.

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

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

The game then unfolds in three stages, resembling the historical events as illustrated in Figure

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

4. In *Stage 1* (until 1870/71), both areas are exposed to the same public schooling policy. Because they belong to homogeneous regions, there is no reason to expect differences in regional agents' decision on how much to invest in infrastructure that facilitates the transmission of regional or national traditions and norms to future generations. In *Stage 2* (1871 – ~1953), people in the treated area are exposed to intrusive policies, exemplified by a public schooling policy that represses regional culture or at least teaches it less than in the counterfactual untreated area. If their utility from regional identity is high enough, regional agents invest a fixed cost, for instance in establishing organizations or in creating technologies to transmit regional identity to future generations. If schools no longer teach children a regional tradition like a song or dance, parents have to choose whether to invest in the ability to teach their children themselves. Alternatively, regional agents can cooperate to set up a regional party, association, or newspaper, which fosters regional culture. Finally, in *Stage 3* (after ~1953), the temporary shock is over and public schooling returns to teaching regional and national culture at similar levels in both areas. Nonetheless, the optimal level of investing in regional identity transmission remains higher in the treated area if regional agents choose to invest the fixed costs in Stage 2. As long as regional agents have no incentive to invest in the ability to teach national traditions, national identity should eventually converge back to the same level in the treated and non-treated area.

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

3 Data, measures, and identification strategy

3.1 Data

France is divided into 22 regions, which consist of 96 départements. These are further divided into 323 arrondissements and 1,995 cantons, but those two sub-units are of lesser importance and do not possess the status of a legal entity. The lowest unit are the 3,320 municipalities in Alsace and Lorraine. For our regression discontinuity estimations, we focus on this municipality level, using shapefiles from www.data.gouv.fr. The *National Institute of Statistics and Economic Studies* (INSEE) provides data on municipality characteristics like age composition, commercial activity and education. Electoral data, such as voter turnout, election results, and referenda results, are

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

obtained from the *Center for Socio-Political Data* (CDSP). In addition, we use survey results at the département level from a large scale survey, the *Observatoire Interrégional du Politique* carried out in 1999, 2001 and 2003. In contrast to all other French surveys, it offers a sufficiently large number of observations at the département level.

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

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

Main outcome: Referendum on Regionalization, 1969

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

Persistence: Referendum on Maastricht Treaty, 1992, and Referendum on Constitution for Europe, 2005

The Maastricht Treaty included several reform proposals about the institutional and political structure of the European Union (EU). The important aspect is that, assuming equal benefits and equal costs from EU reform at the border, the treaty was expected to enhance the role of regions in the

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

EU by fostering both regional decision-making and the expression of regional identity. The treaty was a huge step forward for regions in the institutional landscape in Europe. It formally introduced the principle of subsidiarity, which codified the aim that decision-making should be at the lowest feasible level of authority in the EU (Treaty on the European Union, 1992). In addition, it established a *Committee of the Regions* as part of the European institutional structure, which “created a political space for regions” (Fitjar, 2010, p.528). The Constitution for Europe, voted upon in a second (unsuccessful) referendum in 2005, would also have decisively affected the scope of regional decision-making. An important point was the reinforcement of the subsidiarity principle and “greater recognition to the role of regional authorities” as well as “respect for regional and local self-government as part of national identities”. Cross-border regions were introduced as a new way of representing common regional interests formerly divided by nation-states.

Thus, both outcomes to test for persistence rely on the assumption that two neighboring municipalities on each side of the treatment border do not differ in how much they profit from European integration, except the additional benefit from a stronger role for regions in these frameworks. Conditional on that, we use the treaty as a signal about regional identity. For this to be credible, these aspects must have been salient to voters. In fact, the widespread opinion in 1992 and 2005 was that the EU was “moving towards a Europe of the regions” (Chacha, 2013 p.208). EU integration was seen as reducing the costs of regional autonomy and allowing regions to bypass national governments and deal with Brussels directly. The perception of the Maastricht treaty was that it would allow regions to “seek a greater voice in EU affairs” and “reignite calls for decentralization and regional autonomy” (Chacha, 2013, p.209; Scott et al., 1994). For that reason, regionalist parties “favor European integration because it creates a more favorable political opportunity structure for their subnational autonomy movements” and “perceive the EU ‘as an ally against the central state’” (Jolly, 2007, p.110 & 124). The moderate regionalist Alsatian party *Le parti Alsacien*, for instance, campaigns on its website for an “independent Alsace in a federal European Union”.

Mechanisms: Regional newspaper subscriptions and regionalist parties

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

Out of all measures, the first referendum in 1969 has the advantage that it clearly focuses on fostering regions as an important political unit in France, thus clearly relating and measuring differences in regional identity. As explained above, the two referenda in 1992 and 2005 were both also clearly related to the political recognition of regions and more regional decision-making, and

Table 3: Variables, level of aggregation and region in order of appearance

#	Content	Preferences	Year(s)	Level	Paper
1	Geographic variables	-	-	Mun ^b	L ^b
2	Cahiers de doléances	Stated	1789	Dep ^b	L
3	Survey I	Stated	1999, 2001, 2003	Dep	L
4	Referendum	Revealed	1969	Mun	L
5	Referenda	Revealed	1992, 2005, 2007	Mun	L, A+L
6	Regional Newspaper	Revealed	2014	Mun	L
7	Regionalist parties	Revealed	2015	Mun	L, A+L
8	Survey II	Stated	1999, 2001, 2003	Dep	L, A+L

Notes: This table provides an overview about the main variables in order of appearance throughout the paper. We show all main results for the more credible comparison within Lorraine, but demonstrate that for those outcomes where data are available, the results hold when including Alsace. Generally, all tables and figures starting with an "A" can be found in the Online Appendix.

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

^b Regions refer to L = Lorraine or A+L = Alsace and Lorraine

perceived as such by the population. It is reassuring that there the strong overlap between regional and European identity is not only documented by other studies (Chacha, 2013), but also visible in our data (see Table A21). Moreover, département level data shows that, already in 1972, a referendum about EU expansion yielded a comparable vote pattern in the region than the 1969 referendum on the establishment of regions (Figure A11d). Nonetheless, as those two referenda also relate to broader questions about the European Union, we show that treated and control municipalities at the border do not differ in other factors that might make European integration more or less beneficial. We also compute geographical characteristics to evaluate the exogeneity of the border.⁹

Most of the outcome measures are available for both Alsace and Lorraine, except the referendum in 1969 and the regional newspapers. Table 3 shows their availability and usage. Table A6 shows summary statistics for our variables of interest in the full sample of municipalities in Alsace and Lorraine. Tables A1 and A7 show definitions and sources, as well as descriptive statistics for the variables. The next section begins by focusing on Lorraine, which provides a better counter-factual, due to the exact location of the border being more clearly exogenous. Later, we show that the results hold when including Alsace. This is reassuring with regard to the external validity of the results, and allows us to compare the two regions with regard to the mechanisms.

3.2 Identification strategy

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

⁹ Ruggedness: <http://diegopuga.org/data/rugged/> from Nunn and Puga (2012). Elevation: accessed through the web page of ESRI.

Soil Suitability: <http://www.fao.org/nr/gaez/en/>. To best approximate pre-“Green Revolution” growing conditions in 19th and early 20th-century Europe, we choose a medium input intensity and irrigation.

regression model:

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

where y_c is the outcome variable of interest for municipality c , $Treatment_c$ is a dummy taking the value 1 for municipalities in the formerly occupied region, and 0 otherwise. $p(\cdot)$ allows for different functional form of the running variable, which measures the direct distance from the municipality centroid to the former national border. z_c comprises the distances to the city of Metz, city of Strasbourg, city of Nancy, and the current French-German border. As suggested by [Gelman and Imbens \(2017\)](#), we include a linear term for the distance, allowing its coefficient to vary on either side of the border. This means that we estimate a local linear regression model according to (1) close to the former border, using a uniform kernel density function, for different bandwidths. Figures [A21](#) through [A27b](#) present estimates from plausible alternative specifications.¹⁰ All results from those specification are in line with those presented in the main paper. We use Conley standard errors accounting for spatial spill-overs to neighboring municipalities. Table [A26](#) shows that the main results are robust to clustering at the cantonal or département level.

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

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

where x_c is the distance to the border normalized at 0. This means that the distance for municipalities in the treated region is equal to the actual distance, while it is equal to the actual distance multiplied by minus one for municipalities in the untreated region. Under the assumption of the conditional expectation function, $\mathbf{E}[y_c | x_c]$, being continuous, the treatment effect is equal to the difference in the outcomes at the border between municipalities in the treated and untreated area. This assumes that all other factors relevant in explaining the outcome are continuous at the border and that the treatment is orthogonal to potential outcomes. We address this by formally testing for discontinuities in geographic factors, which are not affected by the treatment. Specifically, we show that there is no discontinuity in terrain ruggedness, elevation, and soil suitability for the production of wheat, potatoes and barley (Tables [A15](#) and [A14](#), and Figure [A8](#)).¹¹

Moreover, to get a sense of identity before 1871, we make use of the fact that Louis XVI, shortly before the French revolution, wanted to assess the loyalty of his citizens. This data, known as the “Cahiers de doléances”, specifically asks about the relative strength of regional identity compared to national identity. This was originally text data, which was transformed to a numerical scale between

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

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

1 and 3, and aggregated to between 4 and 8 units per département [Hyslop \(1968\)](#). Following [Johnson \(2015\)](#), we exclude the *first estate*, clergy, which was more driven by religious policy. We include the *second estate*, nobility, the *third estate*, other citizens, as well as the category *unified orders*. If assessments for more than one estate are available, we take the arithmetic average. [Table 4](#) shows that the average response for all four départements within Lorraine is equal or approaching 2, and that there is no statistically significant difference between Moselle and the untreated départements.

Table 4: National vs. Regional identity in Lorraine 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 \(1968\)](#), where the value 3 corresponds to "National patriotism strongest", 2 corresponds to "Mixed loyalties: national patriotism combined with regionalism or class spirit, or both.", and 1 corresponds to "Other loyalties, regional, or class, or both, outweigh national patriotism". [Hyslop \(1968\)](#) computed these values at the level of selected important city areas based on more disaggregate reports in verbal form. We assign the city areas to current départements.

^a Heteroscedasticity-consistent (robust) standard errors.

4 Main results

4.1 Survey evidence

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

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

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

According to [Table 5](#), people in the treated area clearly express a significantly stronger common regional identity today. In contrast, there is no difference in common French identity. We also compute the ratio of regional relative to national identity, and standardize this variable to ease interpretation. People in the treated areas of Lorraine exhibit a ratio that is 14 percent of a stan-

dard deviation higher. It is interesting that there is no difference with regard to national identity, emphasizing the importance of our model and definition where identities need not to be substitutes. This is the comparison within Lorraine, Table A19 shows that the differences remain similar, but larger in magnitude when including Alsace.

Table 5: Survey results, (Lorraine, département level)

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

Notes: Sources are the Observatoire Interrégional du Politique (OIP) 1999, 2001, and 2003, using respondents in the three départements in Lorraine. Data allows only assigning respondents to treated or untreated départements. Identity is measured on a 4-point Likert-scale. Table A19 shows similar results for all of Alsace and Lorraine. A positive Δ indicates that people in the treated region agree more with the statement. Heteroscedasticity-consistent (robust) standard errors.

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

4.2 Referenda results

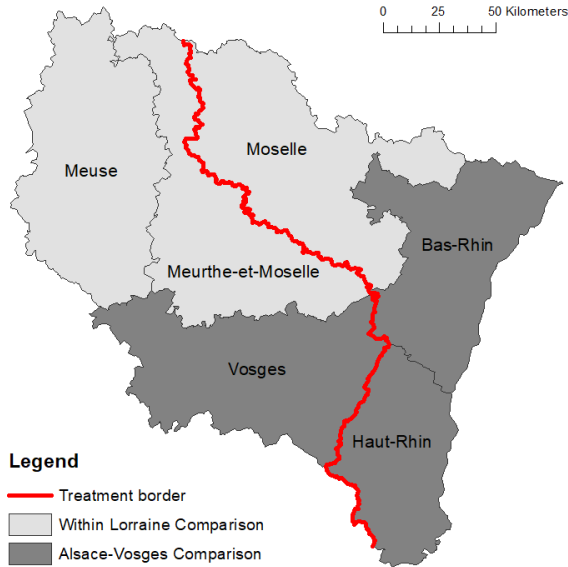
Figure 5 provides maps of the referenda results from 1969, 1992, and 2005. Figures 5b (available for Lorraine only), 5c and 5d show higher agreement to the referenda that would strengthen regional decision-making powers in the treated area to the right of the former border.¹² It is important to note that there are no obvious visible differences in turnout for all three votes (see Figure A12). Moreover, Figure A11c shows no comparable pattern of support for De Gaulle in the 1968 presidential election, suggesting that preferences about him as a person do not explain the differences in 1969.

Table 6 shows OLS estimates of the differences in outcomes between the treated and the untreated areas, including controls. Including all municipalities in the regions enables us to assess the external validity of the following RD estimates. Although the RDD has advantages in most dimensions, potential sorting is more likely to be an issue at the border because the costs of moving to neighboring municipality are lower. The OLS specifications avoid this problem. If both approaches yield similar results, we can not only disregard worries about sorting, but also have more faith in the causal interpretation of the département level survey results.

For *Share Yes 1969*, *Share Yes 1992*, and *Share Yes 2005*, the coefficients indicate stronger regional identity in the treated area. The interpretation of the regression coefficient for the treatment

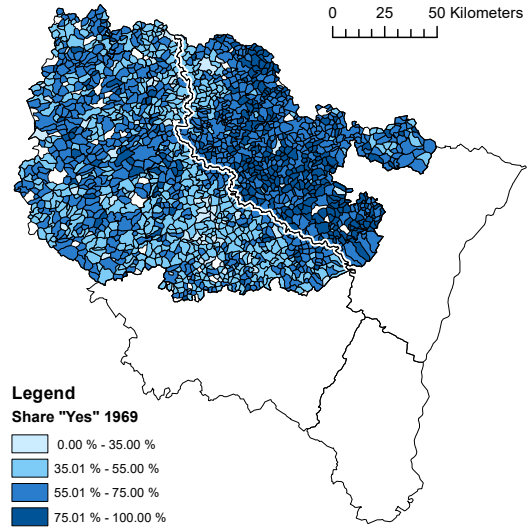
¹² Figure A11a shows at the département level that the comparison for 1969 using Alsace suggests a similar, if not larger, difference. The yes-vote share out of all eligible voters was above 50 percent in Alsace and between 40 and 45 percent in neighboring Vosges.

Figure 5: Maps of municipal level outcomes of referenda in 1969, 1992 and 2005



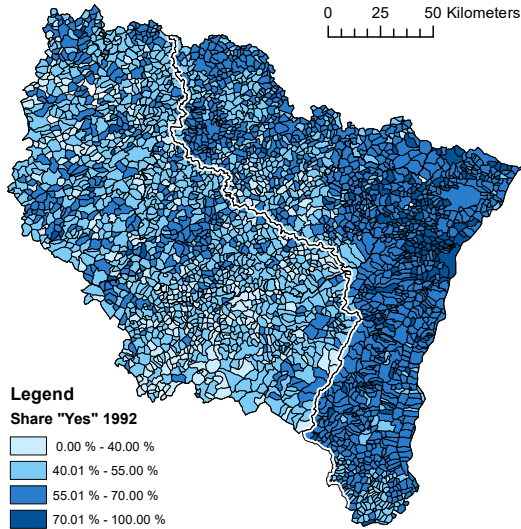
Notes (a): The light grey area shows the historical region of Lorraine, on which our main analysis is based. For the outcomes in c.) and d.) we can show that our results hold when including Alsace-Vosges, indicated by the dark grey area. For 1969, department-level results in Figure A10 also indicate a similar pattern for Alsace-Vosges.

(a) Treated and control area Lorraine and Alsace



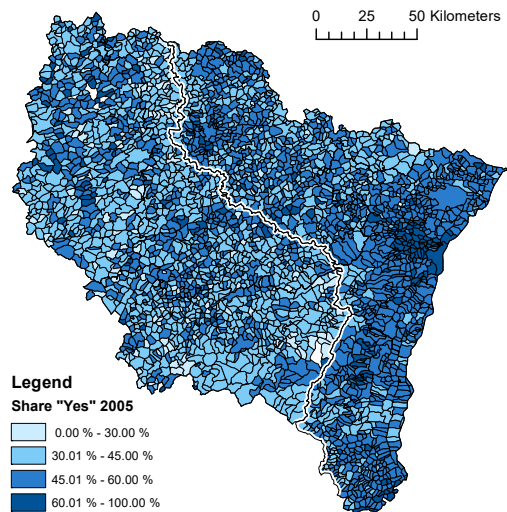
Notes (b): Share of yes votes in Charles De Gaulle's 1969 referendum on more regional decision-making. Results for 1969 are based on newly digitized historical newspapers that were available only for Lorraine, matched to current municipalities. The treatment border is highlighted in white. Darker shades reflect higher values. Figure A11a shows no differences in prior support for De Gaulle.

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



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

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



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

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

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

Table 6: OLS estimates, municipalities in Lorraine

Dep. Variable:	Share Yes 1969 (2)	Share Yes 1992 (3)	Share Yes 2005 (4)
Treatment	13.376 (1.430) [<0.001]	6.323 (1.022) [<0.001]	6.065 (1.099) [<0.001]
Adj. R-squared	0.259	0.089	0.031
Obs.	1677	1813	1818

Notes: OLS estimates using whole sample of municipalities in all départements in Lorraine. The outcomes are the share of Yes votes in the 1969 referendum, in the 1992 referendum, and in the 2005 referendum. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, distance to Nancy. Conley standard errors (10 kilometer bandwidth) are displayed in parentheses and *p*-values in brackets.

Accordingly, the OLS estimates are in line with the survey results concerning to regional identity. Now we turn to the RDD results, considering *Share Yes 1969* as our main outcome and *Share Yes 1992 & 2005*) to assess the persistence of the effect. We show results for bandwidths of 10, 15 and 20 km, and one specification using the optimal IK bandwidth (Imbens and Kalyanaraman, 2012). The closest choice of 10 km basically compares only municipalities directly at the border with their direct neighbors. This should eliminate all concerns regarding comparability of municipalities, as distances to neighboring countries or cities are virtually identical.

Table 7 shows the estimated treatment effect on regional identity effect for 1969, our main result and the clearest measure of regional identity, is about 13 percentage points at the smallest bandwidth of 10 km. This reflects the mid range reaction at a time when the population still contained both individuals who experienced repression, as well as individuals who grew up later and were affected only indirectly through the investments in regional identity by previous generations. The differences in the two referenda later document persistence and indicate that the stronger regional identity is indeed transmitted across generations. For bandwidths between 10km and the efficient bandwidth, the effects range from 3.7 percentage points to 6.369 percentage points in 1992, and 3.3 to 6.875 percentage points in 2005.¹⁴ The effects are significant in all specifications for 1969 and 1992, and

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

¹⁴ That the simple OLS estimation only overestimated the actual effect by very little, increases our faith in the causal interpretation of the survey results, which relied on a comparison of group means at the département level.

turn significant approximately at a 20 km bw for 2005. Moreover, the point estimates are rather stable across bandwidths, with lower-p-values for the optimal bandwidth as one would expect.

Panel A in Figure 6 shows the clear jump at the border for all three referenda results. Figure A14 shows the same plots with a 50km bandwidth; Figure A15 with a second order polynomial. In all specifications the jump at the border is always clearly visible. Figure 7 shows the treatment effects for 1969 smoothly varying the bandwidth between 10 and 50 km. The estimates are remarkably smooth across bandwidths, and clearly remain statistically significant throughout.

Table 7: Discontinuities in referenda results, municipalities in Lorraine

Dep. Variable:	Share Yes 1969			
	(1)	(2)	(3)	(4) ^a
Treatment	12.823 (2.717) [<0.001]	9.999 (2.570) [<0.001]	9.087 (2.514) [<0.001]	10.359 (2.373) [<0.001]
Obs.	388	563	712	1123
Dist	10 km	15 km	20 km	35.54 km
Dep. Variable:	Share Yes 1992			
	(1)	(2)	(3)	(4) ^a
Treatment	3.721 (2.180) [0.089]	5.218 (1.971) [0.008]	4.758 (1.804) [0.009]	6.369 (1.507) [<0.001]
Obs.	408	599	765	1512
Dist	10 km	15 km	20 km	50.19 km
Dep. Variable:	Share Yes 2005			
	(1)	(2)	(3)	(4) ^a
Treatment	3.300 (2.108) [0.118]	2.966 (1.943) [0.127]	4.230 (1.889) [0.025]	6.875 (1.724) [<0.001]
Obs.	408	599	765	1045
Dist	10 km	15 km	20 km	29.10 km

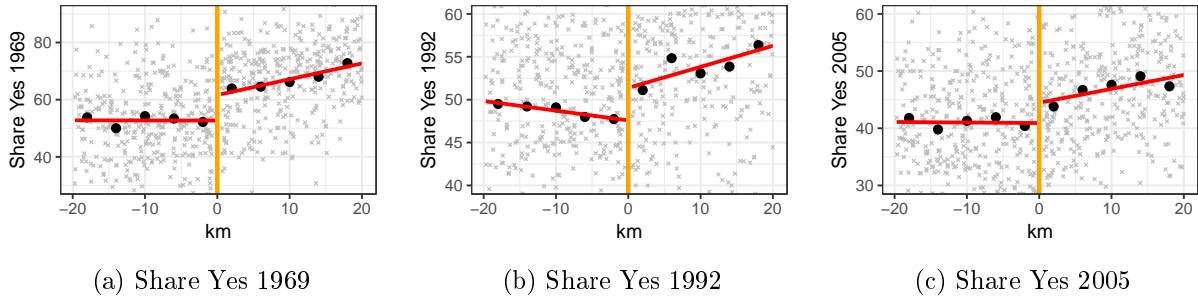
Notes: Discontinuity at the treatment border using municipalities in Lorraine. The outcomes are the share of Yes votes in the 1969 referendum, in the 1992 referendum, and in the 2005 referendum. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, distance to Nancy. Conley standard errors (10 kilometer bandwidth) are displayed in parentheses and *p*-values in brackets.

^a Estimates from using the optimal IK bandwidth.

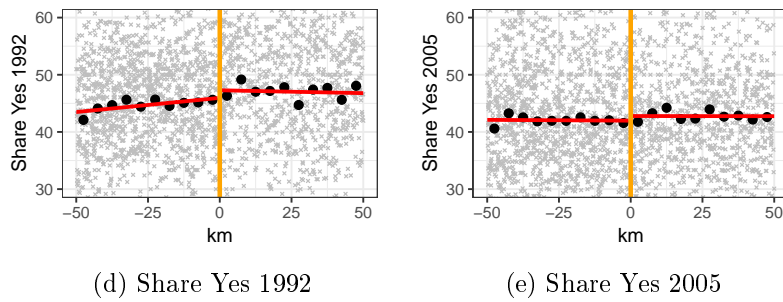
Historical evidence suggests that Alsace and Lorraine were as well integrated into France prior to the Franco-Prussian War as other regions. We implement a *placebo* test using the 1992 and 2005 referenda results in the regions geographically west of the control area, and check for a discontinuity at the border between this western part of Lorraine and the rest of France to further validate this. If the complete region was already exhibiting a stronger regional identity previously, we would expect a discontinuity here. Figure 6, Panel B, however, clearly illustrates that in contrast to Panel A there is no discontinuity at this placebo border. Table A12 shows the absence of discontinuities in the corresponding regression table. Table A31 shows another placebo test using the pre-1870 département border within Moselle, and also finds no significant discontinuities.

Figure 6: RD plots for voting outcomes 1969, 1992 and 2005

Panel A: Regional identity at the treatment border

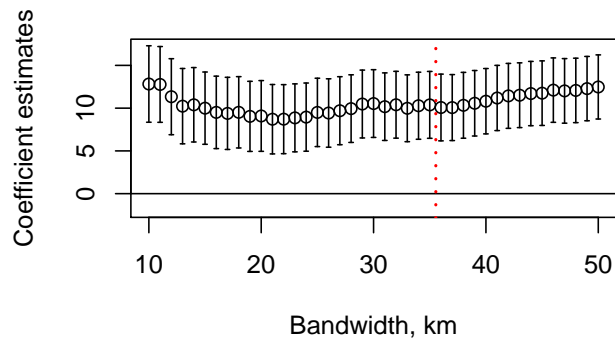


Panel B: Regional identity at a placebo border



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

Figure 7: Estimation plots for 1969 referendum, Lorraine



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

Although Table 7 indicates already that the choice of the bandwidth does not affect our results, Figure 7 clarifies this further. It depicts the individual coefficients and confidence intervals across all plausible bandwidths ranging from 10 to 50 kilometers for the 1969 referendum. The effect size varies little and is always positive. As we would expect, the estimation becomes more precise as we increase the bandwidth, and the coefficient remains remarkably stable. Figure A18 to A27 show the same plot for the 1992 and 2005 referenda. Moreover, they show that the results are not affected when using no control variables, or when additionally controlling for (ii.) border segments, (iii.) distance to the language border, (iv.) longitude, latitude, as well as (v.) longitude, latitude and the interaction between the two.

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

In a next step, we want to examine whether we can find the same results when including Alsace in the analysis. The treatment border in Alsace partly follows linguistic differences, hence the counterfactual municipalities in Vosges might differ with regard to the traditional dialect and culture. Table A17 indicates that at the border the treated municipalities in Alsace are richer and slightly younger on average. However, when looking at the extended RDD results in Table 8, we find that the treatment effects when including Alsace are of a similar magnitude and remain statistically highly significant.

Table 8: Robustness- Discontinuities in referenda results when including Alsace

Dep. Variable:	Share Yes 1992		Share Yes 2005	
	(1)	(2) ^a	(3)	(4) ^a
Treatment	4.395 (2.060) [0.033]	3.869 (1.244) [0.002]	2.624 (1.790) [0.143]	5.816 (1.445) [<0.001]
Obs.	619	2810	618	1687
Dist	10 km	58.76 km	10 km	29.48 km

Notes: Discontinuity at the treatment border in Lorraine. The outcomes are the share of Yes votes in the 1992 referendum, and in the 2005 referendum. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, distance to Nancy. Conley standard errors (10 kilometer bandwidth) are displayed in parentheses and *p*-values in brackets.

^a Estimates from using the optimal IK bandwidth.

5 Mechanisms, persistence and policy preferences

5.1 Mechanisms

After documenting that there is a causal effect of occupation, repression and the associated homogenization policies on regional identity, we are interested in potential mechanisms. It is plausible that the exposure during the treatment period unconsciously changed the attitudes of treated individuals, which affects potentially unobservable aspects of raising their children (Dohmen et al., 2012). Moreover, people in the treated area could also consciously have decided to invest in instruments that help to express, strengthen and transmit regional identity. The theoretical model in Section 2.2 focuses on investments made by regional agents, for instance by founding regional organizations like clubs, political parties, and media outlets.¹⁵ We cannot reliably compare clubs as the legal rules for establishing and registering a club differ between the treated and control area, and the available information about festivities does not reliably identify those related to regional culture. However, we can exploit information about regionalist parties and regional media usage. Note that logically all discontinuities reflecting potential mechanisms can also be considered as outcomes (and are thus bad controls in a regression using the other outcomes), which is why we are not able to estimate how much any particular mechanism has contributed to the differences.

Regionalist parties are also interesting with regard to the chronological order of cause and effects. Fouka (2019) finds that, in her sample of German immigrants exposed to repressive policies in the US, the observed increase in common group identity occurs only after the treatment ended (Fouka, 2018). Accordingly, we are also interested in whether the effects that we document begin to materialize during or after the treatment. Historical evidence indicates that the repressive policies already triggered an increase in regional identity during the treatment period (Goodfellow, 1993; Harvey, 1999). This could be observed through periods of public protest, the establishment of regional newspapers (Callender, 1927), and the emergence and success of regionalist parties.

Regionalist parties

Regionalist parties emerged and enjoyed great electoral success during German occupation, with a vote share of between 30.2 percent and 56.6 percent (Hiery, 1870). The success of regionalist parties continued during the interwar period under French rule. The Independent Regional Party for Alsace-Lorraine, for instance, received 11.5 percent of the votes in Bas-Rhin in 1928. Zanon(2009, p.62) suggests that “autonomists were also present in the Moselle and like their Alsatian counterparts demanded autonomy for Alsace-Lorraine.” Accordingly, the historical evidence indicates that both German and French policies triggered investments in the creation of regionalist parties that then enjoyed electoral success. There were no comparable successful parties during the treatment period in the untreated area. It is also important to note that historians classify the vast majority of these

¹⁵ Ochsner and Roesel (2017) suggests that war memorials and statues also function as a technology to transmit a common history. There are some well-known statues in Lorraine that might reactivate the memory of repressive policies, but they are mostly related to WWI or WWII, which makes a distinction difficult.

parties after WWI as aiming for more regional autonomy, rather than for a return to Germany (Rothenberger, 1975). After the end of WWI, the regional parliament even proclaimed a sovereign region of Alsace-Lorraine. This, however, was not accepted by the French government.

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

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

Regional newspaper subscriptions

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

Table 9 shows a clear discontinuity in subscription rates at the treatment border. At the 10 kilometer bandwidth, the share of subscribers out of all households is around 10 percentage points higher on the treated side. The result is highly significant with p-values below 0.01 in all specifi-

cations, and the clear discontinuity is also graphically visible in Figure 8 and in the map in Figure A29). Table A10 shows that the effect size is not driven by differences in the spoken dialect. We can also try to disentangle supply and demand side explanations by controlling for the number of points of sale in 2014 (there are more regional offices in the treated area). Conditioning on supply side differences barely affects the point estimates, suggesting that demand side differences dominate (Table A32).

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

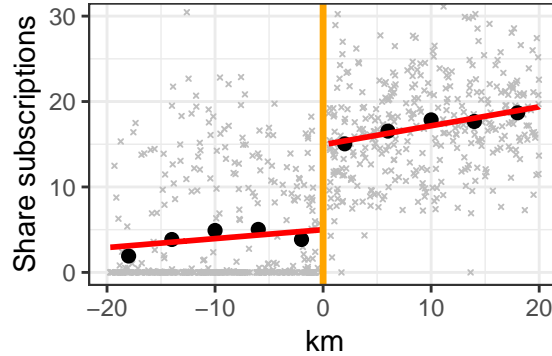
Table 9: RD results: Regional newspaper subscription shares, and regionalist parties

Panel A: Share households with subscription of “Le Republicain Lorraine”, Lorraine				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	10.372 (1.983) [<0.001]	10.450 (1.893) [<0.001]	10.101 (1.816) [<0.001]	11.096 (1.587) [<0.001]
Obs.	408	599	765	1412
Dist	10 km	15 km	20 km	44.66 km
Panel B: Regionalist parties, Lorraine				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	0.093 (0.267) [0.730]	0.348 (0.243) [0.152]	0.314 (0.228) [0.169]	0.408 (0.198) [0.039]
Obs.	408	599	765	1259
Dist	10 km	15 km	20 km	37.63 km
Panel C: Regionalist parties, Alsace and Lorraine				
Variable	(1)	(2)	(3)	(4) ^a
Treatment	1.127 (0.697) [0.106]	2.332 (0.733) [0.002]	2.172 (0.702) [0.002]	2.480 (0.618) [<0.001]
Obs.	619	905	1173	1941
Dist	10 km	15 km	20 km	34.38 km

Notes: Discontinuity at the treatment border. The outcome in Panel **A** is the share of households subscribing to the Lorrainian regional newspaper “Le Republicain Lorraine” in 2014. We could not gain access to a newspaper from Alsace. The vote share for regionalist parties is the outcome in both Panel **B** and **C** for the regional elections 2015. The former uses municipalities only in Lorraine, while the latter uses all municipalities in Alsace and Lorraine. Included controls: distance to Germany (border), distance to Metz, distance to Strasbourg, and distance to Nancy. Conley standard errors (10 kilometer bandwidth) in parentheses and *p*-values in brackets.

^a Estimates from using the optimal IK bandwidth.

Figure 8: RD plot, share households with subscription of “Le Republicain Lorrain”



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

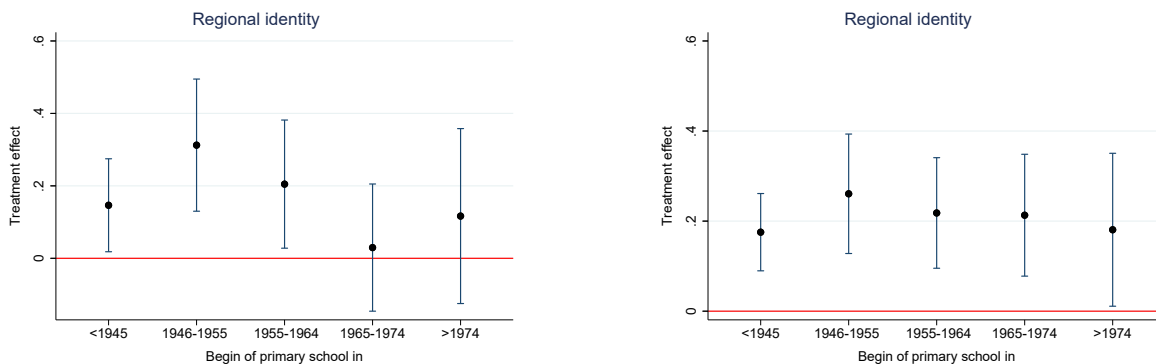
5.2 Regional identity over time

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

The left-hand side of Figure 9 shows the results within Lorraine, and the right-hand side graph shows results within Alsace and Lorraine combined. The results show several interesting patterns. First, the treatment effect is positive for all age cohorts. Second, the effect is already positive for the age cohort who began primary schooling prior to 1945, and thus certainly experienced repression themselves. Third, it is strongest for the age cohort who began attending primary school between 1946 and 1964 and declines for later cohorts. This cohort pattern is similar to what [Alesina and Fuchs-Schuendeln \(2007\)](#) found when studying the legacy of the German division. Fourth, it remains stable and statistically significant when considering Alsace and Lorraine, but is much smaller for the last two age cohorts within Lorraine. Given that the local dialect is also barely used anymore among younger age cohorts today, our prior results suggest that the stronger presence of regionalist parties in Alsace might explain the stronger persistence when including Alsace.¹⁶

¹⁶ Figure A13 shows similar results when measuring regional identity relative to national identity. Note that a potential dynamic extension of the model, where parents also face a variable cost of teaching with a time-varying α parameter for the relative return to identity, could explain a decline over time. If parents reduce the value they assign to regional culture over time, it can become no longer optimal to teach it at home even without the fixed costs component: the

Figure 9: Identity differences by age cohort



(a) Treatment effect in Lorraine

(b) Treatment effect in Alsace and Lorraine

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

5.3 Effects on policy preferences

In contrast to studies assessing the effect of, for instance, exposure to the rule of law (Lowes et al., 2017), differences in regional identity should not generally result in strong discrepancies in factors like rule-following behavior or risk aversion. We would, however, expect differences with regard to regional decision-making and preferences about the allocation of political competencies that relate to regional culture. Models on the size of nations like Alesina and Spolaore (1997) suggest that besides economic concerns (Boix et al., 2011; Gehring and Schneider, 2016), the (perceived) preference heterogeneity is the major factor influencing preferences about secession versus autonomy. We also use the OIP surveys to measure the consequences of a stronger regional identity. Table 10 provides clear evidence that the identity differences in Alsace and Lorraine also affect policy preferences in line with size-of-nation models. People in the treated area feel better informed about regional policies and have a more positive perception of regional democratic processes. When asked whether they would be concerned that more regional autonomy would increase inequality between regions, a significantly lower share of the population is concerned.

We also create three comprehensive proxy variables regarding the transfer of policy competencies to the regional level, more regional autonomy, and the allocation of responsibility for education policy. Each proxy is the average of several survey items in the OIP survey, to make sure differences are not caused by different understandings of any one particular question. Figures A2 through A5 list the individual questions in each sub-category. The average individual in the treated area favors transferring policy competencies from the national to the regional level as well as more regional autonomy significantly more often. Education policy is particularly interesting, as common state

differences between treated and control area would disappear over time. Reasons could, for instance, be a larger share of children moving out of the region to study or work, increasing the economic returns to national identity.

education is a major mechanism of imposing an identity, and influences how traditions and culture are taught. Again, treated subjects express clearly more favorable views towards setting educational policy and standards at the regional level. Table A22 shows very similar results focusing only on Lorraine.

Table 10: Survey results: policy preferences (restricted to Lorraine, département level)

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

6 Robustness: Alternative explanations

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

6.1 Results are due to linguistic differences

One concern regarding the interpretation of our results is that the border – mostly in Alsace – coincides with differences between German dialect speakers – mostly Alsatian and Moselle Franconian – and French dialect speakers. German dialect speakers might develop a stronger regional identity due to the linguistic divide between them and the rest of France, could be exposed to a larger extent to German media, or exhibit different trading patterns (Egger and Lassmann, 2015). Although linguists describe the use of the German Alemannic dialect as steadily declining and now as being mostly used by older generations (Vajta, 2013), we trace back the historical language border to separate the treatment effect from linguistic differences. We rely on Harp (1998) and overlay his map with the municipality boundaries to georeference the border along the French municipality boundaries. Figure 2c shows the resulting language border.¹⁷

¹⁷ See also a similar maps in Callender, 1927. The border was formed in the 8th century and barely moved until the 19th century. Callender (1927, p.430) cites the Count Jean de Pange who traces the border back to barbaric invasions and stated that “in Lorraine the limits of the languages bear no relation to the topography of the country. They form an irregular fringe, [...] these limits, arbitrarily traced by historical accident, have not appreciably altered in fifteen centuries.” We provide the best approximation of the border with the municipality polygons and choose the shortest path around the municipality.

To address a potential correlation between spoken (or formerly spoken) dialect and agreement as our proxy for regional identity, we then exclude all German-dialect speaking municipalities and re-estimate the treatment effect within Lorraine. The estimates in Table 11 remain comparable in size and highly significant and reinforce our hypothesis of a persistently stronger regional identity. Accordingly, the results hold even when comparing only directly neighboring municipalities in the same historical region speaking the same dialect.

Table 11: Discontinuities in referenda results, restricted to Lorraine, excl. German-speaking municipalities

Dep. Variable:	Share Yes 1969		Share Yes 1992		Share Yes 2005	
Variable	(1)	(2) ^a	(3)	(4) ^a	(5)	(6) ^a
Treatment	13.037 (2.740) [<0.001]	9.920 (2.613) [<0.001]	4.028 (2.183) [0.066]	5.103 (1.622) [0.002]	3.331 (2.117) [0.116]	5.068 (1.792) [0.005]
Obs.	380	989	399	1131	399	768
Dist	10 km	41.43 km	10 km	45.37 km	10 km	22.72 km

Notes: Discontinuity at the treatment border using municipalities in Lorraine, excluding German-speaking municipalities. The outcomes are the share of Yes votes in the 1969 referendum, in the 1992 referendum, and in the 2005 referendum. Conley standard errors (10 kilometer bandwidth) in parentheses and p -values in brackets.

^a Estimates from using the optimal IK bandwidth.

6.2 Regional identity higher in border départements

When comparing regional identity in the treated and the untreated areas, we are also comparing citizens of different départements, with Moselle being closer to the country border and further away from Paris than Meurthe-et-Moselle. One might worry that generally different policies in border départements result in differences in regional identity even at the border. For instance, if border départements are better at providing public goods, their citizens might develop a stronger bond to their local government, and feel more close to their region. We argue that it is unlikely that these concerns influence our results. First of all, the amount of policy competence at the département level is limited (see Table A16). Second, we find no signs of differences in, for instance, public good provision or other policies affecting socio-demographic characteristics in Table A17. Third, as a placebo exercise we examine differences in the survey questions presented in Tables 5 and 10 between all French départements bordering a foreign country, and their direct adjacent neighbor. These estimates, presented in Table A30, show that for all but one survey question, there are no statistically significant differences between border départements and their adjacent neighbors.¹⁸

Similarly, we can compare the referenda results in 1992 and 2005 at the border separating

¹⁸ In this table, we have also included one question capturing how satisfied respondents are with the projects undertaken by their regional council, as well as two questions on general views about the EU. Again, one might suspect that the policies implemented by border départements are more aligned with EU policies in general. As we can see in Table A30, there are no statistically significant differences in the two questions regarding satisfaction with the EU, or with the regional council.

all border départements from their adjacent neighbors.¹⁹ We estimate equation (1) using only municipalities in border départements and their immediate neighbors, including the same set of controls as for the estimates presented in Table 7. Since this border is much longer than the treatment border and covers all of France, we also control for the geographical coordinates of the municipality centroids. Figure A17 compares the discontinuities at the border dividing all border départements from their adjacent more central neighbor départements (red dots) with the estimated treatment effects within Lorraine (red squares) for bandwidths of 10, 15, and 20 kilometers. The magnitude of the treatment effect within Lorraine is much larger than other estimates, which are also largely statistically insignificant. This further supports that while, plausibly, border départements can be different, our treatment effect stands out as unusually large.

6.3 Migration into and out of the treated area

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

Second, there was a smaller in magnitude inflow of French people from other regions after WWI and the re-annexation. To some degree, they took up posts in the local administration and schools to replace regional traditions and culture with a strong national identity. Again, as these were French citizens from other regions, they should exhibit a weaker regional identity and also bias against our results. In terms of migration affecting the composition of the treated and control group, it is reassuring to remember that there are no discontinuities in the socio-economic structure of the population today. Nevertheless, we use a digitized version of census data for the years 1916 to 1946 to compute changes in population at the municipal level. The results in Table A27 show no significant discontinuities for any of these measures at the border. Table A28 shows that employing these changes as additional control variables also does not affect our results.

6.4 Local laws and their effects

Since 1924, the treated areas in Alsace and Lorraine enjoy the freedom to deviate from certain rules imposed by the central state. The deviations, known as the *local laws*, were limited to selected areas and further diminished over time. Glenn (1974, p.772) stated that, already by the 1970s, “local

¹⁹We only have data on the 1969 referendum for Lorraine, which was already very hard to get.

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. Still, some differences exist with regard to a small number of welfare policies (including payments to sick employees), which remain more generous in Alsace-Lorraine and include two additional days of vacation. Other differences exist with regard to personal bankruptcy law and the aforementioned voluntary associations.

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

6.5 Outliers, religion, local laws, Germanization

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

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

Another aspect in which the local laws differ from the rest of France is religion. Historically, the church played a larger role in the average citizen's life in the treated area until after WWI, and still does, to a smaller degree, today. In contrast to the rest of France, pupils in the area are still subjected to compulsory religious classes at school (usually two hours per week). We show that in France (for both referenda) there is no relationship between religiosity as well as religious denomination and regional identity or support for the European Union. We also explain why differences in the benefits from trade are not a plausible explanation. Finally, we discuss the relative importance of homogenization policies in strengthening regional identity, and the unsuccessful attempts to "Germanize" the individuals in the treated area.

7 Concluding remarks

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

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

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

What can we learn from these results for policies and future research? It is important to take into account to what degree identities constitute substitutes and are perceived as aligned or oppositional. Our study demonstrates that people with a stronger regional identity do not necessarily have a weaker national identity. We show how this can be integrated into theoretical models using our adapted conceptualization of common identity, which relies on the salience or weights put on attributes that an individual has in common with the rest of the group. This definition can also explain why there are strong existing group identities even though actual within-group heterogeneity is larger than between-group differences (Desmet et al., 2017). When people hold multiple identities, whether the state can impose a new identity depends on the degree to which it is perceived as oppositional to the existing identity (relating to, e.g., Benjamin et al., 2010; Carvalho and Koyama, 2016).

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

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

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