

PERSECUTION PERPETUATED: THE MEDIEVAL ORIGINS OF ANTI-SEMITIC VIOLENCE IN NAZI GERMANY*

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How persistent are cultural traits? Using data on anti-Semitism in Germany, we find local continuity over 600 years. Jews were often blamed when the Black Death killed at least a third of Europe's population during 1348–50. We use plague-era pogroms as an indicator for medieval anti-Semitism. They reliably predict violence against Jews in the 1920s, votes for the Nazi Party, deportations after 1933, attacks on synagogues, and letters to *Der Stürmer*. We also identify areas where persistence was lower: cities with high levels of trade or immigration. Finally, we show that our results are not driven by political extremism or by different attitudes toward violence. *JEL* Codes: N33, N34, N93, N94, D74.

I. INTRODUCTION

A growing theoretical literature argues that cultural norms are powerful determinants of individual behavior and that they can persist over long periods (Bisin and Verdier 2001; Doepke and Zilibotti 2008; Tabellini 2008; Acemoglu and Jackson 2011). From fertility and trust to corruption, there is also convincing empirical evidence that events and institutional arrangements in the distant past influence norms and preferences today, and that parental investment contributes to long-term persistence of attitudes (Guiso, Sapienza, and Zingales 2008; Jha 2008; Fernández and

*We thank the editor, Larry Katz, and four anonymous referees, as well as Daron Acemoglu, Sascha Becker, Efraim Benmelech, Marianne Bertrand, Alberto Bisin, Michael Bordo, Davide Cantoni, Dora Costa, Ernesto Dal Bo, Raquel Fernández, Jordi Galí, Paola Giuliano, Claudia Goldin, Avner Greif, Tarek Hassan, Elhanan Helpman, Rick Hornbeck, Saumitra Jha, Matthew Kahn, Deirdre McCloskey, Omer Moav, Joel Mokyr, Petra Moser, Nathan Nunn, Emily Oster, Steve Pischke, Leah Platt Boustan, Shanker Satyanath, Kurt Schmidheiny, Andrei Shleifer, Yannay Spitzer, Guido Tabellini, Peter Temin, Matthias Thoenig, and Jaume Ventura for helpful comments. Seminar audiences at the 2012 ASSA, Chicago-Booth, CREI, Harvard, NBER, NYU, Northwestern, Stanford, UCLA, UPF, Royal Holloway, Rutgers, Warwick, Yale, and the 2011 Royal Economic Society Conference offered useful criticisms. We are grateful to Hans-Christian Boy for outstanding research assistance and Jonathan Hersh, Maximilian von Laer, and Diego Puga for help with the geographic data. Davide Cantoni and Noam Yuchtman kindly shared data. Financial support from UCLA-CIBER (Voigtländer) and the European Research Council under ERC AdG 230515 (Voth) is gratefully acknowledged.

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The Quarterly Journal of Economics (2012), 1339–1392. doi:10.1093/qje/qjs019.
Advance Access publication on May 8, 2012.

Fogli 2009; Algan and Cahuc 2010; Nunn and Wantchekon 2011). That being said, culture often evolves quickly. Attitudes toward homosexuals, working women, and premarital sex have changed radically since the 1960s (Fernández-Villaverde, Greenwood, and Guner 2010). A key challenge in cultural economics is to explain when norms and beliefs persist and when they are malleable. A fuller appreciation of what influences transmission will ultimately contribute to a deeper understanding of the origins of cultural differences themselves.

This article analyzes the historical roots of anti-Semitism in interwar Germany. Germany's persecution of Jews is one of the defining events of the twentieth century. The extent to which it reflects a deep-seated history of anti-Semitism is controversial (Goldhagen 1996; Eley 2000). We explore the long-term persistence of interethnic hatred by using a new data set of almost 400 towns where Jewish communities are documented for both the medieval period and interwar Germany.¹ When the Black Death arrived in Europe in 1348–50, Jews were often blamed for poisoning the wells. Many towns and cities (but not all) murdered their Jewish populations. Nearly 600 years later, defeat in World War I was followed by a countrywide rise in anti-Semitism. As in 1350, the threshold for violence against Jews declined. This led to waves of persecution, even before the Nazi Party seized power in 1933—but only in some locations.

We find persistence of anti-Semitic attitudes and behavior for more than half a millennium. Localities that burned their Jews in 1348–50 showed markedly higher levels of anti-Semitism in the interwar period: attacks on Jews were 6 times more likely in the 1920s in towns and cities with Black Death pogroms; the Nazi Party's share of the vote in 1928—when it had a strong anti-Jewish focus—was 1.5 times higher;² readers' letters to a virulently anti-Semitic Nazi newspaper (*Der Stürmer*) were more frequent; attacks on synagogues during the “Night of Broken Glass” (*Reichskristallnacht*) in 1938 were more common; and a higher proportion of Jews was deported under

1. We collect information on a total of more than 1,400 towns and cities with Jewish communities in interwar Germany. Our main results are derived from the subsample of 325 places where there is also direct evidence of medieval settlement and unambiguous information on Black Death pogroms.

2. The National Socialist German Workers Party (NSDAP), a.k.a. the Nazi Party, received 2.6% of the popular vote in 1928. It did not win a larger share of the vote until the Great Depression.

the Nazis. There is also evidence that we do measure anti-Semitism and not merely a tendency toward violence or political radicalism. Finally, we examine Jewish settlement patterns in the medieval period. Although economic and institutional factors mattered, these variables explain little of the geography of violence after 1919.

How can the same form of extreme behavior be found in the same localities 600 years later? Our second main contribution is to examine the conditions under which anti-Semitism persisted. For a number of conditioning variables, the long-term transmission of hatred weakens; for example, cities with a strong tradition of long-distance trade (members of the Hanseatic League in northern Germany) show significantly lower persistence over the long term than other communities. The same is true of southern German cities that were more open to trade. Urban centers that grew rapidly after 1750 exhibit a markedly weaker connection between medieval and modern-day anti-Semitism. In contrast, neither a tradition of being governed by a bishop nor relative geographical isolation have a direct effect on the persistence of anti-Semitism.

Our findings suggest that local persistence partly reflects a lack of mobility. Most of the towns in our study were small, with a median population of no more than 9,000 inhabitants in 1933 and with at most a few thousand in the Middle Ages. Immigration and marriages across towns were relatively rare. These characteristics would have facilitated the persistence of beliefs at the local level.³ With industrialization after 1820 came migration, and where immigration was massive the extent of persistence declined. Symbolic practices and festivals may have helped perpetuate hostile beliefs. Passion plays, for instance, often portrayed Jews as engaged in deicide (Glassman 1975). Anti-Semitic sculptures decorated churches and private houses, and book printing widely distributed the same demeaning images.⁴ In some towns, festivals commemorated pogroms; in

3. We discuss the evidence in more detail in Section IV.B. A good characterization of small-town life in early modern Germany is given in the work of Walker (1971), who emphasizes the minimal impact of outsiders on the culture of "home towns."

4. Churches from Cologne to Brandenburg displayed (and many still display) a *Judensau*, the image of a female pig in intimate contact with several Jews shown in demeaning poses (Shachar 1974). The same type of sculpture can also be found in Poland, Sweden, Switzerland, France, and the Low Countries.

the Bavarian town of Deggendorf, for example, the attack on the town's Jewish community in 1337 was celebrated every year until 1968 (Schoeps 1998). Several tracts of Martin Luther are also strongly anti-Semitic (Oberman 1984). The long-term persistence of hatred is hardly unique to Germany. England, France, and Spain also expelled their Jews during the Middle Ages. Nonetheless, anti-Semitism lingered. Until recently, Spanish children played a game called "Killing Jews" around Easter—in a country where Jews have been almost entirely absent since 1492 (Perednik 2003).⁵ England between 1290 and 1656 also showed similar hostility despite an absence of Jews.⁶

This article contributes to the literature on the long-run effects of local culture. Alesina and La Ferrara (2005) find that cultural and religious fragmentation is robustly associated with such outcome variables as civil wars, corruption, and public good provision.⁷ The historical roots of present-day conditions have also attracted attention. Fernández and Fogli (2009) show that the fertility of immigrants' children continues to be influenced by fertility rates in their parents' country of origin. Algan and Cahuc (2010) demonstrate that inherited trust predicts economic performance. Guiso, Sapienza, and Zingales (2008) argue that free medieval cities in Italy have higher levels of interpersonal trust today. There is also evidence that nationalities allowed to lend under Ottoman rule have higher bank penetration in the present (Grosjean 2011), that having been ruled by the Habsburg empire is associated with lower corruption in today's successor states (Becker et al. 2011), that the historic use of the plow in agriculture affects contemporaneous gender roles (Alesina, Giuliano and

5. In a 2009 study by the Anti-Defamation League, 500 people from Austria, France, Hungary, Germany, Poland, Spain, and the United Kingdom were interviewed about their attitudes toward Jews. People from Poland and from Spain were the most anti-Semitic (Anti-Defamation League 2009).

6. "For almost four centuries the English people rarely, if ever, came into contact with flesh-and-blood Jews. Yet they considered the Jews to be . . . in league with the Devil, . . . guilty of every conceivable crime" (Glassman 1975).

7. Bisin and Verdier (2000) build a model of the dynamics of cultural transmission and state the conditions under which heterogeneity of ethnic and cultural traits can survive over the long run. A more general model is Bisin and Verdier (2001). Tabellini (2008) examines interactions of individuals with different degrees of "morality" and shows how their proportion varies as a function of parental investment (see also the overview in Bisin and Verdier 2010).

Nunn 2011), that the effect of changing religious norms on literacy may be irreversible (Botticini and Eckstein 2007), and that the slave trade in Africa led to permanently lower levels of trust (Nunn and Wantchekon 2011).⁸ Jha (2008) finds that Indian trading ports with a history of peaceful cooperation between Hindus and Muslims saw less violent conflict during the period 1850–1950 and in 2002. This is consistent with our finding that persistence of anti-Semitism is weaker in cities that are more trade-oriented. Our work is also related to research on “deep” parameters, such as technological starting conditions, genetic origin, and population composition (Spolaore and Wacziarg 2009; Comin, Easterly, and Gong 2010; Putterman and Weil 2010).

The Holocaust and its antecedents have been a topic of intense research interest. Whereas some argue that it can never be rationally explained (Levi 1987), others have pointed to underlying economic and political causes (Arendt 1994; Glaeser 2005; Cohn 2007). In contrast, Goldhagen (1996) argues that a deep-rooted history of anti-Semitism was ultimately responsible for a wave of hatred. He observes that “the most telling evidence supporting the argument that antisemitism has fundamentally nothing to do with the actions of Jews, and . . . nothing to do with an antisemite’s knowledge of the real nature of Jews, is the widespread historical and contemporary appearance of antisemitism, even in its most virulent forms, where there are no Jews, and among people who have never met Jews.” Goldhagen’s claims are controversial.⁹

In addition to arguments for the transmission of a cultural trait over centuries, even in the absence of Jews themselves (Goldhagen 1996; Perednik 2003), there are functionalist interpretations. These are based on economic and social factors, such

8. Other important work includes Grosjean (2010), who analyzes attitudes toward violence in the southern US and their relation to a “culture of honor” among Scottish and Irish settlers; the comparative work by Hackett Fischer (1989); and research by Durante (2011), who concludes that greater climatic variability is associated with higher trust.

9. In contrast to the literature begun by Browning (1992) and Goldhagen, which ties the genocide to deeper cultural and sociological parameters of the perpetrators, other scholars have argued that the Holocaust was ultimately the consequence of economic and demographic considerations (Aly and Heim 2003) or that events on the Eastern Front ultimately determined the fate of Europe’s Jews (Nolte 1987; Mayer 1988).

as the particular benefits from murdering money lenders (Cohn 2007). With regard to more recent episodes of anti-Semitism, some authors have emphasized the role of modernization. Increasing social mobility and civic rights are said to have heightened the fears of non-Jews about their own social status (Almog 1990; Arendt 1994; Lindemann 2000). Where governments imposed Jewish emancipation, anti-Semitism flourished; but weak states saw no such reaction (Birnbaum and Kochan 1992). Political economy models of hatred focus on the incentives for “entrepreneurs” to foster misperceptions as a rallying cry for groups (Glaeser 2005). Another alternative is the scapegoat theory, which argues that Jews are blamed for misfortune in times of crisis (Ettinger 1980; Katz 1980; Fein 1987).

All of these approaches have difficulties explaining the waxing and waning of anti-Semitism over time as well as the differences in levels across countries (Brustein and King 2004). Our procedure is different. We use two widely separated events that lowered the countrywide threshold for violence against Jews—the Black Death and defeat in World War I—and identify the locations where hatred of Jews led to extreme acts. With respect to the earlier literature, our first contribution is to provide direct empirical evidence that twentieth-century anti-Semitism at the local level has deep historical roots.¹⁰ We do so for a wide range of outcome variables that are relevant in the context of historical debates on the origins of the Holocaust and its connection with German culture. We also show that the same attitudes can persist over the very long run: some six centuries in this case. We examine closely whether the attitude in question—anti-Semitism—is driven by time-invariant, location-specific factors. There is no evidence to support such a conclusion. In particular, economic, geographical, and institutional variables that are correlated with medieval pogroms in the cross-section are largely irrelevant for twentieth-century anti-Semitism. Controlling for these variables does not affect the link between modern persecution patterns and those in the Middle Ages. Although it is not conclusive, this evidence suggests that anti-Semitism persisted even without direct economic benefits

10. We are not able to distinguish between anti-Semitism and a hatred of minorities in general. However, because Jews were the single largest minority in Germany during medieval times and also during the interwar period, xenophobia is observationally equivalent to anti-Semitism.

and in areas where Jews were largely absent for centuries.¹¹ If so, then this strengthens the case for theoretical models in the style of Bisin and Verdier (2001), where children acquire preferences through adaptation and imitation and parents attempt to socialize their offspring to their own preference trait (even if the trait is not useful or is even detrimental). Our second contribution is that we offer one of the first systematic examinations of when cultural traits do and do not persist.¹² That persistence is lower in more “open” cities (Hanseatic cities and southern German trading cities) lends qualified support to models in which investment by parents is partly shaped by their utilitarian motives (Doepke and Zilibotti 2008; Tabellini 2008).

The article proceeds as follows. Section II describes our data and the historical background of anti-Semitism in the Middle Ages. Section III presents our main empirical results. In Section IV we analyze Jewish settlement patterns, the correlates of medieval violence, and the determinants of persistence. The interpretation of our findings is discussed in Section V, and Section VI concludes.

II. DATA AND HISTORICAL CONTEXT

We use data on anti-Semitism during two eras—the medieval period and the years 1920–45. Our measure of medieval violence against Jews are the pogroms that occurred during the Black Death (1348–50). A wave of Jew burning swept through much of Western Europe on the plague’s arrival (Cohn 2007). Germany is an especially useful setting for our purposes; elsewhere, Jews had often been expelled altogether before the Black Death.¹³ There is considerable variation in the extent of pogroms at both the local and regional level in Germany. We can

11. This contrasts with the transmission of trust in Italian cities, for example. There, trust in the past as a result of different civic institutions in the Middle Ages produced immediate economic benefits, which may have helped perpetuate trust up to the present. We thank Andrei Shleifer for pointing out the implications of this aspect.

12. Aghion et al. (2010) look at the extent to which trust can be modified by regulatory intervention.

13. Jews had been expelled from England in 1290 and from France in 1306 and 1322. They were later partly recalled to France but then finally expelled in 1359. Outbreaks of anti-Semitic violence also occurred during the Spanish expulsion of 1492.

therefore compare medieval outbreaks of anti-Semitic violence with similar acts committed in the same location more than half a millennium later, between 1920 and 1945.

II.A. Pogroms and Jewish Settlements in the Middle Ages

Jews first settled in Germany during the Roman period.¹⁴ The documentary record begins around 1000, when there are confirmed settlements in major cities like Worms, Speyer, Cologne, and Mainz (Haverkamp 2002). By the fourteenth century, there were almost 400 confirmed localities with Jewish communities.¹⁵

Pogroms against Jews began not long after the earliest confirmed settlements were established. The crusades in 1096, 1146, and 1309 witnessed mass killings of Jews in towns along the Rhine.¹⁶ In addition, there is a long history of sporadic, localized, and deadly attacks. The so-called *Rintfleisch* pogroms in Bavaria and Franconia in the late thirteenth century destroyed many communities (Toch 2003). In the same category are the *Guter Werner* attacks (1287) in the mid-Rhine area and the *Armleder* pogroms (1336) in Franconia and Saxony (Toch 2010). Many of the pogroms before the plague began when Jews were accused of ritual murder, well poisoning, or desecration of the host.

By far the most widespread and violent pogroms occurred at the time of the Black Death. One of the deadliest epidemics in history, the plague spread from the Crimea to southern Italy, France, Switzerland, and into Central Europe. The disease killed between a third and half of Europe's population between 1348 and 1350 (McNeill 1975). Faced with a mass epidemic of unprecedented proportions, Christians were quick to blame Jews for poisoning wells. Once confessions were extracted under torture, the allegations spread from town to town.

The Jews of Zurich were relatively fortunate—they were merely expelled. Despite intervention by the pope and notwithstanding declarations by the medical faculties in Montpellier and Paris that the allegations of well poisoning were false, many

14. Throughout the article, we refer to Germany according to its borders in 1938.

15. There are good reasons to believe that better documentation, and not just the spread of Jewish settlements, was responsible for the increased numbers (Toch 2010).

16. Attacks in 1309 occurred only in the Low Countries.

towns murdered their Jewish populations. In Basle, approximately 600 Jews were gathered in a wooden house, constructed for the purpose, on an island in the River Rhine. There they were burned (Gottfried 1985). In some areas, peasants and unruly mobs set on the Jews who had been expelled or tried to flee (Gottfried 1985).

The chronicles of towns that burned their Jews rarely provide a detailed explanation. In Nuremberg, the bishop's pro-notary, Michael de Leone, recorded his feelings in 1349 in two poems. He concluded that "the Jews deserved to be swallowed up in the flames" (Cohn 2007). We know that the city authorities and local princes often tried to shield "their" Jews, but few were successful. In Basle, for example, the authorities initially did not intend to persecute the Jews. Yet "the citizens marched to the city-hall and compelled the council to take an oath that they would burn the Jews."¹⁷ The city council of Strasbourg similarly intended to save its Jewish inhabitants, but a mob led by the butchers' and tanners' guilds deposed the council (Schilter 1979 [1698]); the successors then arrested the Jews, who were burned on St. Valentine's Day (Foa 2000).¹⁸ Variation at the local level evidently cannot be fully explained by economic, social, or political motives. Instead, we argue that the attacks reflect to what extent large parts of the populace could be induced to agitate strongly for killing Jews.

A similar dearth of sources restricts the analysis of locations where no assaults are recorded. Several city councils received letters warning them about Jews poisoning wells but faced no mob when they decided against persecution. In some cases, it is not certain that any Jews inhabited the town at the time of the Black Death. In many cases, however, we can be certain that Jews lived in towns that did not carry out attacks. In Halberstadt in central Germany, for instance, transactions with Jewish money lenders are recorded right before and during the Black Death; there is no record of any violence. The most likely

17. The appendix in Schilter (1979 [1698]) recalls this incident, citing the medieval chronicle of Jacob von Königshofen (1346–1420).

18. This account is disputed (Cohn 2007). Another famous example of elites shielding Jews involves Duke Albrecht of Austria, who initially intervened to stop the killing. But in the end—faced with direct challenges by local rulers to his authority and under the orders of his own judges—he had all the Jews living in his territories burned (Cohn 2007). There is substantial uncertainty in general about the extent of elite involvement in the mass killings of Jews (Haverkamp 2002).

conclusion is that in locations where Jews lived but no pogrom occurred, anti-Semitic sentiment was weaker or absent. Hence there was less pressure put on the authorities (by artisans and peasants) to expel or burn the local Jewish community.

We use the *Germania Judaica* (GJ) as the main source for the medieval period (Avneri 1968). Initiated as a research project by the German Society for the Advancement of Jewish Studies in 1903, GJ was conceived as a comprehensive description of Jewish settlement history in the German empire from the origins to the Congress of Vienna in 1814. Its three completed volumes begin with the earliest known Jewish settlements in Germany and end in 1519. We principally use data from volume 2, which covers the period 1238 to 1350. We supplement GJ with information from the recent work by Alicke (2008). Doubtful cases of Jewish settlements or occurring of pogroms in 1349 are not included in the data set. This leaves 325 towns with a confirmed Jewish settlement and unambiguous information on pogroms in 1349.

The scholars producing GJ drew on a number of original documents and secondary works. An important source of information are the so-called *Memorbücher*. These collections, compiled in the Middle Ages, contain remembrances of dead community members and prayers; from the thirteenth century onward, they developed into a recognizable literary form. Some of them contain more detailed information, such as lists of victims during particular outbursts of violence (e.g., during the 1348–50 pogroms or during the First Crusade in 1096). Many of the plague pogroms are recorded in the *Martyrologium of the Nürnberg Memorbuch* (Salfeld 1898). Several other communities, such as Deutz, also compiled their own versions. As our indicator for violence against Jews in the Middle Ages, we code for whether there was a pogrom. A typical entry in GJ reads as follows: “Heiligenstadt—... fortified by 1278, later capital of the principality of Eichsfeld, today Kreisstadt in Thuringia. At the time of the Black Death, the Jews of Heiligenstadt were systematically killed. Survivors were recorded in Erfurt in 1365 and in Frankfurt in 1389. Heiligenstadt only admitted Jews again in 1469.”

Most towns with Jewish populations were sites of mass killings in 1348–50. Of 325 observations, 235 (72%) recorded attacks. The map (Figure I) shows the frequency of pogroms during 1348–50 in Germany (in terms of its 1938 borders). Areas where every town saw violent attacks on Jews are shown as black; the shade

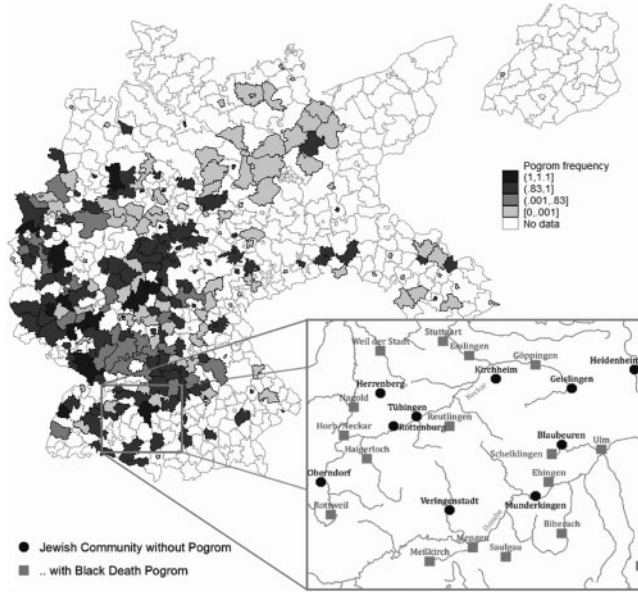


FIGURE I
Pogroms in 1348–50

Notes: Map of Weimar Republic: Pogrom frequency is defined at the county (Kreis) level as the number of cities with pogroms in 1349 divided by the number of cities with a Jewish community. The lowest category [0–.001] indicates Jewish settlement with no pogroms. We define pogrom frequency = 1.1 if a county has more than one city with a Jewish community and pogroms in each of these cities. Detailed map: Data from Haverkamp (2002). Locations with a confirmed Jewish settlement in the fourteenth century but no pogrom are indicated by a circle; a square indicates a pogrom during the time of the Black Death.

intensity of other areas decreases with decreasing pogrom frequency. Areas without data are those parts of Germany for which there are no records of medieval Jewish settlements. Even though the map contains some unshaded areas, the information derived from GJ covers all the major parts of Germany. The Rhineland, Franconia, and Hesse stand out as regions with numerous attacks.

However, the frequency of attacks varied substantially even at the local level. The detailed map shows parts of southwest Germany. Cities and towns with a confirmed Jewish settlement are marked with a circle; those that suffered a pogrom during the Black Death are marked with a square. Some contiguous towns

with Jewish settlements experienced very different histories of medieval anti-Semitic violence. For example, the Jews of Göppingen were attacked, whereas those in Kirchheim escaped unharmed. The same contrast is visible for Reutlingen and Tübingen as well as Rottenburg and Horb—towns no more than 16 miles (25 km) apart. We exploit this level of variation at the local level in the quantitative analysis section.

It is beyond the scope of this article to detail the history of Jews in Germany between the Middle Ages and the nineteenth century. We know that after the dramatic attacks in 1348–50, resettlement was slow and never attained the same density of Jewish communities as in the early fourteenth century. In many places, the “Jewish presence was extremely short-lived and transient, sometimes spanning just a single year or little more” (Toch 2003). Major towns typically expelled the few remaining Jews in the fourteenth or fifteenth century. Although some resettled in surrounding villages, many migrated to Eastern Europe; as a result, Jewish communities had largely disappeared from Germany by 1550. They did not return in larger numbers until the seventeenth century, when mercantilist rulers welcomed Jewish commercial and financial expertise (Burnett 1996).

The number of Jews in Germany grew from the eighteenth century onward, but they were subject to many discriminatory rules (curtailing the right to marry, limiting the total numbers allowed in a city, etc.). After emancipation in the early nineteenth century, the number of Jews living in Germany increased more rapidly. By the turn of the century, Germany was once more home to numerous Jewish communities. It is crucial to recognize that the proportion of Jews at the city level in Weimar Germany is unrelated to Black Death pogroms (see Table III later). That is, whether a city saw pogroms did not affect resettlement half a millennium later; without continuous Jewish settlement, there was no institutionalized local remembrance of plague pogroms.¹⁹

Jewish emancipation occurred only during and after the French occupation in the early nineteenth century. The possibility of equal rights for Jews after the defeat of France led to a wave of unrest, the so-called Hep-Hep riots in 1819 (Katz 2004). These

19. A comprehensive history of Jewish settlement in Germany (such as GJ), which could have helped identify formerly hostile places, was not available in the nineteenth century.

began in Würzburg and quickly spread to a large number of German, Polish, and Danish cities. The size of the Jewish community grew in the nineteenth century, and anti-Semitism increased after reunification in 1871. An anti-Semitic petition in 1880 called for limiting Jewish immigration and influence, and anti-Semitic parties were winning significant shares of the total vote by the 1890s (Wawrzinek 1927). By 1914, however, the anti-Semitic parties had dwindled to near insignificance (Levy 1974).

II.B. Anti-Semitism in Germany after World War I

Anti-Semitism in Germany grew during and after World War I. During the war, right-wing organizations spread rumors that Jews were not serving at the front but were engaged in war profiteering. The German Army High Command ordered a count of all Jews in uniform—allegedly to counter such rumors—but never published the results. After the collapse of 1918, Jews were blamed for Germany's defeat in World War I. This led to another increase in the level of anti-Semitic agitation. Jews who had served in high office included Walther Rathenau, who coordinated the supply of raw materials for the war. Matthias Erzberger, another prominent politician and a Jew, opposed the war openly from 1917 onward; he signed the humiliating armistice with the Entente in 1918. As chairman of the armistice commission and later as finance minister, he implemented many of the provisions of the Versailles Treaty. These led to a large tax hike to pay for reparations.

In addition, Jews provided some of the leadership for the German revolution of 1918 and for attempts to establish socialist regimes thereafter. In Munich, Kurt Eisner proclaimed a Soviet Republic; Gustav Landauer and Eugen Levine also held positions of great influence. Rosa Luxemburg attempted to organize a revolution along Bolshevik lines.²⁰ This ultra-left bid for power was eventually thwarted by demobilized army units. Radical right-wing groups quickly seized on the involvement of leading Jewish politicians in the revolution, the armistice, and the Treaty of Versailles. The false claim that Germany's army had been

20. Luxemburg and Liebknecht led the Independent Social Democratic Party of Germany, the ultra-left-wing of the Social Democratic Party. Liebknecht was widely believed to be Jewish.

“stabbed in the back”—and not actually defeated in battle—pointed to domestic unrest as the key factor that lost the war.

Anti-Semitism was already widespread before the Nazi Party’s rise to power in 1933. Student associations often excluded Jews. Jewish cemeteries were frequently desecrated; synagogues were besmirched with graffiti. Politicians made anti-Semitic speeches (Walter 1999). Jews were not welcome in many hotels and restaurants, and entire towns declared themselves to be open for Christian guests only (Borut 2000).

According to the census of 1925, there were more than 560,000 Jews living in Germany. The vast majority (66%) resided in the most populous cities; the rest were evenly divided between smaller cities and more than 1,000 towns and villages with fewer than 10,000 inhabitants. For the regional patterns of twentieth-century violence, our main source is Alicke (2008). From the wealth of information in his encyclopedia of Jewish communities in German-speaking areas, we focus on evidence about anti-Semitic violence in the 1920s and 1930s. Our main sample includes 325 cities with unambiguous information on Black Death pogroms and Jewish communities in both medieval and interwar Germany. We also use an extended data set that contains all locations mentioned in Alicke (2008)—that is, 1,428 cities with Jewish communities in interwar Germany.

Pogroms before 1933 were rare but not unknown. We find 38 communities that witnessed major attacks on Jews before the Nazi rise to power. To qualify as such, there had to have been physical violence.²¹ During Weimar Germany’s period of economic decline and social unrest after 1918, numerous right-wing parties with anti-Semitic programs sprang up. Hitler’s National Socialist German Workers Party (NSDAP, a.k.a. the Nazi Party) was only one of many, but it was among the most radical. The German National People’s Party (DNVP) continued the anti-Semitic rhetoric of the Imperial era (Hertzman 1963). Closest to the NSDAP was the German People’s Freedom Party (DVFP), which split from the DNVP in 1922 because of the latter’s lack of radical anti-Semitism. We use Hänisch’s (1988) election data in addition to commonly used control variables.²²

21. As documented in Alicke (2008). Political agitation or the desecration of Jewish property is not counted under this heading.

22. This data set is now the standard for elections during the interwar period (King et al. 2008).

During its early years, the Nazi Party emphasized its extremist worldview and anti-Semitic beliefs while attempting to seize power by violent means. After the so-called Beer Hall Putsch, the party was banned for several years. The DVFP absorbed much of the Nazi vote in the May 1924 election (Striesow 1981).²³ We find a correlation of .59 between the voting results of the DVFP in 1924 and the Nazi Party in 1928, which is significant at the 1% level. Readmitted to the polls in 1928, the Nazi Party won 3.6% of the eligible votes in our main sample.²⁴ In some localities, as many as 34% of voters supported the party's program; in others, not a single vote was cast in favor of the NSDAP.²⁵

The Nazi Party's public profile later changed when it tried to garner middle-class support. Toward this end, during 1928–33, it tried to appear "respectable"; leaders pledged to use only legal means to win power.²⁶ This change in tactics is generally dated after 1928 (Stachura 1978; Childers 1983).²⁷ During the Great Depression, the Nazi Party increasingly exploited economic and social issues. Anti-Semitism never disappeared from the party's manifestos and propaganda, but it was toned down. Surveying trends in research during the past two decades, Heilbrunner (2004) concludes:

Until the 1960s most studies of the Nazi Party and National Socialism argued that anti-Semitism was an essential factor in explaining Nazi success before 1933. But in recent decades, numerous studies have shown that anti-Semitism was probably somewhat

23. Members of the banned NSDAP reconstituted themselves as a party under the label National Socialist Freedom Party (NSFP), which put forward joint lists with the DVFP. The NSFP later merged with the NSDAP when the ban on the latter expired (Levy 2005).

24. Nationwide, the NSDAP received 2.6% of the vote. The difference between our sample mean and the nationwide average arises because our data set includes only cities with Jewish communities in the 1920s.

25. The latter occurred in seven cities in the full sample—all with fewer than 2,000 eligible voters.

26. Stachura (1978) emphasizes decisions made after the election of 1928 as a turning point; Bracher (1970), Broszat (1960), and Bullock (1991) suggest that the decisive changes occurred in 1929.

27. Herbert (2000) observes that "after 1930, the election propaganda of the rising National-Socialists mentioned antisemitism only peripherally."

underrepresented in Nazi Party activity and propaganda in the period before 1933, particularly in the last years before Hitler became Chancellor.

After the turning point in 1928, the NSDAP's campaigns were directed at disaffected protest voters who may or may not have shared its more radical ideas. With the party's gains in electoral appeal, the distribution of votes by district increasingly approximates a normal distribution, so locations with radical views are less easily identified as the party's mass support swamps the factors that drove its early results.²⁸ Beginning in 1930, the NSDAP's vote share increased everywhere; hence, relative differences between the average and the most fervently pro-Nazi district become harder to identify. For these reasons, we regard election results *until* 1928 as more accurate indicators of a local population's ideological orientation (however, we also analyze the post-1928 election results). Figure II displays the geographical distribution of votes for the Nazi Party in 1928. Bavaria, the upper Rhine region, and Schleswig-Holstein are areas of high support. There is ample variation at the regional level, with areas of extremely low vote shares immediately adjacent to those with high proportions of votes for the Nazi Party.

We also collect data on *Reichskristallnacht*. Although much of the violence was centrally directed, it required local cooperation. In a number of towns and cities, there were no attacks. We collect information from Alicke (2008) on whether synagogues were damaged or destroyed in 1938. The local record is not always clear on why this happened. In a handful of cases, local mayors refused to participate or stopped SA troopers from burning down the synagogue. Historical narratives (Alicke 2008) often emphasize "technical" constraints, including fire hazard and ownership issues. We take no position here on whether these were merely a pretext. However, we see no good reason why there should have been fewer practical difficulties in German municipalities that once had participated in medieval pogroms.

Next, we use data on deportations of German Jews to assess the strength of anti-Semitic sentiment in each town. The German federal archive (Bundesarchiv) has used available records to

28. Figure A.1 in the Online Appendix gives a perspective on how voting outcomes changed over time by plotting vote shares for the DVFP in 1924 and for the NSDAP in 1928, 1930, and 1933. After 1928, a continuous shift of the distribution to the right is apparent.

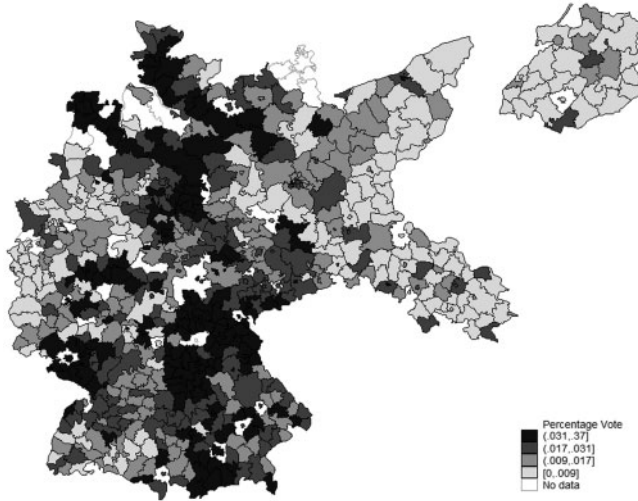


FIGURE II

Percentage of Votes for the NSDAP in the German National Election of 1928

compile detailed, municipal-level data from available records on deportations—including the name, date of birth, date of deportation, destination, and (where known) ultimate fate of each individual.²⁹ Mass deportations to the east began in 1941. As early as 1938, however, Polish Jews living in Germany were rounded up, transported to the German–Polish border, and forced to cross. Before that date, and during the pogroms of the *Reichskristallnacht*, Jews from some towns were deported to camps in the Reich.

In our empirical analysis, we examine how many deportations took place while conditioning on the number of Jews living in a town. In our view, any remaining differences reflect local sentiment. This is because many rules for the treatment of Jews were far from clear-cut. The Reichssicherheitshauptamt (RSHA) of the Schutzstaffel (SS) under Adolf Eichmann was in charge of overall coordination, but there was substantial room for local factors to affect deportations. Raul Hilberg’s classic treatment of the destruction of European Jewry argues that “each city

29. Bundesarchiv (2007). The register of names and places is available online at <http://www.bundesarchiv.de/gedenkbuch>.

has its own deportation history” (Hilberg 1961, 320). Meyer (2004) also emphasizes local variation and notes that—in areas where the Gestapo and representatives of the Reichsorganisation der Juden worked well together and developed mutual trust—local Jews fared better (including some cases of rescues). General histories note the variability and chaos associated with deportations, especially early on. Not even age was consistently applied as a selection criterion.³⁰

The Nazi newspaper *Der Stürmer* provides our final indicator for anti-Semitism. Published with a front-page banner declaring “the Jews are our misfortune,” it was by far the most anti-Jewish of all the Nazi papers. *Der Stürmer* typically mixed tales of Jewish ritual murders with dark conspiracy theories. It also contained a section with letters to the editor (chosen by the paper for their interest and attitude of the letter writer). These letters typically involve a mixture of denunciation and rhetorical questions about how despicable it is to mingle with Jews. For example, a Hamburg schoolgirl wrote to the newspaper in 1935 (Hahn 1978) as follows:³¹

Dear Stürmer!

I attend a well-known higher secondary school in Hamburg. Regrettably, we still have many Jewish fellow students. Equally regrettably, many German girls are still close friends with these Jewish girls. On special occasions, when we wear [BDM]³² uniforms in school, these girls walk arm-in-arm with their Jewish friends. You can imagine what an impression this gives! When confronting the girls in question, they say “stop instigating hatred all the time! Jews are human beings, too, and ‘Eva’ is a ‘modest’, ‘decent’, ‘nice’ girl!”...I consider these friendships very dangerous, since the Jews and their corrupting ideas destroy the souls of the girls

30. Hilberg (1961), Löw (2006). We provide more historical detail on the local patterns of deportation decisions in Section I.D of the Online Appendix.

31. It is tempting to question the letter’s veracity. However, Streicher’s personal files and the *Stürmer* archive (in the City Archive of Nuremberg) contain many letters of this type and other denunciations. The historical literature accepts the veracity of *Stürmer* letters (Showalter 1983).

32. BDM stands for Bund Deutscher Mädchen (Association of German Girls). This was the equivalent of the Hitler Youth for girls.

slowly but surely. Girls at 14 are too innocent to realize the true intentions of their Jewish “girlfriends.” I am myself barely 15 years old.

We use four years of letters to the editor of *Stürmer*, from 1935 to 1938, and code the location of the letter writer. We total the number of letters in three categories: those published as article equivalents (an obvious sign of approbation by the editors), those denouncing named individuals still talking to or doing business with Jews, and those asking questions about Jews (e.g., the number of Jews remaining in a city). The vast majority of all cities with information on Jewish settlement in the interwar years did not send a single letter to the *Stürmer*. At the other end of the distribution, we find cities like Nuremberg (where the *Stürmer* was edited and NSDAP party congresses were held) with 73 letters, Munich (where the party was founded and the Beer Hall Putsch took place) with 77, Cologne with 110, and Berlin with 354 letters.

II.C. Data Overview

We construct our data set as follows. We first collect information on all the municipalities with twentieth-century data on Jewish population and anti-Semitic outcome variables, relying on the work of Aliche (2008). Next, we check for direct evidence of Jewish settlement in the fourteenth century. This procedure yields information on 325 cities (our main sample). For the twentieth century, we have data on 1,427 towns and cities within the 1938 borders of Germany but with many towns and cities having no confirmed Jewish settlements (extended sample).

Table I gives an overview of the key variables in the main sample. Jews are typically a small part of the population (1.4%).³³ In the average city, about half of the population was Protestant and most of the remainder Catholic. In 87% of locations, there was a synagogue or a dedicated place for religious worship by Jews in 1933. About 6% of cities witnessed pogroms during the 1920s. The average city gave 3.6% of votes to the NSDAP in 1928

33. In Germany as a whole, Jews accounted for less than 1% of the total population. It is not surprising that our sample shows a higher proportion than the nation as a whole, because (1) it includes only cities with Jewish communities in interwar Germany, and (2) many Jews lived in urban centers.

TABLE I
DESCRIPTIVE STATISTICS FOR MAIN SAMPLE

	Mean	Std. Dev.	Min.	Max.	Obs.
Population in 1933	46,118	115,863	207	756,605	325
%Jewish in 1933	1.44	1.45	0.020	15.7	325
%Protestant in 1925	48.4	34.0	0.97	97.6	325
Synagogue in 1933	0.87	0.34	0	1	319
Indicators for twentieth-century anti-Semitism					
<i>POG</i> ^{1920s}	0.063	0.242	0	1	320
<i>NSDAP</i> ¹⁹²⁸	0.036	0.049	0.00083	0.313	325
<i>DVFP</i> ¹⁹²⁴	0.080	0.097	0	0.588	325
<i>DEPORT</i>	197.1	839.5	0	10,049	301
<i>STÜRMER</i>	3.77	10.7	0	110	325
<i>SYNATTACK</i>	0.903	0.297	0	1	278
Black Death pogrom (<i>POG</i> ¹³⁴⁹)	0.723	0.448	0	1	325

Notes: Table is based on cities with medieval Jewish communities and Jewish population in 1920–30 (main sample). Appendix Table A.1 shows the equivalent statistics for the extended sample. *POG*^{1920s} is an indicator variable for pogroms in each location during the 1920s; *NSDAP*¹⁹²⁸ is the vote share of the NSDAP in the May 1928 election; and *DVFP*¹⁹²⁴ is the vote share of the Deutsch-Völkische Freiheitspartei in the May 1924 election; *DEPORT* is the number of deportees from each locality; *STÜRMER* is the number of anti-Semitic letters to *Der Stürmer*; *SYNATTACK* takes the value 1 if a synagogue was destroyed or damaged in the 1938 *Reichskristallnacht*, and 0 otherwise. *POG*¹³⁴⁹ takes the value 1 if a pogrom occurred in the years 1348–50, and 0 otherwise.

and 8% to the Völkisch-Nationalist DVFP in 1924. For both elections, there is substantial variation by municipality. The average town reported 197 deportees; the range was from 0 to 10,049. The number of anti-Semitic letters to the *Stürmer* during 1935–38 ranges from 0 to 110 (which we scale by town/city population in the empirical analysis). In about 90% of cities with synagogues or prayer rooms, these were damaged or destroyed during the *Reichskristallnacht*.

In Table II, we explore basic correlation patterns in our data. We find that all our indicators of twentieth-century anti-Semitism are significantly and positively correlated with medieval pogroms. In addition, the six variables for modern anti-Semitism are mostly positively correlated with each other (Online Appendix Section II.A reports the same information as Tables I and II but for the extended sample).

Next, we examine the comparability of localities with and without Black Death pogroms. Table III shows various outcome variables; it reports their means (conditional on Black Death pogroms) in Panel A and the corresponding regression results in

TABLE II
CORRELATIONS AMONG MAIN VARIABLES FOR MAIN SAMPLE

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) <i>POG</i> ¹³⁴⁹	1						
(2) <i>POG</i> ^{1920s}	0.170***	1					
(3) <i>DVFP</i> ¹⁹²⁴	0.105*	0.539***	1				
(4) <i>NSDAP</i> ¹⁹²⁸	0.128**	0.444***	0.831***	1			
(5) % <i>DEPORT</i>	0.230***	0.056	-0.065	-0.010	1		
(6) <i>STÜRMER</i> / <i>pop</i>	0.109**	0.0266	0.158***	0.225***	0.014	1	
(7) <i>SYNATTACK</i>	0.127**	0.001	-0.020	-0.020	-0.066	-0.039	1

Notes: Table is based on our main sample (including only cities with medieval Jewish communities and Jewish population in 1920–30). Appendix Table A.2 shows the equivalent statistics for the extended sample. *POG*¹³⁴⁹ takes the value 1 if a pogrom occurred in the years 1348–50, and 0 otherwise. *POG*^{1920s} is an indicator variable for pogroms in each location during the 1920s; *NSDAP*¹⁹²⁸ is the vote share of the NSDAP in the May 1928 election and *DVFP*¹⁹²⁴ is the vote share for the Deutsch-Völkische Freiheitspartei in the May 1924 election; %*DEPORT* is the percentage of deportees from each locality (relative to Jewish population in 1933); *STÜRMER*/*pop* is the number of anti-Semitic letters to *Der Stürmer* per 10,000 inhabitants; *SYNATTACK* takes the value 1 if a synagogue was destroyed or damaged in the 1938 *Reichskristallnacht*, and 0 otherwise. * $p < .10$, ** $p < .05$, *** $p < .01$ (p -values for pairwise correlations, weighted by city population in 1933).

Panel B.³⁴ Columns (1) and (2) compare long-run economic development as proxied by city growth over two periods: 1300–1933 and 1750–1933.³⁵ Neither period shows statistically significant differences between towns and cities with and without pogroms. The same is true for the percentage of Protestants in 1925 (column (3)). It is noteworthy that the percentage of Jews in the population in 1933 is not significantly different either (column (4)). This suggests that Jews did not systematically avoid settling in locations where medieval pogroms had occurred. Finally, columns (5)–(8) examine economic outcome variables in 1933. These include, respectively: the percentage of blue-collar workers, because these individuals voted predominantly for the Communist Party, which may affect Nazi votes (Childers 1983; Hamilton 1982); the unemployment rate; the percentage of manufacturing employment, which captures differences in industrialization; and the percentage of retail and trade employment, because many Jews worked in this sector. None of these variables differs

34. For reasons of consistency, we include our standard set of control variables in the regressions reported in Panel B: ln(city population), %Protestant, and %Jewish.

35. We use two periods for growth because there are few reliable observations on population size in 1300. Reported results are for the main sample.

TABLE III
CITY-LEVEL CONTROLS AND MEDIEVAL POGROMS

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
City pop growth	1750-1933	%Protestant 1925	%Jewish 1933	%Blue collar 1933	%Unemployed 1933	%Manufacturing 1933	%Retail & trade 1933
Panel A: Means by Pogrom in 1349							
$POG^{1349} = 1$	2.38 (1.20)	46.8 (33.3)	1.44 (1.48)	41.1 (10.8)	17.0 (7.8)	35.2 (12.6)	22.0 (10.3)
$POG^{1349} = 0$	2.28 (1.63)	52.6 (35.8)	1.44 (1.38)	40.0 (11.8)	15.0 (8.2)	31.8 (13.9)	19.0 (11.2)
Panel B: Regressions on POG^{1349}							
POG^{1349}	0.120 (0.534)	-6.887 (4.520)	0.169 (0.165)	-0.953 (1.131)	0.0443 (0.758)	1.000 (1.367)	0.123 (0.958)
Observations	46	325	325	325	325	325	325
Adjusted R^2	0.075	0.036	0.094	0.401	0.469	0.369	0.554

Notes: All regressions run by OLS for the main sample, including only towns with documented medieval Jewish settlement. In Panel A, standard deviation in parentheses; in Panel B, standard errors in parentheses (clustered at the county level). POG^{1349} takes the value 1 if a pogrom occurred in the years 1348-50, and 0 otherwise. All regressions include our standard set of control variables: $\ln(\text{city population})$, %Protestants, and %Jewish (except for columns (3) and (4), which exclude %Protestant and %Jewish, respectively). City population corresponds to the year of the dependent variable: $\ln(\text{city population})$ in 1300 in column (1), $\ln(\text{City population})$ in 1750 in column (2), $\ln(\text{City population})$ in 1925 in column (3), and $\ln(\text{City population})$ in 1933 in columns (4)-(8). City population data for 1300 and 1750 are from Bairoch, Batou, and Chèvre (1988).

significantly between the two samples, so there is little reason to question the comparability of the localities with and without pogroms in 1349. In Online Appendix Section II.A we show that this holds also for our extended sample, as well as for election turnout in the 1920s and 1930s (which is often used as a key indicator of social capital; see Guiso, Sapienza, and Zingales 2008).

III. BASELINE RESULTS

In this section we present our main results. As described in Section II, the Black Death was a common shock that lowered the overall threshold for violence against Jews. In some cities, citizens responded with pogroms, but Jews were unharmed in other cities. We therefore argue that pogroms during the Black Death in 1348–50 at least partly reflect medieval anti-Semitism. Similarly, the general upsurge in anti-Semitic sentiment in Germany after World War I made the expression of anti-Semitic attitudes and violent acts against Jews more likely. We demonstrate that across a range of indicators, towns and cities with a medieval history of violence against Jews also engaged in more persecution in the 1920s and 1930s.

III.A. *Comparison of Two Cities*

To fix ideas, let us compare two cities: Würzburg, with a population of 101,000 in 1933, and Aachen, with a population of 162,000. Würzburg had a Jewish community since 1100 (Alicke 2008) and Aachen since 1242 (Avneri 1968). The former was the site of a pogrom during the Black Death; the latter was not.

Würzburg's Jews suffered persecution early. A pogrom in 1147 destroyed the community. During the *Rintfleisch* pogroms in 1298, some 800 Jews died. There were also pogroms in the 1920s, and the *Stürmer* published 23 letters from readers in this city (a frequency 10 times higher than average). In Würzburg the Nazi Party garnered 6.3% of the vote in May 1928, when the mean district recorded 3.6%. We know that 943 Jews were deported after 1933 (out of a community of 2,145, which is equivalent to 44%).³⁶

36. This does not imply that 56% were not deported. Emigration of Jews before 1939 likely accounts for much of the gap. The files of the Bundesarchiv are not perfect, and especially in the later stages of the war, record-keeping degenerated.

Aachen provides a stark contrast with Würzburg. Jews were first recorded in 1242, paying taxes. The town had a Judengasse (street for Jews) in 1330. For Aachen, the GJ explicitly states that there is no record of anti-Semitic violence, either before or during the Black Death—even though, in 1349, the citizens of Brussels wrote to the Aachen authorities urging them “to take care that the Jews don’t poison the wells” (Avneri 1968). Aachen also saw no pogroms in the 1920s. The *Stürmer* published only 10 letters from Aachen (or less than half the number from Würzburg, despite a population that was 60% larger). Only 1% of voters in Aachen backed the NSDAP in 1928. Of the 1,345 Jews living there, 502 (37%) are known to have been deported. We now investigate how general these differences are.

III.B. Empirical Strategy and Overview of Results

We use three empirical strategies: standard regression techniques, propensity score matching, and matching by geographical location. Regressions take the following general form:

$$(1) \quad AS_i = \alpha + \beta \cdot POG_i^{1349} + \gamma X_i + \varepsilon_i.$$

Here AS_i represents the various proxies for anti-Semitism in the Weimar Republic and Nazi Germany at the city level i , POG_i^{1349} is an indicator variable for Black Death pogroms, and X_i is a vector of control variables. Our main control variables are city population, the percentage of the population that is Jewish, and the percentage that is Protestant.³⁷ Depending on the indicator, we allow for different distributions of the error term ε_i and do not limit ourselves to normal ones. Where the outcome variable’s distribution is highly skewed, we use Poisson maximum likelihood (ML) estimation. To demonstrate the strength of our results (and control for nonlinearities), we also use propensity score matching estimation on the same correlates.

Also, the survival of evidence was less than assured given the numerous bombing raids.

37. Protestants were more prone to vote for the Nazi Party (Falter 1991). City population and the share of Jewish population are measured for the year closest to each outcome variable; for the latter variable, data are available for 1925 and 1933. The share of Protestants is available only for 1925. In cases where we do not have city- or town-level observations for control variables, we use county- (*Kreis*-) level data. Standard errors are clustered at the county level.

TABLE IV
 CONDITIONAL AVERAGE OF TWENTIETH-CENTURY OUTCOME VARIABLES

	Pogrom in 1349		All towns	Obs.
	No	Yes		
Pogrom in 1920s (% of towns)	1.1	8.2	6.3	320
NSDAP May 1928 (% of valid votes)	2.7	4.0	3.6	325
DVFP May 1924 (% of valid votes)	7.2	8.4	8.0	325
Deportations (per 100 Jews in 1933)	24.2	35.6	34.0	278
<i>Stürmer</i> letters (per 10,000 inhabitants)	0.59	0.86	0.82	325
Synagogue attack (% of towns)	79.1	93.8	90.3	278

Notes: All statistics based on the main sample, including only towns with documented medieval Jewish settlement. Of the 325 towns and cities, 235 (72%) had pogroms in 1348–50. The mean of deportations per 100 Jews and *Stürmer* letters is weighted by city population in 1933. The mean of synagogue attacks is calculated only for towns with synagogues or prayer rooms in 1933.

In addition, we match towns by geographic location, based on longitude and latitude. As argued in the rich literature in labor economics (see Card and Krueger 1997), comparing places close to each other can help overcome the problems associated with omitted variables. Hence, we directly compare towns that are no more than a few miles apart and for which one saw a pogrom in 1349 while the other(s) did not.³⁸

Before turning to the regression results, we examine differences in various twentieth-century outcome variables between cities that did and did not experience Black Death pogroms. As Table IV shows, pogroms in the 1920s were substantially more frequent in towns with a history of medieval anti-Semitism. Similarly, vote shares for the Nazi party (NSDAP) in 1928 and for the anti-Semitic DVFP in 1924 (when the Nazi Party was banned) were more than a percentage point higher—which is substantial, given that the average vote shares were (respectively) 3.6% and 8%. Our three proxies for anti-Semitism in the 1930s also show marked differences for towns with Black Death pogroms: the proportion of Jewish population deported is more than 10% higher,³⁹ letters to the editor of *Der Stürmer* were about 30% more frequent, and the probability that local synagogues were damaged or destroyed during the *Reichskristallnacht* of

38. More precisely, Black Death pogroms in Germany occurred during 1349 and 1350. For ease of exposition, hereafter we refer to them as the 1349 pogroms.

39. We calculate deportations per 100 Jews and then derive the means, which are weighted by city population in 1933.

TABLE V
BLACK DEATH POGROMS, POGROMS IN THE 1920s, AND SYNAGOGUE
ATTACKS

	Pogrom in 1349		Total
	No	Yes	
Panel A: Pogrom in 1920s			
No	87 98.9%	213 91.8%	300 93.8%
Yes	1 1.1%	19 8.2%	20 6.3%
Total	88	232	320
Panel B: Synagogue attacks			
No	14 20.9%	13 6.2%	27 9.7%
Yes	53 79.1%	198 93.8%	251 90.3%
Total	67	211	269

1938 is more than 10% higher. In the next section, we show that these differences are significant both statistically and in terms of quantitative importance.

III.C. 1920s Pogroms

Pogroms in the 1920s were infrequent and highly localized affairs. Although they were embedded in a broader context of anti-Semitic agitation and acts, such as attacks on shops, we only count recorded acts of physical violence. Cities with Black Death pogroms had, on average, significantly more pogroms in the 1920s than cities without pogroms in 1349. As shown in Panel A of Table V our main sample comprises 320 cities with observations on pogroms in both 1349 and the 1920s. In 232 localities, the Black Death coincided with pogroms. The 1920s saw 20 pogroms in Weimar Germany. The frequency of attack was 8.2% in the 232 cities with pogroms in 1349 versus 1.1% in the remaining 88 cities. A town having experienced a medieval pogrom thus raises the probability of witnessing another pogrom in the 1920s by a factor of approximately 6.

Table VI, column (1) reports the ordinary least squares (OLS) regression of pogroms in the 1920s on Black Death pogroms.

TABLE VI
MAIN RESULTS

Dep. variable:	(1) 1920s pogroms OLS	(2) NSDAP 1928 OLS	(3) DVFP 1924 OLS	(4) Deportations ML	(5) <i>Stürmer</i> letters ML	(6) Synagogue attacks OLS
Panel A: Baseline regressions						
POG^{1349}	0.0607*** (0.0226)	0.0142*** (0.00567)	0.0147 (0.0110)	0.142*** (0.0706)	0.369** (0.144)	0.124** (0.0522)
ln(Pop)	0.0390*** (0.0152)	-0.00254 (0.00219)	-0.00123 (0.00418)	0.241*** (0.0841)	0.848*** (0.0419)	0.0498*** (0.0117)
%Jewish	0.0135 (0.0114)	0.00174 (0.00190)	0.00701 (0.00442)	0.0743** (0.0348)	0.218*** (0.0383)	0.0262** (0.0132)
%Protestant	0.00034 (0.00042)	0.00029*** (0.000088)	0.00083*** (0.00018)	-0.0039*** (0.0012)	-0.0053** (0.0023)	0.00036 (0.00060)
ln(# Jews 1933)				0.815*** (0.0822)		
Observations	320	325	325	278	325	278
Adjusted R^2	0.054	0.043	0.080			0.098
Panel B: Matching estimation^a						
POG^{1349}	0.0744*** (0.0182)	0.0133*** (0.00486)	0.0203** (0.0102)	161.7*** (41.33)	2.386*** (0.570)	0.103* (0.0553)
Observations	320	325	325	278	325	278
Panel C: Geographic matching^b						
POG^{1349}	0.0819*** (0.0162)	0.0116** (0.00456)	0.0238*** (0.00746)	195.8*** (33.55)	2.864*** (0.579)	0.152** (0.0677)
Median distance	20.4	20.0	20.0	21.9	22.2	23.7
Mean distance	23.4	23.1	23.1	28.3	32.6	27.6
Observations	320	325	325	278	325	278

Notes: All regressions run at the city level. Standard errors in parentheses, clustered at the county (Kreis) level. POG^{1349} takes the value 1 if a pogrom occurred in the years 1348-50, and 0 otherwise. City population is taken from the 1925 census in column (1) and from the election data for the respective year in columns (2) and (3); in columns (4)-(6), city population is from the 1933 census. %Jews is from the 1925 census for columns (1)-(3), and from 1933 census in columns (4)-(6). %Protestants is from the 1925 census. OLS = ordinary least squares estimation; ML = Poisson maximum likelihood estimation. ^aMatching estimation based on the same set of control variables as used in Panel A. Treatment variable is POG^{1349} . The average treatment effect for the treated (ATT) is reported, using robust nearest neighbor estimation with the four closest matches. ^bMatching estimation based on geography; the matching characteristics are longitude and latitude. Column (4) uses the city's Jewish population in 1933 as additional matching variable, and column (5) uses city population in 1933. Treatment variable is POG^{1349} . ATT is reported, using robust nearest neighbor estimation with the two closest matches. Distance (in miles) between each city and its two closest matches is reported. * $p < .10$, ** $p < .05$, *** $p < .01$.

There is a positive and significant association even after controlling for population size, the percentage of the population that is Jewish, and the percentage that is Protestant. The effect is quantitatively important, as Black Death pogroms are associated with a probability of 1920s pogroms that is more than 6 percentage points higher. This result is confirmed by propensity matching while using the same covariates (Panel B of Table VI).⁴⁰

Finally, we report results for geographical matching (Panel C). The probability of a pogrom in the 1920s is 8.2 percentage points higher in cities with medieval pogroms than in nearby cities without attacks on Jews during the Black Death. The mean and median distances between matched cities are low—about 20 miles.⁴¹ The effects identified by geographical matching are significant and of a similar magnitude as our previous estimates. This strongly suggests that our findings are not driven by unobserved heterogeneity at the local level.

A history of medieval violence against Jews is associated with large and statistically significant shifts in the probability of another pogrom, but the correlation is not perfect. Not all towns that burned their Jews in 1348–50 saw attacks in the 1920s; in fact, the majority did not. Many factors can reduce the extent to which anti-Semitic attitudes survive in one location. At the end of the Section IV.C, we examine some of the city characteristics that are associated with lower persistence.

III.D. Voting Results

We now turn to parliamentary elections during the Weimar Republic. The May 1928 election is arguably the most reliable indicator for anti-Semitism because the NSDAP emphasized the anti-Semitic and radical side of its program before the party's turning point in the late 1920s. Thereafter, it aspired to greater respectability in the eyes of middle-class voters and toned down its anti-Semitic rhetoric. In column (2) of Table VI we analyze this

40. Following Abadie et al. (2004), we use four matches for propensity score estimation based on control variables. This offers the benefit of not relying on too little information, yet it avoids incorporating observations that are not sufficiently similar. Results are much the same when we change the number of matches.

41. To match cities that are as close to each other as possible, we restrict the number of matches to two. We effectively compare each city that had a Black Death pogrom with the two nearest cities that did not. When increasing the number of matches to four—as in the matching based on controls in Panel B—the results are almost identical even though distance increases by about 50%.

result further. In 1928, the NSDAP vote share was 1.4 percentage points higher in electoral districts with a past of anti-Semitic violence (after we control for population size and the percentage of Jews and Protestants). This means that the NSDAP added more than a third to its typical vote share in cities that had pogroms in 1349. The control variables show that Protestants voted for the NSDAP in greater numbers than the average population, confirming the findings in Falter (1991).⁴² According to the point estimates in column (2), an increase of one standard deviation (33%) in the population share of Protestants raises the NSDAP vote share by about 1 percentage point—an effect slightly smaller than that of medieval pogroms. Finally, the percentage of Jews in the population is positively (but not significantly) correlated with NSDAP votes in 1928. The same result holds if we use propensity matching by control variables (Panel B).

To illustrate the strength of these findings, consider the two towns of Königheim and Wertheim. They are 6.4 miles apart and in 1933 had populations of 1,549 and 3,971, respectively. Both had a Jewish settlement before the Black Death. Königheim did not witness a pogrom during the plague, but Wertheim did. The NSDAP received 1.6% of valid votes in Königheim in 1928; in Wertheim, it received 8.1%. The analysis in Panel C of Table VI (see column (2)) generalizes this type of comparison by matching each town in our main data set to its two nearest neighbors with a different history of medieval anti-Semitic violence. The results confirm the magnitude and statistical significance of our previous estimates.

Column (3) in Table VI repeats the same regressions for the DVFP in May 1924, which attracted much of the vote for the temporarily banned NSDAP. On average, Black Death pogroms are associated with a DVFP vote share that is 1.5–2.2 percentage points higher. Although the OLS regression result is marginally below statistical significance, both propensity score matching and matching by geography suggest large and significant differences. To put matters in context, in the sample overall, the DVFP polled 8% in 1924; thus, the matching results imply that DVFP votes are about a quarter higher in cities where Black Death pogroms

42. Other authors attribute the relative strength of the NSDAP in Protestant areas to its weakness in proposing policies that could have appealed to farmers in southern (Catholic) areas (King et al. 2008).

occurred. This is the same order of magnitude as for Nazi Party votes in 1928.

III.E. Deportations, Stürmer Letters, and Attacks on Synagogues

In this section we analyze deportations of Jews between 1933 and 1944. Although they resulted from a centrally directed policy, deportations in any one town and village partly reflected the level of hostility shown by local authorities as well as support of (or denunciations by) neighbors and acquaintances.

Column (4) in Table VI shows regression results for deportations during the Nazi regime. As the dependent variable, we use data on the number of Jews transported at the city level for the period 1933–45. Poisson ML regression is our favored estimation technique because the distribution of deportations is heavily right-skewed. According to Wooldridge (2002), linear models may not be appropriate for “corner-solution” specifications, where a significant mass of the nonnegative observations is close to zero.⁴³ We add the size of the Jewish population in 1933 to our regular set of controls.⁴⁴ On average, 197 Jews were deported from cities in the main sample. Thus, the coefficient of .14 from the ML estimation implies that cities with Black Death pogroms deported about 30 more Jewish inhabitants on average than cities without medieval pogroms. Panels B and C present matching estimations by other covariates and geography, respectively. This estimation technique (which does not rely on a particular probability distribution) yields quantitatively stronger

43. The Online Appendix (Section II.C) provides results for OLS estimation using the logarithm of deportations as dependent variable (which is also heavily right-skewed). Our preferred specification—Poisson ML estimation—avoids log-linearizing the dependent variable and thus preserves the higher moments of the distribution (Santos Silva and Tenreyro 2006; Santos Silva, Tenreyro, and Windmeijer 2008). In addition, Online Appendix Section II.C shows that we obtain comparable results when using deportations per 100 Jews (in 1933) as the dependent variable.

44. After 1933, more than half of Germany’s Jews emigrated. This creates a potential issue with the results in column (4), Table VI. More anti-Semitic tendencies may have triggered more emigration before 1939 and thus fewer deportations thereafter. Table A.10 in the Online Appendix addresses this issue by showing that we obtain nearly the same results when controlling for the Jewish population in 1939.

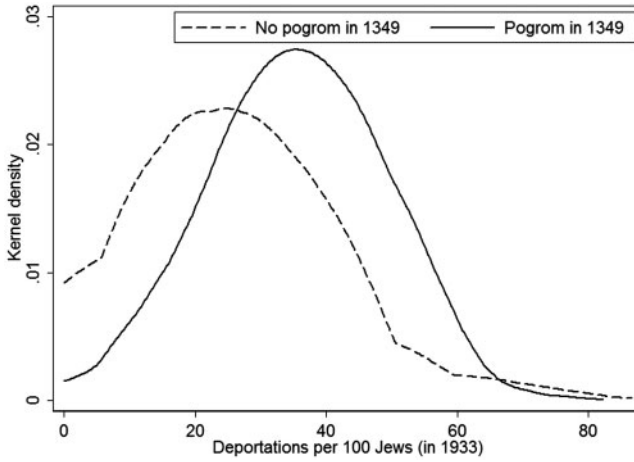


FIGURE III

Deportations of Jews Conditional on Black Death Pogroms

This figure plots the kernel density of the number of deported Jews between 1933 and 1945 divided by Jewish population in 1933 at the city level (weighted by city population in 1933). The data used corresponds to our main sample (including only towns with a documented medieval-era Jewish settlement).

results, with more than 100 additional deportees in cities with Black Death pogroms.⁴⁵

A simple way to illustrate our results is to graph deportations from towns and cities with and without 1349 pogroms; see Figure III. We plot the kernel density of the percentage of Jewish population that was deported after 1933. The distribution for cities with Black Death pogroms is shifted sharply to the right, indicating that their Jewish inhabitants were deported more often.

Next, we turn to letters to the editor of the Nazi newspaper *Der Stürmer*. In towns with Black Death pogroms, there was one letter sent for every 11,570 inhabitants; in towns without a pogrom, the frequency falls to one per 16,860. Column (5) in Table VI shows that the correlation between 1349 pogroms and the number of *Stürmer* letters is significant in our sample. Because the dependent variable is right-skewed, we again use

45. Distances are slightly larger in this case because we must also need to control for the Jewish population.

Poisson ML. The estimated impact is sizable. With an average of 3.8 letters per city, the ML coefficient implies an additional 1.5 letters for cities with Black Death pogroms. The matching estimations confirm this result by indicating more than two additional letters.

Finally, we examine data from the *Reichskristallnacht* (on November 9, 1938), limiting the analysis to localities that were home to synagogues or prayer rooms. Towns with a history of pogroms had a markedly greater tendency to register attacks. As shown in Panel B of Table V, synagogues were damaged or destroyed in 93.8% of German cities with pogroms but in only 79.1% of cities without pogroms.

Column (6) in Table VI reports the results from a linear probability model that regresses Black Death pogroms on an indicator variable for whether a city's synagogue was damaged or destroyed during the *Reichskristallnacht*. The coefficient is positive, large, and significant. More populous cities had a higher probability of attack; the coefficient for Protestants is positive but not significant. The estimated coefficients show that cities with Black Death pogroms were about 12% more likely to damage or destroy synagogues during *Reichskristallnacht*. Both propensity score and geographic matching confirm the significance and magnitude of this result, and they imply a 10%–15% higher attack probability.

In the Online Appendix, we test the robustness of these results. In Section II.B we control for a variety of socioeconomic variables and show that the OLS results are robust to province and prefecture fixed effects. In Section II.C we explore the robustness of our results to alternative specifications for each twentieth-century outcome variable (Tables A.7–A.13). In Section II.D, we control for spatial correlation and show that the vast majority of our results hold for various sample splits: we document persistence of anti-Semitism within the subsamples of eastern versus western cities, large cities versus small towns, and Protestant versus Catholic areas.

III.F. Principal Components Analysis and the Extended Sample

Do our measures of anti-Semitism in interwar Germany capture a broader, underlying pattern of attitudes, or are they isolated phenomena that occasionally coincide with medieval violence? To answer this question, we obtain the first principal

component from all six twentieth-century outcome variables: pogroms in the 1920s, the share of DVFP votes 1924, the share of NSDAP votes 1928, *Stürmer* letters, deportations per 100 Jews in 1933, and an indicator variable for whether a synagogue was destroyed (or damaged). We scale all variables (except for the vote shares) by city population in 1933.⁴⁶ To exploit as much variation as possible, we calculate the principal component for the extended sample, which includes all cities with Jewish communities in Weimar Germany.⁴⁷ All variables have positive factor loadings, suggesting that our indicators capture an underlying anti-Semitic attitude. The first principal component explains 27% of the sample variance.

Next, we employ the principal component as a dependent variable. To interpret the results, we standardize all variables except for the *POG*¹³⁴⁹ indicator. Thus, the coefficient for *POG*¹³⁴⁹ tells us by how many standard deviations the principal component increases in cities that had medieval pogroms. The results are presented in Table VII. Whether we use our standard set of control variables (column (1)) or an extended one (column (2)), matching estimation (column (3)), or simple geographical matching (column (4)), we obtain a strong and significant result for medieval pogroms. According to the estimates, this effect is large. Black Death pogroms increase the dependent variable by 0.25–0.32 standard deviations.

46. Vote shares are already scaled by definition. *Stürmer* letters are scaled by population because larger cities naturally send more letters. Similarly, synagogue attacks are more likely in larger cities (that often had numerous synagogues in 1938), and in larger cities there is a higher probability of observing at least one violent attack on Jews in the 1920s. Scaling by population accounts for these facts. For consistency, we also scale deportations per 100 Jews by population: it usually took a handful of local individuals to report local Jews and cooperate with deportations, and finding these “willing persecutors” among a million inhabitants was presumably easier than among a small-town population of a few hundred.

47. Not all six variables are observed in all cities. In such cases, we use the five remaining variables to construct the principal component measure. Whenever more than one of the six observations is missing for a city, we code the principal component as a missing value. In our main data set, 241 of 325 towns and cities have observations for all six 20C outcome variables. Replacing the missing values for deportations (36), synagogues (33), and 1920 pogroms (1) yields 311 observations for the principal component measure.

TABLE VII
DEPENDENT VARIABLE: FIRST PRINCIPAL COMPONENT OF SIX OUTCOME VARIABLES

	Main Sample			Extended Sample				
	(1) OLS	(2) OLS	(3) ME ^a	(4) GeoMatch ^b	(5) OLS	(6) OLS	(7) ME ^a	(8) GeoMatch ^b
<i>POG</i> ¹³⁴⁹	0.290** (0.132)	0.254* (0.135)	0.264** (0.127)	0.318*** (0.0819)	0.333*** (0.127)	0.303** (0.130)	0.274** (0.126)	0.315*** (0.0808)
<i>JewCom</i> ¹³⁴⁹					0.0158 (0.105)	-0.0378 (0.109)	mv	mv
ln(Pop 1933)	-0.0875 (0.0646)	0.0532 (0.0644)	mv		-0.191*** (0.0421)	-0.0339 (0.0345)	mv	
%Jewish 1933	0.0215 (0.0971)	-0.200* (0.105)	mv		0.154*** (0.0439)	0.112*** (0.0374)	mv	
%Protestant 1925	0.284*** (0.0757)	0.297*** (0.0755)	mv		0.287*** (0.0411)	0.282*** (0.0396)	mv	
%Blue collar 1933		-0.367** (0.149)				-0.109 (0.0874)		
%Industry employ.		0.0832 (0.156)				-0.0622 (0.0853)		
%Self-employed in retail & trade		0.169** (0.0725)				0.248*** (0.0613)		
Observations	311	311	311	311	1035	1035	1035	1184
Adjusted R ²	0.052	0.099			0.124	0.206		

Notes: First principal component obtained from six proxies for twentieth-century anti-Semitism: pogrom in the 1920s, DVPP votes 1924, NSDAP votes 1928, deportations, *Stürmer* letters, and an indicator variable for synagogue attacks; see Section III.F for details. The dependent variable and all control variables are standardized, so that beta coefficients are reported. *POG*¹³⁴⁹ takes the value 1 if a pogrom occurred in the years 1348-50, and 0 otherwise. *JewCom*¹³⁴⁹ equals 1 if a Jewish community is documented before 1349. Regressions in columns (1)-(4) are run for the main sample, including only cities with documented medieval Jewish communities. Columns (5)-(8) use the extended sample that includes all cities with Jewish communities in the 1920s and 30 s. Standard errors in parentheses (clustered at the county level). ^aMatching estimation based on the control variables indicated by "mv"; treatment variable is Pogrom 1349. The average treatment effect for the treated (ATT) is reported, using robust nearest neighbor estimation with the four closest matches. ^bMatching estimation based on geography. Matching characteristics are longitude and latitude for each city (using robust nearest neighbor estimation with the two closest matches); ATT is reported. * $p < .10$, ** $p < .05$, *** $p < .01$.

So far, we have analyzed twentieth-century anti-Semitism only for cities with confirmed Jewish settlements in the fourteenth century. Using the main sample allows for a clear interpretation of the POG^{1349} coefficient, but it discards more than three quarters of the observations available in the extended sample. We now use all cities and towns for which we have information on twentieth-century outcome variables. To interpret the POG^{1349} coefficient in this context, we must control for the existence of medieval Jewish communities; this is captured by the dummy variable $JewCom^{1349}$. Columns (5)–(8) in Table VII report this analysis. Results for Black Death pogroms are strongly similar to those for the main sample and are highly significant throughout.

IV. ORIGINS OF PERSECUTION AND CORRELATES OF PERSISTENCE

Our results suggest a high degree of persistence in terms of anti-Semitic acts and sentiment at the local level. In this section, we explore two questions: What factors explain Black Death pogroms, and when does cultural transmission of anti-Semitism fail?

IV.A. Correlates of Medieval Jewish Settlement and Black Death Pogroms

We collect and analyze data on medieval city characteristics to explain where Jews settled first and also why pogroms occurred in some places but not others. Some economic and political variables are correlated with medieval settlement and (more weakly) with Black Death pogroms, but they are generally uncorrelated with twentieth-century anti-Semitism.

For the extended sample, we have information on where Jews had settled by 1350. In addition, the first mention of Jewish settlement is recorded in GJ. Because we have no direct indicators of the size of Jewish communities, we allow these two outcome variables to proxy for the attractiveness of individual cities to Jews. We also employ explanatory variables that proxy for a city's economic and political openness: whether a city was self-governing as a Free Imperial city, had been incorporated by 1349, or had obtained market rights before the Black Death. Similarly, a city's location on a navigable river and its membership in the Hanseatic League are indicative of trade openness. In addition, we include

two indicator variables that are political in nature, one each for cities run by a bishop and Stauffer cities.⁴⁸ Finally, we also control for geographical isolation (proxied by ruggedness of terrain) and the age of a city.

Columns (1)–(4) in Table VIII analyze the correlates of medieval Jewish settlement. Both openness indicators and political variables have some explanatory power. Jewish settlement was more frequent in Hanseatic cities, but Jewish communities were not significantly older in 1349. The same is true for cities that were incorporated in 1349. Free Imperial cities (membership in this group partly overlapped with the Hanseatic League) owed allegiance to the emperor, not to regional princes. They were directly represented in the Imperial Diet, and many of them were self-governed by bourgeois elites. Free Imperial cities—as well as cities with market rights and those governed by bishops—had more and older Jewish communities, which suggests that they were the most attractive to Jews. Cities on navigable rivers had older Jewish communities, whereas the opposite was true for more isolated towns. Cities founded by the Stauffer emperors had Jewish communities more often than other cities but were no more likely to have old, established Jewish settlements. Finally, cities with a longer municipal history had more and older Jewish communities. Overall, the pattern of Jewish settlement is in line with expectations—the larger the potential for trade, the earlier Jews settled.

Some of our political and economic variables are related to the pattern of Black Death attacks. We find significantly higher probabilities of pogroms in Free Imperial cities, cities with market charter, those founded by the Stauffer, and older cities. This suggests that more commercial centers—where Jews might have played a more prominent role in economic life—witnessed greater pogrom frequencies (Cohn-Sherbok 2002). The overall explanatory power of all the variables in columns (5) and (6) is lower than in our regression on Jewish settlement patterns.

48. We take membership information on the Hanseatic League from Daenell (1905). At the height of its influence, the Hanseatic League counted more than 80 members. Led by Lübeck, the Hanseatic League included cities from Wisby in Sweden and Riga in Latvia to Roermond in modern-day Holland. Our main and extended samples include 36 and 46 Hanseatic cities, respectively. Data on Imperial cities and those ruled by bishops are from Jacob (2010). Cantoni and Yuchtman (2012) kindly shared their data on medieval market charters and dates of incorporation.

TABLE VIII
CORRELATES OF MEDIEVAL JEWISH SETTLEMENT AND POGROMS

Dep. variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Jewish Comm. existed in 1349	ln(Age of Jewish comm. in 1349)	Pogrom in 1349	First principal component ^a				
<i>POG</i> ¹³⁴⁹								
Hanse	0.161** (0.0659)		0.0896 (0.198)		-0.0730 (0.0887)		0.276** (0.136)	0.324** (0.142)
Incorporated 1349	0.108*** (0.0373)		0.0915 (0.0926)		0.0367 (0.0544)		-0.441*** (0.138)	-0.0195 (0.141)
Free Imperial	0.331*** (0.0475)		0.463*** (0.144)		0.131** (0.0598)		-0.0530 (0.194)	-0.0530 (0.194)
Market town 1349	0.161*** (0.0437)		0.270** (0.109)		0.104* (0.0533)		0.0557 (0.142)	0.0557 (0.142)
Navigable River	0.0316 (0.0391)		0.240** (0.0923)		0.0838 (0.0514)		-0.107 (0.136)	-0.107 (0.136)
Bishop		0.282*** (0.0770)		0.744*** (0.236)		0.0504 (0.0756)		0.188 (0.269)
Staufers		0.363*** (0.0802)		0.123 (0.185)		0.207*** (0.0770)		-0.235 (0.224)
Isolated town		0.0301 (0.0485)		-0.313*** (0.0908)		-0.0518 (0.0531)		-0.00398 (0.164)
ln(Age of city in 1349)		0.123*** (0.0192)		0.212*** (0.0683)		0.156*** (0.0396)		-0.0955 (0.110)
Observations	765	700	298	269	325	323	311	309
Adjusted R ²	0.087	0.073	0.128	0.147	0.028	0.066	0.050	0.045

Notes: All regressions run by OLS. Columns (7) and (8) include the additional controls: ln(city population 1933), %Protestant 1925, %Jewish 1933 (all standardized). Standard errors in parentheses (clustered at the county level). *POG*¹³⁴⁹ takes the value 1 if a pogrom occurred in the years 1348-50, and 0 otherwise. "Isolated town" is a dummy set to 1 for cities with above-median ruggedness (calculated within a 20 km perimeter); for cities located on a navigable river, this dummy is set to 0. The remaining dependent variables are explained in the text. Columns (1) and (2) use only cities from our extended sample that were first mentioned before 1349. ^aFirst principal component (standardized) obtained from six proxies for twentieth-century anti-Semitism, as described in the notes to Table VII. Columns (7) and (8) also control for ln(city population 1933), %Protestant 1925, %Jewish 1933 (all standardized). * $p < .10$, ** $p < .05$, *** $p < .01$

Do medieval economic or political correlates of Jewish settlement and pogroms directly predict twentieth-century anti-Semitism? If so, then medieval pogroms might simply be proxying for geographical, economic, or political factors that have remained unchanged. We address this question by adding the medieval explanatory variables plus the 1349 pogrom indicator to regressions where the principal component of anti-Semitism is the dependent variable (columns (7) and (8) in Table VIII). With the exception of Hanseatic cities (see Section IV.B for an interpretation), none of the medieval correlates is significantly associated with twentieth-century anti-Semitism. However, the coefficient for medieval pogroms remains positive and highly significant. Online Appendix Section II.E provides additional results for medieval Jewish settlement and pogroms. In particular, Table A.19 uses medieval correlates to predict pogrom probabilities in 1349 and then includes this prediction in regressions with twentieth-century outcome variables. Although POG^{1349} remains highly significant, predicted pogrom probability is insignificant in all specifications.

IV.B. Persistence before and after the Black Death

Anti-Semitic attacks in Germany were not limited to the fourteenth and twentieth centuries; there were scattered pogroms as early as the eleventh century, and violence also erupted when Jews returned in larger numbers in the nineteenth century. If our argument about the persistence of anti-Semitic sentiment at the local level is correct, then we should find that pogroms and other expressions of Jew-hatred occurred in the same locations before and after 1349.

For each location in our main sample, we analyze the number of reported attacks before 1347, the presence of *Judensau* sculptures, and participation in the 1819 *Hep-Hep* riots as a function of Black Death pogroms.⁴⁹ *Judensau* sculptures, which portrayed

49. We use 1347 as a cut-off date because that is when the plague reached Southern Europe. Pre-plague persecutions are not comparable in scale to the attacks on German territory in 1349: altogether there were 142 pogroms in our main sample over the three centuries prior to the Black Death, as compared with 235 in the single year 1349. The first pogroms in our data set were recorded during the First Crusade in 1096 in communities along the Rhine. These were followed by attacks during the Second Crusades in 1146; the *Guter Werner* and *Rintfleisch* pogroms in 1287 and 1298, respectively, and the *Armlleder* attacks in 1336. In addition, several Jewish communities suffered local pogroms, typically after facing

TABLE IX
 POGROMS IN 1349, PRE-PLAGUE ATTACKS, AND PROXIES FOR ANTI-SEMITISM BETWEEN
 1350 AND 1900

	(1) # <i>POG</i> ^{pre-1347}	(2) <i>Judensau</i>	(3) <i>Hep-Hep</i>
<i>POG</i> ¹³⁴⁹ = 1	0.481	0.055	0.060
<i>POG</i> ¹³⁴⁹ = 0	0.322	0	0.011
Difference	0.159*	0.055**	0.048*
<i>p</i> -value	0.09	0.02	0.06
Observations	325	325	325

Notes: Conditional means are reported for cities with and without Black Death pogroms (indicated by *POG*¹³⁴⁹) for our main sample. #*POG*^{pre-1347} is the number of attacks on Jewish communities in a city before 1347. All columns include cities with documented Jewish settlement prior to 1349. *Judensau* is a dummy set equal to 1 only for cities with such an adornment. *Hep-Hep* is a dummy for cities that recorded attacks on Jews during the riots in 1819. See Online Appendix III for more detail. * *p* < .10, ** *p* < .05.

Jews in demeaning poses, were part of churches as well as public and private buildings. The *Hep-Hep* riots were frequently violent protests against possible emancipation of the Jews.

As Table IX shows, there is a highly consistent and significant pattern of differences. The number of pre-plague attacks is about 1.5 times higher in towns and cities that also attacked their Jews in 1349.⁵⁰ There are no *Judensau* sculptures in localities without a pogrom in 1349, and only 1.1% of these towns witnessed *Hep-Hep* riots. In contrast, we find *Judensau* sculptures and early nineteenth-century attacks in (respectively) 5% and 6% of all cities and towns with Black Death pogroms. Overall, the evidence is consistent with the persistence of anti-Semitic attitudes and behavior at the local level over the entire period from the eleventh to the twentieth century.

IV.C. When Did Cultural Transmission Fail?

How do we make sense of anti-Semitism persisting for more than half a millennium? To understand why persistence exists in

accusations of ritual murder or host desecration. Online Appendix III gives details of the data on pre-plague pogroms, *Judensau*, and *Hep-Hep* riots.

50. In Online Appendix III.A, we reduce the sample periods for preplague attacks, taking particular care to confirm the existence of a Jewish community during the relevant period. This procedure yields even larger (and significant) differences. We also investigate the relationship between *Judensau* sculptures, pre-plague pogroms, and *Hep-Hep* riots for twentieth-century anti-Semitism.

the first place, we examine conditioning variables that may weaken it. We focus on three types: political variables, economic indicators, and geographical characteristics. In Table X, we test for whether the transmission of anti-Semitic attitudes looks visibly different in each subgroup. For the Hanseatic cities (column (1)), the interaction term with POG^{1349} is negative and significant. The combined effect implies that the extent of transmission from the medieval period is essentially zero. Observe also that once we include an interaction term, membership in the Hanseatic League by itself does not systematically predict less Jew-hatred in the 1920s and 1930s.⁵¹ What disappears is the predictability of twentieth-century hatred based on fourteenth-century pogroms.⁵²

Although lower persistence of anti-Semitism in Hanseatic cities is suggestive, the result requires further investigation. Is its openness to trade that undermines racial hatred? Because there are no Hanseatic cities in southern Germany, we construct a measure designed to capture similar conditions for cities south of Cologne (the southernmost member of the Hanseatic League). In line with the first set of medieval correlates in Table VIII, we derive the “open” index as the sum of four indicators: incorporated by 1349; Free Imperial city; market charter by 1349; and located on a navigable river. The interaction effect of this index with medieval pogroms is negative and significant at the 5% level. Here, just as in the case of Hanseatic cities, we find lower

51. Hanseatic cities certainly did not have an unblemished record. Following the French occupation, the Jews of Bremen and Lübeck were expelled; there were *Hep-Hep* riots in Hamburg in 1819 (Sterling 1950).

52. Including only a dummy for Hanseatic cities yields a coefficient of $-.45$ (std. err. = 0.14)—similar to the one reported in column (7) of Table VIII. That the negative interaction term in column (1) of Table X accounts for most of the difference between Hanseatic and non-Hanseatic cities suggests that failed persistence drives this result. However, a potential concern is that the result may stem in part from Hanseatic cities being generally less anti-Semitic, irrespective of whether a pogrom occurred there in 1349. To explore this possibility, we split the sample into towns with and without Black Death pogroms and regress the principal component on a dummy for Hanseatic towns as well as the usual controls. The Hanseatic dummy is negative and highly significant for cities with Black Death pogroms (-0.66 , std. err. = 0.19), but positive and insignificant for cities without pogroms in 1349 (0.12, std. err. = 0.22). Thus, Hanseatic cities were not significantly more (or less) anti-Semitic compared with all cities *without* medieval pogroms. Yet among cities *with* Black Death pogroms, Hanseatic towns were significantly less anti-Semitic in the early twentieth century, suggesting that it is indeed the failed persistence of anti-Semitism that drives this finding.

TABLE X
DIFFERENCES IN PERSISTENCE

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Hanseatic	Open city	City growth	Industrial	Bishop	Geographic isolation	
POG^{1349}	0.311** (0.141)	0.375* (0.198)	0.257 (0.225)	0.777** (0.312)	0.293** (0.134)	0.384** (0.165)	0.309* (0.187)
Hanseatic	-0.133 (0.175)						
Hanseatic $\times POG^{1349}$	-0.444** (0.208)						
Open	0.158 (0.128)						
Open $\times POG^{1349}$	-0.298** (0.148)						
PopGrowth			-0.131 (0.166)				
PopGrowth $\times POG^{1349}$			-0.432** (0.168)				
%Industrial				-0.00351 (0.00730)			
%Industrial $\times POG^{1349}$				-0.0143* (0.00859)			
Bishop					0.292 (0.371)		
Bishop $\times POG^{1349}$					-0.185 (0.451)		
Isolated _{1, 2}							
Isolated _{1, 2} $\times POG^{1349}$						0.176 (0.228)	-0.0037 (0.190)
Observations	311	214	110	311	311	311	311
Adjusted R ²	0.060	0.063	0.081	0.068	0.047	0.048	0.046

Notes: Dependent variable is the first principal component (standardized) obtained from six proxies for twentieth-century anti-Semitism as described in the notes to Table VII. All regressions run by OLS, including the controls: In(city population 1933), %Protestant 1925, %Jewish 1933 (all standardized). Standard errors in parentheses (clustered at the county level). POG^{1349} takes the value 1 if a pogrom occurred in the years 1348–50, and 0 otherwise. “Open” is an index, calculated as the sum of the following indicator variables: Free Imperial city, city incorporated in 1349, market rights in 1349, and located at a navigable river. The index is then standardized to obtain beta coefficients. The regression in column (2) includes only cities to the south of Cologne (the southern-most member of the Hanseatic League). “PopGrowth” is the (standardized) city’s population growth between 1750 and 1933; population in 1750 is from Bauroch, Baton, and Chèvre (1988). “%Industrial” is the percentage of employment in industry and manufacturing in 1933. “Bishop” is a dummy variable set equal to 1 for Episcopal cities (and to 0 otherwise). “Isolated₁” is a dummy set equal to 1 for cities with above-median ruggedness (calculated within a 20 km perimeter); for cities located on a navigable river, this dummy is set to 0. “Isolated₂” is a dummy set equal to 1 if the nearest city with at least 10,000 inhabitants in 1750 is more than 31 miles (50 km) distant. * $p < .10$, ** $p < .05$, *** $p < .01$.

persistence. Yet there is an important difference: whereas Hanseatic cities are (on average) significantly less anti-Semitic than the rest of the sample, “open” cities in the South are similar to their nonopen counterparts.⁵³ Thus, there is reason to doubt that openness itself increases tolerance; the effect is clear for Hanseatic cities but not southern ones. Instead, openness may have been associated with economic success and higher migration rates, which in turn undermined persistence. To examine this possibility in more detail, we look at fast-growing cities.⁵⁴ We therefore include an interaction term with the (standardized) population growth between 1750 and 1933.⁵⁵ As column (3) of Table X shows, cities that grew faster saw substantially and significantly less persistence of anti-Semitic attitudes.

Industrialization is mildly associated with less persistence. In column (4), we include an interaction term with the percentage of 1933 employment in industry and manufacturing. The coefficient is negative and significant at the 10% level.⁵⁶ Next we look at cities ruled by local bishops, which were governed by the equivalent of a religious prince. Such cities were typically less important as commercial centers than other Free Imperial cities. We find that their levels of anti-Semitism are somewhat lower on average, but there is essentially no difference in transmission from the rest of the sample.

53. When including only the open city index in the regression, the coefficient is small, negative, and insignificant: $-.09$ (std. err. = 0.09).

54. Fast city growth was the direct result of immigration, not high fertility. Before 1850, cities were too unhealthy to sustain themselves; after 1850, differences in city growth rates were largely driven by differences in migration (Hochstadt 1999).

55. Ideally, we would like to use city growth starting after the Black Death. Because observations on city size are scarce, doing so would reduce our sample to a handful of cities that were already large by the Middle Ages. Instead, we use Bairoch, Batou, and Chèvre (1988) to obtain figures for 1750, which is the earliest date that gives us more than 100 observations. Cities in this subsample are mostly larger than average.

56. An increase of one standard deviation in industrialization lowers the overall coefficient on POG^{1349} by $.18$, which is relatively small compared to the $.777$ coefficient for POG^{1349} alone. In the Online Appendix Section II.F, we separate the effect of population growth from that one of industrialization by including one interaction term for each. The interaction effect for population growth is highly significant, but the one for industrialization is insignificant. This suggests that population inflow was itself enough to weaken the persistence of anti-Semitism—rather than industrialization (and modernization) driving both weaker persistence and migration.

Finally, we construct two measures of geographical isolation. First, the ruggedness of the terrain around each location in our sample is derived using the Nunn and Puga (2010) algorithm. We use a dummy that indicates whether ruggedness is above the median, and we set this measure of geographic isolation to 0 for towns and cities on navigable rivers.⁵⁷ Second, we construct a dummy equal to 1 if the nearest larger city is more than 31 miles (50 km) away (and set to 0 otherwise).⁵⁸ Columns (6) and (7) report the results. For both indicators, more isolated cities are mildly more anti-Semitic in the twentieth century, but persistence is, counterintuitively, lower but not significantly so from a statistical perspective.⁵⁹

In combination, the results for industry structure and for city growth suggest that the industrial transformation of cities after 1750 undermined the long-term transmission of Jew-hatred. The fastest-growing cities did not expand because of their own population's fertility but instead as a result of migration (Hochstadt 1999). Essen, Berlin, Düsseldorf, Hamburg, Frankfurt, and Cologne all fall in this category. This dynamic gives a clear interpretation to our results: where a large inflow of outsiders weakened the transmission of attitudes from one generation to the next, anti-Semitism in the twentieth century cannot be predicted by fourteenth-century attitudes. This suggests that the overall pattern of persistence documented in this article may reflect the effects of relatively low levels of mobility. Long-term transmission is also absent for members of the Hanseatic League and for southern German cities that were more open to trade. Just how much more tolerant trade-oriented cities were is slightly ambiguous: Hanseatic cities were generally more tolerant than the rest, but this level effect is weaker for southern open cities.

Our results make sense in the context of generally low migration rates prior to 1820. There is not much reliable data in the aggregate, but existing observations suggest that the relevant

57. Using ruggedness alone would imply for example that Königswinter is one of the most geographically isolated cities in Germany since it is close to a mountain range (the Siebengebirge). Yet Königswinter is on the Rhine, not far from Bonn and Cologne.

58. "Larger cities" are defined as having at least 10,000 inhabitants in 1750; there are 33 such cities in the extended sample, and 24 in the main sample.

59. For the three cases where we find that transmission fails (Hanseatic; open cities in southern Germany; rapidly growing cities), we provide further robustness checks in the Online Appendix Section II.F.

migratory flows—new inhabitants coming to live permanently in relatively small towns—were small. Prussian statistics indicate that the migration rate per generation was approximately 2% before 1820, and the number of new inhabitants of towns in Swabia and Tyrol was in the same range.⁶⁰ Even though migration everywhere increased rapidly after 1820, most inhabitants of a typical town in our sample must have been direct descendants of those who lived there in 1350.⁶¹

V. INTERPRETATION OF RESULTS

In this section, we test for whether our results could simply be driven by political extremism, by general right-wing attitudes, or by a different attitude toward violence.

V.A. *Other Election Results*

In columns (1) and (2) of Table XI, we examine the correlation between medieval pogroms and NSDAP election results after 1928.⁶² We find that the effect becomes weaker in 1930 and vanishes in 1933. The various specifications in the Online Appendix (see Table A.16) confirm these results. In 1930, the magnitude of the effect is unchanged with respect to 1928, even though the NSDAP won about five times more votes in 1930. This suggests that the number of Nazi voters with historically rooted

60. Male migrants to Schwäbisch Hall in the period after 1651 were equivalent to approximately 2.5% of the population (women and families typically migrated only very short distances). In the late medieval period and in the neighboring towns of Esslingen and Nördlingen, the ratios may have been higher (Vasarhelyi 1974; McIntosh 1997). McIntosh notes that long-distance migration declined sharply in the early modern period: by the 1730s and 1740s, only 18% of migrants came from distances greater than 31 miles (50 km). *Bürgerbücher* (citizens' registers) from Brixen similarly suggest migration rates of 1%–2% per generation (Toloi 2010).

61. A back-of-the-envelope calculation for 19 generations between 1350 and 1920 (equivalent to a generation length of 30 years) suggests that with migration rates of 2% before 1820 and 10% per generation thereafter (Hochstadt 1999), more than half of the 1920 population had direct ancestors that lived in the same place in 1350. Even if we assume an upper bound of 20% on post-1820 migration, this proportion remains more than a third. Marriage was typically delayed for much of the early modern period (and occurred, on average, at age 24 for women [Knodel 1988]). With reproductive careers ending at age 45, a generational length of 30 is conservative.

62. We focus on the 1930 and 1933 elections because the electoral returns for 1932 were not published at a sufficiently low level of aggregation (King 2008).

TABLE XI
NSDAP IN THE 1930s, RIGHT-WING PARTIES, AND VIOLENT CRIME

Dep. variable	(1) NSDAP 1930	(2) NSDAP 1933	(3) DNVP 1924	(4) KPD 1924	(5) KPD 1928	(6) Principal component ^a (county-level regressions)	(7)	(8)
<i>POG</i> ¹³⁴⁹	0.0137 (0.0101)	-0.0113 (0.0125)	-0.0267** (0.0131)	0.00915 (0.00873)	0.0101 (0.00724)	0.263** (0.126)	0.252*** (0.110)	0.252*** (0.110)
ln(Pop)	-0.00816*** (0.00320)	-0.0111*** (0.00359)	-0.00505 (0.00419)	0.0138*** (0.00305)	0.0125*** (0.00249)	-0.131 (0.0702)	0.00111 (0.0699)	-0.00260 (0.0701)
%Jewish	0.00240 (0.00320)	0.0100*** (0.0038)	-0.00337 (0.00403)	-0.0077*** (0.0023)	-0.00335 (0.00204)	0.0118 (0.0794)	0.0277 (0.0719)	0.0315 (0.0721)
%Protestant	0.00128*** (0.00015)	0.0023*** (0.0002)	0.0020*** (0.0002)	0.000035 (0.00012)	0.00017* (0.0001)	0.209*** (0.0715)	0.305*** (0.0662)	0.304*** (0.0675)
Violent crime p.c. 1908-12							0.448*** (0.0961)	0.431*** (0.109)
Simple theft p.c. 1908-12							0.0187 (0.0657)	0.0187 (0.0657)
Observations	325	325	325	325	325	263	263	263
Adjusted <i>R</i> ²	0.219	0.426	0.372	0.102	0.103	0.041	0.215	0.212

Notes: All regressions run by OLS. Standard errors in parentheses (clustered at the county level in columns (1)-(5)). *POG*¹³⁴⁹ takes the value 1 if a pogrom occurred in the years 1348-50, and 0 otherwise. The remaining dependent variables are explained in the text. ^aFirst principal component (standardized) as described in the notes to Table VII. * *p* < .10, ** *p* < .05, *** *p* < .01.

anti-Semitic motives did not grow during the rise of the NSDAP. Given the declining importance of anti-Semitic agitation for the NSDAP after 1928, it is easy to rationalize the nonsignificant correlation with medieval pogroms. Moreover, with increasing party shares of the popular vote, it becomes more difficult to identify extreme local attitudes.

It is possible that the association between medieval violence and voting results for the Nazi Party simply reflects more right-wing or violent attitudes. We use a political experiment to distinguish anti-Semitic from right-wing votes cast in 1924. Following the murder of the Jewish German Foreign Minister Walther Rathenau in 1922, the right-wing DNVP expelled several vociferous anti-Semites from its ranks. As a result, the party split; the newly formed DVFP pursued a similarly nationalist and reactionary program as the DNVP but with a markedly more radical anti-Semitic twist.⁶³ In the next election in 1924, the DNVP won about 15% of votes versus 7% for the DVFP.

We have already shown that the DVFP gained more seats in localities with a past of medieval pogroms. If this is a reflection of anti-Semitism—and not more right-wing attitudes generally—then we should expect the closest (but less anti-Semitic) competitor DNVP to register fewer votes in towns and cities with an anti-Semitic past. Column (3) of Table XI bears this hypothesis out: DNVP votes were about 2.7% lower in cities with pogroms in 1349 (this result is robust; see Table A.17 in the Online Appendix). Votes lost by the DNVP are similar to votes gained by the DVFP in these cities (Table VI, column (3)). Because the two parties' programs were similarly right-wing overall, these findings point to anti-Semitism, not extreme political attitudes as the driver of voting behavior in cities with Black Death pogroms.

What about political extremism in general? If the differences in electoral results and anti-Semitic behavior reflect a generally more radical outlook on life, then all political parties at the far end of the political spectrum should receive more votes in towns and cities with medieval pogroms. In columns (4) and (5) of

63. According to Levy's (2005) entry on the DNVP, "Hitler . . . thought that the Nationalists were demagogic rather than sincerely anti-Semitic and that they were only willing to fight for their own narrow economic interests. Their shopworn anti-Semitism was trotted out only at election time. Suspicions regarding the seriousness in the matter of the Jewish Question were confirmed when moderates gained control of the party, a process accelerated by the murder of Walther Rathenau."

Table XI, we explore this possibility for the German Communist Party (KPD). It received only a marginally higher share of the vote in 1924 and 1928 conditional on a 1349 pogrom, and the effect is not significant.

V.B. Violence

In the last three columns of Table XI, we examine the connection between anti-Semitism in the interwar period, violence, and medieval pogroms. The best crime data—with details on the type of crime, and at a relatively low level of aggregation—comes from late Imperial Germany (Johnson 2010). We use data for 1908–12, for which observations at the county (Kreis) level are available. There are 263 counties with all relevant controls in our main sample. We adapt our data set to this level of aggregation, using county average outcome variables and adjusting POG^{1349} to indicate whether a Black Death pogrom took place within one or more cities in a county. Column (6) shows that our main result holds at the county level: the adjusted POG^{1349} is a powerful predictor of the level of twentieth-century anti-Semitism, when our principal component is the dependent variable. In column (7), we add violent crimes (assault and battery) per capita as explanatory variable (standardized to obtain beta coefficients). This factor is indeed strongly associated with anti-Semitic attitudes after 1920: a one standard deviation increase in violent crime per capita is associated with nearly half a standard deviation increase in our principal component measure of twentieth-century Jew-hatred. At the same time, the size of the coefficient on medieval pogroms is unaffected. This suggests that we have identified two separate sources of anti-Semitic sentiment and actions. As a placebo test, we add data on simple theft in the ultimate column. This factor is statistically insignificant, and it does not alter our previous results.

VI. CONCLUSION

At the time of the Black Death, Jews were burned in many (but not all) towns and cities across Germany. In this article, we demonstrate that the same places that witnessed violent attacks on Jews during the plague in 1349 also showed more anti-Semitic attitudes more than half a millennium later: their inhabitants engaged in more anti-Semitic violence in the 1920s, were more

likely to vote for the Nazi Party before 1930, wrote more letters to the country's most anti-Semitic newspaper, organized more deportations of Jews, and engaged in more attacks on synagogues during the *Reichskristallnacht* in 1938. We also present evidence that towns and cities that attacked their Jews in 1349 had more pogroms before the Black Death; they were also more likely to display anti-Semitic sculptures in public and attack Jews in the early nineteenth century. Violent hatred of Jews persisted at the local level despite their virtual disappearance from Germany for centuries after 1550. By the same token, tolerance also persisted over the long term.

Many studies have asked whether the rise of the Nazi Party should be interpreted as a direct consequence of growing, broad-based anti-Semitism in the Weimar Republic. Our findings do not support such an interpretation. Although we show a clear link between medieval pogroms and the Nazi vote in 1924 and 1928 (as well as a weaker one in 1930), the correlation vanishes as the party's mass appeal grows. The party's political profile changed after 1928; in particular, it became less virulently anti-Semitic in its propaganda. This is not to say that anti-Semitic sentiments did not contribute to the electoral successes of the NSDAP. Rather, the link with its deeper, historical roots became more tenuous in the years leading up to its seizure of power in 1933.⁶⁴

The correlation between medieval pogroms and twentieth-century anti-Semitism underscores the importance of deeper historical antecedents of cultural attitudes at the local level.⁶⁵ The estimated effects are large. Our broad measure of twentieth-century anti-Semitic behavior and attitudes (the first principal component) is about 0.3 standard deviations higher in cities with medieval pogroms. At the same time, medieval pogroms do not explain all of the variation in the cross-section. Our findings add further weight to existing papers that demonstrate the historical origin of modern-day attitudes (Guiso, Sapienza, and Zingales 2008; Jha 2008). Nonetheless, there are important

64. In this sense, our findings support the more revisionist claims of Heilbrunner (2004). Also, results do not suggest that deep-rooted anti-Semitism at the local level is what enabled the Nazi Party to garner enough votes for its bid for power.

65. Goldhagen (1996) argues that the Holocaust reflected widespread, "exterminationist" anti-Semitic beliefs. We find that local precedent mattered, but this does not lend direct support to Goldhagen's wider argument.

differences. We find that similar behavior occurs in the same location centuries apart. This is a different dimension of persistence than the indirect effects of past city independence on modern-day social capital (Guiso, Sapienza, and Zingales 2008) or of trade cooperation across ethnicities in the Middle Ages on religious violence today (Jha 2008). In both of those cases, attitude transmission occurred partly through complementary institutions. In our data set, there is no evidence that institutions or civic organization reinforced or mediated persistence.

We show that not only initial Jewish settlement patterns but also Black Death pogroms were partly influenced by medieval economic factors. However, the same factors do not explain twentieth-century anti-Semitism. We find no evidence that geographical isolation—as proxied by ruggedness, access to river transport, and the distance to larger cities—is a predictor of the stability of anti-Semitic actions and beliefs. There is also no evidence that eastern versus western locales, large cities versus small towns, or Protestant versus Catholic areas witnessed strongly different degrees of persistence.

Instead of reinforcing persistence, we argue that economic factors had the potential to undermine it.⁶⁶ In our data, persistence disappears in locations where the costs of discriminating against outsiders was high—among members of the Hanseatic League in northern Germany, which specialized in long-distance trade. The same is true for towns and cities in southern Germany that were more open to trade. In contrast to other papers documenting the effect of deep-rooted cultural factors on present-day economic outcomes (such as the slave trade’s impact on trust and economic performance in Africa today), we find evidence for the link also operating in the opposite direction: economic incentives modified the extent to which attitudes stayed the same. We cannot be certain that vertical transmission from parents to children was crucial, yet the decline in persistence of anti-Semitism in trading cities is more in line with models of parental investment in children’s attitudes that emphasize utilitarian motives (Doepke and Zilibotti 2008; Tabellini 2008).

Our results also lend qualified support to Montesquieu’s famous dictum that trade encourages “civility.” Results from the Hanseatic cities demonstrate a link between trade openness and growing tolerance on average. The southern German open

66. We thank Ernesto Dal Bo for pushing our thinking on this point.

cities also support this link, but only up to a point: although persistence of anti-Semitism was weaker in these towns, the overall level of anti-Semitic sentiment in the 1920s and 1930s was not lower than elsewhere.

Is long-term persistence of attitudes a thing of the past? In other words, are highly localized variations in culture that reflect deep historical roots still present today? To address these questions, future work should examine the persistence of anti-Semitism into the twenty-first century by using present-day large-scale surveys.

SUPPLEMENTARY MATERIAL

An Online Appendix for this article can be found at QJE online (qje.oxfordjournals.org).

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REFERENCES

- Abadie, Alberto, David Drukker, Jane L. Herr, and Guido W. Imbens, "Implementing Matching Estimators for Average Treatment Effects in Stata," *Stata Journal*, 4 (2004), 290–311.
- Acemoglu, Daron, and Matthew Jackson, "History, Expectations, and Leadership in the Evolution of Cooperation," Mimeo, 2011.
- Aghion, Philippe, Yann Algan, Pierre Cahuc, and Andrei Shleifer, "Regulation and Distrust," *Quarterly Journal of Economics*, 125 (2010), 1015–1049.
- Alesina, Alberto, Paola Giuliano, and Nathan Nunn, "Fertility and the Plough," NBER Working Paper No. 16718, 2011.
- Alesina, Alberto, and Eliana La Ferrara, "Ethnic Diversity and Economic Performance," *Journal of Economic Literature*, 43 (2005), 762–800.
- Algan, Yann, and Pierre Cahuc, "Inherited Trust and Culture," *American Economic Review*, 100 (2010), 2060–2092.
- Alicke, Klaus-Dieter, *Lexikon der jüdischen Gemeinden im deutschen Sprachraum: Bd.1: Aachen—Groß-Bieberau, Bd.2: Großbock—Ochtendung, Bd. 3 Ochtrup—Zwittau*. (Gütersloher: Gütersloher Verlagshaus, 2008).
- Almog, Shmuel, *Nationalism & Antisemitism in Modern Europe, 1815–1945*. (New York: Pergamon, 1990).
- Aly, Götz, and Susanne Heim, *Architects of Annihilation: Auschwitz and the Logic of Destruction*. (London: Weidenfeld & Nicolson, 2003).
- Anti-Defamation League, *Attitudes towards Jews in Seven European Countries*. (New York: Anti-Defamation League, 2009).

- Arendt, Hannah, *The Origins of Totalitarianism* (New York: Harcourt, 1994).
- Avneri, Zvi, *Germania Judaica, Bd. 2: Von 1238 bis zur Mitte des 14. Jahrhunderts* (Tübingen: J. C. B. Mohr, 1968).
- Bairoch, Paul, Jean Batou, and Pierre Chèvre, *La Population des villes Europeennes de 800 à 1850: Banque de Données et Analyse Sommaire des Résultats*. (Geneva: Centre d'histoire économique Internationale de l'Université de Genève, Librairie Droz, 1988).
- Becker, Sascha O., Katrin Boeckh, Christa Hainz, and Ludger Woessmann, "The Empire Is Dead, Long Live the Empire! Long-Run Persistence of Trust and Corruption in the Bureaucracy," CEPR Discussion Paper No. 8288, 2011.
- Birnbaum, Pierre, and Miriam Kochan, *Anti-Semitism in France* (Oxford: Blackwell, 1992).
- Bisin, Alberto, and Thierry Verdier, "Beyond the Melting Pot: Cultural Transmission, Marriage, and the Evolution of Ethnic and Religious Traits," *Quarterly Journal of Economics*, 115 (2000), 955–988.
- , "The Economics of Cultural Transmission and the Dynamics of Preferences," *Journal of Economic Theory*, 97 (2001), 298–319.
- , "The Economics of Cultural Transmission and Socialization," in *Handbook of Social Economics*, ed. Benhabib, Jess, Bisin, Alberto, and Jackson, Matthew O.O. (Amsterdam: Elsevier Science, 2010).
- Borut, Jacob, "Anti-Semitism in Tourist Facilities in Weimar Germany," *Yad Vashem Studies*, 28 (2000), 7–50.
- Botticini, Maristella, and Zvi Eckstein, "From Farmers to Merchants, Conversions and Diaspora: Human Capital and Jewish History," *Journal of the European Economic Association*, 5 (2007), 885–926.
- Bracher, Karl Dietrich, *The German Dictatorship: The Origins, Structure, and Effects of National Socialism* (New York: Praeger, 1970).
- Broszat, Martin, *Der Nationalsozialismus*. (Stuttgart: Deutsche Verlag-Anstalt, 1960).
- Browning, Christopher, *Ordinary Men: Reserve Police Battalion 101 and the Final Solution in Poland* (New York: HarperCollins, 1992).
- Brustein, William, and Ryan King, "Anti-Semitism in Europe before the Holocaust," *International Political Science Review*, 25 (2004), 35–53.
- Bullock, Alan, *Hitler: A Study in Tyranny*. (New York: Harper Perennial, 1991).
- Bundesarchiv, *Gedenkbuch Opfer der Verfolgung der Juden unter der Nationalsozialistischen Gewaltherrschaft in Deutschland, 1933–1945*. (Koblenz: Bundesarchiv, 2007).
- Burnett, Stephen, "Jews and Anti-Semitism in Early Modern Germany," *Sixteenth Century Journal*, 27 (1996), 1057–1064.
- Cantoni, Davide, and Noam Yuchtman, "Medieval Universities," Legal Institutions and the Commercial Revolution," NBER Working Paper No. 17979, 2012.
- Card, David, and Alan Krueger *Myth and Measurement: The New Economics of the Minimum Wage* (Princeton, NJ: Princeton University Press, 1997).
- Childers, Thomas, *The Nazi Voter: The Social Foundations of Fascism in Germany, 1919–1933* (Chapel Hill: University of North Carolina Press, 1983).
- Cohn, Samuel K., "The Black Death and the Burning of Jews," *Past & Present*, 196 (2007), 3–36.
- Cohn-Sherbok, Dan, *Anti-Semitism: A History* (Stroud: Sutton, 2002).
- Comin, Diego, William Easterly, and Erick Gong, "Was the Wealth of Nations Determined in 1000 BC?" *American Economic Journal: Macroeconomics*, 2 (2010), 65–97.
- Daenell, Ernst, *Die Blütezeit der Hanse* (Berlin: Reimer, 1905).
- Doepke, Matthias, and Fabrizio Zilibotti, "Occupational Choice and the Spirit of Capitalism," *Quarterly Journal of Economics*, 123 (2008), 747–793.
- Durante, Ruben, "Risk, Cooperation and the Economic Origins of Social Trust: An Empirical Investigation," Working Paper, Sciences Po, 2011.
- Eley, Geoff, *The Goldhagen Effect: History, Memory, Nazism—Facing the German Past* (Ann Arbor: University of Michigan Press, 2000).
- Ettinger, Shmuel, "Jew-Hatred in its Historical Context," in *Antisemitism through the Ages*, ed. Almog, Shmuel (Oxford: Pergamon Press, 1980).

- Falter, Jurgen W. *Hitlers Wähler*. (Munich: C. H. Beck, 1991).
- Fein, Helen, "Explanations of the Origin and Evolution of Anti-Semitism," in *The Persistent Question: Sociological Perspectives and Social Context of Modern Anti-Semitism*, ed. Fein, Helen (Berlin: de Gruyter, 1987).
- Fernández, Raquel, and Alessandra Fogli, "Culture: An Empirical Investigation of Beliefs, Work and Fertility," *American Economic Journal: Macroeconomics*, 1 (2009), 146–177.
- Fernández-Villaverde, Jesús, Jeremy Greenwood, and Nezih Guner, "From Shame to Game in One Hundred Years: An Economic Model of the Rise in Premarital Sex and its De-Stigmatization," NBER Working Paper No. 15677, 2010.
- Foa, Anna, "The Jews of Europe after the Black Death," *European Review*, 9 (2000), 237–238.
- Glaeser, Edward, "The Political Economy of Hatred," *Quarterly Journal of Economics*, 120 (2005), 45–86.
- Glassman, Bernard, *Anti-Semitic Stereotypes without Jews: Images of the Jews in England, 1290–1700*. (Detroit: Wayne State University Press, 1975).
- Goldhagen, Daniel, *Hitler's Willing Executioners: Ordinary Germans and the Holocaust* (New York: Knopf, 1996).
- Gottfried, Robert Steven, *The Black Death: Natural and Human Disaster in Medieval Europe* (New York: Free Press, 1985).
- Grosjean, Pauline, "A History of Violence: The Culture of Honor as a Determinant of Homicide in the US South," Fondazione Eni Enrico Mattei Working Paper No. 2010.51, 2010.
- , "The Institutional Legacy of The Ottoman Empire: Islamic Rule and Financial Development in South Eastern Europe," *Journal of Comparative Economics*, 39 (2011), 1–16.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales, "Long Term Persistence," NBER Working Paper No. 14278, 2008.
- Hackett Fischer, David, *Albion's Seed* (Oxford: Oxford University Press, 1989).
- Hahn, Fred, *Lieber Stürmer. Leserbriefe an das NS-Kampfblatt 1924 bis 1945*. (Stuttgart: Seewald, 1978).
- Hamilton, Richard, *Who Voted for Hitler?* (Princeton, NJ: Princeton University Press, 1982).
- Hänisch, Dieter, *Wahl- und Sozialdaten der Kreise und Gemeinden des Deutschen Reiches 1920–1933, Database ZA8013* (Berlin: Leibniz-Institut für Sozialwissenschaften-GESIS, 1988).
- Haverkamp, Alfred, *Geschichte der Juden im Mittelalter von der Nordsee bis zu den Südalpen. Kommentiertes Kartenwerk* (Hannover: Hahn, 2002).
- Heilbronner, Oded "German or Nazi Anti-Semitism?," in *The Historiography of the Holocaust*, ed. Stone, Dan (New York: Palgrave Macmillan 2004).
- Herbert, Ulrich "Extermination Policy: New Answers and Questions about the History of the 'Holocaust' in German Historiography," in *National Socialist Extermination Policies: Contemporary German Perspectives and Controversies*, ed. Herbert, Ulrich (Oxford: Berghahn, 2000).
- Hertzman, Lewis, *DNVP: Right-Wing Opposition in the Weimar Republic, 1918–1924* (Lincoln: University of Nebraska Press, 1963).
- Hilberg, Raul, *The Destruction of the European Jews*. (New Haven, CT: Yale University Press, 1961).
- Hochstadt, Steve, *Mobility and Modernity: Migration in Germany, 1820–1989*. (Ann Arbor: University of Michigan Press, 1999).
- Jacob, Markus, "Long-Term Persistence: The Free and Imperial City Experience in Germany," Mimeo, 2010.
- Jha, Saumitra, "Trade, Institutions and Religious Tolerance: Evidence from India," Stanford University Research Paper No. 2004, 2008.
- Johnson, Eric, *German Crime, Death and Socioeconomic Data, 1871–1914. Database ZA8069* (Berlin: Leibniz-Institut für Sozialwissenschaften-GESIS, 2010).
- Katz, Jacob, *From Prejudice to Destruction: Anti-Semitism, 1700–1933*. (Cambridge, MA: Harvard University Press, 1980).
- , *Die Hep-Hep-Verfolgungen des Jahres 1819* (Berlin: Metropol Verlag, 2004).

- King, Gary, Ori Rosen, Martin Tanner, and Alexander Wagner, "Ordinary Economic Voting Behavior in the Extraordinary Election of Adolf Hitler," *Journal of Economic History*, 68 (2008), 951–996.
- Knodel, John E. *Demographic Behavior in the Past: A Study of Fourteen German Villages in the Eighteenth and Nineteenth Centuries* (Cambridge: Cambridge University Press, 1988).
- Levi, Primo, *If This Is a Man and The Truce* (London: Abacus, 1987).
- Levy, Richards S., *The Downfall of the Anti-Semitic Parties in Imperial Germany* (New Haven, CT: Yale University Press, 1974).
- Levy, Richards S. *Anti-Semitism: A Historical Encyclopedia of Prejudice and Persecution* (Santa Barbara: ABC-CLIO, 2005).
- Lindemann, Albert, *Anti-Semitism before the Holocaust*. (Harlow: Longman, 2000).
- Löw, Andrea, *Juden im Getto Litzmannstadt. Lebensbedingungen, Selbstwahrnehmung, Verhalten* (Göttingen: Wallstein, 2006).
- Mayer, Arno J. *Why Did the Heavens not Darken? The "Final Solution" in History* (New York: Pantheon, 1988).
- McIntosh, Terence, *Urban Decline in Early Modern Germany: Schwäbisch Hall and Its Region, 1650–1750* (Chapel Hill: University of North Carolina Press, 1997).
- McNeill, William Hardy, *Plagues and People* (New York: Anchor, 1975).
- Meyer, Beate, "Handlungsspielräume regionaler jüdischer Repräsentanten (1941–1945). Die Reichsvereinigung der Juden in Deutschland und die Deportationen," in *Die Deportation der Juden aus Deutschland*, ed. Kundus, Birthe, and Meyer, Beate (Göttingen: Wallstein, 2004).
- Nolte, Ernst, *Das Vergehen der Vergangenheit* (Berlin: Ullstein, 1987).
- Nunn, Nathan, and Leonard Wantchekon, "The Slave Trade and the Origins of Mistrust in Africa," *American Economic Review*, 101 (2011), 3221–3252.
- Nunn, Nathan, and Diego Puga, "Ruggedness: The Blessing of Bad Geography in Africa," CEPR Working Paper No. 6253, 2010.
- Oberman, Heiko A. *The Roots of Anti-Semitism in the Age of Renaissance and Reformation* (Philadelphia: Fortress Press, 1984).
- Perednik, Gustavo, "Naive Spanish Judeophobia," *Jewish Political Studies Review*, 15 (2003), 87–110.
- Putterman, Louis, and David Weil, "Post-1500 Population Flows and the Long-Run Determinants of Economic Growth and Inequality," *Quarterly Journal of Economics*, 125 (2010), 1627–1682.
- Salfeld, Siegmund, *Das Martyrologium des Nürnberger Memorbuches* (Berlin: Simion, 1898).
- Santos Silva, Joao M. C., and Silvana Tenreiro, "The Log of Gravity," *Review of Economics and Statistics*, 88 (2006), 641–658.
- Santos Silva, Joao M. C., Silvana Tenreiro, and Frank Windmeijer, "Is it Different for Zeros? Discriminating between Models for Non-Negative Data with Many Zeros," Centre for Microdata Methods and Practice Working Paper No. CWP20/10, 2008.
- Schilter, Johann, *Chronik der Stadt Freiburg im Breisgau*. (1698; Freiburg: Ed. Robert Feger, 1979).
- Schoeps, Julius H. "Degendorf," in *Neues Lexikon des Judentums*, ed. Schoeps, Julius H. (Gütersloh: Bertelsmann, 1992).
- Shachar, Isaiah, *The Judensau: A Medieval Anti-Jewish Motif and Its History*. (London: Warburg Institute, 1974).
- Showalter, Dennis, "Der Stürmer: The Mobilization of Hostility in the Weimar Republic," *Modern Judaism*, 3 (1983), 173–187.
- Spolaore, Enrico, and Romain Wacziarg, "The Diffusion of Development," *Quarterly Journal of Economics*, 124 (2009), 469–529.
- Stachura, Peter, "Der Kritische Wendepunkt? Die NSDAP und die Reichstagswahlen vom 20 Mai 1928," *Vierteljahrshefte für Zeitgeschichte*, 26 (1978), 66–99.
- Sterling, Eleonore, "Anti-Jewish Riots in Germany in 1819: A Displacement of Social Protest," *Historia Judaica*, 12 (1950), 105–142.
- Striesow, Jan, *Die Deutschnationale Volkspartei und die Völkisch-Radikalen 1918–1922*, 2 vols. (Frankfurt: Haag & Herchen, 1981).

- Tabellini, Guido, "The Scope of Cooperation: Norms and Incentives," *Quarterly Journal of Economics*, 123 (2008), 905–950.
- Toch, Michael, *Die Juden im Mittelalterlichen Reich* (München: Oldenbourg, 2003).
- , "The Formation of a Diaspora: The Settlement of Jews in the Medieval German Reich," *Aschkenas*, 7 (2010), 55–78.
- Tolloi, Philipp, "Das Bürger- und Inwohnerbuch der Stadt Brixen von 1500–1593," Magisterarbeit FU Bozen, 2010.
- Vasarhelyi, Hanno, "Einwanderung nach Nordlingen, Esslingen und Schwabisch Hall zwischen 1450 und 1550," in *Stadt und Umland*, ed. Maschke, Erich, and Sydow, Jürgen (Stuttgart: Dt. Verlagsanstalt, 1974), 129–165.
- Walker, Mack, *German Home Towns. Community, State, and General Estate 1648–1871*. (Ithaca, NY: Cornell University Press, 1971).
- Walter, Dirk, *Antisemitische Kriminalität und Gewalt*. (Bonn: Dietz, 1999).
- Wawrzinek, Kurt, *Die Entstehung der Deutschen Antisemitenparteien, 1873–1890*. (Berlin: Ebering, 1927).
- Wooldridge, Jeffrey M. *Econometric Analysis of Cross Section and Panel Data* (Cambridge, MA: MIT Press, 2002)