Ethnic Autonomy[*]

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Abstract

This article explores the impact of the postal system on the consolidation of state authority in pre-modern Europe. Previous research indicates that geographical scale limits the state's ability to rule directly in this period. I argue that European states used the post to mitigate this constraint. Posts substantially reduced communications cost as an infrastructure of delivering information. I investigate the effect of postal service on state authority with a new data set on France. Using draft-desertion rates in the First Republic and the persistence of non-French speakers in a later period as my outcomes, I show that proximity to posts reduces them. I address the endogeneity concern that postal expansion is determined by confounding factors through two additional analyses: the first employs interactions using geographical distances to Paris and linguistic distances to French and the second focuses on the preexisting infrastructure that could induce postal location.

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Introduction

A growing body of research underscores the state's ability to execute policy as an important source of economic development (Andrews, Pritchett, and Woolcock 2017; Besley and Persson 2009, 2010; Fukuyama 2011). That the state makes significant contributions to growth reflects the realization that today's wealthy states tend to have stronger capacity and enjoy tax revenues as greater proportions of their income than developing countries (Johnson and Koyama 2017). This scholarship is distinct from an influential literature in political economy which holds that the "right" set of institutions, most notably secure property rights, play a central role in growth (Acemoglu, Johnson, and Robinson 2005) and instead argues for cultivating a capability to bring about intended policies.

How some states acquire an ability to consolidate authority and implement policy has not been widely studied. Classical works in the state-building literature focus largely on how states gain control over land as the primary source of taxation (Ertman 1997; Poggi 1978; Tilly 1992). The process of consolidation, by contrast, describes how the state shapes the behavior of mass population more directly. Recent research pays closer attention to this dimension of political development—the control of the population. It shows that the consolidation of state authority requires the ability to win compliance or acquiescence from the underlying population (Gorski 2003; Herbst 2000). Early state-builders typically achieve this condition by providing public goods, to the extent that they can hold together diverse ethnic and linguistic groups in a single society (Wimmer 2016, 2018). By contrast, neighboring states can undermine states' effort to make their domestic authority more complete as indicated in recent international relations works (Lee 2018; Mylonas 2012). Given that politically developed states, such as those found in contemporary Western Europe and North America, have consolidated authority and enjoy a strong ability to undertake intended policies, these studies discuss why an indirect form of governance or incomplete sovereignty tend to perpetuate in many developing countries. In polities with a limited degree of authority, geographical attributes can hamper development, both politically and economically (Nunn and Puga 2012; Stasavage 2010).

In this paper, I provide a mechanism of the consolidation of state authority by exploring the development of postal service in early-modern Europe. Beginning in the mid-fifteenth century,

countries such as France, Germany, and England experimented with a new system in which they built relay stations at regular intervals across long distances. The institution proved to be an effective infrastructure and substantially reduced the cost of communication for European states that were both the creators and the main beneficiaries. Although the initial service in England and France carried exclusively official mails, it eventually became open to the wider society and acquired the role of a public good that delivered money and merchandise. As post offices arrived at previously hard-to-reach locales in the countryside, they effectively brought the state closer the population. Thus postal expansion as "infrastructural capacity" strengthened the state's to enforce rule (Mann 1993).

I then investigate the postal system as a medium of delivering political information by using a new data set of 214 cities in early-modern France. France offers an adequate test as it was a precocious state-builder that was able to amass a large territory, but like its European neighbors, it faced the challenge of centralizing authority due to institutional and fiscal fragmentation (Dincecco 2015). The French state took advantage of the post not just to weaken political dissent but also to consolidate rule. The data on the postal system consists of the distribution of relay stations in three periods—1559, 1690, and 1792—by drawing on hitherto unused published sources. It allows me to assess the impact of the post as infrastructural capacity on subsequent political development. My empirical analysis tests the post's impact on two dimensions. The first addresses how it functions as an information channel by studying its effect on the rate of desertion and draft-dodging during the First Republic. The government introduced a new institution of conscription for young men but met with strong resistance across the country. I digitize a specialized historical work to assess the relationship between access to the post and desertion rates. This constitutes an empirical test in the short-run. The second analysis tests a longer-run consequence by exploring the extent to which the French state reigned over language, a relatively low-profile and more difficult test on the consolidation of state authority. The language data comes from a rarely-used survey conducted in 1863 by the French government on the population, which is documented in Eugen Weber (1976). The date that the survey was taken is of importance, because France had achieved administrative

centralization by then but did not yet initiate a universal curriculum that would require pupils to use French all the time.

One of the main findings of this study is that post offices serve as an information channel for the state in the short-run and the long-run. In the short-run, I document evidence that proximity to the post by 1792, the most recent year available, reduces the rates of deserters and draft dodgers at the turn of the nineteenth century. Similarly, for the longer-term impact, I report a positive association between the distance to the nearest post office and non-French speakers in the late nineteenth century. These results are robust to inclusion of a host of geographical and economic variables, including the distance to the nearest border and coast. To mitigate endogeneity concerns that unobserved confounding factors might determine postal distribution, I employ two strategies. The first is the interaction model, in which I introduce a different confounder for each of the two outcomes. For desertion rates, I employ the geographical distance to Paris interacted with the distance to post offices to explore whether the information channel is driven by geographical distances. My analysis shows that distance to the capital matters, but proximity to post offices decreases desertion rates largely irrespective of the distance. For non-French speakers, I introduce a measure on linguistic similarity between French and the non-French tongues spoken by the ethnic minority. Its interaction with proximity to the post is not significant, suggesting that linguistic distances to French do not seem to drive postal expansion. As a second check on endogeneity concerns, I investigate the impact of the preexisting infrastructure on the early-modern post, including that of precursors such as university-run messengers and of Roman roads. These precedents could induce the location of posts, but statistical findings do not corroborate the supply-side hypothesis while the post-office variable remains significant.

I make two contributions in this paper. First, I provide a mechanism about how the construction of post offices strengthens the infrastructural capacity of early-modern European states. Postal service attracts increasing attention in the recent literature on social history, in which scholars seek to establish a connection between the early-modern post and the subsequent rise of what some call a "communications revolution" epitomized by the newspaper. This research highlights how the state-

sponsored post constituted a critical infrastructure—essentially a public good as it ultimately came to serve the population—which dramatically reduced the cost of circulating information (Behringer 2006; Pettegree 2014; Raymond and Moxham 2016). In addition, much of recent empirical works that explores the impact of postal service on political and economic consequences draws evidence from the modern period (e.g., Acemoglu, Moscona, and Robinson 2016; Rogowski et al. Forthcoming). This study is among the first, if not the first, to examine the linkage between the post as state capacity and political development in the early-modern context. Second, I provide evidence on how the postal system contributed to the consolidation of state authority using a new data set on early-modern France. In pre-modern Europe, states had to resort to indirect rule, because geographical distance made the cost of direct rule remained prohibitively high until the rise of the railway. Developing states face this challenge today: recent empirical research finds the degree of authority to be inversely proportional to the distance to the political center (Michalopoulos and Papaioannou 2013, 2014; Olsson and Hansson 2011). My paper demonstrates that pre-modern European states attempted to overcome the distance problem by investing in the post. Drawing evidence from France, my analysis focuses on the expansion of the French postal system across three centuries. But it also shows that this institution came short of consolidating authority, due to the persistence of ethnolinguistic diversity across the country. My paper's evidence thus underscores the institutional dimensions on the origins of ethnolinguistic diversity. While previous scholarship finds strong associations between geographical attributes and diversity (Michalopoulos 2012), I describe how states seek to gain control over the population even in the face of overwhelming difficulties.

Conceptual Framework

Pre-modern Europe was organized as "composite" states. They may possess a large swath of territory, but the authority structure was comprised of a mosaic of disparate subunits held together by treaties, allegiances, and marriages (Elliott 1992; Koenigsberger 1987; Nexon 2009). For the ruler

at the time, direct rule was nearly unattainable, largely because the state at the time did not possess a strong enough infrastructural capacity to govern the entire territorial domain directly. The infrastructural capacity is defined as the state's ability to "penetrate its territories and logistically implement decisions" (Mann 1993). Built on the Weberian tradition of the state, it refers to how states develop institutions to influence, mold, and regulate social relations. One major consequence of an underdeveloped infrastructural capacity was information asymmetry in economic activity between the ruler and the ruled, particularly those local notables who influence and manage production. In this environment, pre-modern European rulers faced *fiscal fragmentation*, the condition in which the monarch had to negotiate local powerholders to determine individual tax rates, which gave them a strong incentive to free-ride on their payments (Dincecco 2015, 902).[1]

The government-sponsored postal service played a key role in enhancing infrastructural capacity for early-modern European states. While the institutionalized post was known to be operational since Roman Emperor Augustus (r. 27 BCE–14 CE), the service remained quite slow: It is estimated that couriers on horseback were able to travel for only 30–40 km a day given how the lodging was placed at such intervals on major Roman roads (Pettegree 2014, 21). The pace did not increase much throughout the Middle Ages: in the fall of 1215, it took approximately 30 days from Liège to Rome and 40 days in the return trip in following January (Behringer 1990, 10–11). By the mid-fifteenth century, mails traveled 20–30 km on average and 50–60 km if the news was particularly urgent (Behringer 1990, 11). In 1449, it needed seven weeks from Nuremberg to Vienna.

A historic innovation occurred at the turn of the sixteenth century when Germany introduced the imperial post (*Kaiserliche Reichspost*). It was pioneering in that it substantially improved the speed of the operation. The German system grew efficient by allowing both postmen and horses to switch at relay stations placed at shorter (two- to three-mile) intervals than previously. Mails would now go for an estimated 161 km a day, a six-fold increase from the average of 25 km half a century earlier (Behringer 1990, 12). For instance, couriers in 1505 carried mails in a 765-km

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[1] The development and persistence of tax farming may be understood in this context, since in the ruler's perspective, local knowledge was required to assess production accurately and measure taxable assets. See Kiser (1994) and Johnson and Koyama (2014) for examples of conceptual contributions.

route from Mechelen, a town near Brussels, to Innsbruck for 131 hours (or five days and eleven hours) (Behringer 1990, 10–11); if they traveled at the pace of 25 km as before, it would have taken 30 days.[2] Figure 1 shows the location of the imperial post in the mid-sixteenth century. The pre-modern post was less a network of nodes than a collection of stations in which mailmen carried letters on horseback from one post to the next. The German system proved to be so effective as it constituted a model to which other European states turned to build their own.

Figure 1: The distribution of the German imperial post in the mid-sixteenth century.

Source: See the Empirical Strategy section.

The post serves as an infrastructural capacity for early-modern European states in two ways. First, they used it as a means to gain greater control over society. By directly managing the flow of information, the ruler can now bridge the information gap and begin to mold the social relations in his image. In France, for instance, the postal service led to the state involvement in centralizing political

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[2]The German imperial post is also innovative in that the German state outsourced the operation to the noble family of Taxis who made the service *public*. It not only carried letters for royal and administrative purposes but also gave an access to other customers, including merchants and priests, to deliver not only letters and packages but also money, jewelery, and samples of textiles and spices (Behringer 2006, 342).

information (Vittu 2001). France was an early adopter of the institution in the mid-fifteenth century following the German experiment prior to the imperial post. It built a number of permanent road-houses, where postmasters were assigned to take care of the horses and lodging (Allen 1972, ch. 1). Sixteenth-century monarchs began their attempt to possess the official communications exclusively by refusing the delivery of private letters on the crown roads and forbidding any rival networks to be built alongside (Schobesgerger et al. 2016, 33–4). The monopolization effort opened the door for censorship. Using as a pretext the 1626 royal edict that expanded the royal authority over the publishing trade, Cardinal Richelieu clamped down on the pamphlet literature which issued more than a thousand opposition papers over the succession feud in the previous decade (Sawyer 1990, 138–9). By mid-century France centralized the post by annulling the university-run messenger service that coexisted and by channeling the profits through the king's purse.

Second, the post allows the state to shape identity at the societal level (Soifer 2008). This effect may follow the state's control over the information channel, as state-led censorship substantially raises the cost of access to political information. One major impact on society is language use. A high access cost may give ethnolinguistic minorities an incentive to study the language of the political center, because it is through the state-owned information channel that they learn about new policies, ordinances, and other public proclamations. The issue became salient in mid-nineteenth-century France. When the postman passes through areas where French literacy was deemed low, he would read letters and official documents aloud (Weber 1976, 267). The infrastructure expanded—and routinized—the state's interactions with the population. In this environment, the ability to understand the information stemming from the capital in its language is crucial for the recipients. For one, they can engage with the state to be eligible to receive benefits which are prescribed in the system and not readily available outside of it (Zhang and Lee 2019). By contrast, recipients can avoid the state when they receive "bad" news. The notifications about conscription would fit this case. Despite the centralization of authority, France still met with resistance for the military service until the late nineteenth century (Weber 1976, 104).

In short, the post plays a crucial role in building an infrastructural capacity for early-modern

European states. The innovation at the turn of the sixteenth century significantly increased the speed of information flow. States took advantage of the communications channel by monopolizing it to censor political information and keep the access cost high. They also relied on this capacity to shape the culture of the underlying society. More specifically, the postal service can give the population an incentive to learn and use the language of the capital. I test these arguments in the remainder of the paper.

Empirical Strategy

This study investigates the evolution of state authority by focusing on the impact of postal service in early-modern European history. For an empirical analysis, I first consider how the post plays a role of a communications channel. If it functions as designed by the state, it should deliver information about state policies and proclamations to towns that receive a post. As I hypothesize that post offices facilitate the consolidation of state authority, I expect their effect to be stronger in locales with one than those without. Second, in a longer-term analysis I explore how minority population is incorporated into state institutions through post offices and use the spread of a unitary language as a measure of authority consolidation. Language is a difficult test of state capacity. Unlike taxation that involves passing interactions between the state and its subjects at the time of assessment and collection, imposing a single language requires more frequent, prolonged, and invasive efforts by the state.[3] The post may provide minority-language speakers with an incentive to study the language of the capital to reduce the cost of access to information and to take advantage of it. Since this is a time-consuming effort that entails mass participation, assessing state capacity in language serves as a challenging test of the consolidation of authority in this period.

I draw evidence from French history. France is appropriate as it is a tough case. On the one hand, it is a precocious state-builder in Europe (Spruyt 1994; Strayer 1970). It amassed a large ter-

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[3]To underscore this point, Jeffrey Herbst (2000, 126–31) discusses a reliance on indirect taxation and nontaxation sources of revenue allowed African states to *not* have to invoke mass loyalty based on language or other common cultural attributes in their political development.

ritory at the time of Carolingian rule and, despite the split, kept acquiring more throughout the early-modern period. The pace of centralization was relatively slow to come: France relied on a decentralized (i.e., inefficient) form of tax farming longer than its English neighbor (Johnson and Koyama 2014; Johnson 2006). In addition, Paris was an early starter in Europe of state-run post offices in the mid-fifteenth century. The attempt to gain control over the circulation of political information makes France an adequate candidate to understand the effect of the post as an instrument of political control. On the other hand, a high degree of ethnolinguistic diversity persisted throughout the pre-modern period. France is well-known today for its strong government-led effort to make immigrants conform to its cultural and linguistic standard (e.g., the 2004 ban to wear conspicuous religious symbols, most notably the Islamic veil, in public schools). Yet it was not until the start of the Third Republic in 1870 did Paris legislate a universal curriculum requiring French to be the language of instruction in public schools.[4] Before then, language served simply as an instrument of rule and the fluent speakers were limited to a fraction of the population, including government officials, literates, and local elites (Bell 2001, 171–2; Weber 1976, 71).[5] In short, France is an adequate case because of its early interest in linguistic and cultural homogeneity but the lagged development of implementation capacity.

I assemble a new data set of 214 cities in France that cover ten minority ethnic groups on their attributes primarily of the early-modern period. It includes all cities in Nüssli (2011), which offers GIS (geographical information system)-based information on the location, administrative divisions, and political status for the subunits that existed at the final year of each century. These 214 cities are under French jurisdiction today to control for the shifting territory over time. The choice of the city as a proximate unit for ethnicity rests on observed patterns. Ethnic groups predominantly live in a clustered fashion and designate a hub city as their homeland "capital," around which eco-

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[4]There was a recognition of the absence of linguistic unity, which revolutionaries saw as a political liability. To illustrate, Henri Grégoire, a Catholic priest and a leading revolutionary, realized post-Revolution that "there is no patriotism in the countryside," and perceived that people's inability to communicate intelligibly to be an impediment to achieving political unity based on the revolutionary ideals (Weber 1976, 72, 98).

[5]It is important to note that linguistic unity at the state level in France did not begin with the 1539 Ordinance of Villers-Cotterêts issued by François I. Still in the books today, its goal was not to make French a unitary language in the royal domain but to make it the language of the court over Latin (Weber 1976, 70).

nomic activity flourishes and institutional development occurs. This empirical pattern allows me to examine city-level attributes as useful proxies for those of ethnic groups. I draw on Minahan (2000) to both identify the ethnic groups in today's French territory and specify the historical location of their homeland. I use this information to approximate the area of residence for these groups as displayed in Figure 2.

My data set is originally a time-series and cross-sectional one organized in fifty-year periods from 1400 to 1900 CE, but because the outcome variables are limited to a single time period, I limit statistical analysis to the cross-section.[6] For identification I construct a number of covariates which account for time and can determine the value of the outcome variables.

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[6]I also collected the information on the cities in the adjacent states that were once under French rule over this period. There are at least 256 cities in the dataset. However, I have dropped those that eventually fell outside of French authority today for the theoretical and methodological reasons. The theoretical rationale is that these cities were nominally "French" and never developed long-term, institutional connections with Paris, such as a provincial estate. The methodological reason is that limitations of data availability due to the lack of institutional ties make systematic analysis difficult.

Figure 2: The geographical distribution of ten ethnic groups and the 214 cities in France.
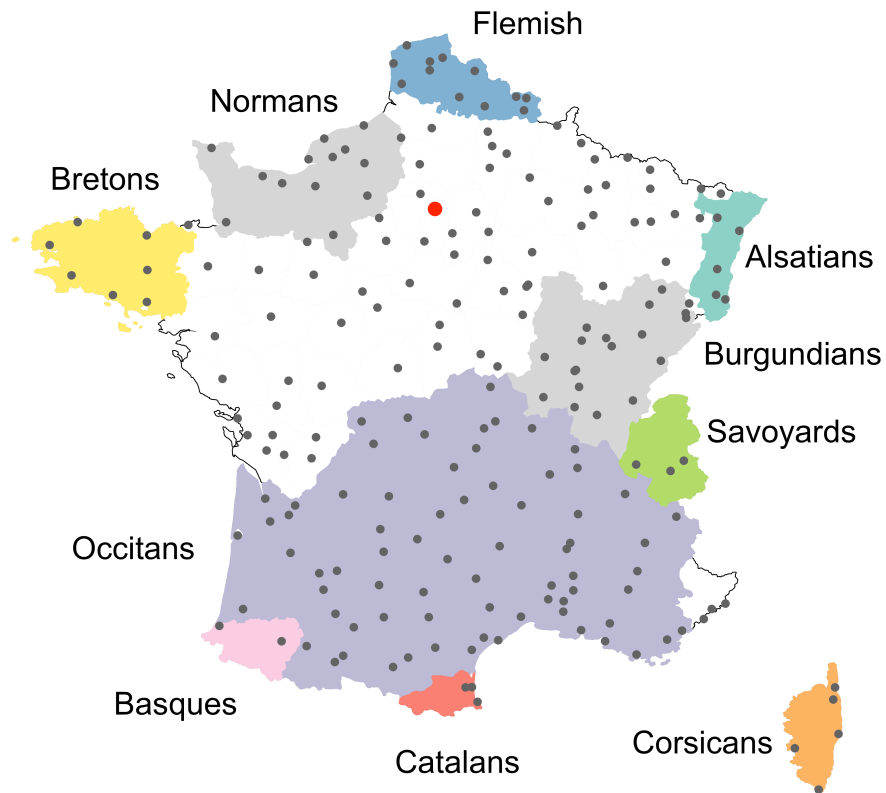
Notes: The gray dots indicate the cities; the red dot in the north indicates Paris. Ethnicity is color-coded individually, but the French-speaking groups (i.e., the Normans and Burgundians) get the same color.
Source: Minahan (2000), Nüssli (2011), Simons and Fennig (2018).

I take an "expansive" approach about which minority ethnic groups are included in France. If I count only those whose homeland city is located within today's French territory, the Basques, the Catalans, and the Flemish would be removed as their main homeland cities are located outside France (Vitoria, Barcelona, and Brussels, respectively). For the Basques and the Catalans, for instance, the area along the Pyrenées was historically contested and its nominal owners frequently shifted between Spanish and French monarchs. State boundaries were less rigid before the modern era and this territorial fluidity in part allowed these groups to retain strong cultural connections across the borders through French cities such as Bayonne, Perpignan, and Lille (respectively for the

Basques, the Catalans, and the Flemish). The colors that denote the "territory" of ethnic groups in Figure 2 simply designate the areas where non-French tongues are spoken on the level of the department (*département* in French). It is important to note that these color-coded areas merely indicate where these minority individuals are expected to live. Neither do they serve as politically salient categories nor indicate that individuals of minority groups would recognize departmental boundaries as ethnic or politically salient boundaries.

I employ two outcomes to test two different effects of the post that functions as an information channel and, through this infrastructure, as an instrument to consolidate authority over cultural practices. The first is the data on desertion rates during the First Republic. France enacted the first conscription law in late 1798 to meet the demand for soldiers fighting abroad. Men over the age of 20 would be drafted to serve until 25 years old. The law met with massive resistance, as a sizable proportion of conscripts deserted or avoided the draft (Arbellot and Lepetit 1987). It would be an adequate test of the effects of pre-revolutionary infrastructure-building on a phenomenon that took place immediately after the revolution. The additional rationale for using this measure is that if post offices serve as an information channel, they help explain how French people exploit them to their own advantage. I draw on Hargenvilliers (1937) to calculate the rate of recorded deserters (*déserteurs*) and draft dodgers (*insoumis*) divided by the number of conscripts from 1798 through 1804, the last year of the First Republic.[7] It should be noted that the departments in the Vendée region resisted the revolution and thus the conscription. The data is observed at the département level. Figure displays the geographical distribution of the data.

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[7]I thank David Le Bris for alerting me to this source.

Figure 3: Outcome Variable 1: Deserters and Draft Dodgers during the First Republic.
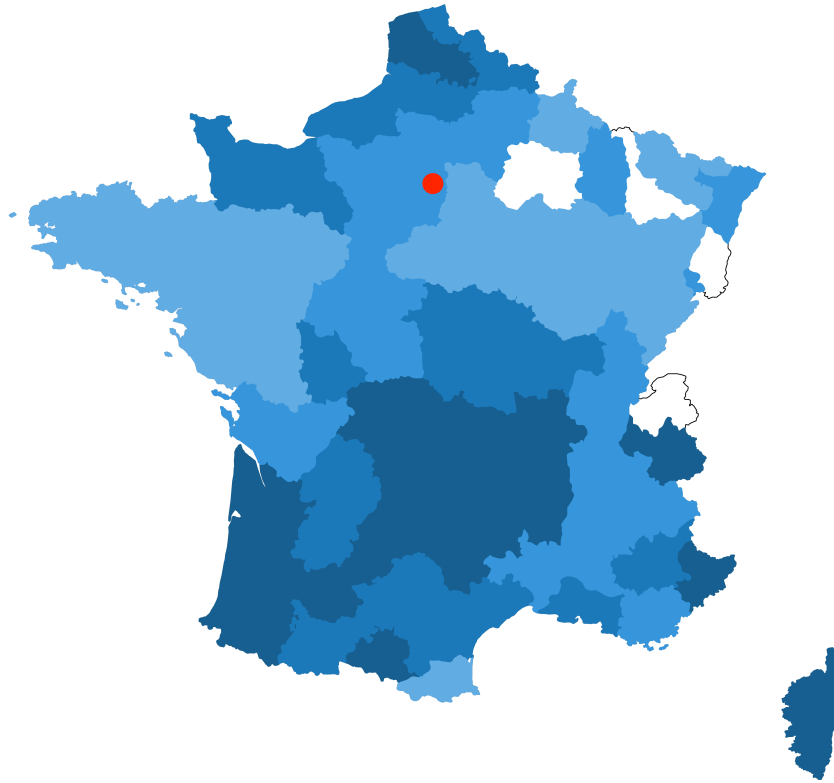
Note: The data is from 1798–1804. The red dot indicates Paris. Darker colors indicate higher proportions: The darkest blue indicates the top quantile (75–100 percent), the next darkest, the second quantile (50–74 percent), and so on. *Source:* Hargenvilliers (1937).

In Figure 3, dark blue indicates higher rates while light blue shows lower rates. It reports that while desertion occurred through much of France, the rates seem higher in the *midi* region in the south.

The second outcome variable is the linguistic dimension of ethnicity as operationalized by the use of non-French languages in mid-nineteenth-century France. In the literature on ethnicity and nationalism, language is one of the most important dimensions with which to define ethnicity for a couple of reasons. It is relatively straightforward to quantify. Moreover, ethnolinguistic diversity represents a longer-term consequence of state-capacity development. As the network of post offices expands over time, diversity is expected to decrease as it hinders taxation and the state's other efforts to consolidate authority. The persistence of non-French tongues may be considered a function of

the limited reach of state capacity, which, in turn, gives non-French-speaking populations incentive to create their own institutions.

The data on linguistic diversity in nineteenth-century France draws from Weber's *Peasants into Frenchmen* (1976). While typically cited as evidence of transformation in the social identity of the peasants in the countryside from the local one to a broader—that is, French—one, it also contains a wealth of untapped data before the change. The data is based on the 1863 survey conducted by the Ministry of Public Instruction and documents the extent to which French was spoken and taught as the language of instruction in each locality. It includes the number of French- and non-French-speakers at the level of commune, the administrative unit roughly equivalent of township or municipality, and are aggregated at the *département* level. According to the survey, of the 37,510 communes across 89 *départements*, 8,381 (22.3 percent) spoke little to no French (Weber 1976, 67). Similarly, of the more than four million schoolchildren aged seven through thirteen in the survey, approximately 11.2 percent spoke no French and 37.1 percent could understand it but not write it. Weber notes government surveyors' incentive to highlight the "success" of the spread of the language over the *patois* such that the figures recorded therein are likely to be exaggerated (Weber 1976, 67). Thus these are probably conservative estimates. Still, the data in the survey is useful and was taken at an appropriate timing, because France under the Third Republic that arose in 1870 began to undertake the compulsory primary education policy aiming at standardizing the country's languages by French.

Figure 4 graphically displays the geographical distribution of non-French speakers on a map. It clearly shows that in each panel high percentages of them, represented in colors, are concentrated in provinces remote from Paris (the red dot). The data is shown in quantile, where a darker color indicates higher values in percentage. The darkest blue indicates the top quantile (75–100 percent); and the next darkest, the second quantile (50–74.9 percent). Since the median value is zero, the bottom two quantiles are omitted. The white area indicates the French-speaking region, suggesting that the use of French was better-established in it before the start of the Third Republic. The distribution of the data across the two panels looks similar, but it is crucial to distinguish them because

of varying population size across the communes.

Figure 4: Outcome Variable 2: Non-French Speakers in the late Nineteenth Century.

(a) Proportion of non-French-speaking communes   **(b) Proportion of non-French-speaking population**
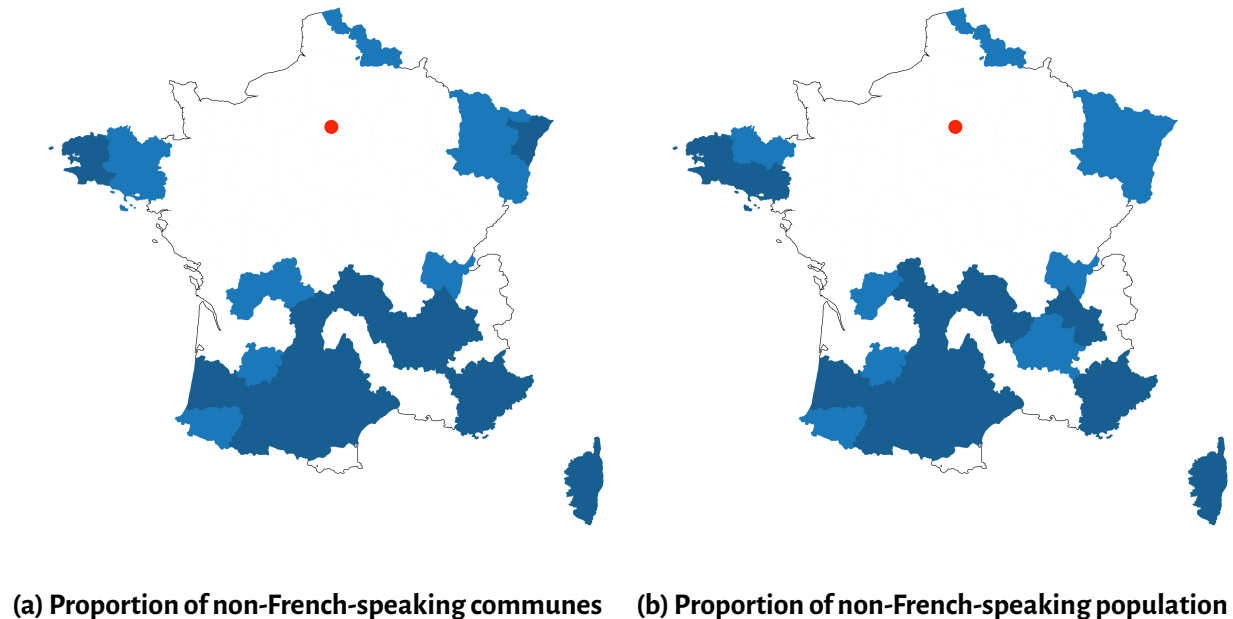
Note: The data is from 1863. The red dot indicates Paris. Darker colors indicate higher proportions: The darkest blue indicates the top quantile (75–100 percent); and the next darkest, the second quantile (50–74 percent). Given that the median value is zero, the bottom two quantiles are dropped for readability.
Source: Weber (1976).

My main explanatory variable on infrastructural capacity is the geographical distance to the nearest post office. I first identify the location of cities that bear a relay station and calculate the shortest distance to them for every city in the data set. To account for the evolution of state capacity over time, I obtain sources for multiple time periods. The 1559 data draws from Boissière (2016), the 1690 data is from Jaillot (1690), and the 1792 data comes from Bertaud and Reichel (1987).[8] There are 99 cities with a post office by 1599, 114 cities by 1690, and 175 cities by 1792. Figure 5 visualizes the geographical distribution of the post for each period.

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[8]The Appendix presents the maps from which the data is generated.

Figure 5: Location of post offices across three centuries.

(a) 99 Post Offices in 1559

(b) 114 Post Offices in 1690

(c) 175 Post Offices in 1792

Note: The red dot indicates Paris.
Source: Boissière (2016) for 1559, Jaillot (1690) for 1690, and Arbellot and Lepetit (1987) for 1792.

Another measure on political institutions is the impact of the local parliament. Parts of today's French territory were incorporated at different times, and this historical process was a reason for the

relatively late centralization of authorities (Johnson and Koyama 2017). One institutional solution to maintain territorial integrity was to delegate authority to the local level in exchange for the regular stream of revenue. Throughout the ancien régime, Paris established and relied upon the regional assemblies or provincial estates. These bodies represent the fragmented nature of French political development, which could, in turn, capture the autonomy of local cultural practices. I measure the impacts of institutional incorporation by counting the number of years that provincial estates were held up to the French Revolution when all ancien-régime institutions were abolished. The data comes primarily from Kiser and Linton (2002) and is supplemented by Blockmans (1976) and Swann (2012). Not all *départements* had an assembly, but some had as many as almost 400 years of experience between 1400 and 1789.

A host of controls could mediate the relationship between state capacity and local autonomy. The first is a set of four geographical determinants. One is the geographical distance from the capital. As discussed earlier, under fragmented rule the state's ability to consolidate authority may become attenuated as subjects of authority reside far afield. I include the distance from Paris for each of the 214 cities in my data set. A related measure is the distance to the nearest border and to the nearest coast. These represent the ease with which people in the peripheral parts of France are exposed to outside influence and are available from 1400 through 1800 given the border changes. The last two are land elevation above the sea level and terrain ruggedness, both of which are drawn from the GLOBE (Global Land One-kilometer Base Elevation project) database (GLOBE Task Team and others 1999).[9] It is a 1 km-by-1 km gridded data on land terrain that covers the entire world.

The second set of controls are economic variables. The conventional proxy for growth in economic history is population growth whose standard source on the city level is Bairoch, Batou, and Chévre (1988). Based on it, I follow Bosker, Buringh, and van Zanden (2013) which updates the Bairoch et al. data. To account for time, I use the value of the most recent year for the study (1850) weighted by that of the base year (1400). Another proxy is the printing press. I consider it to be primarily an economic measure, since the profit motive is a main rationale for the technology's ini-

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[9]The terrain ruggedness index (TRI) is originally proposed by Riley, DeGloria, and Elliot (1999).

tial diffusion across Europe in the late fifteenth century. Printers were willing to bring a press to any city that is perceived to have a strong potential to recoup the fixed cost of setup and raise quick cash (Febvre and Martin 1976; Pettegree 2010). I record the first date of print in each city and count the number of presses by 1700 at the *département* level.[10] A third economic measure is access to commercial fairs. These annual events started in medieval times and served as a major contributor to the "Commercial Revolution" in Europe (Epstein 2000). They attracted armies of merchants who traded textiles, spices, and books. In France, the Champagne trade fairs were well-known and, once they declined in significance in the fourteenth century, Lyon took over as a hub in France. To account for this dimension of economic activity, I identify the location of eleven commercial fairs in France based on Raj (2018).[11] I then calculate the geographical distance between each of them and 214 cities and count the number of fairs-holding cities within 50 km.[12] Finally, access to canals is included. Canals have historically played an important role in France by facilitating the transportation of goods for the traders located inland. I draw on a public report compiled in Becquey (1820) to identify the canals that were in service or about to be constructed by the early nineteenth century. I then georeference 37 of them and count the number of canals within the 50 km for each city. Table 1 provides the summary statistics of these variables in my data set.

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[10]Data sources include Burke (2004), Clair (1976), Pettegree (2007), Conner (2001), Walsby (2011a,b), Bouchot (1890), and Reske (2007).

[11]The eleven cities that hold commercial fairs are Angers, Bordeaux, Caen, Lille, Lyon, Orleans, Paris, Rennes, Rouen, Toulouse, and Tours.

[12]I use 50 km as a reasonable cutoff as overland transportation in Europe remained unreliable throughout the pre-modern period.

Table 1: Summary statistics.

	N	mean	median	sd	min	max
Outcome variables*						
Proportion of						
deserters and draft dodgers	214	0.16	0.16	0.1	0.02	0.48
Proportion of						
non-French-speaking communes	214	0.28	0	0.4	0	1
non-French-speaking populations	214	0.24	0	0.35	0	1
Political institutions variables						
Distance from nearest post office (km)						
in 1559	214	30	22	43	0	296
in 1690	214	28	0	44	0	296
in 1792	214	11	0	39	0	296
Years of provincial estates held*	214	118	36	143	0	398
Geography variables						
Distance to Paris	214	368	339	197	0	985
Distance to nearest coast (km)						
in 1400	214	173	159	132	1	502
in 1500	214	158	133	136	0	470
in 1600	214	158	133	136	0	470
in 1700	214	157	131	136	0	469
in 1800	214	151	130	128	0	440
Distance to nearest border (km)						
in 1400	214	58	44	46	1	230
in 1500	214	113	87	104	1	518
in 1600	214	129	104	116	1	518
in 1700	214	153	131	131	1	579
in 1800	214	199	180	138	1	616
Elevation (m)	214	180	132	195	2	1,304
Terrain ruggedness (m)	214	65	40	80	1	557

continued on next page

	N	mean	median	sd	min	max
Economic variables						
Population size in 1850 weighed by						
population in 1400 (in thousands)	214	1.76	0	5.6	0	54
Number of printing presses by 1700*	214	0.77	1	0.66	0	3
Number of cities holding commercial fairs						
within 50km	214	0.14	0	0.35	0	1
Number of canals within 50km	214	0.56	0	0.96	0	4
Other control variables						
Distance from nearest imperial posts						
in sixteenth-century Germany (km)	214	278	250	173	0	665
Number of university*	214	0.36	0	0.52	0	2
Distance from Wittenberg (km)	214	939	944	224	483	1,401
Distance from Zürich (km)	214	509	511	193	86	976
Hub Roman road	214	0.29	0	0.45	0	1
Roman road	214	0.7	1	0.46	0	1
Access to navigable river under Rome	214	0.7	1	0.46	0	1

Notes: * placed at the end of variable description denotes that data is observed at the level of département.
Source: See the Empirical Strategy section.

Estimation Results

Baseline estimates

First, I investigate the impact of the post on chronologically immediate outcomes, using the following reduced form:

$$\text{Autonomy}_{id} = \alpha_1 + \beta_1 \text{Distance from post offices}_{id} + \gamma_1 X_{id} + \epsilon_{id}. \tag{1}$$

Autonomy$_i$ here refers to the rate of deserters and draft dodgers, β is a set of the distance from post office in 1559, 1690, and 1792 and my main parameter of interest in this equation, and γ represents a vector of covariates on within-country factors X that include the frequency of regional assemblies held as a political-institutions variable and geographical and economic factors. Since

the outcome variable is observed at the *département* level, I use *d* to cluster the estimation on this level by using robust standard errors.

Table 2: Impact of post offices on deserters and draft dodgers First-Republic France, 1798–1804.

Dependent variable	Proportion of deserters and draft dodgers					
	(1)	(2)	(3)	(4)	(5)	(6)
Log distance to post offices						
in 1559	0.012*			0.001	0.0003	−0.0003
	(0.007)			(0.004)	(0.004)	(0.004)
in 1690		0.016**		0.006	0.005	0.007*
		(0.007)		(0.005)	(0.004)	(0.004)
in 1792			0.030***	0.026***	0.017***	0.017***
			(0.010)	(0.009)	(0.006)	(0.006)
Log distance to Paris					−0.019**	−0.023***
					(0.008)	(0.008)
Log distance to nearest border					−0.016	−0.018*
averaged, 1400–1800					(0.011)	(0.010)
Log distance to nearest coast					−0.028***	−0.026***
averaged, 1400–1800					(0.006)	(0.006)
Controls					✓	✓
Observations	214	214	214	214	214	214

Notes: Robust standard errors clustered on the *département* level for all models. The full results are in the Appendix. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table 2 documents the impact of post offices as an information channel that the French state developed during the ancien régime on the consequences of conscription, one of the major country-wide institutions newly introduced in Republican France. In the bivariate models, each year of postal distribution is positively and significantly correlated (Models 1–3). Positive values mean that the more distant town dwellers are from the post, the greater deserters grow. They provide evidence for my hypothesis that post offices not only deliver state policies and rules but also help consolidate authority, as proximity to the post allows the First Republic government to put the law in greater effect. The rest of the models combine all three years and indicate that only the post offices in 1792 remain positive. When the distance-to-Paris variable is introduced (Models 5–6), the post in 1792 remains positive but its magnitude drops, suggesting that the spread of the new institutions such

as the draft through post offices first reaches locales closer to the capital. Still, the 1792 variable is positive and significant in a fully-specified model that includes a number of geographical and economic determinants. Evidence in Table 2 establishes that post offices serve as an infrastructural capacity. Given the results, I employ the post offices in 1792 as my main explanatory variable in the subsequent analyses.

Second, I explore longer-term effects of the post. Here I use the persistence of non-French speakers by 1863 as the outcome. This analysis is intended to assess the extent to which the pre-modern French state was able to shape average people's behavior before the introduction of the universal curriculum in the 1880s.

Table 3: Impact of post offices on non-French speakers in the late nineteenth century.

Dependent variable	Proportion of non-French-speaking...			
	communes		populations	
	(1)	(2)	(3)	(4)
Log distance to post offices in 1792	0.082***	0.078***	0.076***	0.071***
	(0.025)	(0.020)	(0.026)	(0.018)
Controls		✓		✓
Observations	214	214	214	214

Notes: Robust standard errors clustered on the *département* level for all models. The full results are in the Appendix. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table 3 shows the impact of post offices in 1792 on non-French-speaking communes and populations in the late nineteenth century. Similar to the previous section, the post variable is positively and significantly linked to non-French speakers, both in bivariate and in fully-specified models. Greater distances to post offices mean that people are more likely to use a non-French tongue. In each outcome variable, the magnitude of the post is stable when other covariates such as the distance-to-Paris variable are included (Models 2 and 4). The evidence here suggests that postal expansion in the early-modern period has a lasting effect in that proximity gives *patois* (or non-French) speakers an incentive to switch their language. At the same time, it reveals that the French state's ability to mold people's languages in its image remained limited due to the fact that diversity

persisted up to modern times. These estimates suggest that the post functions as an instrument of political control but the pace of acquiring such a capacity seems to take a long time.

Within-country variation

The previous section broadly establishes the link between post networks and their immediate and longer-term effects. In this section, I focus on within-country variation to identify the determinants of postal distribution. This approach allows me to address one concern of endogeneity that the across-the-country effects of the post are driven largely by the geographical "periphery," where greater proportions of deserters are observed as in Figure 3, or by some salient cultural attributes of the minority such as differences in language. To examine these issues, I employ interaction models for each outcome variable.

First, on the linkage between the rate of desertion and draft-dodging and geographical distance, I explore the following model to identify distance's impact:

$$\text{Autonomy}_{id} = \alpha_2 + \beta_2 \text{Post offices in } 1792_{id} \times \text{Distance from Paris} \in (0, 200\text{km}] \ ... \ (600, 800\text{km}]_{id} +$$

$$\gamma_2 X_{id} + \epsilon_{id}.$$

$$(2)$$

Instead of the continuous measure on the distance from post offices, I re-code it according to certain distances from Paris. As Figure 6 shows, the observations are grouped by the equal distance, from the shortest to the longest, at the 200-km, 400-km, 600-km, and 800-km radius from Paris. The groups are color-coded based on the given radius. Blue denotes those that the post is constructed, magenta denotes cities without it, and gray indicates those beyond the 800 km-radius range.

Figure 6: Distribution of the post offices by 1792 based on certain distances from Paris.
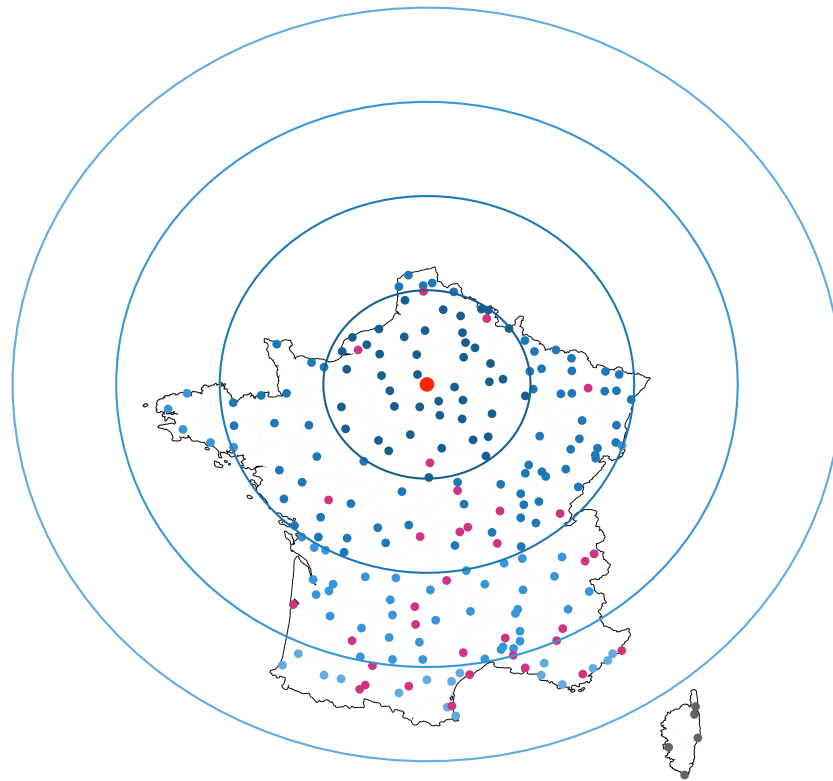
Notes: The circles refer to the distances from Paris, from the shortest to the longest, at 200 km, 400 km, 600 km, and 800 km in radius. The location of post-office cities are color-coded in accordance with the circles. Blue denotes cities with the post, magenta without it, and gray outside the 800 km radius.
Source: See the Empirical Strategy section.

The second interaction addresses whether specific cultural factors, in particular linguistic differences with the French language, could determine the location of post offices. The hypothesis here is that the French state installed posts starting with "easy" places, such as predominantly French-speaking locales, in preference for "harder" ones where non-French tongues are the norm. Posts are costlier to be built in the latter because of the popular resistance that may accompany them. The underlying rationale is that building post offices in non-French-speaking areas may be perceived as eroding the local autonomy and would require an extra effort by the state. Language is one of the most salient cultural attributes. Since it is easily recognizable by sound, it often serves as a tool to group social relations (cf. Gellner 2006). In turn, people take advantage of linguistic differences to

build barriers to access to political information and the market (Laitin 1998). Equation 3 captures this argument:

$$\text{Autonomy}_{id} = \alpha_3 + \beta_3 \text{Post offices in 1792}_{id} \times \text{Linguistic distance to French}_{id} + \gamma_3 X_{id} + \epsilon_{id}. \quad (3)$$

As in Equation 2, this interaction uses the indicator variable for the post. The "linguistic distance" indicates the degree in linguistic difference between French and the non-French tongues spoken by minority populations. To measure this distance, I draw on Greenberg (1956) who constructs an index on linguistic similarity called the *resemblance factor*. Ranged between zero and one, it gauges the proximity between a given pair of languages based on the classification in linguistics.[13] The proximity data draws from the *Ethnologue* database (Simons and Fennig 2018). Since the resemblance factor captures how *close* a pair of languages between French and another tongue, I subtract it from one to denote how *distant* a non-French language is from French. The value of one indicates the farthest distance to, or bears no similarity with, French (Basque fits this description as it is considered a "language isolate"),[14] whereas the value of zero represents no distance (the languages of the Burgundians and of the Normans are today considered no longer distinct from the French language and instead subsets or "dialects" of it).

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[13]More formally, the resemblance factor, denoted r, is calculated as:

$$r_{ij} = \left(\frac{l}{m}\right)^{\alpha}, \quad (4)$$

where l is the number of shared classifications in the language tree between linguistic group i and j, m is the highest number of classifications for any language in a given sample, and α is a positive number less than one. I follow Fearon (2003) and fix α at 0.5.

[14]In linguistics, a *language isolate* is a language that is linked to no other known tongues.

Table 4: Interactions exploring determinants of the expansion of post offices by 1792 in France.

Dependent variable	Proportion of deserters and draft dodgers			
Distance from Paris within	200km	400km	600km	800km
	(1)	(2)	(3)	(4)
Log distance to Paris ×	-0.013^{**}	-0.010^{**}	-0.009^{**}	-0.007
Post office in 1792	(0.006)	(0.004)	(0.004)	(0.005)
Log distance to Paris		-0.026^{***}		
		(0.008)		
Post office in 1792		-0.010		
		(0.026)		
Controls	✓	✓	✓	✓
N post offices in 1792 in each bin	44	70	44	16
N post offices in 1792, cumulative	44	114	158	174
Observations	214	214	214	214

Dependent variable	Proportion of non-French-speaking...	
	communes	populations
	(5)	(6)
Linguistic distance to French ×	-0.185	-0.204
Post office in 1792	(0.407)	(0.389)
Linguistic distance to French	0.716	0.675
	(0.524)	(0.498)
Post offices in 1792	-0.207^{**}	-0.174^{*}
	(0.102)	(0.094)
Controls	✓	✓
Observations	214	214

Notes: Robust standard errors clustered on the *départment* level for all models. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$. The number of post offices in 1792 excludes that of Paris.

Table 4 reports the results of the two interaction models. The top row (Models 1–4) explores the geographical distance as a determinant, while the bottom row (Models 5–6) documents the possibility of a linguistic driver for the location of post offices. Table 4 suggests that distance has some effect in understanding authority consolidation. The negative associations indicate that close proximity to post offices reduces the proportion of those who desert and dodger conscription. The effect is significant and larger in locales closer to Paris. At the same time, geographical distance does

not entirely explain the state's ability to implement policy, because post offices have a significant impact even in peripheral towns located 400- and 600-km distant from the capital. These ranges are greater than the average distance of 383 km for all observations. This finding suggests that proximity to post office would strengthen state authority largely irrespective of the distance from the capital.

The bottom row of Table 4, by contrast, indicates that postal distribution seems little to do with the minority's linguistic differences with French. The negative effect of the interaction means that proximity to the post would reduce non-French speakers, but neither model is significant. Instead, the indicator for post offices by 1792 remains negative and significant. This result alleviates the concern that linguistic differences with the French tongue determine the distribution of post offices.

Robustness

The findings have thus far supported my hypothesis that the post functions as an information channel for the state and that its effects are larger where there is a proximate access. They are robust to the inclusion of a host of covariates, including interaction effects on geographical and linguistic distances. Still, there is an additional reason that unobserved factors may confound these findings. More specifically, some object that the infrastructure built prior to the establishment of relay stations may determine the post's location. The argument is that French state preferred to build posts where well-trodden roads had already been available over new paths that would require a greater investment. If true, the effects of the post may be endogenous to this infrastructure. The postal network that developed may thus be considered a function of the preexisting supply. To address this concern, I introduce several potential confounders. First, I examine direct precursors to the state-sponsored post. As discussed above, European universities ran a messenger system from medieval times, where France enjoyed one of the most expansive networks. At the same time, the French post was inspired by Germany's pioneering experiment that eventually led to the system of the imperial post. These precedents yield a hypothesis which states that the presence of a university or the proximity to the German imperial post provide the French state with ready-made networks on which to expand its own. I use Frijhoff (1996), Rüegg (2011), and Darby and Fullard (1970) first to obtain

the foundation date of universities. I then construct an indicator taking the value of one if a city gets a university before aggregating the number at the *département* level. As for the German imperial post, I draw on Behringer (1990), Pettegree (2014), and Schobesgerger et al. (2016) to identify the cities that opened the service at the turn of the seventeenth century and calculate the shortest distance for each of the 214 French cities in my data set.[15]

The second supply-side determinant is the Protestant Reformation. It is well-known in the scholarship that Luther and his followers advocated lay readership of the Bible (Dittmar and Meisenzahl Forthcoming): Luther was interested not only in using German over Latin for proselytization but also in modernizing the German language (Burke 2004, 68, 102). One consequence of this historic movement is the hypothesis that the persistence of non-French tongues may have to do with the exposure to this idea. To account for the Reformation's impact, I follow Pfaff and Corcoran (2012) to calculate the shorter distance to either Wittenberg or Zürich, two major epicenters of the movement, where proximity indicates a greater impact. Finally, I consider longer-run consequences of history, in this case Rome. European states that experienced Roman rule inherited and expanded on roads built by the Romans. It is predicted that the French postal networks were founded on the preexisting Roman ones. To address this possibility, I draw on various sources including Talbert (2000), Hammond (1981), Åhlfeldt (2015), and *Pleiades* (2015) to identify the cities reached by the Romans that had access to roads. I then create an indicator taking the value of one if a city had major or minor Roman roads.[16]

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[15]The French cities known to receive the service at the time include Paris, Strasbourg, and Ensisheim (located near Strasbourg and Zürich).

[16]Following Bosker, Buringh, and van Zanden (2013), those cities with two or more major roads are coded "Roman hub" and those with one major road or one or more minor roads are coded cities with "Roman roads."

Table 5: Impact of preexisting infrastructure on post offices.

Dependent variable	Proportion of... deserters and draft dodgers		Proportion of non-French-speaking... communes		populations	
	(1)	(2)	(3)	(4)	(5)	(6)
Log distance to post offices in 1792	0.018***	0.019***	0.074***	0.075***	0.067***	0.066***
	(0.006)	(0.006)	(0.020)	(0.020)	(0.018)	(0.019)
Log distance to nearest	0.036***	0.035***	0.054	0.053	0.043	0.043
German imperial post	(0.013)	(0.013)	(0.054)	(0.053)	(0.044)	(0.044)
Number of universities	0.010	0.008	0.051	0.050	0.033	0.037
	(0.011)	(0.011)	(0.052)	(0.054)	(0.045)	(0.047)
Log distance to		0.0004		−0.006		0.010
Wittenberg or Zürich		(0.011)		(0.059)		(0.049)
Roman hub		−0.006		−0.050		−0.026
		(0.012)		(0.059)		(0.049)
Roman road		0.037***		0.034		0.014
		(0.013)		(0.077)		(0.068)
Navigable river under Rome		−0.005		0.017		−0.016
		(0.014)		(0.089)		(0.079)
Controls	✓	✓	✓	✓	✓	✓
Observations	214	214	214	214	214	214

Notes: Robust standard errors clustered on the *département* level for all models. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table 5 documents the impact of major supply-side variables. These factors do not show consistent effects, while post offices remain positive and significant. Moreover, compared to fully-specified models in Tables 2 and 3, the magnitude of the post is largely stable, which is reassuring in that the impact of post offices is unlikely to be endogenous to the preexisting infrastructure. The statistical estimates in my analyses have found that post offices serve as a strong predictor of state infrastructural capacity in implementing and consolidating authority for both short-term (desertion and draft-dodging) and long-term (non-French speakers) outcomes. These also suggest that the impact of this channel is unlikely to be driven by geographical and economic covariates and the preexisting infrastructure.

Conclusion

This paper explores the impact of the postal system in early-modern Europe on the development of state authority. The institution was designed not only to facilitate communication between the political center and far-flung areas within country but also to bring about political order. Taking advantage of the power of the post to deliver information reliably, the French state monopolized the channel and consolidated authority by clamping down on political dissent. My empirical analysis finds that the post served as infrastructure to relay news and implement state policy by examining the post's impact on the rate of deserters during the First Republic. Postal expansion also contributed to the state's control over language. My analysis suggests that proximity to a post reduces non-French speakers, but the very fact that ethnolinguistic diversity persisted until the late nineteenth century indicates that the state's ability to implement policy across the country was limited.

These empirical findings yield two broader implications. First, investigations into the consolidation of state authority, a topic that has not been as widely studied, advances the understanding of how states shape society. While Scott (1998) vividly warns of the catastrophic and unintended consequence of the modern state's attempts to make the population "legible," my paper illustrates both the strengths and the limitations of state-capacity building in early-modern times. It shows that the French state's investment in the postal service helped control the flow of political information. It was effective but still came short in terms of the lasting diversity. My paper demonstrates that even for "ideal type" European states, state-capacity building was a slow and time-consuming process. Second, the recent scholarship focusing on post offices and transport as sources of economic growth is situated in the modern context (Donaldson 2018; Rogowski et al. Forthcoming). It is possible that the networks of these communications technologies are based on the preexisting ones built in the prior period. As these works demonstrate, the pre-modern postal system also substantially reduced transaction costs in communications on both political and economic dimensions. If the modern transport infrastructure contributes to growth, this study makes a bridge by exploring the impact of the pre-modern postal institution.

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Appendix for "Ethnic Autonomy"

January 29, 2020

Contents

1 Original Maps of Post Offices in France Used for the Main Explanatory Variable

1.1 1559

Figure A1 shows the distribution of the post offices in France in 1559. It is drawn by cartographer Aurélie Boissière (2016) in *Atlas de l'histoire de France, 481–2005*.

Figure A1: Location of post offices in France in 1559.

1.2 1690

Figure A2 exhibits the location of the relay stations of the French post in 1690. Titled "Carte particulière des postes de France," it is drawn by Alexis-Hubert Jaillot. It supersedes the more famous 1632 "Carte géographique des Postes qui traversent la France" drawn by Nicolas Sanson. The map is available online as part of the World Digital Library project of the U.S. Library of Congress.

Figure A2: Location of post offices in France in 1690.

1.3 1792

Figure A3 presents the distribution of France's post offices in 1792. It comes from Guy Arbellot and Bernard Lepetit in *Atlas de la Révolution française*, vol. 1: *Routes et communications* (1987). It is part of a 11-volume series on the French Revolution published by the *École des Hautes Études en Sciences Sociales*.

Figure A3: Location of post offices in France in 1792.
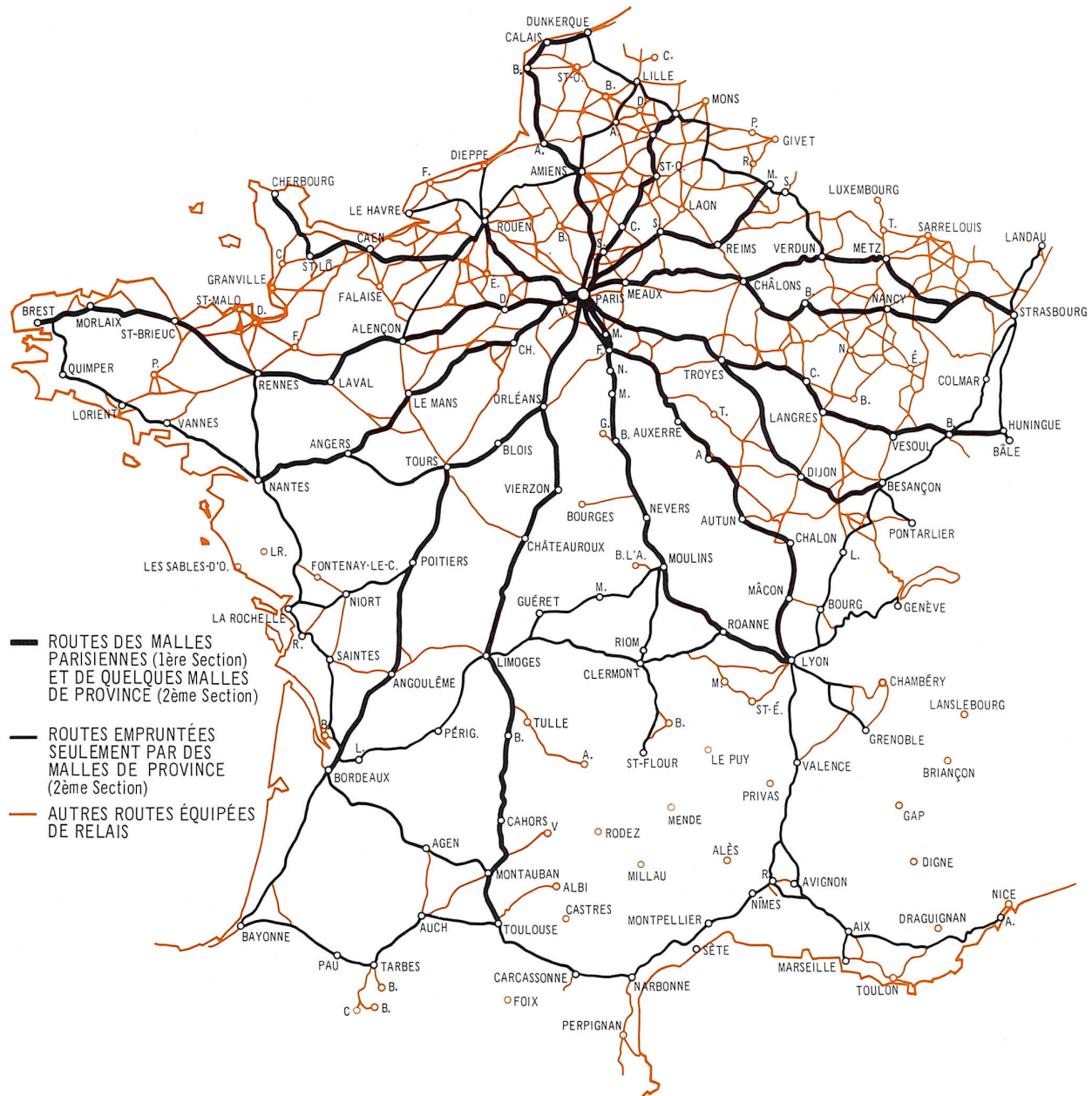
2 Estimation Results

2.1 Desertion and Draft Dodging

Table A1 reports the full result of Table 2 of the main text.

Table A1: Impact of post offices on deserters and draft dodgers First-Republic France, 1798–1804.

Dependent variable	Proportion of deserters and draft dodgers					
	(1)	(2)	(3)	(4)	(5)	(6)
Log distance to post offices in 1559	0.012*			0.001	0.0003	−0.0003
	(0.007)			(0.004)	(0.004)	(0.004)
Log distance to post offices in 1690		0.016**		0.006	0.005	0.007*
		(0.007)		(0.005)	(0.004)	(0.004)
Log distance to post offices in 1792			0.030***	0.026***	0.017***	0.017***
			(0.010)	(0.009)	(0.006)	(0.006)
Years provincial estates held					−0.0001	−0.0001
					(0.0001)	(0.0001)
Log distance to Paris					−0.019**	−0.023***
					(0.008)	(0.008)
Log distance to nearest border averaged, 1400–1800					−0.016	−0.018*
					(0.011)	(0.010)
Log distance to nearest coast averaged, 1400–1800					−0.028***	−0.026***
					(0.006)	(0.006)
Elevation					0.0001*	0.0001*
					(0.0001)	(0.0001)
Terrain ruggedness					−0.0001	−0.0001
					(0.0001)	(0.0001)
Weighted log population growth by 1850						0.011
						(0.008)
Number of printing presses by 1700						−0.022**
						(0.009)
Number of canals within 50km						−0.009
						(0.006)
Number of commercial fairs within 50km						0.055**
						(0.026)
Intercept	0.133***	0.130***	0.138***	0.128***	0.438***	0.471***
	(0.014)	(0.014)	(0.012)	(0.014)	(0.073)	(0.069)
Observations	214	214	214	214	214	214

Notes: Robust standard errors clustered on the *département* level for all models. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

2.2 Non-French-speakers

Table A2 reports the full result of Table 3 of the main text.

Table A2: Impact of post offices on deserters and draft dodgers First-Republic France, 1798–1804.

| Dependent variable | Proportion of non-French-speaking… | | | |
| | communes | | populations | |
	(1)	(2)	(3)	(4)
Log distance to post offices in 1792	0.082***	0.078***	0.076***	0.071***
	(0.025)	(0.020)	(0.026)	(0.018)
Years provincial estates held		0.001***		0.001***
		(0.0003)		(0.0003)
Log distance to Paris		−0.070		−0.075*
		(0.050)		(0.045)
Log distance to nearest border		−0.080**		−0.075**
averaged, 1400–1800		(0.037)		(0.034)
Log distance to nearest coast		0.013		0.008
averaged, 1400–1800		(0.026)		(0.023)
Elevation		0.00002		0.00000
		(0.0003)		(0.0002)
Terrain ruggedness		−0.001**		−0.001**
		(0.0004)		(0.0004)
Weighted log population growth by 1850		0.028		0.024
		(0.039)		(0.034)
Number of printing presses by 1700		−0.034		−0.036
		(0.030)		(0.027)
Number of canals within 50km		−0.108***		−0.097***
		(0.033)		(0.028)
Number of commercial fairs within 50km		−0.023		−0.030
		(0.075)		(0.064)
Intercept	0.219***	0.941***	0.192***	0.962***
	(0.041)	(0.340)	(0.037)	(0.321)
Observations	214	214	214	214

Notes: Robust standard errors clustered on the *département* level for all models. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

2.3 Interactions

Tables A3 and A4 make the full results of Table 4 of the main text.

Table A3: Interaction between post offices in 1792 and 200-km distances from Paris.

Dependent variable	Proportion of deserters and draft dodgers
	(1)
Post offices in 1792 $\times$	-0.013^{**}
Log distance from Paris $\in$ (0 km, 200 km]	(0.006)
Log distance from Paris $\in$ (200 km, 400 km]	-0.010^{**}
	(0.004)
Log distance from Paris $\in$ (400 km, 600 km]	-0.009^{**}
	(0.004)
Log distance from Paris $\in$ (600 km, 800 km]	-0.007
	(0.005)
Post offices in 1792	-0.010
	(0.026)
Log distance to Paris	-0.026^{***}
	(0.008)
Years provincial estates held	-0.0001
	(0.0001)
Log distance to nearest border	-0.021^{*}
averaged, 1400–1800	(0.012)
Log distance to nearest coast	-0.029^{***}
averaged, 1400–1800	(0.006)
Elevation	0.0001^{**}
	(0.0001)
Terrain ruggedness	-0.0001
	(0.0001)
Weighted log population growth by 1850	0.007
	(0.008)
Number of printing presses by 1700	-0.024^{***}
	(0.009)
Number of canals within 50km	-0.011^{*}
	(0.006)
Number of commercial fairs within 50km	0.052^{**}
	(0.026)
Intercept	0.591^{***}
Observations	214

Notes: Robust standard errors clustered on the *département* level for all models. The number of post offices by 1792 that fall into each bin of the Distance-from-Paris variable $\in$ $(0, 200km], ...(600km, 800km]$ is, respectively, is 44, 70, 44, and 16. The value of observations that fall outside each bin in both variables us coded zero. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table A4: Interactions between post offices in 1792 and linguistic distance to French.

Dependent variable	Proportion of non-French-speaking...	
	communes	populations
	(1)	(2)
Post offices in 1792 ×	−0.185	−0.204
Linguistic distance to French	(0.407)	(0.389)
Post offices in 1792	−0.207**	−0.174*
	(0.102)	(0.094)
Linguistic distance to French	0.716	0.675
	(0.524)	(0.498)
Log distance to Paris	−0.073	−0.078*
	(0.046)	(0.042)
Years provincial estates held	0.001***	0.001***
	(0.0003)	(0.0003)
Log distance to nearest border	−0.064*	−0.061*
averaged, 1400–1800	(0.039)	(0.036)
Log distance to nearest coast	0.028	0.021
averaged, 1400–1800	(0.025)	(0.023)
Elevation	−0.00001	−0.00002
	(0.0003)	(0.0002)
Terrain ruggedness	−0.001	−0.001
	(0.0004)	(0.0004)
Weighted log population growth by 1850	0.027	0.023
	(0.034)	(0.030)
Number of printing presses by 1700	−0.028	−0.031
	(0.029)	(0.026)
Number of canals within 50km	−0.108***	−0.097***
	(0.032)	(0.028)
Number of commercial fairs within 50km	−0.003	−0.012
	(0.070)	(0.060)
Intercept	0.933**	0.943***
	(0.362)	(0.344)
Observations	214	214

Notes: Robust standard errors clustered on the *département* level for all models. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

2.4 Robustness checks for potential confounders

Table A5 reports the full result of Table 5 of the main text.

Table A5: Supply-side effects on the development of post offices.

Dependent variable	Proportion of... deserters and draft dodgers		Proportion of non-French-speaking... communes		populations	
	(1)	(2)	(3)	(4)	(5)	(6)
Log distance to post offices in 1792	0.018***	0.019***	0.074***	0.075***	0.067***	0.066***
	(0.006)	(0.006)	(0.020)	(0.020)	(0.018)	(0.019)
Years provincial estates held	−0.0001**	−0.0001**	0.001***	0.001***	0.001**	0.001**
	(0.0001)	(0.0001)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Log distance to Paris	−0.019**	−0.020**	−0.062	−0.063	−0.069*	−0.068
	(0.008)	(0.008)	(0.045)	(0.046)	(0.041)	(0.043)
Log distance to nearest border averaged, 1400–1800	−0.020*	−0.020*	−0.084**	−0.083**	−0.078**	−0.079**
	(0.011)	(0.010)	(0.037)	(0.037)	(0.035)	(0.035)
Log distance to nearest coast averaged, 1400–1800	−0.021***	−0.021***	0.023	0.022	0.016	0.018
	(0.006)	(0.005)	(0.026)	(0.027)	(0.024)	(0.024)
Elevation	0.0001**	0.0001**	−0.00002	−0.00000	−0.00003	−0.00004
	(0.0001)	(0.00005)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Terrain ruggedness	−0.0001	−0.0001	−0.001**	−0.001**	−0.001*	−0.001*
	(0.0001)	(0.0001)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Weighted log population growth by 1850	0.009	0.008	0.032	0.039	0.027	0.029
	(0.007)	(0.007)	(0.038)	(0.041)	(0.034)	(0.035)
Number of printing presses by 1700	−0.023**	−0.022**	−0.044	−0.042	−0.042	−0.044
	(0.009)	(0.009)	(0.028)	(0.028)	(0.026)	(0.027)
Number of canals within 50km	−0.002	−0.004	−0.097***	−0.098***	−0.088***	−0.087***
	(0.006)	(0.006)	(0.033)	(0.033)	(0.029)	(0.029)
Number of commercial fairs within 50km	0.056**	0.054**	−0.020	−0.017	−0.026	−0.023
	(0.023)	(0.023)	(0.079)	(0.079)	(0.066)	(0.067)
Log distance to nearest German imperial post	0.036***	0.035***	0.054	0.053	0.043	0.043
	(0.013)	(0.013)	(0.054)	(0.053)	(0.044)	(0.044)
Number of universities	0.010	0.008	0.051	0.050	0.033	0.037
	(0.011)	(0.011)	(0.052)	(0.054)	(0.045)	(0.047)
Log distance to Wittenberg or Zürich		0.0004		−0.006		0.010
		(0.011)		(0.059)		(0.049)
Roman hub		−0.006		−0.050		−0.026
		(0.012)		(0.059)		(0.049)
Roman road		0.037***		0.034		0.014
		(0.013)		(0.077)		(0.068)
Navigable river under Rome		−0.005		0.017		−0.016
		(0.014)		(0.089)		(0.079)
Intercept	0.258**	0.250**	0.587	0.612	0.681*	0.619
	(0.100)	(0.122)	(0.391)	(0.527)	(0.364)	(0.436)
Observations	214	214	214	214	214	214

Notes: Robust standard errors clustered on the *département* level for all models. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.