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# RESISTANCE TO INSTITUTIONS AND CULTURAL DISTANCE: BRIGANDAGE IN POST-UNIFICATION ITALY

By

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# Resistance to Institutions and Cultural Distance
## Brigandage in Post-Unification Italy*

Giampaolo Lecce † Laura Ogliari ‡ Tommaso Orlando §

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**Abstract**

We study how cultural distance affects the rejection of imposed institutions. To do so, we exploit the transplantation of Piedmontese institutions on Southern Italy that occurred during the Italian unification. We assemble a novel and unique dataset containing municipal-level information on episodes of *brigandage*, a form of violent uprising against the unitary government. We use the geographic distance from local settlements of Piedmontese descent as a proxy for the cultural distance between each municipality and the new rulers. We find robust evidence that cultural distance from the origins of the transplanted institutions is significantly associated with more intense resistance to these institutions. Our results further suggest that the rejection of the transplanted institutions may have a long-lasting effect on political participation.

**Keywords:** Institutions, Institutional Transplantations, Culture, Social Unrest, Electoral Turnout
**JEL classification:** N43, D74, P16, Z10

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# 1 Introduction

The recent comeback of separatist and secessionist movements in Europe can be interpreted as a signal of the lack of cultural convergence between regions of the same country, as documented by Alesina et al. (2017). This interpretation suggests that the historical process of nation building, which led to the formation of contemporary European states by the end of the 19th century, has not always been successful. In many cases, nation building amounted to national rulers introducing uniform institutions across their territories and implementing policies intended to create a homogeneous legal environment and, possibly, a unified national identity.[1] Thus, incomplete nation building can often be attributed to flaws in the introduction of new institutions, such as the lack of acceptance of a newly imposed institutional framework.

In this paper, we investigate whether cultural differences play a relevant role in the short-run rejection of new institutions. This rejection may hinder state formation processes in the short run and can also have long-lasting effects on important aspects of nation building, such as the intensity of political participation. We address this issue by analyzing the consequences of the imposition of Piedmontese institutions on the territories in continental Southern Italy[2] during the Italian unification process (1860–1870). Three features of the Italian unification make it an ideal setting for our analysis. First, institutional rejection took on the very visible form of violent, guerrilla-like popular unrest known as *brigandage*. Second, historical migrations provide us with local variation in cultural similarity with Piedmont across southern municipalities. Finally, the incompleteness of Italy's nation building process is reflected by large and persistent differences in attitudes toward institutions, the intensity of which may be partially evaluated in light of this case of institutional rejection.

The contribution of our paper is threefold: first, we construct a new and unique dataset including information on recorded brigandage episodes at the municipal level and on pre- and post-unification socio-economic variables, thereby providing the first detailed and comprehensive quantification of the intensity of institutional rejection in the form of brigandage; second, we relate this intensity to cultural characteristics and find strong evidence that institutional rejection is closely linked to

[1] See Alesina and Reich (2015) for historical examples of nation building in Europe.

[2] From now on, we shall simply refer to this region as 'Southern Italy', but the limitation to the continental regions applies everywhere.

cultural distance from the environment in which the institutions originated; third, we highlight a persistent relationship between the intensity of the institutional rejection and the dynamics of political participation following the Italian unification.

We measure cultural distance from Piedmont by the geographical distance from communities descending from 'near-Piedmontese' settlers, whose persistent cultural similarity with their ancestors is well documented by historians.[3] Prolonged interactions with Piedmontese descendants, occasional intermarriages and protracted exposure to Piedmontese social norms will increase the cultural proximity of local communities to these near-Piedmontese settlements and, therefore, to Piedmont itself. Knowing the number of brigandage episodes in each municipality, we directly test whether cultural distance affects the strength with which communities reject transplanted institutions. Our results show that, on average, doubling the distance from the closest Piedmontese enclave is associated with a 17% increase in the expected incidence of brigand uprisings. We substantiate our claim of a social interaction channel by discussing anecdotal evidence of historical trade and intermarriages across neighboring communities and by showing that the effect of cultural proximity is non-linear and sensitive to the intensity of exposure to Piedmontese culture.

Our results survive an extensive sensitivity analysis and are robust to the inclusion of controls for a wide range of alternative explanations (e.g., human and social capital, land use, financial development, etc.). A potential concern is that our results may be driven by characteristics typical of all ethno-linguistic enclaves and that there is really nothing specific about our reference points being communities of near-Piedmontese descent. For example, linguistic minorities may display higher social cohesion or have developed internal social structures that reduce their propensity to violently reject transplanted institutions. To address this concern, we replicate our analysis by taking different cultural enclaves (Greek, Croatian and Albanian) as reference points: distance from those enclaves does not affect brigandage incidence in a significant way. This evidence supports the claim that cultural proximity between the environment in which the institutions originated and that in which they are applied plays a crucial role in determining these institutions' ability to function.

After establishing the link between cultural proximity and institutional rejection, we investigate whether there is a relation between our measure of the latter and the

[3]We call 'near-Piedmontese' those communities established by migrants from the Provence-Savoy-Piedmont area. For further details, see Section 2.

levels of political participation in the years following the Italian unification. Specifically, we show that local changes in electoral turnout between the 1861 and 1865 national elections are negatively correlated with the intensity of the occurrence of brigandage episodes between 1862 and 1864.[4] Institutional rejection thus induces lower political participation. We also explore the relationship between brigandage and turnout in subsequent elections. We find suggestive evidence that municipalities with a large number of uprisings had depressed turnout up until the early 20th century. This 40-year-long effect of brigandage suggests that the short-term rejection of Piedmontese institutions impacted the nation building process through its long-lasting influence on political participation.

Our results add new evidence to the literature on institutions and culture.[5] The economic literature has already highlighted how these factors generally evolve jointly (Bisin and Verdier, 2017) and interact with one another (Tabellini, 2010; Alesina and Giuliano, 2015). In particular, while the economic analysis of institutions and institutional change has often implicitly assumed cultural homogeneity in the underlying environment (Acemoglu et al., 2011), empirical evidence suggests that the same institution can have different effects when local norms and social capital are different (Putnam, 1993). For instance, the functioning of legal and administrative institutions and their effectiveness in terms of economic outcomes are deeply affected by the cultural traits of the environment to which they are applied (see, among others, Acemoglu and Jackson (2017), Guinnane (1994) and Guiso et al. (2016).).

The main empirical challenge in identifying the effect of underlying cultural traits on institutional rejection is that institutional variation interplays with cultural variation.[6] Institutional transplantations – the deliberate, rapid and forced exportation of institutions from one location (the *donor environment*) to another (the *recipient*

[4]This time span was chosen to capture the effect of uprisings occurring between the two electoral rounds: see Section 6.

[5]The positive impact of both well-functioning institutions and favorable cultural traits on economic growth has been widely documented in the recent economic literature (see Acemoglu et al., 2005 and Guiso et al., 2006 for general introductions).

[6]For instance, difficulties in studying the interplay between cultural traits and institutions may come from the fact that it is difficult for identical institutions to arise endogenously from different cultural milieus (Tabellini and Greif, 2010); that the same institution may display different degrees of effectiveness when applied to different environments because of the institutional – rather than the cultural – background of such environments (Ma, 2013); and that culture itself may be influenced by institutional arrangements, implying an obvious endogeneity issue (Aldashev et al., 2012). Moreover, cultural traits are difficult to specify and measure in absolute terms: 'culture' is composed of preferences and beliefs, and although several ingenious quantifications have been proposed (e.g., Guiso et al., 2004), all inevitably capture only some aspects of a more general, yet unfathomable, picture.

*environment*) – can provide variation in institutions that is uncorrelated with underlying cultural traits, as the transplanted institutions are almost never designed to be transplanted. Transplantations involving several recipients simultaneously are particularly useful because they often lead to the imposition of a uniform set of institutions on culturally diverse groups.

This is not the first work to make use of institutional transplantations to analyze the relationship between cultural traits and institutional effectiveness. For instance, Lecce and Ogliari (2017) study the long-run economic effect of the interaction between culture and the imposition of French institutions on Prussian counties during the Napoleonic occupation. However, transplanted institutions face the possibility of immediate rejection by the recipient: this rejection may come in different forms, ranging from violent uprising against the donor (as in our case) to the local bureaucracy's prevention of the application of the foreign law or use of the transplanted institutions to different ends than those for which they were originally intended (as in Kurkchiyan, 2009). In this paper, we measure the degree of *institutional acceptance* by recipient communities and investigate whether cultural proximity to the donor facilitates the possibility that the transplanted institutions will take hold in the first place by decreasing the intensity of rejection.[7]

This paper also touches upon the more specific literature on legal transplantation (e.g. Berkowitz et al., 2003*a* and Berkowitz et al., 2003*b*). These studies focus on the long-term economic effects of imported legal institutions and attribute differences in their adoption to the lawmaking process and the demand for laws exploiting cross-country variation. We instead concentrate on a single transplantation instance and use finer municipality-level variation to highlight the role of cultural distance from the donor environment in determining short-run institutional rejection.

Finally, we connect our study with other works in the economic literature that focus on Italian post-unitary brigandage. Most notably, Accetturo et al. (2016) exploit a "side effect" of brigandage, i.e., the passage of the draconian Pica Law in 1863, to study the effects of divisive policies on voter turnout in the aftermath of unification. Amodio (2012) shows that three selected and notable brigandage episodes destroyed social capital and had long-lasting effects on voter turnout. To the best of our knowledge, however, our paper is the first to link near-Piedmontese (and, more generally,

[7] In a different context, Fisman et al. (2017) stress the importance of cultural proximity in mitigating informational asymmetries in the Indian lending market.

non-indigenous) ancestry in Southern Italy with the intensity of brigandage.

The remainder of the paper is organized as follows. Section 2 reviews the historical background, discussing the situation of the Italian peninsula during the unification process, the guerrilla episodes following the creation of the new state, and the history of the northern cultural enclaves settled in Southern Italy. Section 3 illustrates our data and provides descriptive statistics. Section 4 presents our identification strategy, illustrates the main results and discusses the relevant mechanisms. Section 5 examines a number of alternative channels that may explain our results, while section 6 investigates the long-run relationships between brigandage and social capital. Appendix A contains additional figures, tables and robustness checks. Appendix B provides further details on the data and the historical data sources.

# 2 Historical context

## 2.1 Italian unification and brigandage

Our analysis is made possible by the peculiar historical circumstances that arose within the Italian unification process of the 1860s. Between the spring and summer of 1860, after landing in Sicily, general Garibaldi had occupied the territory of the former Kingdom of the Two Sicilies, which included Sicily and continental Southern Italy (henceforth 'Southern Italy') and had hitherto been ruled by the Bourbon dynasty.[8] By the late summer of 1860, Garibaldi ruled as a *pro tempore* dictator in the name of the Savoy after having ousted the legitimate king from Naples, the capital city, and forced him and the remnants of the Bourbon army to retreat within the walls of the city-fortress of Gaeta, near the border with the Papal States.[9] Unable to further delay an official military intervention, the Piedmontese army descended into Southern Italy, and by October 1860, the former Bourbon territories had been integrated into the Piedmontese kingdom.

The unification process was carried out by a complete transfer of the Piedmontese institutions onto the annexed territories. The *Statuto Albertino* (the Piedmontese constitution) became the constitution of the newly formed state, and between late 1860 and early 1861, the Piedmontese lieutenants began issuing decrees involving the extension of the whole Piedmontese administrative and judicial system to the rest

[8] For an administrative map of Southern Italy in the period under study, see Figure A1

[9] Other southern troops gathered in the strongholds at Messina (Sicily) and Civitella del Tronto (at the northeastern extremity of the kingdom).

of Italy and assigned key administrative position to loyal Piedmonese officials. The intention of the Piedmontese to extend their law and administration to the invaded areas was commonly known even before the territorial occupation was completed. Ultimately, the explicit intention of the Savoy king was to unify all Italian-speaking territories under his rule.[10] There was no indication that Victor Emmanuel and Cavour would adopt any form of federalism: following the post-Napoleonic French tradition, Savoy rule was not authoritarian but heavily centralized and aimed at creating a "strong state", disregarding local diversities that could hinder the political unity of the new kingdom.

The transplantation of the Piedmontese institution created a sense of dissatisfaction among some of the elites and most of the common population alike, by whom the *Piedmontization* of the institutions was considered a form of hostile invasion and not of annexation.[11] This sentiment of dissatisfaction provided fertile ground for the Bourbon house to instigate unrest. The first months of Piedmontese rule, in which Bourbon resistance was still thriving within the military strongholds, were characterized by unorganized popular uprisings in rural towns, most of which were sparked by instigators affiliated with either the former king or the Church. This first phase of reaction against the Piedmontese invasion faded as rapidly as the authorities that supported it: Gaeta surrendered in February 1861, and the Church, already deprived of more than half of its former territories, decreased the intensity of its hostilities around that time. Nevertheless, it soon became clear that insurgencies, despite being instigated by loyalist agents, were founded upon deeper roots.

Three aspects of the institutional transplantation deeply resonated with the masses and served as a catalyst for their mobilization. First, in line with its nineteenth-century liberal ideology, the Piedmontese government was unambiguously anti-clerical, and its civil and penal law contained hardline provisions against the Church's temporal power and economic stance. Religious orders were either abolished or

[10]The continuity with the earlier Kingdom of Sardinia was also emphasized by two measures of extreme symbolic value: the regnal number of the king – Vittorio Emanuele remained "the second" instead of becoming the "first" king of Italy – and the extension of the Piedmontese currency to the whole kingdom.

[11]In a heartfelt parliamentary motion presented on November 20, 1860, duke Marzio Francesco Proto Carafa Pallavicino, deputy of Casoria, complained about the extensive presence of the Piedmontese in key official positions and clearly stated the sentiment of dissatisfaction felt by the Neapolitan population: "*There is not an instance in which an honest man could earn something without involving a Piedmontese to help. [...] This is invasion, not union, not annexation! This is treating our land as a conquest land. [...] The government of Piedmont wants to treat our land as Cortez and Pizarro did in Peru and Mexico.*"

deprived of land and other possessions. This constituted a shock to the rural communities of Southern Italy not only on cultural or ideological grounds but also because ecclesiastical organizations would often intervene in favor of the poorest and weakest during times of economic downturn. A similar mechanism underlies the reasons behind the negative reception of Piedmontese land reforms by the lower classes. Southern Italy was organized as a post-feudal economy, with a tiny class of landlords owning large estates (the so-called *latifondi*), an equally small but increasingly wealthy and powerful urban middle class, and a large mass of landless and mostly propertyless peasants.[12] The possessive capacity of those few landlords was limited by the presence of *terre demaniali* – lands directly owned by the Crown that could be used as pasture or farming land by peasants in times of poor harvest and/or low employment (Liberati, 1988).[13] Retrieving an old plan drafted by the Napoleonic government at the beginning of the century (that had already sparked an insurgency at the time: see Pappalardo, 2014), the new government decided to partition and auction off these lands. The reorganization of land usage benefited mainly the bourgeoisie (which supported national unification) but was not well tolerated by the peasants, reinforcing their connection with the former king and the Church, who were considered friendly authorities, as opposed to local nobility and foreign invaders. Finally, the Savoy decrees contained provisions for the inclusion of both ex-Bourbon and new recruits in the newly formed national army: to this end, compulsory military service was planned for 1861 and subsequent years.[14]

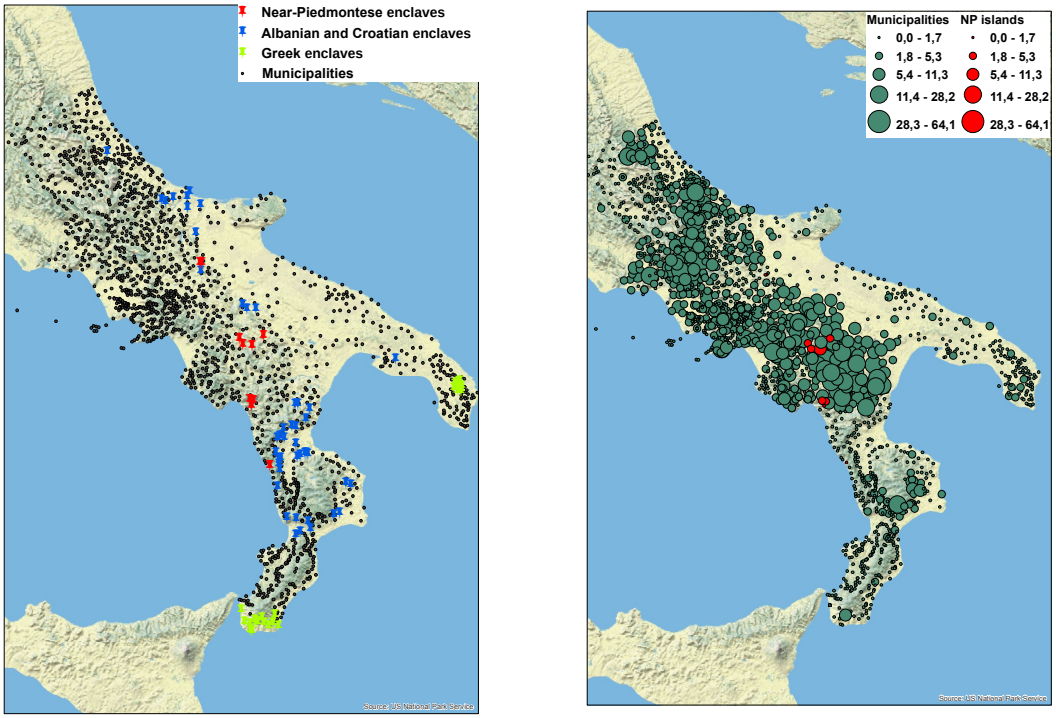
Thus, by 1861 all the unwelcome innovations coupled with the demise of the reference authorities of previous centuries (the Bourbon king and the Church) sparked a new wave of popular unrest that – in some communities – led to the organization of guerrilla groups of so-called *brigands*. Brigands came almost invariably from the peasant class and were joined in some cases by disbanded Bourbon soldiers who refused to integrate into the new army's ranks. Their bands varied in size, ranging from few individuals to hundreds: one of the best-known brigand leaders, Carmine

[12] In the first decades of the nineteenth century, Cerignola, in northern Apulia, was a wealthier-than-average agricultural town, the development of which was certified by sizable immigration. However, only 40.5% of its inhabitants lived on a larger-than-subsistence income, and 68% of households were headed by landless peasants (Russo, 1988).

[13] To appreciate their extension, consider that, a few decades before national unification, state-owned land constituted 54.4% of the agricultural land in the flat countryside of Cerignola (Russo, 1988) and 39% of the mountainous municipality of Morcone (De Francesco, 1988).

[14] The unraveling of Piedmontese plans for the re-organization of the Southern army epitomizes the popular opposition to the regime change: a decree was issued on December 20, 1860, to reintegrate 70,000 Bourbon soldiers into service under Piedmontese command. The deadline was delayed several times, but by June 1861, only 20,000 had appeared for service.

Crocco, claimed to have once led an army of more than 2,000 (Ciocca, 2013). Bands existed almost exclusively in rural areas, and due to their need to escape regular troops, were concentrated where control of the territory by the non-indigenous was more difficult, i.e., around the mountain range of the Apennines and the hillside areas to the north and east of Naples (Figure 1).




(a) Near-Piedmontese communities (red pinpoints) and other linguistic enclaves (blue and green pinpoints).

(b) Intensity of brigandage (in episodes per 1,000 inhabitants). Near-Piedmontese communities are denoted by the red dots.

Figure 1: Municipalities in continental Southern Italy as of 1861.

Scholars partition the brief history of brigandage into three phases. The first coincides with the formation of brigand bands throughout the years 1860-1861. The influence of the Church and the king and the hope that the latter would return – and old institutions thus restored – were the main drivers of brigand activity in this period. This activity involved instigating and leading episodic revolts in rural municipalities; attacking non-loyalist landowners, especially the urban elites who had acquired lands thanks to the Piedmontese reforms; and, occasionally, clashing with regular troops. Between incursions, brigands retreated to secluded areas that they left only to obtain supplies, an activity that was constantly supported by the local peasantry. The second phase saw brigand groups organizing in paramilitary fashion,

with commanders-in-chief and a more stable, albeit fragmented, organization. Despite Piedmontese efforts,[15] intense guerrilla warfare lasted until 1864. Extending a label used by historians, we call these first two phases 'great brigandage'. Unable to cope with such political instability in half of the national territory and facing a seemingly endless drainage of resources, the government introduced a form of martial law (the 'Pica law') in August 1863, with the goal of providing "temporary and exceptional means of defense" for public order. The hardening of legal provisions (going as far as allowing the execution of suspects without a trial) and the near-absolute power given to the military in 11 out of 16 provinces (those labeled as "infested by brigands") in Southern Italy were effective, and the intensity of brigand activity began to fade in the second half of 1863. Beginning in 1865, political brigandage began gradually losing the connotation of anti-Piedmontese resistance and progressively faded into common criminality.

Post-unitary brigandage was an explicit, violent form of reaction against the institutions transplanted by the Piedmontese and, in particular, of those provisions of the law that directly interfered with the life of common peasants.[16] This brigandage was a large-scale phenomenon in Southern Italy: a true civil war. According to official data reported by Molfese (1964), of a total number of brigands estimated at approximately 80,000, more than 5,000 had been killed (during military operations or by execution) between 1861 and 1865, a similar number had been arrested and approximately 3,600 had surrendered. According to Ciocca (2013), approximately 6,500 brigands and more than 1,600 regular soldiers were killed in the more extended period of 1861-1869. In this paper, we use the number of brigandage-related events in each municipality of Southern Italy as a measure of the intensity of the rejection of the institutional transplantation during the Piedmontese invasion of Southern Italy and the consequent process of national unification.

[15] Apparently, at the height of the anti-brigandage operations in early 1864, the Italian army had deployed more than 110,000 soldiers against the brigands, amounting to approximately two-thirds of the available units (Ciocca, 2013).

[16] The anti-institutional sentiment and the objective to safeguard the poor masses are clear in a brigand song from Mercato Cilento: "*Tu si' lu giurici re li miei signuri, i' so' lo capo re li fuorilegge; tu scrivi co' la penna e dai ruluri, i' vao ppe' lu munno senza legge. Tu tieni carta, penna e calamaio ppe' castia' a sti poveri pezzienti, i' tengo povole e chiummo, quanno sparo: giustizia fazzo a chi non tene nienti.* (Translation: You are the judge of the lords, I am the head of the outlaws; you write by pen and cause sorrow, I go around the world without law. You have paper, pen and inkpot to punish these poor souls, I have got gunpowder and bullets, when I shoot: justice I make for those who have nothing.)"

## 2.2 Near-Piedmontese enclaves in Southern Italy

The aim of this paper is to test the hypothesis that cultural traits matter at least partly for institutional acceptance. We focus on a specific aspect of the cultural identity of the receiving environment, namely, its cultural proximity to the donor. Our task is therefore to test whether cultural proximity has a (positive) impact on institutional acceptance. To do this, we rely on the existence of communities of near-Piedmontese descent in areas where brigandage was, on average, intense.

### 2.2.1 Origins

There is substantial agreement among historians that such communities were established in the late Middle Ages (with the earliest mentions dating back to between the thirteenth and fifteenth centuries). We call them 'near-Piedmontese' because not all of the places of origin of the immigrants who first settled these communities lie within the current borders of Piedmont (some trace their origin back to the contemporary region of Liguria; see Toso, 2002) or within the 1861 borders of the Kingdom of Savoy (other communities are thought to be descendants of soldiers from the Alpine valleys of what is now southeastern France; see De Salvio, 1908). What matters for this paper is that all these communities originated within the Provence-Savoy-Piedmont area, which is also the cradle of the Kingdom of Savoy and the macro-region where its cultural traits developed. Ten near-Piedmontese communities are easily identifiable (and were at the time of the Italian unification) because they retain Gallo-Romance dialects.[17] For most such municipalities, the Gallo-Romance dialect was the only language spoken by peasants at the time of the events we study, although it is believed that most could communicate, at least at a basic level, in the language of the surrounding provinces, and many would have understood Standard Italian because of partial mutual intelligibility (De Mauro, 1963).

Linguistics helps us to identify the places of origin and, consequently, to clarify the reasons underlying the migratory phenomena that led to the formation of these communities. The ten near-Piedmontese enclaves constitute four geographically distinct clusters: the municipalities of Celle di San Vito and Faeto in northern Apulia; seven municipalities in Basilicata, divided into two clusters (Picerno, Pignola, Tito and Vaglio on one hand and Nemoli, Rivello and Trecchina on the other); and the isolated municipality of Guardia Piemontese in northern Calabria. Despite the scarcity of documents, contemporary historians tend to exclude the possibility that the main

[17] We use an extensive definition of 'Gallo-Romance languages' that encompasses Franco-Provençal, Occitan and the Gallo-Italic languages of Piedmont and Liguria.

motive for these communities settling in Southern Italy may have been an attempt to escape religious persecution. The origin of the Apulian Franco-Provençal settlement has been traced back to soldier relocation and land assignment by Charles of Anjou in the 1260-1270s (see, for instance, De Salvio, 1908 and Melillo, 1959). Based on linguistic evidence, Pfister (1991) and Toso (2002) suggest that most of the Gallo-Italic speakers from Basilicata descend from southern Piedmontese and/or Ligurian colonizers, who are not believed to have been interested in religious struggles. The Calabrian settlement of Guardia was indeed created by a Waldensian community, and it is possible that southward migration was sparked by fears of persecution following the Albigensian Crusade (early thirteenth century). There is no evidence, however, that religious motives affected the choice of the precise location of the colony (which might have been otherwise explicitly selected for its secludedness or defensibility). In fact, the Waldensians were positively received by the Calabrian nobility and faced no difficulties until after the Reformation when, because of their adherence to Protestantism, they suffered harsh persecution (Vegezzi Ruscalla, 1862).

### 2.2.2 Cultural persistence

It is crucial for our empirical strategy that these ethno-linguistic enclaves retained their ancestors' cultural traits over the centuries.[18] Historical evidence documents a persistent cultural similarity between the inhabitants of these near-Piedmontese enclaves and their ancestors. This similarity is made particularly evident by the survival of ancestral linguistic traits, which is usually associated with the persistence of other, less evident cultural traits.[19] German linguist Gerhard Rohlfs was the first to study the peculiar linguistic traits of near-Piedmontese municipalities in Basilicata. He reported how local dialects displayed several analogies with Gallo-Romance languages (including the Sicilian Gallo-Romance dialect) and structurally differed from the dialect spoken in the surrounding region.[20] Linguistic similarities are also

[18]The persistence of cultural traits has been widely documented in the economic literature. See for example Voigtländer and Voth (2012), Doepke and Zilibotti (2008) and Alesina et al. (2013).

[19]A growing empirical literature studies the relationships among ancestry, language diffusion and cultural persistence over time and space; see Spolaore and Wacziarg, 2016*a* for further details.

[20]Rohlfs identifies the core of a northernmost near-Piedmontese cluster in the municipalities of Potenza, Tito, Picerno, Pignola and Vaglio. Moreover, he reports Trecchina (the municipality with the strongest resemblance to northern languages), Rivello, Nemoli and San Costantino (currently part of the municipality of Rivello) as part of a southern Gallo-Romance cluster: figure A5 in appendix A depicts a map of the two near-Piedmontese clusters in Basilicata. Figure A4 in appendix A is a comparative table of the languages spoken in the near-Piedmontese community of Tito in San Chirico (a nearby non near-Piedmontese community) and in two municipalities in Liguria and Piedmont (the areas of origin of near-Piedmontese colonizers). See Rohlfs (1988) for further details.

reported for the other three enclaves. Vegezzi Ruscalla (1862) provides an ethnographic study of Guardia Piemontese in which he thoroughly reports the analogies between the local language and that spoken in the Piedmontese valleys where the ancestors of Guardia's inhabitants originated and underlines the persistent resemblances with the Piedmontese.[21] Finally, De Salvio (1908) led a comparative study of the dialect spoken in Celle and Faeto at the beginning of the twentieth century and the old Savoy dialect of the Middle Ages: the results of this comparison proved that these languages were closely connected. In addition to their linguistic traits, near-Piedmontese communities have retained other aspects of their ancestral culture: writing around the time of our events of interest, Vegezzi Ruscalla (1862) reports that the inhabitants of Guardia Piemontese maintained very similar customs to their Piedmontese ancestors in terms of clothing and, more important for our analysis, attitudes toward property and work.[22] We thus exploit these linguistic and cultural enclaves to proxy for the cultural distance of Southern Italy's communities from the donor environment, assuming that near-Piedmontese enclaves embody customs and social norms very similar to those prevailing in Piedmont. Importantly for our analysis, though, historical accounts provide no evidence of such communities – with the possible exception of Guardia – being recognized as culturally similar by the invading Piedmontese of the time. For example, while the presence of Albanian and Greek communities was reported in the 1861 Census, near-Piedmontese enclaves did not receive any mention in the official statistics. This fact also suggests that Piedmontese officials were likely unaware of their ancient link with these communities. This suggestion arguably excludes the possibility that the Piedmontese were in the position to apply any kind of 'preferential treatment' to near-Piedmontese communities during the period of institutional transplantation.

# 3 Data and variables

The main dependent variable in our analysis is the intensity of brigandage, which we measure as either the total number of brigandage-related episodes in each municipality or as brigandage incidence (i.e., the number of episodes divided by the municipality's population, measured in thousands of units). We use these measures of brigand activity to quantify the intensity of the rejection of the institutional

[21] Figure A6 in appendix A offers several examples of linguistic similarities and differences comparing the Italian language, the dialect spoken in Guardia Piemontese, the dialect spoken in Val d'Angrogna and the dialect spoken in Cosenza (the largest city near Guardia Piemontese).

[22] Rohlfs (1972) also reports strong similarities in clothing between inhabitants of Guardia Piemontese in the first half of the nineteenth century and their Piedmontese ancestors.

transplantation in each of the 1,855 municipalities in post-unitary Southern Italy (see Figure 1). We digitized the information collected in three volumes published by the Italian Ministry of Culture,[23] which include all episodes of brigandage reported in the State Archives of Southern provinces (for an example of entries in the State Archives, see Figure A3). This process led to a total of 12,242 brigandage episodes for which we know the geographical location, the type of offense, the authority that reported it and the year in which it was recorded. On average, the municipalities in our population experienced approximately 6.6 episodes each (corresponding to approximately 1.93 episodes per thousand inhabitants), with approximately 68.5% of them experiencing at least one episode and the most intensely brigand-stricken municipality reaching 64 episodes per thousand inhabitants.[24] Based on information contained in the original records, we are able to classify episodes into four broad categories of offenses: violent crimes, clashes with authorities and armed insurrections (36.3%); non-violent crimes such as theft, arson and instances of connivance (36.8%); and, finally, a residual category including all episodes reported as notifications of the presence of brigand bands, reports by citizens or arrests (26.8%). Furthermore, just under half of our episodes (45%) were recorded by courts at any level; most of the other half were recorded by public safety institutions such as the police or the *Prefetture*, the local representatives of the Ministry of the Interior (46%).[25] Approximately one in four (24.1%) occurrences belong to the early phase of brigandage (1860-1861), characterized by the immediate reaction to Piedmontese occupation; approximately three-quarters of our episodes (74.3%) are associated with the most intense phase of brigand guerrilla war (1860-1864); the remaining 25.7% were recorded between 1865 and 1870.[26]

The main explanatory variable is the logarithm of the geographic distance of each municipality from the closest near-Piedmontese community, which we measure in two different ways. In the baseline specifications, we use the linear distance between municipal centroids. One might argue that because culture typically spreads

[23]Ministero per i Beni e le Attività Culturali (1999-2001).

[24]The total number of episodes exceeds that indicated by most historians who focus on major brigandage events. For example, the clashes reported by Molfese (1964) include approximately 475 major episodes concentrated in approximately 19% of the municipalities in our sample.

[25]Since the records come from different sources, there could be over-reporting of some episodes. We address this issue in Section 4.3 and in Appendix A by considering only episodes reported by the police and re-aggregating observations, respectively, to eliminate most potential duplicates.

[26]When considering the temporal distribution of brigandage, however, one must bear in mind that different institutions might have recorded episodes with varying delay: for instance, courts may have recorded some episodes at the beginning of the associated trials, which may have occurred months or even years after the suspected crime had taken place. In particular, several episodes located in the last phase might in fact refer to brigandage activities that occurred before 1865.

through frequent contacts and social interactions, for the matter at hand, a measure of actual traveling distance between two places may be more appropriate than linear distance. For this reason, in a subsequent specification, we compute distances using the ancient Roman road network as reconstructed by McCormick et al. (2013).[27] The two measures display, as expected, a highly positive degree of correlation (0.94). In addition to geographic characteristics, we control for socio-demographic and economic features of Southern Italy's municipalities and provinces before unification. For this purpose, we collect and digitize novel data from several statistical sources dating back to the last decades of the Kingdom of Two Sicilies,[28] and population data concerning the years immediately following Italian unification, obtained from the Italian Census of 1861 and the additional statistical reports of the following decade. To capture differentials in economic growth across municipalities prior to the onset of the events we study, we compute the population growth rate between the 1850s and 1861 (both values are reported in the Italian 1861 Census). Other variables that were recorded before national unification (most of which between 1830 and 1850) at the municipal level include indicators for the presence in each municipality of civil, criminal or commercial courts; of the local episcopal or archiepiscopal seat; of secondary education institutes;[29] of new hospitals; and of relevant manufactures or proto-industrial plants. We also use information reported by Corona (1995) to construct an indicator of popular attitudes toward innovation and the privatization/distribution of common-use lands[30]. We further collect information on provincial-level pre-unitary characteristics: the number of individuals subject to military draft in 1834; the total number of landowners, farmers and fishermen; and the total number of professionals, artisans and servants. We also include provincial data on tax revenues, municipal revenues and total expenditure for public works in 1850-51. Moreover, using data collected by Villani (1964), we can obtain some provincial measures of the intensity and patterns of the diffusion of monasteries and the sale of their lands during the Napoleonic period.

[27] The choice of using a log-transformed version of these distances is in line with our interpretation of physical distance as an inverse proxy for cultural proximity: the diffusion of culture from a point of origin suggests that equal increases in physical distance should be deemed less important as their distance from the origin increases.

[28] Our main data sources are the *Annali Civili*, an official statistical publication by the Ministry of the Interior of the Kingdom of Two Sicilies, published in several volumes between 1833 and 1860; the statistical collection (*Statistica dell'Italia*) by Count L. Serristori published in 1842; and historical works on the sale of national wealth during the Napoleonic period (Villani, 1964) and on the reaction to provisions of land redistribution during the nineteenth century (Corona, 1995).

[29] These are divided into *licei*, *collegi* and other secondary schools.

[30] The information provided by Corona (1995) refers to the last decades of the eighteenth century and therefore predate the period under analysis by 70-80 years. We provide more information on the data and on the index we construct in Section 5.1.

Table 1: Descriptive statistics and means comparison

| | nP communities (1) | Other municip. (2) | Difference (3) |
|---|---|---|---|
| Area 1861 (ha) | 4361.30 | 4163.67 | -197.63 |
| Pop. 1861 (ths.) | 3.01 | 3.66 | 0.65 |
| Pop. growth | -0.11 | -0.04 | 0.06 |
| Altitude (100m) | 6.71 | 4.14 | -2.58*** |
| Dist. Naples | 138.98 | 160.19 | 21.20* |
| Dist. n. prov. seat. | 33.64 | 32.13 | -1.51 |
| Dist. town | 30.59 | 19.01 | -11.58 |
| Dist. coast | 35.17 | 22.11 | -13.06 |
| Dist. Papal States | 218.56 | 191.57 | -26.99 |
| Observations | 10 | 1845 | 1855 |

Column 1 reports means in near-Piedmontese communities; column 2 reports means in all other municipalities; column 3 reports the difference between the two means: tests for the difference in means allow for unequal variances in the sub-samples (* p<0.1, ** p<0.05, *** p<0.01). All distances are expressed in kilometers. For a detailed description of the variables, see Appendix B.

Table 1 reports the mean values of several geographic controls for near-Piedmontese communities and all other municipalities in Southern Italy. Differences in such values are statistically significant only in the case of altitude and distance from Naples, with nP communities lying on higher grounds and closer to the capital than the average municipality. Consistent with this evidence, we notice from Table 2 that near-Piedmontese communities display slightly more intense brigandage than the average municipality. However, when the comparison population is reduced to the subsample of municipalities within the first quartile of distance from the closest near-Piedmontese community, we see that the latter display much less intense brigandage. In particular, it emerges from Figure 2 that most municipalities within this restricted range display more brigandage than the national average; that the incidence is smaller for the 10 near-Piedmontese communities than for their most immediate neighbors; and, finally, that there is an evident decrease in incidence as one moves closer to near-Piedmontese communities within a 25 km radius.

The fact that near-Piedmontese communities display above-average brigandage incidence should come as no surprise. As it emerges visually from Figure 1b, the majority of brigand activities were concentrated along the Apennine range and, in general, in inland municipalities rather than in coastal towns. Near-Piedmontese communities meet these characteristics.

Table 3 reports the average of our main geographic and socio-economic controls for municipalities with a brigandage incidence below the median (column 1); for the complementary set of municipalities with incidences above the median (column 2);

Table 2: Brigandage intensity by distance from the nearest nP community

| | All municipalities | | | nP communities | | | Dist. 1st quartile | | |
|---|---|---|---|---|---|---|---|---|---|
| | mean | min | max | mean | min | max | mean | min | max |
| Episodes (tot.) | 6.60 | 0 | 211 | 8.80 | 0 | 26 | 11.21 | 0 | 211 |
| Episodes p.m. | 1.93 | 0.00 | 64.13 | 2.33 | 0.00 | 6.59 | 3.04 | 0.00 | 64.13 |
| Observations | | 1,855 | | | 10 | | | 461 | |

*Episodes (tot.)* is the number of brigandage episodes in each municipality; while *Episodes (p.m.)* is the number of episodes per 1,000 inhabitants (a measure of brigandage *intensity*) in each municipality. Column 1 reports means, minimums and maximums for all municipalities; column 2 reports statistics for near-Piedmontese communities only; column 3 reports statistics for non-nP municipalities whose distance from the nearest nP community lies in the first quartile of such distance's distribution in our sample. These correspond to all non-nP municipalities within a 46 km radius from the nearest nP community. For a detailed description of the variables, see Appendix B.

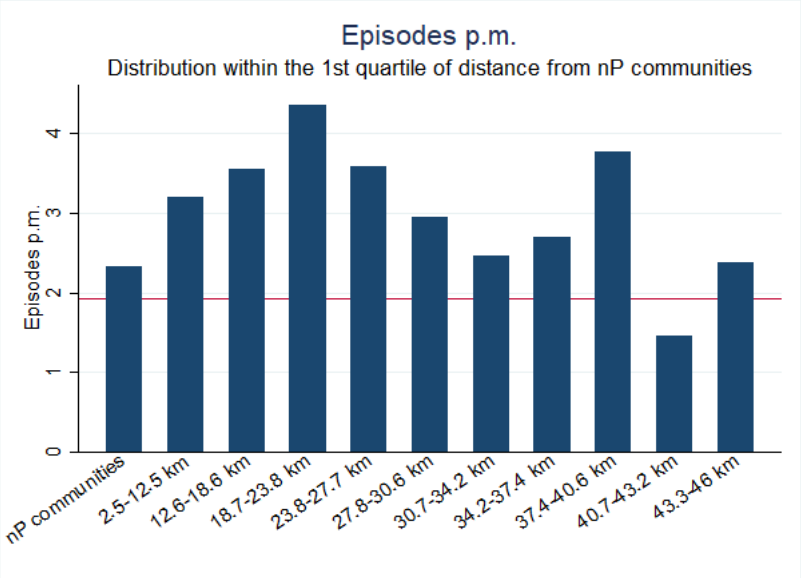



Figure 2: Distribution of episodes per thousand inhabitants within the first quartile of the distance from the nearest near-Piedmontese community (46 km). Each bin includes 46 or 47 municipalities; labels on the horizontal axis indicate the distance range of each bin. The horizontal red line denotes the population average (1.93).

and, finally, for the municipalities most affected by brigandage (those with incidences in the top quartile, column 3). The patterns are as expected: communities with higher levels of brigandage tend to be larger in area but smaller in population, consistent with their location at the center of the peninsula, in mountainous areas, relatively far from the coast and major towns. The distance from Naples, the kingdom's capital city, appears to be negatively correlated with brigandage intensity, as both areas near Naples are attractive to brigands because of their wealth (the province of Naples exhibited, for instance, a larger population growth rate than the rest of Southern Italy over the 1850s) and because brigandage was almost absent

Table 3: Descriptive statistics by brigandage intensity

| | Occasional brig. (1) | Frequent brig. (2) | Highly freq. brig. (3) |
|---|---|---|---|
| Area 1861 (ha) | 3752.84 | 4577.08 | 5054.14 |
| Pop. 1861 (ths.) | 3.72 | 3.59 | 3.48 |
| Pop. growth 1824-61 | -0.06 | -0.03 | 0.00 |
| Altitude (100m) | 3.77 | 4.53 | 5.09 |
| Dist. Naples | 192.03 | 128.08 | 115.60 |
| Dist. n. prov. seat. | 31.44 | 32.84 | 35.29 |
| Dist. town | 18.04 | 20.11 | 22.10 |
| Dist. coast | 19.22 | 25.14 | 28.03 |
| Dist. Papal States | 227.31 | 156.07 | 144.30 |
| Dist. Piedm. | 98.92 | 78.61 | 69.88 |
| Observations | 928 | 927 | 463 |

All distances are expressed in kilometers. Municipalities are classified according to brigandage intensity. *Occasional brigandage* denotes municipalities with less than the median value of episodes per capita (.725); *Frequent brigandage* denotes municipalities with more than the median value of episodes per capita; *Highly frequent brigandage* denotes municipalities with more than the 75th percentile of episodes per capita (2.35). For a detailed description of the variables, see Appendix B.

from the southernmost extremities of Southern Italy, i.e., the tips of Apulia and Calabria, which are the areas located farthest from Naples. The same geographic disposition explains part of the evidence on the distance from the Papal States (lying beyond the northernmost border of the kingdom), to which the explicit support given to brigands by the Church in the earliest phases may have also contributed.

# 4 Cultural distance and institutional rejection

In this section, we present our main results. As described in Section 2, Italian unification was a common 'shock' that generated a reaction with different degrees of intensity across Southern Italy. In some municipalities, citizens responded with violent uprising and riots, while in others, no episodes of protest were reported. We argue that geographical distance from a community of near-Piedmontese ancestry is a significant determinant of this institutional rejection, which is evidence that cultural distance from the donor environment hinders institutional acceptance. Indeed, geographical distance represents an inverse measure of the likelihood of historical interaction with near-Piedmontese communities and the associated cultural admixture, providing a good indicator of cultural proximity to the origin of the institutional arrangement. We show that after controlling for a number of geographic and socio-economic observables, the intensity of brigandage is positively correlated with the distance to near-Piedmontese communities.

## 4.1 Comparison of two communities: a case study

To clarify our point, we consider as an example two villages that are comparable in terms of inhabitants and geographical characteristics. Let us consider Castelluccio Superiore, a municipality in Basilicata with a population of 2,900 in 1861 and an altitude of 680 meters, and Castelluccio Valmaggiore, an Apulian municipality with a population of approximately 2,700 and an altitude of 630 meters (the similarity in names is accidental: four municipalities in total share the denomination of 'Castelluccio'). The former was located 16 km from one of the two near-Piedmontese clusters in Basilicata, with the closest enclave being Nemoli. The latter was 2.5 km away from the near-Piedmontese municipality of Celle San Vito. Many brigandage episodes were reported in the area of Castelluccio Superiore (24 episodes, with an incidence of 8.3 episodes p.m.). Molfese (1964) mentions Castelluccio Superiore in his book, describing the "assault of Castelluccio" on August 1863, when 20 national guards were assaulted by 40 brigands while escorting a group of noblemen. In the ensuing clash, nine people (six guards, one noblemen and two brigands) died, and the surviving noblemen were kidnapped. Castelluccio Valmaggiore provides a stark contrast with Castelluccio Superiore. No episodes of brigandage were reported in our sources during the military invasion or in the following years. However, Daunia, the broader area in which Castelluccio Valmaggiore lies, was not immune from brigandage: Lucera, its main center lying 24 km from Castelluccio Valmaggiore, was an intensely brigand-stricken municipality. We now investigate whether this observation can be generalized to claim that proximity to a near-Piedmontese community was associated with less-intense brigandage, conditional on the observables.

## 4.2 Empirical strategy

To test our central hypothesis, namely, that *ceteris paribus*, Piedmontese institutions were more harshly rejected in regions farther from near-Piedmontese communities and therefore less exposed to the influence of a near-Piedmontese culture, we estimate several generalized linear models of the following form

$$g\left(\mathbb{E}(Y_{i,j} \mid \mathbf{X}_{i,j})\right) = \beta_1 \text{Dist}_i + \beta_2 \text{Pop}_i + \beta_3' \mathbf{G}_i + \beta_4' \mathbf{C}_i + \beta_5' \text{Prov}_j \tag{1}$$

where $Y_{i,j}$ is the number of brigandage episodes recorded in town $i$ of province $j$ or, in some specifications, the incidence of brigandage in town $i$ of province $j$; $\mathbf{X}_{i,j}$ denotes all regressors related to town $i$ of province $j$, which include $\text{Dist}_i$, a measure of the distance of municipality $i$ from the closest near-Piedmontese community, our main

independent variable; $\text{Pop}_i$ (a suitable transformation of the) population of town $i$;[31] $\mathbf{G}_i$ and $\mathbf{C}_i$, vectors of geographical and pre-unitary socio-economic controls, respectively, measured at the municipality level; and $\text{Prov}_j$, a set of pre-unitary controls measured at the province level and possibly reduced to a set of province indicators. The key coefficient is $\beta_1$, the effect of the distance from the closest near-Piedmontese community on the number of brigandage episodes or the incidence of brigandage. We expect $\beta_1$ to be positive and significantly different from zero, indicating that – conditional on our controls – proximity to a near-Piedmontese community reduces a municipality's propensity to experience brigand activity in its territory.

Our identification relies on the absence of correlation between our measure of distance and the error terms, conditional on all controls. Taking settlement locations as fixed, this amounts to claiming that the location of near-Piedmontese communities must be randomly determined. Among other factors, we control for time-invariant observables, such as altitude and the linear distances from the coastline and the capital city, which, as presented in the previous subsection, make the assignment as a near-Piedmontese community approximately random. Moreover, while near-Piedmontese communities are the result of migratory movements, historical evidence presented in Section 2 suggests that the first colonizers did not autonomously decide where to settle, having been either invited (by landowners) or ordered (by political and military authorities) to take possession of those areas. Thus, the location and characteristics of near-Piedmontese communities were not chosen according to criteria that might, through other channels, influence the presence and/or intensity of brigand activity.

Our interpretation of the results relies on the dual assumption that culture exhibits long-run persistence and, simultaneously, that the near-Piedmontese communities on which we focus had interacted with their immediate neighbors in previous centuries. The first claim – discussed in Section 2.2.2 – guarantees that these communities retained traits of their ancestral culture within a homogeneous and culturally distant surrounding environment, from their foundation until the events under study. The second claim – which we examine in depth in Section 4.4 – justifies our use of geographical distances as proxy for cultural distance, as social interaction must have

[31] When $g$ is not linear and the specification requires the dependent variable to take on integer values, the impact of regressors on the incidence of brigandage, which is measured in linear models as the number of episodes per 1,000 inhabitants, is found by retaining the number of episodes as the dependent variable and forcing $\beta_2 = 1$ using log-transformed population as $\text{Pop}_i$. In this case, as $\beta_1$ is interpreted as the effect of distance on expected incidence passed through $g$, we shall indicate brigandage incidence as the dependent variable in our tables.

implied that neighboring communities came into contact with the near-Piedmontese cultural heritage.

## 4.3 Main results

Table 4 reports estimates of ordinary least squares models (columns 1–3) and negative binomial models (columns 4–6) that relate the total number of brigandage episodes to the *linear* distance of each municipality from the closest near-Piedmontese community and a varying set of controls.[32] The relevant distances are log-transformed.[33] Columns 7–9 report estimates of ordinary least squares models using the incidence of brigandage (i.e., the total number of episodes is normalized by the population in 1861) as the dependent variable. Columns 10–12 report the result for a negative binomial model in which the restriction $\beta_2 = 1$ applies (see footnote 31). Columns 1 and 4 include the most basic demographic controls: population growth in the 1850s-1861 period (which may also serve as an indicator of economic growth in this pre-industrial setting), the log-transformed municipal population as reported in the 1861 Census and the main geographical controls (municipal coordinates, area and altitude), distance controls, provincial controls and a set of region-level fixed effects. Columns 2 and 5 replace regional fixed effects with province-level fixed effects, which also absorb all the provincial controls, while columns 3 and 6 complete the specifications by adding pre-unification municipal-level variables. Columns 7–9 do not include the log-transformed municipal population when using the linear model in order to match the aforementioned restriction on the coefficient for the population in count models 10–12. The most complete specifications (namely, models 3, 6, 9 and 12) all display a positive and significant correlation between the intensity of brigandage and the distance from the nearest near-Piedmontese community.

Clearly, we do not claim such distance to be the only driver of brigandage intensity, but its effect is sizable: according to the estimates in model 9, doubling the distance from the nearest near-Piedmontese community is associated with a municipality experiencing 0.21 additional episodes p.m. (amounting to an increase of 10.5% on an average of 1.93 episodes p.m.); model 12 suggests that doubling the distance is associated with a 17% increase in the expected incidence.

[32] Tables A1-2 in the Appendix report all the estimates omitted from Table 4.

[33] In operating this transformation, we set distances in the interval $[0, 1)$, which includes only the zero-distance of near-Piedmontese communities from themselves, to 0.

Table 4: Baseline results

| Dep. Variable: | Total Number of Episodes (Ep. tot) | | | | | | Episodes per thousand inhabitants (Ep. p.m.) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| (log) Dist. Piedm. | 1.796* | 1.752* | 1.517* | 0.185** | 0.178** | 0.169* | 0.717** | 0.706** | 0.699** | 0.225** | 0.222** | 0.227*** |
| | (0.937) | (0.944) | (0.860) | (0.091) | (0.090) | (0.087) | (0.290) | (0.292) | (0.289) | (0.090) | (0.088) | (0.086) |
| Model | OLS | OLS | OLS | Neg. Bin. | Neg. Bin. | Neg. Bin. | OLS | OLS | OLS | Neg. Bin. | Neg. Bin. | Neg. Bin. |
| Geographical controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Distance controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Provincial controls | Yes | No | No | Yes | No | No | Yes | No | No | Yes | No | No |
| Municipal controls | No | No | Yes | No | No | Yes | No | No | Yes | No | No | Yes |
| Region FEs | Yes | No | No | Yes | No | No | Yes | No | No | Yes | No | No |
| Province FEs | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes |
| Adj./Ps. $R^2$ | 0.422 | 0.423 | 0.488 | 0.155 | 0.157 | 0.163 | 0.352 | 0.354 | 0.353 | 0.111 | 0.113 | 0.118 |
| Obs. | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 |

Pop. growth included in all specifications. Columns 1-6 also include (log) Pop. 1861; in columns 10-12, Pop. 1861 is used as the exposure variable. Geographical controls include: (log) Area 1861 (ha), Altitude (100 ms), Latitude and Longitude. Distance controls include: (log) Dist. Naples, (log) Dist. n. prov. seat, (log) Dist. town, (log) Dist. coast, (log) Dist. Papal States. Prov. controls include young men, real estate owners, liberal arts professionals, farmers, artisans, fishermen, average duties on milled grain, state revenues, public expenditure, monasteries suppressed in 1806-1815, monasteries reinstated in 1818, buyer per contract and rent per contract in the alienation of national wealth occurred in 1806-1815; all variables refer to pre-unitary years. Municipal controls include dummy variables for the presence in each municipality of civil, criminal or commercial courts; of the local episcopal or archiepiscopal seat; of secondary education institutes; of hospitals; and of relevant manufactures or proto-industrial plants. Standard errors clustered at district level in parentheses (* p<0.1, ** p<0.05, *** p<0.01).For a detailed description of the variables, see Appendix B.

An inspection of the other coefficients, reported in Tables A1-2, shows the resilient relevance of the municipality's distance from Naples, which is associated with a decrease in brigandage. Population and area, which are trivially positively correlated with the number of episodes, nonetheless appear to influence the incidence of brigandage in opposite directions: geographically larger municipalities tend to display a higher brigandage incidence, but – as we noted above – the latter decreases with the municipality's population. As anticipated, brigandage is associated with higher altitudes and a longer distance from the nearest coast.

Results reported in Table 5 are meant to assess the stability of our baseline findings and to clarify the interpretation of the estimates. As explained previously, brigandage displayed the most reactionary and insurrectional features in the early phases of its existence before transforming into a less politically motivated – albeit widespread – criminal movement.

Column 1 of Table 5 replicates the baseline specification (i.e., model 12 of Table 4) using only episodes occurring between the years 1860 and 1864, a period which – extending the historians' definitions – we label 'great brigandage'. In column 2, we exploit information on the types of crime reported in the archives. Although it is informative to consider the whole set of brigandage episodes together, it is essential to test that our main hypothesis still holds for the subset of events with the most vivid anti-establishment connotation. In particular, we restrict our analysis to episodes that either are reported as having explicit political content (e.g., the organization of popular insurrections or clashes with regular police or army forces) or episodes that are classified as violent in nature: these account for approximately 36% of all brigandage episodes in our records. The estimated coefficients remain similar in both magnitude and significance to those found in our previous results. As explained in our description of the data, observed brigandage episodes were recorded by several sources. Typically, police and other public safety forces would record episodes as soon as they were reported to them by officers or citizens. We deem these sources as more reliable both in terms of geographical localization and in terms of temporal positioning. In column 3, we therefore report estimates of our main specification using brigandage data recorded by police forces only. This exercise also allows us to dispel any doubt about the existence of multiple entries for the same episode across different sources.[34] In column 4, we propose an alternative measure of geographical proximity. As social interaction depends on suitable means of communication,

[34]Results using episodes reported by other sources are provided in Table A3 in Appendix A.

we found it appropriate to check whether our results held when computing road distances rather than linear distances. This might be particularly relevant, given the complex orographic features of the areas we study. Given historical evidence on the high degree of coincidence between nineteenth-century roads and the ancient network of Roman roads, we chose to use the latter (McCormick et al., 2013) to compute our approximate road distances. Indeed, the ancient Roman road network was the main communication system throughout the Middle and Modern Ages, i.e., the centuries in which cultural traits from the near-Piedmontese communities might have spread to neighboring communities through socio-economic contact (see Figure A2). Although other minor roads not included in our network are likely to have been in used in these centuries, there is evidence that, well into the nineteenth century, many of the roadways in use in Southern Italy still exploited the ancient Roman tracks. The effect that we obtain is extremely similar to that derived using linear distances.

Table 5: Refinements to baseline results

| Dep. Variable: **Ep. p.m.** | Great brigandage (1) | Political or violent (2) | Reported by police (3) | Roman roads (4) |
|---|---|---|---|---|
| (log) Dist. Piedm. | 0.229** | 0.204*** | 0.214** | |
| | (0.113) | (0.077) | (0.090) | |
| (log) Roman-road dist. | | | | 0.253*** |
| | | | | (0.069) |
| Pseudo $R^2$ | 0.116 | 0.126 | 0.134 | 0.118 |
| Obs. | 1855 | 1855 | 1855 | 1855 |

The coefficients are estimated using the specification of column 12 in Table 4. *Great brigandage* restricts our analysis to brigandage episodes occurring between 1860 and 1864. *Roman roads* considers distance computed along the Roman road network. Geographical, Distance and Municipal controls, Pop. growth and Province fixed effects are included in all specifications. Standard errors clustered at the district level in parentheses
(* p<0.1, ** p<0.05, *** p<0.01). For a detailed description of the variables, see Appendix B.

In Appendix A, we perform an extensive sensitivity analysis addressing possible measurement and specification issues. First, we show that the results are robust to the use of alternative measures of brigandage intensity. In particular, we estimate our main specification using brigandage data reported by courts and by other sources, and we recode our dependent variable aggregating all entries that share the same date and the same place and are reported consecutively (within the same document) in order to address potential over-reporting concerns. Second, we use

alternative measures of municipal proximity. Specifically, we use linear distance without the log transformation; then, we use as our main independent variable the most discrete measure of distance, namely, the indicator for near-Piedmontese communities; and, finally, to show that our effect is not driven exclusively by the near-Piedmontese communities themselves, we implement our baseline specification by dropping these communities from our sample. Third, we present models alternative to the Negative Binomial regression. We repeat our analysis by estimating a Poisson model for our brigandage episodes and by using the zero-inflated versions of both Poisson and Negative Binomial regressions to account for the large number of zeros in our dependent variable. Additionally, we replace provincial indicators with more disaggregated indicators (at the district level) or more aggregated indicators (at the regional level). To allow for potential correlation in the error term, we cluster standard errors at the district and at the province levels, and we estimate a linear model taking into account spatial correlation. Finally, we show that our evidence is not driven by influential observations. We trim and winsorize the extreme 1% of observations of our dependent variable and consider alternative subsamples. The results of all these different specifications show that the association between brigandage intensity and proximity to near-Piedmontese communities is always statistically significant, negative and remarkably stable.

## 4.4 A cultural diffusion interpretation

Our results suggest a strong positive correlation between geographical distance from the closest near-Piedmontese community and the number of brigandage episodes that characterized the institutional rejection following the Italian unification. In this section, we discuss why historical interactions with neighboring communities made geographical distance a valid proxy of cultural vicinity to the Piedmontese and provide suggestive evidence that social interaction is indeed a relevant determinant of the phenomenon we observe.

### 4.4.1 Interactions with neighboring communities

Geographical isolation favored cultural persistence in near-Piedmontese enclaves but did not inhibit social interactions with neighboring populations. It is important for our empirical strategy that the descendants of Piedmontese settlers had intense contacts with local populations. There is an extensive literature documenting how culture and social norms spread through frequent contact and social interaction: in the language of Cavalli Sforza and Feldman (1981), both vertical and horizontal

transmission mechanisms are assumed to co-exist.[35] For instance, Fogli and Veldkamp (2011) document the relationship between the increase in female labor force participation in the United States and the spacial diffusion of beliefs about women's roles. Spolaore and Wacziarg (2016*b*) claim that the historical fertility decline in Europe, which began in France, depended on the diffusion of new social norms and behavioral changes via social interaction and social influence. We conjecture that frequent interactions between near-Piedmontese enclaves and nearby communities generated a significant convergence in cultural and social norms and that the strength of those interactions strictly depended on geographic distance, considering in particular the lack of advanced communication systems in historical Southern Italy.

A first channel of social interaction was trade between the near-Piedmontese communities and the neighboring municipalities. Historical sources attest that some of the near-Piedmontese communities were not self-sufficient, necessitating frequent commercial exchanges in local markets and fairs. Bitonti (2012) documents how both Celle di San Vito and Faeto had frequent contacts with neighboring municipalities in the fifteenth century, particularly in establishing a commercial partnership with the town of Ariano Irpino. A second channel of interaction was intermarriage. Vegezzi Ruscalla (1862) reports that, after the Reformation and the following persecution, Guardia's citizens were sometimes forced to marry outside their own community. While there is no easily available record of local marriages, we may gain some insight by exploring the local diffusion of Gallo-Italic surnames. Rohlfs (1985) identifies 22 surnames that are likely to derive from historical Piedmontese migrations.[36] The author also reports the municipalities in which these surnames are relatively frequent. When we locate municipalities where these surnames are recorded, we observe that the average distance from the closest near-Piedmontese enclave is approximately 30 km, with a peak of 90 km. This evidence supports our conjecture that Piedmontese descendants had the opportunity to interact with nearby communities.

To further explore whether Piedmontese descendants had social relations with their neighbors, we again rely on linguistic similarities. In our specific environment, given the geographic isolation of our communities of interest, linguistic admixture is a distinct sign that some form of social interaction must have taken place. Mennonna

[35]For a review of the economic analysis of cultural transmission mechanisms, see Bisin and Verdier (2011).

[36]Figure A7 in appendix A provides the original list of surnames by Rohlfs (1985).

(1987) states that the dialects of the near-Piedmontese enclaves of Basilicata had influences on the (non-Gallo-Romance) dialects of neighboring towns because of economic and cultural exchanges among bordering municipalities. Rohlfs (1988) reports Gallo-Romance influences in the – otherwise southern – dialects of the towns of Avigliano, Cancellara, Ruoti and Trivigno, close to the northernmost cluster of near-Piedmontese enclaves in Basilicata. Minor Gallo-Romance elements may also be found in the dialect spoken in Maratea, near the southernmost cluster (Figure A5).

### 4.4.2 The scope of cultural proximity

Table 6 presents the results of further analyses, clarifying the mechanisms behind our results. In columns 1–4, we estimate our main specification using municipalities within each quartile of the distribution of distances to the nearest near-Piedmontese community. Consistent with our idea that geographical distance facilitates social interaction and that the diffusion of cultural and social norms is non-linear (being much more intense at shorter distances), our estimates show that our global effect is driven primarily by municipalities in the first quartile of the distribution of distance. This finding means that the effect of being close to a near-Piedmontese community is strong only within a range of approximately 45 km from the latter. Note that, given the types of social interactions one may expect to have taken place in the Middle and Modern Ages in the areas under study (intermarriage, small-scale trade, participation in local markets and fairs), it seems plausible that the diffusion of near-Piedmontese cultural values from near-Piedmontese communities did not proceed beyond the limit of a day's walk (or donkey-ride) distance, which we may reasonably locate within a range of 40 to 50 kilometers.

If social interaction is indeed the mechanism through which geographic distance from a near-Piedmontese enclave impacts institutional rejection, we should observe that municipalities exposed to a higher number of Piedmontese descendants display a lower brigandage incidence. In columns 5 and 6, we test this hypothesis conditioning our sample to the presence of a near-Piedmontese enclave within a 50 km radius and exploiting two measures of intensity of exposure to near-Piedmontese population. The first variable (*Share of near-Piedmontese communities within 50 km*) measures for each municipality the number of near-Piedmontese communities over the total number of municipalities within a 50-kilometer radius neighborhood, weighted by inverse distance.[37] In addition to capturing the idea that cultural ex-

[37]Let $i$ be the reference municipality; $N_i$ the set of municipalities that are closer than 50 kilo-

posure increases in the frequency of near-Piedmontese communities located within a suitably large neighborhood, this variable incorporates the concept that as the closeness of near-Piedmontese enclaves increases, the chance of social interaction and, therefore, the cultural exposure increase. The second variable (*Share of near-Piedmontese population within 50 km*) also takes into account the size of municipalities and near-Piedmontese communities by weighting inverse distances by their population.[38] Again, the idea is that the likelihood of admixture with Piedmontese culture grows as the relative number of Piedmontese descendants with whom one might enter into contact increases. As one can see, the estimates of our coefficients retain a negative sign and statistical significance and are stable in size. For the sake of illustration, suppose that municipality $i$ has 9 neighboring (that is, closer than 50 km) municipalities, all located 20 km from $i$ and that none of those is a near-Piedmontese community. If a near-Piedmontese community were exogenously added to the set of neighbors at 20 km from the reference municipality, our estimate in column 5 predicts that the expected brigandage incidence in $i$ would reduce by two-thirds. However, if, say, the added near-Piedmontese community were half as populated as the initial 9 neighbors, according to our estimate in column 6, the expected brigandage incidence in $i$ would reduce by only two-fifths. We consider this finding to be a clear indication that cultural distance and the intensity of the exposure to Piedmontese culture affected the strength of brigandage in the period in which brigandage was motivated primarily by institutional rejection, suggesting that higher exposure to Piedmontese culture induces a lower degree of institutional rejection.

Finally, one could expect the relative importance of social interaction with Piedmontese descendants to be less effective in larger cities. Indeed, as a municipality's population increases, the probability that a random inhabitant of the town will be subject to frequent contact with any specific cultural trait decreases.

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meters to $i$; $d_{j,i}$ the distance between municipalities $j$ and $i$; and $NP$ the set of near-Piedmontese communities. Then

$$\text{Share of Near-Piedmontese communities within 50 km} = \frac{\sum_{j \in N_i \cap NP} d_{j,i}^{-1}}{\sum_{j \in N_i} d_{j,i}^{-1}}$$

[38] Allowing municipality $j$'s population to be denoted by $\text{pop}_j$, we have

$$\text{Share of near-Piedmontese population within 50 km} = \frac{\sum_{j \in N_i \cap NP} d_{j,i}^{-1} \cdot \text{pop}_j}{\sum_{j \in N_i} d_{j,i}^{-1} \cdot \text{pop}_j}$$

Table 6: Mechanisms

| Dep. Variable: **Ep. p.m.** | By quartile of distance from nP community | | | | Exposure intensity | | City size | | |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| (log) Dist. Piedm. | 0.378*** | 0.192 | -0.500 | 1.125 | | | 0.245** | 0.236*** | 0.225*** |
| | (0.076) | (0.522) | (1.044) | (2.310) | | | (0.110) | (0.084) | (0.085) |
| Share of nP comm. in 50 kms | | | | | -10.934*** | | | | |
| | | | | | (3.347) | | | | |
| Share of nP pop. in 50 kms | | | | | | -9.882** | | | |
| | | | | | | (4.061) | | | |
| Cities (75percentile) | | | | | | | 0.033 | | |
| | | | | | | | (0.300) | | |
| Dist. Piedm. * Cities (75pctl) | | | | | | | -0.081 | | |
| | | | | | | | (0.074) | | |
| Cities (90percentile) | | | | | | | | 0.683 | |
| | | | | | | | | (0.537) | |
| Dist. Piedm. * Cities (90pctl) | | | | | | | | -0.236** | |
| | | | | | | | | (0.118) | |
| Cities (95percentile) | | | | | | | | | 0.971 |
| | | | | | | | | | (0.634) |
| Dist. Piedm. * Cities (95pctl) | | | | | | | | | -0.298** |
| | | | | | | | | | (0.146) |
| Dist. quartile | 1st | 2nd | 3rd | 4th | | | | | |
| Pseudo $R^2$ | 0.174 | 0.0955 | 0.138 | 0.110 | 0.169 | 0.168 | 0.120 | 0.119 | 0.118 |
| Obs. | 464 | 464 | 464 | 463 | 516 | 516 | 1855 | 1855 | 1855 |

The coefficients are estimated using the specification of column 12 in Table 4. *Share of nP comm. in 50 kms* and *Share of nP pop. in 50 km* are described in Section 4.4.2. *Cities ("x"percentile)* is a dummy variable that equals 1 if the municipality has a population larger than the "x"th percentile. *Dist. Piedm. * Cities ("x"pctl)* is the interaction between *(log) Dist.Piedm.* and *Cities ("x"percentile)*. Geographical, Distance and Municipal controls, Pop. growth and Province fixed effects are included in all specifications. Standard errors clustered at district level in parentheses (* p<0.1, ** p<0.05, *** p<0.01).

Besides, the relative importance of interactions with Piedmontese descendants in determining the local cultural traits should be smaller, as exposure to different cultures is more frequent. Columns 7–9 include an indicator variable that equals one if the municipality is in the 75th, 90th and 95th percentiles of population, respectively, and its interaction with distance from the nearest near-Piedmontese community. Unsurprisingly, the coefficient on the interaction term is negative and decreases in magnitude as the size of the city increases, eroding the effect of exposure to Piedmontese culture.

# 5 Competing explanations

## 5.1 Alternative channels

The results presented thus far provide evidence that geographical proximity to a near-Piedmontese community was *ceteris paribus* associated with smaller brigandage incidence. The robustness of this result to changes in the model's specification and the addition of several geographical and socio-economic controls suggests that this finding was not due to observable peculiarities of near-Piedmontese communities. However, in this section, we test whether our results might be driven by pre-existing factors other than cultural proximity, such as differences in education, attitudes towards innovation and social capital.

**Education.** Higher levels of human capital may generate positive spillovers through social interactions and thereby influence the ease of adoption of new institutions around centers of diffusion. Our findings may hide the diffusion of superior education levels around near-Piedmontese communities. Overall, educational attainment in post-unitary Italy was very poor: according to the 1861 Census, more than 75% of the citizens were illiterate. This percentage rises to approximately 88% when we consider the continental territories of the former Kingdom of Two Sicilies. To control for potential differences in primary education and to rule out the potential correlation between education and the distance from the near-Piedmontese enclaves as a possible confounding factor, we collect information on the number of primary schools, pupils enrolled and teachers employed in primary schools in each municipality, exploiting a report by the Italian Statistical Office on the state of primary education during 1862-1863.[39] Column 1 in Table 7 reports our main specification

[39]Educational reform in post-unification Italy was ineffective until Coppino's law in 1877. Primary schooling was offered at the municipal level until 1911. For further details, see Scarangello (1964).

including the number of schools reported in each municipality and the ratio between pupils and teachers as measures of, respectively, the diffusion and quality of primary education. Our coefficient of interest is not affected by the introduction of these controls.

**Economic institutions.** In this paragraph, we take into account two important dimensions of economic activity that may spread through space: agricultural productivity and financial institutions. First, since their establishment, near-Piedmontese communities and, through spatial diffusion, their neighbors might have specialized in agricultural activities that were less affected by the post-unification reforms. To account for this potential confounding factor, we take from the literature (Galor and Özak, 2016; Mayshar et al., 2015) and include controls for potential land outcomes and soil quality to capture differentials in land productivity.[40] In column 2 of Table 7, we show that our result is not dramatically affected by the addition of municipal-level controls referring to crop types, agricultural yields and raggedness, although the latter has some explanatory power in relation to our outcome. Second, the historical presence of a (relatively) developed financial sector may help cope with the short-run economic consequences of the institutional transplantation. Pascali (2016) links the development of modern banks to the presence of Jewish communities in the fifteenth century. In the same spirit, we inspect the impact of the presence of Jewish pawnshops in the south of Italy during the fifteenth century, before the ban imposed by the Spanish Crown, as documented by Montanari (1999). Column 3 of Table 7 shows that the results of the baseline specification are not affected by the inclusion of an indicator of the presence of a Jewish pawnshop in the municipality.[41]

**Attitudes towards innovation.** Disposition toward institutional innovation may differ across municipalities and territories. Southern Italy's history has been characterized by the succession of different rulers and crowns throughout the centuries, and there is evidence of many institutional changes that were opposed or accepted by local communities. Pre-existing attitudes associated with near-Piedmontese communities can be relevant in explaining our findings. In fact, one may suppose that reaction was weaker around near-Piedmontese areas not because of cultural similarities with their ancestors, as we claim, but because these communities were innately less inclined to rebel against institutional reforms. Corona (1995) reports instances

[40] Our main soil quality measure is the caloric suitability index constructed by Galor and Özak (2016). We also make use of data from the European Soil Database (v. 2.0) compiled by the European Soil Data Center (ESDAC).

[41] The presence of Jewish communities may also capture potential differences in pre-existing attitudes towards individuals of different cultures and in relationships with the Church.

Table 7: Alternative explanations

| | Additional controls for: | | | | | |
|---|---|---|---|---|---|---|
| Dep. Variable: | Education | Land quality | Fin. inst. | Attitude | Soc. capital | All |
| **Ep. p.m.** | (1) | (2) | (3) | (4) | (5) | (6) |
| (log) Dist. Piedm. | 0.233*** | 0.179** | 0.228*** | 0.226*** | 0.226*** | 0.191** |
| | (0.082) | (0.091) | (0.087) | (0.087) | (0.087) | (0.089) |
| Schools p.m. | 0.164* | | | | | 0.155* |
| | (0.084) | | | | | (0.085) |
| Pupils/teachers | 0.003*** | | | | | 0.003*** |
| | (0.001) | | | | | (0.001) |
| Raggedness | | 0.046*** | | | | 0.044*** |
| | | (0.011) | | | | (0.011) |
| Soil quality | | -0.548 | | | | -0.504 |
| | | (0.667) | | | | (0.647) |
| Agr. limitations | | 0.045 | | | | 0.130 |
| | | (0.156) | | | | (0.150) |
| Steepness | | 0.005 | | | | -0.058 |
| | | (0.082) | | | | (0.082) |
| (log) Dist. Jewish | | | -0.155* | | | -0.146* |
| lenders | | | (0.083) | | | (0.081) |
| Prop. innovation | | | | -0.081 | | -0.076 |
| | | | | (0.076) | | (0.074) |
| Pawnshops | | | | | -0.074 | -0.081 |
| | | | | | (0.100) | (0.103) |
| Pseudo $R^2$ | 0.122 | 0.123 | 0.119 | 0.118 | 0.118 | 0.129 |
| Obs. | 1703 | 1826 | 1855 | 1855 | 1855 | 1674 |

The coefficients are estimated using the specification of column (12) in Table 4. The header of each column reports the alternative explanation addressed in the corresponding specification. Geographical, Distance and Municipal controls, Pop. growth and Province fixed effects are included in all specifications. Standard errors clustered at district level in parentheses (* p<0.1, ** p<0.05, *** p<0.01). For a detailed description of the variables, see Appendix B.

of different behaviors by local communities in response to innovations in land property under the Bourbon regime. These reports allow us to construct a (censored) index of attitudes toward such innovations. Specifically, we assign a score of $-1$ to communities that enacted behaviors explicitly opposed to innovations and a score of $+1$ to municipalities displaying episodes of acceptance of innovative legislation (and a score of 0 to those for which there is a lack of evidence in either direction). Column 4 in Table 7 adds our attitude index to the baseline specification and shows that including this measure of past attitudes towards institutional change does not affect our result.

**Social capital: charity lending.** Another potential explanation for decreased brigandage intensity in near-Piedmontese communities is the possibility that these had developed internal social structures that led them to display a lower propensity to violently reject the institutional transplant. To assess the plausibility of this

channel, we repeat our analysis controlling for the presence of charitable institutions in the community. We exploit the presence of the so-called *monti di pietà* (pawnbrokers) in the 16th and 17th centuries. These institutions were formal pawnbrokers run as charities: they were created with the explicit intention to aid the less fortunate. We collect these data from Montanari (1999) and create a dummy variable that equals one if a Monte di Pietà was reported in the municipality. In column 5 of Table 7, we report the results of the baseline specification including these controls. Our findings are not significantly affected by the new control variables.

Finally, in column 6 of Table 7 we control for all these variables at once and the coefficient of main interest is still positive and statistically significant.

## 5.2 Placebo tests

The results in the previous section show that controlling for available indicators of education, social capital, attitudes towards institutional change and economic and financial institutions at the municipal level does not alter our findings Thus, because formal institutions were homogeneous across Southern Italy at the time of the transplant and given the absence of historical accounts of informal institutions distinguishing near-Piedmontese communities from neighboring settlements, the attribution of our result to cultural differences between near-Piedmontese and other communities appears sound; however, it may still be insufficient to conclude that the driving feature of our results lay in the cultural proximity of these near-Piedmontese communities with respect to the donor environment and that nearby municipalities experienced less brigandage because of the diffusion of cultural traits springing from near-Piedmontese communities. First of all, near-Piedmontese municipalities' very status as a linguistic minority – rather than their specific ancestry – might be the reason for reduced reaction to new institutions in these towns. Second, lower brigandage in neighboring communities could have been reinforced not by cultural diffusion *from* the near-Piedmontese towns but *by sheer imitation of their behavior*. In this section, we conduct two placebo exercises that use as main independent variable the distance of each municipality from non-near-Piedmontese ethno-linguistic enclaves and their distance from municipalities that did not experience any brigandage episodes, respectively. The former exercise aims to rule out the possibility that our findings are driven by characteristics of cultural enclaves (e.g., social cohesion) that are nonetheless not necessarily exclusive of their Piedmontese heritage. The latter excludes the possibility that near-Piedmontese communities were (willingly or unwillingly) coordinating nearby municipalities into abstaining

from rebellion and that they decided not to rebel by imitation.

**Placebo: social capital and social cohesion.** In a recent paper, Bracco et al. (2015) show that Albanian linguistic enclaves in Southern Italy display larger degrees of civicness than the average Southern municipality. This finding is attributed to the more intense *social cohesion* that emerges within ethno-linguistic enclaves, where bonds and relationships are formed by virtue of the enclave's cultural dissimilarity with respect to the surrounding environment. One might then suspect that a similar mechanism underlies our results, i.e., that near-Piedmontese communities had developed internal social structures that led them to display a lower propensity to violently reject the institutional transplant than their non-near-Piedmontese neighbors. To assess the plausibility of this channel, we repeat our analysis using non-near-Piedmontese linguistic enclaves as reference points. At present – as in the past – Southern Italy hosts 79 such enclaves, the majority of which (54) are of Albanian descent, with the remaining 25 being of Greek (23) or Croatian (2) origin. We inspect whether our results are replicated if distances from these enclaves are used.

Column 1 of Table 8 reports the result of the estimation of our main specification when the distance to the nearest non-near-Piedmontese ethno-linguistic enclave is used as the main independent variable. In column 2, we restrict the analysis only to those municipalities in the first quartile of the distribution of distance to the nearest non-near-Piedmontese community (we showed in section 4.4.2 that our result is driven by municipality within a 45 km range from near-Piedmontese enclaves). Since Greek communities have a very particular geographic location (see Figure 1a) and are considerably distant from the areas where the near-Piedmontese communities lie, we tak into account the evidence on Albanian enclaves by Bracco et al. (2015) and repeat the analysis considering the two groups separately. All these specifications yield non-significant estimates for the coefficient of interest.[42] Thus, our attenuation effect of the proximity to a linguistic enclave on the intensity of brigandage appears only when the enclaves with respect to which such proximity is evaluated are the near-Piedmontese communities: this excludes the possibility that the channel of social cohesion due to the status of being an ethno-linguistic enclave drives our results.

[42] As mentioned in Section 2.2.2, some Albanian and Greek communities were already recognized as linguistic enclaves in the 1861 Census. Our results are virtually the same when using the smaller sample of enclaves reported there (the Census recognizes 17 Albanian enclaves, instead of the 54 we use, and 9 Greek enclaves instead of 23). Results are available upon request.

Table 8: Placebo regressions

| Dep. Variable: **Ep. p.m.** | Non-Piedmontese | | Albanian | | Greek | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| (log) Dist. non-Piedm. | 0.012 | 0.049 | | | | |
| | (0.068) | (0.054) | | | | |
| (log) Dist. Albanian | | | 0.068 | 0.021 | | |
| | | | (0.087) | (0.071) | | |
| (log) Dist. Greek | | | | | -0.012 | 0.020 |
| | | | | | (0.127) | (0.083) |
| Dist. quartile | All | 1st | All | 1st | All | 1st |
| Pseudo $R^2$ | 0.117 | 0.167 | 0.117 | 0.179 | 0.117 | 0.110 |
| Obs. | 1855 | 464 | 1855 | 464 | 1855 | 464 |

Columns 1 and 2 consider all non-Piedmontese linguistic enclaves as reference points; columns 3 and 4 consider Albanian enclaves only; columns 5 and 6 consider Greek enclaves only. The even columns restrict the analysis to municipalities within the first quartile of distance from the nearest reference point. The dependent variable is Ep. p.m. The coefficients are estimated using the specification of column (12) in Table 4. Geographical, Distance and Municipal controls, Pop. growth and Province fixed effects are included in all specifications. Standard errors clustered at the district level in parentheses (* p<0.1, ** p<0.05, *** p<0.01). For a detailed description of the variables, see Appendix B.

**Placebo: coordination and imitation.** Even if one accepts the hypothesis that cultural proximity to the donor is the driving force behind less intense brigandage in near-Piedmontese communities, one may attribute the extension of such attenuation to neighboring communities to behavioral imitation of the near-Piedmontese rather than to 'cultural contagion' by them. If this were the case, we would expect the same phenomenon to arise in the vicinity of many areas with low brigandage intensity. In order to assess this, we repeat our analysis using as the main independent variable the distance from 200 randomly selected groups of 10 municipalities displaying no brigandage at all and located within 80 kilometers of a near-Piedmontese enclave (this step enables us to exclude using municipalities from macro-areas that were substantially unaffected by brigandage). If imitation of non-rebellious neighbors were a widespread phenomenon in the context under study, we would expect most of the estimates of our coefficient of interest to become positive. From Figure 3, we see instead that approximately 1.5% of our coefficients are significantly positive.[43] This finding suggests that, if it existed at all, the incentive to imitate the behavior of neighboring communities was not strong enough to significantly impact the intensity of resistance to the institutional transplant.

[43]Consider that while the near-Piedmontese communities themselves are excluded from the random reference sets of municipalities, positive coefficients should and will arise if most municipalities in the random set happen to be close enough to the near-Piedmontese enclaves.

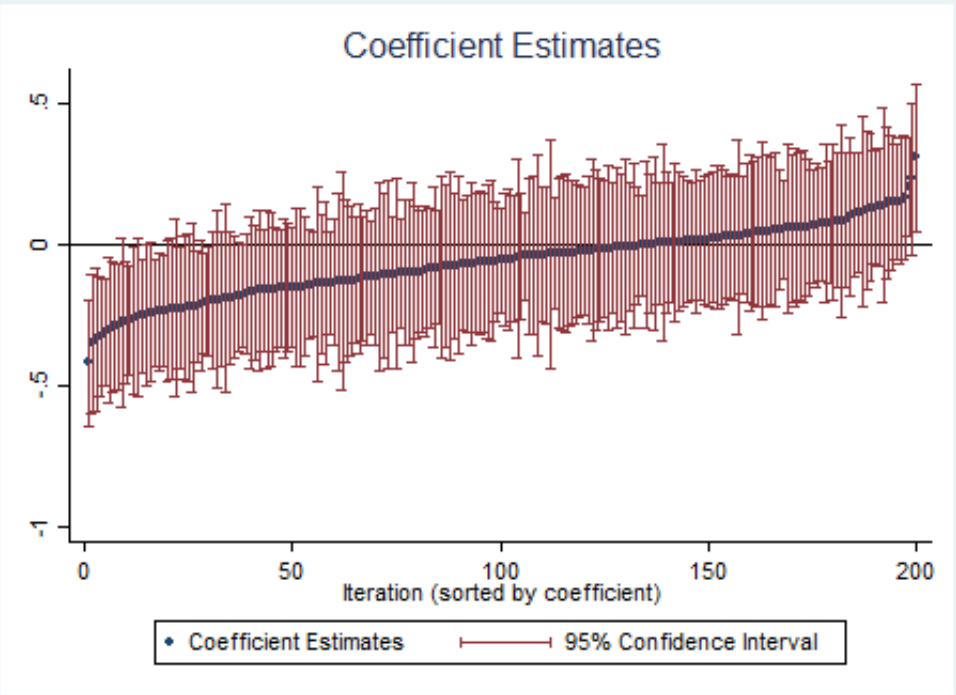



Figure 3: Coefficient estimates and 95% confidence intervals for 200 replications of the estimation exercise in column 12 of Table 4, where the main independent variable is the distance from a set of 10 randomly selected municipalities that (i) lie within 80 km of a near-Piedmontese community and (ii) have experienced no brigandage. Only 2 coefficients are positive and significant at 5% (3 at 10%).

# 6 Brigandage and political participation

In this section, we examine the impact of the institutional rejection on political participation in the aftermath of the Italian unification. The imposition of the new institutions, the following unrest in response to the political regime change and the subsequent hard-handed repression by the national army are natural vehicles for the creation of a culture of mistrust and the reinforcement of negative attitudes toward the new political structure. Such an environment can lead to a decrease in cooperation among individuals and a reduction of trust in national institutions, resulting in lower political participation. Indeed, as shown by Lowes et al. (2017), a poor institutional environment can induce 'worse' cultural traits, which may in turn lead to socio-economic backwardness. Reminiscent of Banfield (1958) and Putnam (1993), we exploit the differences in civic capital across Italian territories and test whether a stronger institutional rejection, quantified by the intensity of brigandage, is associated with a weakening in the levels of political participation. In this respect, we follow the existing literature and proxy political participation by electoral turnout,

the only measure available since 1861 at the local level.[44] In section 6.1, we study the relation between institutional rejection and turnout in the aftermath of the Italian unification, and in section 6.2, we investigate whether effects of brigandage may be observed in the long run.

## 6.1 Immediate consequences of brigandage

A potential concern with this analysis is that a lack of trust in the transplanted institutions may have caused brigandage in the first place. In fact, lower turnout in areas characterized by more intense brigand activity may simply reflect their propensity to reject the transplanted institutions in one way (violent guerrilla conflict) or another (non-participation in elections). It is also possible that direct differential exposure to the military invasion generated distrust in the new regime, causing both lower levels of political participation and episodes of social unrest to cluster around the same areas. To address these and other related concerns, we show that episodes recorded in the years between the two earliest general elections following the Italian unification (held in 1861 and 1865) are associated with a relative reduction in electoral turnout form the first to the second rounds. As documented by our previous analyses, the patterns of local variations in brigandage were already clear in the early phases (1860-1861) of the reactionary movement. We thus assume, in this context, that turnout in the 1861 electoral round already incorporates the effects of local variations in the propensity for institutional rejection. By taking into account the relationship between differences in turnout between 1861 and 1865 and brigandage episodes occurring between 1862 and 1864, we are thus able to isolate the direct impact of the latter on political participation in addition to the pre-existing local differences in civic capital and trust in the new institutions.

In the analysis that follows, we exploit an additional data source: the *Atlante Storico Elettorale d'Italia*, a dataset collected by the Istituto Carlo Cattaneo containing detailed information on Italian national elections since 1861. During the period under analysis, municipalities were grouped into roughly equally sized constituencies (in terms of voters); each constituency elected one member of Parliament. Electoral data on turnout in elections held between 1861 and 1919 are available at the constituency level. All municipalities in which there was at least one eligible voter were reported. We use the Dizionario dei Comuni del Regno d'Italia (1863) to identify the formal constituency to which each municipality belonged, so we have a precise

[44] For a thorough review of the role of civic capital for economic development, see Guiso et al. (2011).

assessment of both turnout and the number of brigandage episodes by constituency at the same level of aggregation.[45] We then estimate the following linear model:

$$\Delta T_{i,j} = \alpha + \beta_1 Y_i + \beta_2' \mathbf{X}_i + \beta_3' \mathbf{H}_i + \gamma_j + \varepsilon_i \tag{2}$$

where $\Delta T_{i,j}$ is the difference in turnout between 1865 and 1861 in constituency $i$ and province $j$; $Y_i$ is the total number of episodes (per thousand inhabitants) that occurred between 1862 and 1864 in constituency $i$; $\mathbf{X_i}$ and $\mathbf{H_i}$ are vectors of geographical and constituency controls, respectively, with the former being measured for the main municipality of the constituency, while the latter are aggregated from municipal controls (see Section 3); $\gamma_j$ is a province indicator;[46] and, finally, $\varepsilon_i$ is an error term satisfying the usual assumptions. We expect the estimate of $\beta_1$ to be significantly different from zero; specifically, we conjecture that a higher incidence of brigandage should be negatively related to changes in turnout. The estimated coefficients are reported in Table 9.

In columns 1–3, we regress the change in turnout on the brigandage episodes reported in the period between the two elections (1862-1864).

In column 1, we control for province fixed effects only, while in column 2, we add the geographical and municipal controls. In column 3, we use an alternative dependent variable, electoral turnout in 1865, but we include turnout in 1861 among the control variables. In columns 4 and 5, we include, respectively, a dummy variable that equals one if there is at least one near-Piedmontese enclave in the constituency and the (minimum) distance of the constituency from the nearest near-Piedmontese enclaves: together with the usual geographical and socio-economic controls, this corroborates the view that changes in turnout are affected from brigandage itself, rather than from its determinants. Finally, in columns 6 and 7, we show that using episodes not belonging to the infra-electoral period yields non-significant estimates, reducing the concern for spurious correlation by highlighting the direct impact of episodes that may have effectively affected changes in individual behavior between 1861 and 1865. According to our estimate in column 2, one additional episode

[45] One needs to keep in mind that our outcome variable reflects only the political participation of the elites, who were less involved than popular masses in the rebellion against the Piedmontese. Indeed, according to the 1859 electoral law, eligible voters had to meet requirements in terms of age (older than 25), minimum literacy and income (at least 40 *lire* per year). The combination of these criteria reduced the number of potential voters in the country to 400,000, corresponding to approximately 2% of total population.

[46] Province fixed effects are particularly relevant in our specification since they capture the correlation between the Pica law (implemented at the provincial level) and electoral turnout, as underlined by Accetturo et al. (2016).

Table 9: Electoral turnout 1861-1865

| Dep. Variable: | $\Delta T$ (1) | $\Delta T$ (2) | $T_{1865}$ (3) | $\Delta T$ (4) | $\Delta T$ (5) | $\Delta T$ (6) | $\Delta T$ (7) |
|---|---|---|---|---|---|---|---|
| Ep. p.m. 1862-64 | -0.025* | -0.039** | -0.035** | -0.046** | -0.041** | | |
| | (0.011) | (0.015) | (0.013) | (0.017) | (0.016) | | |
| Turnout 1861 | | | 0.168 | | | | |
| | | | (0.118) | | | | |
| NP in constit. | | | | -0.067 | | | |
| | | | | (0.074) | | | |
| Min. Dist. Piedm. | | | | | 0.016 | | |
| | | | | | (0.026) | | |
| Ep. p.m. 1860-61 | | | | | | -0.028 | |
| | | | | | | (0.054) | |
| Ep. p.m. 1865-70 | | | | | | | -0.007 |
| | | | | | | | (0.025) |
| Geog. Controls | No | Yes | Yes | Yes | Yes | Yes | Yes |
| Distance Controls | No | Yes | Yes | Yes | Yes | Yes | Yes |
| Municipal controls | No | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. $R^2$ | 0.0709 | 0.126 | 0.297 | 0.122 | 0.121 | 0.0924 | 0.0876 |
| Obs. | 126 | 126 | 126 | 126 | 126 | 126 | 126 |

All coefficients are estimated by ordinary least squares. Dependent variables in column headings. *Ep. p.m. 1862-1864* measures episodes per 1,000 inhabitants occurring at the constituency level in infra-electoral years. $T_{1865}$ and $T_{1861}$ indicate turnout levels measured at the constituency level in 1865 and 1861 respectively. $\Delta T$ is the difference in turnout between the two years. Pop. 1861, Pop. growth and Province fixed effects are included in all specifications. Standard errors are clustered at the province level. (* p<0.1, ** p<0.05, *** p<0.01).

per thousand inhabitants is associated with a decrease of 3.9 percentage points in turnout between the two elections on average. This effect is sizable if we consider that the average change in turnout (in absolute value) at the constituency level was 11%, supporting the assumption that brigandage had a significant short-run effect on electoral participation.

## 6.2 The effects of brigandage in the long run

In the following section, we provide suggestive evidence that a negative relationship between the intensity of brigandage and electoral turnout persisted until the turn of the twentieth century. We repeat the exercise of column 3 in Table 9 using as the dependent variable turnout at each electoral round between 1892 and 1909. We restrict our attention to this period (thus ignoring elections held between 1865 and 1882) because it provides us with rather homogeneous electoral rules[47] and a substantial expansion of the electorate in comparison to previous elections, increas-

[47]For instance, the three electoral rounds of 1882, 1886 and 1890 were organized with fewer than 40 constituencies, which makes a comparison with our original constituencies meaningless.

Table 10: Electoral turnout 1892-1909: Long Term Effects

| Dep. Variable: **Turnout** | 1892 (1) | 1895 (2) | 1897 (3) | 1900 (4) | 1904 (5) | 1909 (6) |
|---|---|---|---|---|---|---|
| Ep. p.m. | -0.011* | -0.015* | -0.016** | -0.004 | -0.009 | -0.011 |
| | (0.005) | (0.007) | (0.008) | (0.006) | (0.007) | (0.012) |
| Geog. Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Distance Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Municipal controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. $R^2$ | 0.294 | 0.209 | 0.266 | 0.171 | 0.286 | 0.240 |
| Obs. | 119 | 119 | 119 | 119 | 119 | 119 |

All coefficients are estimated by ordinary least squares. All *Turnout* variables are measured at the constituency level. Turnout 1861, Pop. 1861, Pop. growth and Province fixed effects are included in all specifications. Geographical controls include (log) Area 1861 (ha), Altitude (100ms), Latitude and Longitude. Distance controls include (log) Dist. Naples, (log) Dist. n. prov. seat, (log) Dist. town, (log) Dist. coast, and (log) Dist. Papal States. Municipal controls include dummy variables for the presence in each municipality of civil, criminal or commercial courts; of the local episcopal or archiepiscopal seat; of secondary education institutes; of hospitals; and of relevant manufactures or proto-industrial plants. Standard errors are clustered at the province level. (* p<0.1, ** p<0.05, *** p<0.01).

ing the validity of our results.[48] We also restrict our analysis to constituency that existed in both 1861 and the 1892-1909 period. In order to avoid using potential channels through which brigandage may have influenced turnout as regressors, we do not include measures after 1861 as controls. Table 10 reports estimates of $\beta_1$ when all episodes of brigandage are used as the main independent variable. The estimated coefficient is always negative, fairly stable and statistically significant until the turn of the century. These results indicate that an instance of short-run institutional rejection may have a long-lasting impact – up to half a century after its occurrence – on political participation, as it undermines trust in the institutions of the newborn state.

# 7 Conclusions

This work analyzes the outcomes following the institutional transplantation that took place in 1860-1865 in the context of the Italian unification process. The imposition of the Piedmontese administrative and legal framework on Southern Italy sparked an armed reaction by the peasant classes in continental Southern Italy, which is known as *brigandage*. We use historical sources and construct a dataset

[48]Since the requirements for age, literacy and income were weakened, the new electoral rule more than doubled the number of people with the right to vote.

that allows us to evaluate the intensity of this phenomenon at the municipal level. Next, we relate this measure to the distance of each municipality from the nearest of ten communities descending from near-Piedmontese settlers. Across several model specifications and using a variety of controls, we find robust evidence that distance from the nearest near-Piedmontese community (which we use as a proxy for cultural distance) is *ceteris paribus* associated with a lower intensity and incidence of brigandage. We interpret this result as evidence in favor of the hypothesis that in the context of an institutional transplantation, cultural proximity with the donor environment reduces the propensity of the recipient environment for institutional rejection in the short term. Short-run rejection may have a direct impact on important social outcomes: here, we document a significant decline in electoral turnout in the aftermath of unification in places where more brigandage episodes were reported. Further suggestive evidence outlines a negative relationship between the intensity of institutional rejection and turnout that does not disappear until the turn of the twentieth century. This 40-year-long effect of brigandage suggests that the short-term rejection of Piedmontese institutions impacted the nation building process through its long-lasting influence on political participation. Overall, our results shed some light on the intricate relationship among cultural distance, institutional innovation and institutional effectiveness. Additionally, our analysis helps deepen the understanding of current political phenomena, such as electoral abstentionism, in light of the complex social dynamics triggered by the formation of contemporary European states.

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