Leadership and Social Norms: Evidence from the *Forty-Eighters* in the Civil War *

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Abstract

A growing theoretical literature emphasizes the role that prominent individuals play in shaping beliefs and social norms. We provide empirical evidence for such 'civic leadership.' We focus on the *Forty-Eighters*, a group of political refugees from Germany's failed 1848 revolutions, and their role in the struggle for the abolition of slavery in the U.S. Our primary outcome is volunteering for the Union Army. Given the enormously high death toll during the Civil War, this measure provides a powerful measure of social convictions against slavery. Using different empirical strategies, we show that towns where *Forty-Eighters* settled in the 1850s increased their Union Army enlistments by eighty percent or twenty per hundred adult males over the course of the war. Using machine learning techniques to infer soldiers' ancestry, we find that the *Forty-Eighters* had the biggest impact on the enlistment of German Americans, a smaller effect on English-speaking men (Native and Irish), and yet a smaller effect on Scandinavian and Italian men. *Forty-Eighters* who themselves enlisted in the war did not have a larger effect, except when they raised their own regiments. Those who fought also had a discernible effect in the field of battle, lowering their soldiers' likelihood of desertion.

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1 Introduction

A growing body of theoretical literature on learning in social networks points to the role of 'leaders' in the formation and equilibrium selection of social norms, beliefs and convictions (Jackson and Wolinsky, 1996; Bala and Goyal, 2000; Galeotti and Goyal, 2010). These leaders typically have no organizational or institutional authority. Rather, their influence arises from their central position in a social network which allows them to direct information flows and influence equilibrium beliefs (Murphy and Shleifer, 2004). In social networks, leaders' defining characteristics are their conviction, talent for communication and knowledge (Akerlof and Holden, 2016) which contribute to their visibility and prominence (Acemoglu and Jackson, 2015). We refer to individuals who use their central position in social networks to change social norms as *civic leaders*.[1]

There is ample empirical evidence for the importance of leadership in formal organizations. For example, Bertrand and Schoar (2003) study how CEOs affect company performance or Jones and Olken (2005) measure what effect political leaders have on their nations' economies. By contrast, there is only limited evidence on the effect of civic leadership in the evolution of social norms.[2] This is likely due to the difficulty in determining civic leaders and measuring their impact. The example of prominent individuals like Abraham Lincoln and Nelson Mandela illustrates this: Both are justly regarded as leaders who helped change the social norms against slavery and Apartheid in their societies. However, since they were also leaders of their political organizations, it is hard to disentangle their individual role as civic leaders from their organization's influence. This bears the risk of overstating the effect of civic leadership. Unobserved trends in the evolution of social norms present another challenge. Prominent individuals may be remembered as flagbearers of societal change but this does not necessarily imply that they caused it. Perhaps, they were just in the right place at the right time.

To our knowledge, this is the first paper to estimate a causal effect of civic leadership on individual beliefs and social norms as a whole. We do this in a historical setting that involved high

[1] There is no common label in the literature. Acemoglu and Jackson (2015) refer to 'prominent agents,' Akerlof and Holden (2016) to 'movers and shakers,' and Galeotti and Goyal (2010) simply to 'the few.'

[2] The paper closest to ours is Jack and Recalde (2015) who study the effect of elected community leaders' behavior on voluntary public goods contributions.

personal stakes: the American Civil War. The struggle for the abolition of slavery was the most acrimonious political battle in U.S. history, and culminated in what has been labeled the most horrific war in U.S. history (see Costa and Kahn, 2003). Between 1861 and 1865, over two million Northern and 750,000 Southern men took up arms to fight. This was about 12% of the northern and 8% of the southern population respectively. Participating in the war was costly, one out of five men died. In total, 620,000 men lost their lives, as many as in almost all other American wars combined (Hacker, 2011). Yet, almost 95 percent of soldiers were volunteers. Since the financial incentives to fight in the war were low—Union Army privates earned about $13 per months and payment was irregular—the question arises: what drove mean to risk their lives?[3] According to (McPherson, 1997, p.5), the "volunteers' values remained rooted in the homes and communities from which they sprang to arms and to which they longed to return." A sense of duty and honor clearly mattered to these values. We take this argument one step further and show that civic leaders rallied people to the anti-slavery cause and led men to to volunteer for the Union army.

There was often no strong economic motive to join the Union Army since the pay of 11$ per months for privates was not high, and payment was irregular. The decision to volunteer was primarily driven by norms and convictions.[4] Between 1861 and 1865, ten percent of the male U.S. population took up arms to fight over the issues of slavery and Southern secession.[5] In total, 620,000 men died in the Civil War, as many as in almost all other American wars combined (Hacker, 2011). The Civil War's death toll was high not only in absolute but also in relative terms: One out of every five white men who participated died. Given this, Union Army enlistments are as powerful a measure of social convictions as one can imagine.

The civic leaders we study are a well-defined group of U.S. immigrants, the so-called *Forty-Eighters*, who came to the U.S. as political refugees from the failed German Revolutions of 1848-49.[6]

[3] At an average inflation rate of 2.14% per year, $11 in 1860 are roughly equivalent to $300 in 2018. In the South, there were stronger economic motives since it was the Southern institutions that were threatened by the war. Hall, Huff, and Kuriwaki (2017) provide evidence showing that slave-ownership was a significant determinants of joining the Confederate army.

[4] In the South, By contrast, there were stronger economic motives since it was the Southern institutions that were threatened by the war. Hall et al. (2017) provide fascinating evidence showing that slave-ownership was a significant determinants of joining the Confederate army.

[5] Over the course of four years, over two million Northern men fought for the Union Army against just under one million Southern men in the Confederate Army.

[6] The 1848 revolution was not limited to Germany. There were uprisings in Ireland, Poland, France and Italy. However, political exiles from Germany were seen by historians as unique in being motivated by their high libertarian ideals compared to primarily patriotic and nationalistic motives (Wittke, 1970).

Looking at this specific group of immigrants has several advantages: First, as newly arrived immigrants the *Forty-Eighters* were not part of political organizations in the U.S. Instead, they wielded their influence as civic leaders in local communities.[7] Second, the *Forty-Eighters* were forced into sudden flight to escape prosecution thus arriving empty handed, unprepared, and without prior knowledge of their destination. As we will discuss in more detail, this unpreparedness provides us quasi-experimental variation in their spatial distribution across destination regions in the U.S. Third, the *Forty-Eighters*' active participation in the German Revolutions of 1848 and 1849—the cause of their subsequent expulsion— marks them as civic leaders and clearly demonstrates their strong convictions and leadership characteristics. In the words of Zucker, the *Forty-Eighters*' foremost historian, they were "political beings" and "intellectually speaking, three aspects dominated the scene from which [they] fled into the freedom of the United States: (*i*) liberty, (*ii*) democracy, and (*iii*) national unity" (Zucker, 1950, p.9,22). The same 'three aspects' became the unifying themes of the Republican Party—slavery, access to 'free soil', and opposition to Southern secession—and the *Forty-Eighters* quickly emerged to be leaders in their new communities who promoted their beliefs and convictions .[8]

Our empirical analysis measures what effect the *Forty-Eighters* had on individuals' willingness to fight for a change in social norms. We combine enlistment data from a recently digitized collection of all men who served in the Union Army with newly collected data on the spatial distribution of *Forty-Eighters* across 4,300 towns in the Union states. To measure the latter, we coded information from four biographical accounts of the *Forty-Eighters* (Zucker, 1950; Wittke, 1970; Raab, 1998; Baron, 2012) and complemented it with individual searches on *Ancestry.com*. These detailed biographies allow us to create a unique panel of 493 individuals who located across 87 towns. Finally, we supplement our analysis with demographic controls at the town-level because the 1850 and 1860 censuses are two rare exceptions where historical U.S. Census data was reported below the county level (Fishman, 2009).

An obvious concern with our analysis is that the *Forty-Eighters* may have selected into destination regions. If they settled in towns where the political climate was turning against slavery, this

[7] There is only a handful of individuals that took prominent roles in the Republican party. We can exclude those cases from our analysis.

[8] The question of 'free soil' was intimately linked to that of slavery; the short-lived *Free Soil* party was the precursor to the Republican party.

would upward-bias our estimates. While initially plausible, this concern dissolves under closer scrutiny of the historical situation. As mentioned above, the *Forty-Eighters* had to leave Europe hastily to escape prosecution. Unlike other German immigrants, the *Forty-Eighters* thus did not have existing family ties or social connections upon their arrival, and were often in immediate need of finding employment (Wittke, 1970, ch.6). The *German Society of New York* (where almost 90% of *Forty-Eighters* arrived) reported "in 1850 and 1851 a sudden steep increase in requests for assistance to people totally deprived of all means, mostly political refugees flocking to America after the failure of the revolutions" (Wust, 1984, p.31). Penniless and in need of a job, most *Forty-Eighters* moved shortly after their arrival to wherever the *Labor Bureau* found them employment (usually somewhere in the Mid-West). In a time when information traveled slowly, it is unlikely that the *Forty-Eighters* were matched with politically active communities who shared their liberal ideals. This argument is strengthened by the historical record suggesting that the majority of Germans of the older immigration were uneducated and politically ignorant (Börnstein, 1881) or conservatives who regarded the *Forty-Eighters* with suspicion (Wittke, 1970, p.162).

One remaining concern arises if the *Forty-Eighters* went to locations that provided work for *all* German immigrants arriving during this time, and if those co-arriving immigrants were also more politically involved than the older members of existing German-American communities.[9] We address this concern directly by controlling for German immigrant arrivals that coincided precisely with the arrival of the *Forty-Eighters*. One, we add the change in the size of German communities between the 1850 and 1860 Census. Two, we calculate each town's distance to all towns advertised as destinations in *Metzler's map for immigrants*, the primary cartographic guide for German immigrants' settlement in the U.S. in the 1850s. Three, we coded up shipping lists of all German arrivals in the time-window 1849–1852 and located them in U.S. towns using later Censuses.

Evidence from location choice models show that the *Forty-Eighters* clearly co-located with other Germans arriving in the same time window, as well as tending to locate in relatively more urban

[9] It is possible that the individuals we focus on are the more prominent 'tip of the iceberg,' but that other politically motivated German immigrants who escaped the historians' attentions had also taken a leadership role in the U.S. In this respect, it is worth re-iterating that the term *Forty-Eighter* is not defined by anything that is entirely measurable, such as membership to an organization. Zucker's book mentions 318 individuals. Reiter identified 1,001 German political refugees who shipped to the U.S. (Nagel, 2012a, ch.2.1). Zucker states that "an estimate of 3,000–4,000 political emigrants would have been ample to include all the leaders as well as lesser followers" (p.45).

towns. Imbalance between towns that *Forty-Eighters* settled in and the universe of control towns is limited to town size, pre-1850 German communities, and co-incident changes in German communities. We therefore always control for these. All spatial and economic characteristics are otherwise balanced.

We estimate sizable effects. The presence of one *Forty-Eighter* in a town raised enlistments for the Union Army by twenty per hundred adult males over the duration of the war, which equals the mean enlistment rate in the data. In log terms, the presence of a *Forty-Eighter* raised enlistments by eighty percent. Once town size and German communities are controlled for, these estimated magnitudes are invariant to a wide range of geographic and economic controls.

To further understand the estimated effect of civic leadership, we look at two specific channels that have been emphasized in the historical narrative surrounding the *Forty-Eighters*: their involvement in (*i*) publishing and in (*ii*) German social clubs, especially the so-called *Turner Societies*. We find that the *Forty-Eighters* had sizeable effects both on the presence of local German-language newspapers and on the formation of *Turner Societies*, while they had no effect on English-speaking newspapers. The newspaper-effect is partly driven by *Forty-Eighters* taking up jobs in publishing, but more importantly it was driven by *Forty-Eighters* founding new newspapers. While the newspaper effect cannot be viewed solely as evidence of political leadership, the effect on *Turner Societies* constitutes very direct evidence of the *Forty-Eighters*'s local political involvement because the *Turner Societies* differed from other primarily German social clubs in being highly political and involved in the struggle for abolition.[10]

Next, we investigate the 'cultural gradient' of the *Forty-Eighters*' influence on social norms. The historical record suggests that the *Forty-Eighters*' social network was centered around the German-American community but that they actively reached out beyond this group. They were active supporting the Republican party and the broader anti-slavery movement, gave public speeches in English and launched articles in the English-speaking press (Curti, 1949; Zucker, 1950; Wittke, 1970; Baron, 2012). To examine how much cultural barriers affected the *Forty-Eighters*' influence

[10]The Turner movement emerged at the beginning of the 19th century in the German states during the time of the Napoleonic occupation with the goal to strengthen physical and moral powers through the practice of gymnastics. The movement became more politicized during the 1830s and 1840s, and was primarily political when the first American *Turnverein* was founded in 1849 (Metzner, 1894). For instance, *Turner Societies* formed bodyguards for Lincoln's public appearances during his 1860 presidential campaign, at a time when violent outbreaks were the norm rather than the exception at such events. See discussion in section 2.

within local communities, we decompose all enlistments from the same town by soldiers' ancestry. We infer ancestry, we trained a machine learning algorithm on the full-count 1860 U.S. Census (where ancestry is reported) and then predicted all soldiers' ancestry. We then calculate the number of enlisted men of each ancestry by town. In line with the historical record, the *Forty-Eighters*' effect was most pronounced for German-American men. The effect was around twenty percent smaller for Native and for Irish-ancestry men. The effect was smallest for the two large non-English speaking immigrant groups, Scandinavians and Italians.

Finally, we turn to a closer investigation of *Forty-Eighters*' direct engagement in the war. 149 of the *Forty-Eighters* fought in the Civil War themselves. Interestingly, we find that the enlistment effect of *Forty-Eighters* who did not fight in Civil War was at least as big as the effect of those who did. One may have expected the effect of 'fighting' *Forty-Eighters* to be larger because the leadership literature emphasizes leaders' resoluteness, and willingness to 'lead by sacrifice' and 'lead by example' (Bolton, Brunnermeier, and Veldkamp, 2012; Dewan and Myatt, 2008; Hermalin, 1998). The reality, however, was that the primary driver of enlistment among the *Forty-Eighters* was probably military experience and not resoluteness, given that most would have been in their late forties or early fifties in 1861.[11] Furthermore, it was those that did not enlist who had the biggest effect on the Turner Societies, which suggests that two different leadership styles were prevalent among the *Forty-Eighters*. Digging further reveals an interesting heterogeneity: The *Forty-Eighters* who enlisted and raised their own regiments had the biggest effect while those that enlisted without raising their own regiments had a smaller effect than those who did not enlist.

As a last exercise, we study the universe of 1.6 million surviving Union Army soldiers who neither died nor were severely wounded, and ask whether the presence of one of the 149 *Forty-Eighters* in their fighting units affected their likelihood of desertion. Controlling for many significant individual- and company-level drivers of desertion, we find that having a *Forty-Eighters* as the captain of a company reduced the likelihood of desertion by 2 percent, which is roughly half the reduced desertion probability associated with belonging to the officer corps.

Our paper contributes to different strands of the literature. First, it contributes to the literature on social learning and the diffusion of social norms (see Young, 2009). More narrowly, our findings

[11] While we have no systematic data on their military training in Germany, we find a strong correlation between having been involved in military altercations during the 1848 revolution and enlisting in the Civil War.

provide empirical support for theories that emphasize the importance of individual leadership in social learning. These theories suggest that information flows in social networks are typically organized by a small set of prominent agent (Galeotti and Goyal, 2010)–in our case civic leaders– who stand out because of (i) the visibility of their actions (Acemoglu and Jackson, 2015), or (ii) their ability to build social ties and unite individuals in a common endeavor (Akerlof and Holden, 2016; Jackson and Wolinsky, 1996; Bala and Goyal, 2000).[12]

Second, we relate to a broader literature on leadership inside organizations which asks what makes a successful leader. We transfer these insights to the case of civic leaders who emerge outside an organizational structure. The literature on leadership in organizations finds that important leadership characteristics are 'conviction' or 'resoluteness' (Bolton et al., 2012) and a 'sense of direction' (Dewan and Myatt, 2008). These insights apply to the *Forty-Eighters* as well. Said characteristics, combined with a willingness to 'lead by sacrifice' and 'lead by example' (Hermalin, 1998), helped them build connections and center a social network around them.

Third, our paper contributes to a political economy literature on persuasion (DellaVigna and Gentzkow, 2010). Leaders, through their visibility and connectedness, have a central position in social network which allows them to direct information flows and influence equilibrium beliefs (Loeper, Steiner, and Stewart, 2014; Murphy and Shleifer, 2004). In our context, civic leaders tried influence agents' beliefs locally through grassroots organizations and on a larger scale through newspaper editorships. It is important to note that we can show the *Forty-Eighters*' effect on social norms and on newspapers but cannot ultimately document to what extent the former was driven by the latter. There is reason to be cautious: Gentzkow, Shapiro, and Sinkinson (2011) find no evidence that partisan newspapers affected party vote shares in the 19th century U.S., although their data's starting point in 1869 is our end-point.[13]

Finally, we relate to the empirical literature on knowledge diffusion that commonly uses the arrival of narrowly defined immigrant groups as natural experiments to study the transmission of knowledge embedded in 'knowledge elites'.[14] Examples include Hornung (2014) who studies

[12]There is also a separate literature that studies agents' "preferential attachment" to certain connected leaders in the context of attention. For example, in Calvó-Armengol, Martí, and Prat (2015) agents decide strategically whom to pay attention to.

[13]For a review of the partisan nature of U.S. newspapers in the 19th century, see Gentzkow, Glaeser, and Goldin (2006).

[14]This literature is small compared to the literature studying the general equilibrium market adjustments to immigration-induced changes in the work force. See Friedberg and Hunt (1995) for a review.

the late 17th century migration of skilled Huguenots from France to Germany; Moser, Voena, and Waldinger (2014) who look at the influx of German Jewish scientists into the U.S. after 1939; or Borjas and Doran (2012) who study at the effect of the post-1990 influx of Russian mathematicians into the U.S. With a broader focus, Nunn, Qian, and Sequeira (2017) use the interaction of timing in source countries' push factors and the moving U.S. frontier to study the long-run consequences of the age of mass migration. Our paper is closely related to this literature in that we use a similar exogenous immigration-shock. We differ, however, in our focus on the diffusion of social norms rather than knowledge. A further point of distinction is our focus on barriers to diffusion. Our finding that the *Forty-Eighters*' effect was heavily concentrated in German-American communities provides initial evidence for ancestry as an important barrier to the diffusion of social learning (Spolaore and Wacziarg, 2009).

The remainder of the paper is organized as follows. Section 2 introduces the historical background and describes the *Forty-Eighters*' situation in both German lands and the United States. Section 3 discusses the main data on the *Forty-Eighters* and on Union Army enlistment. Section 4 discusses identification. Section 5 provides the results. Section 6 concludes.

2 Background to the *Forty-Eighters*

From the early 19th century on, a rising nationalist movement across the German states started propagating a political union and a more balanced distribution of power between the ruling monarchs and their subjects. However, it was only in February 1848 that uproars in France spilled over to the German states and sparked a revolution. What became known as *March Revolution* started with first revolutionary uprisings in Baden which quickly spread into other states. We defer a discussion of the details of the German Revolutions to Online Appendix A. The important fact for the paper is that after the failed revolution, ten thousand political refugees escaped to Switzerland and sought asylum. Those who could not escape were often executed or sentenced to long prison terms. Soon after their escape, it became clear that Switzerland could not permanently host the political refugees (Jung, 2015; Nagel, 2012b; Reiter, 1992). Instead, "diplomatic pressures from neighboring powers forced Switzerland to weaken in its policy of giving hospitality to political offenders, and many left [...] and crossed the Atlantic to America" (Wittke 1970, p.27). This

expulsion is nicely illustrated in a contemporary political cartoon from 1849 (see Figure 1 in Online Appendix A) which shows the absolutistic rulers sweeping the *Forty-Eighters* out of Europe.

The *Forty-Eighters* were a specific cohort of German immigrants to the U.S. (Wittke, 1970, p.4) defines them as "those who in some way actually participated in the liberal movements and the Revolutions of 1848 and 1849, and left their homes because of a conflict with the established authorities, or because they realized that henceforth it would be either too dangerous or too intolerable to remain." Implicitly, we adopt this definition. From a practical standpoint, we code up all the biographical information found in four historical compendia on the *Forty-Eighters*, which include 493 individuals, and complete their U.S. biographies using *Ancestry.com*. A detailed description of biographical data sources is provided in Appendix A.1.

Figure 1 tracks the arrival of the *Forty-Eighters* in the U.S., and shows how rapidly they arrived. Of the almost 500 men, more than 80% arrived in the space of less than two years.

What were the characteristics of these individuals? The *Forty-Eighters* were by all accounts a rather diverse group, consisting not only of intellectuals but also of small proprietors and urban craftsmen. What they shared were primarily their political convictions, which were strong enough to see them expelled from Europe. The strength of their convictions set them apart from other German immigrants who came to the United States to escape economic hardship.

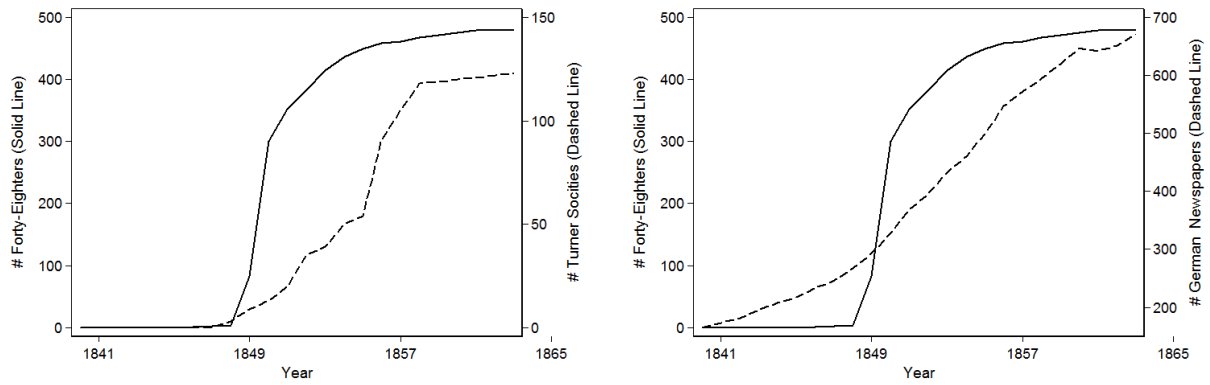
Why did the *Forty-Eighters* engage with the political battles in the 1850s United States? A letter by Anton Füster, one of the key figures of the March revolution in Vienna in 1848, written a year after he arrived in America (Tóth, 2014, cited on p.202), is illustrative: "Only a year ago, we were reverently singing the German national anthem. Now it sounds different. What is the German Fatherland? Is it Austria? No, I was forced to flee from there. Is it Prussia? No. There I was arrested. Is it Saxony? No. There warrants were issued against me. Is it the free city of Hamburg? No. There I was driven out by the police. Where is the German fatherland? In America!" This engagement with the political battles in the U.S. distinguished German revolutionaries from Irish, Polish or Italian immigrants who were also involved in the 1848 uprisings. While the revolutionary goals of these latter groups were primarily patriotic and nationalistic, the *Forty-Eighters* were motivated by their high libertarian ideals (Wittke, 1970). The *Forty-Eighters*' strong libertarian beliefs are a direct result of their committed to overthrow the feudal system in the German lands which they considered a form of slavery. Other European countries abolished feudal ties earlier.

How did the *Forty-Eighters*' convictions map into the political battles in the 1850s United States? According to Wittke (1970, p.192), the *Forty-Eighters* "appraised the situation in terms of their revolutionary idealism, and concluded that the United States was involved in a sectional controversy over basic human rights in which one part of the nation defended the exact antithesis of democracy and equality." Various quotes by *Forty-Eighters* document that human slavery was to their mind a moral evil. Carl Schurz, one of the most prominent *Forty-Eighters*, calling it "one shrill discord." Friedrich Knapp's editorial in the *New York Abendzeitung* illustrates how abolition links to the *Forty-Eighters*' revolutionary ideals: "The problem of slavery is not the problem of the Negro. It is the eternal conflict between a small privileged class and the great mass of the non-privileged, the eternal struggle between aristocracy and democracy" (quoted in Zucker, 1950, p.121).

With the emergence of the Republican Party, the *Forty-Eighters* saw their beliefs represented by a political party and they worked hard to convert both other Germans as well as Americans to their beliefs. With the election of Lincoln as the first Republican president in November 1860, the *Forty-Eighters* saw their next revolution arising. When seven Southern states seceded and the Civil War broke out in April 1861, they were among the first to enlist for the Union Army, encouraging others to follow their example. The enthusiasm for the war nicely illustrated by a quote from Carl Schurz: "...a tremendous problem and...a mighty cause! I am happy to live in this country at this time. In comparison with the splendid goal, what are our little sufferings and our individual sacrifices? Slavery is being driven out of its last citadel; the insulted dignity of human nature has been avenged. The people of the new world are taking an immeasurable step forward in its cleansing and ennobling."

How did the *Forty-Eighters* influence others' social norms and convictions? On this question, two factors stand out clearly in all historical accounts. One, the *Forty-Eighters* were very likely to find employment in the newspaper business, often founding newspapers themselves. Because the majority of newspapers in the 1850s openly declared their political leanings, such work afforded newspaper editors significant ability to shape their readers' views, although it needs to be stated that quantitative evidence for this is far from conclusive (Gentzkow et al., 2011). Two, the *Forty-Eighters* were very active in their local social clubs. These included card clubs, music societies, sharpshooter organizations, library associations. Bretting (1981, p.201) lists over 50 German social

Figure 1: The *Forty-Eighters*' Arrival, *Turner Societies*, and German Newspapers



Notes: The left panel plots the arrival of the *Forty-Eighters* (scaled on the left axis) together with the emergence of the American *Turner Societies*, the first two of which were founded in 1848. The right panel plots the arrival of the *Forty-Eighters* together with the growth of German Newspapers in the U.S. (scaled on the right axis). German newspapers are scaled above zero, the first were founded as early as the 18th century.

clubs between 1835–1859 in New York City alone. However, by far the most politically important and influential were the so-called *Turner Societies* ('*Turnvereine*'). The first U.S. *Turnverein* was founded in 1849 and subsequently, many more Turner Societies were founded across the U.S., creating a social network that at the time wielded substantial political leverage. The abolition of slavery soon became the main goal of the U.S.-wide organization of *Turner Societies*. Most Turners were active supporters of the newly founded Republican Party during the 1850s and 60s. At a time when violent outbreaks at political gatherings were common, Turners frequently formed bodyguards for anti-slavery activists during public speeches; Turners were Lincoln's bodyguards for his first inauguration (Zucker, 1950; Baron, 2012) and when the Civil War started in 1861, they formed special "Turner Regiments" (Hofmann, 1995, p.158). Wittke (1970, p.225) estimates that 60-80 percent of the Turners enlisted for the Civil War.

Figure 1 plots the arrival of our sample of *Forty-Eighters* together with these two potential mechanisms. Both graphs are in line with the historical narrative that the *Forty-Eighters* had an impact on both outcomes. Visually, this is more striking for the *Turner Societies* because the first was founded in 1849 (by a *Forty-Eighter*). A second jump in the number of *Turner Societies* is discernible in 1856, the first year the newly formed Republican Party entered the presidential election race. This is consistent with the historical narrative which clearly shows that the *Turner Societies* had become essentially political clubs by this time (Hofmann, 1995), (Levine, 1980, p.256).

3 The Main Data

This section describes our newly collected biographical accounts of the *Forty-Eighters* along with our main outcome variable, Union Army enlistment at the town level.

Exposure to the *Forty-Eighters*: We are interested in the *Forty-Eighters*' role as civic leaders and how they influenced the equilibrium selection of beliefs and convictions in their U.S. destinations' social network. In a time where distance-related travel and transportation costs are still quite high, social networks were of limited spatial scope which means that we need detailed geographic data to model the *Forty-Eighters*' sphere of influence. Fortunately, the Census years 1850 and 1860 are the only two Censuses in the 19th century where the Census Bureau published basic demographic information at a more disaggregate level than counties, namely towns (Fishman, 2009). Since the *Forty-Eighters*' were staunch supporters of the abolition movement, we focus our analysis on the Union states where we observe a total of 7,294 towns which form the basis of our analysis. A detailed description of the data is provided in Appendix A.2.

We know about the *Forty-Eighters* qualities as leaders from the German Revolutions and therefore expect them to earn a similar central position in their new communities. To measure this, we need detailed information about their residential locations and period of stay. We compile this information from the biographies of 493 *Forty-Eighters* published in Zucker (1950), Wittke (1970), Raab (1998) and Baron (2012) and we complete the picture with individual searches on *Ancestry.com*. This leaves us with a comprehensive panel dataset that documents the *Forty-Eighters*' movements across space along with additional biographical information about their training, occupations and political activities.

Our main regressor of interest exploits the individual biography information on the $F = 493$ *Forty-Eighters* and collapses it into a town-level dataset. Let $FortyEighter_{ikt}$ be an indicator that takes the value 1 if *Forty-Eighter* i settled in town k in year $t \in [1850, 1861]$, i.e. the time between the *Forty-Eighters*' arrival in the U.S and the outbreak of the Civil War. We can then define a town-level exposure measure T_k as:

$$T_k = \sum_{i \in F} \mathbb{1}(\sum_t FortyEighter_{itk} \geq 1)_{ik} \tag{1}$$

where the indicator function takes the value 1 if a *Forty-Eighter* settled in the town in a given

year.

Figure 1 showed that the *Forty-Eighters*' time of arrival fell within a very narrow window. We will also document that the *Forty-Eighters* did not move around much once they had settled in their first location outside of the port of arrival. Nonetheless, the *Forty-Eighters* did not all settled down at exactly the same time, and did not all stay in a single town. While expression (1) provides an uncluttered shorthand of our treatment, our preferred exposure measure is a more precise account of the duration that a *Forty-Eighter* i spent in town k:

$$T_k = \sum_{i \in F} \sum_{t=1850}^{1861} \frac{1}{11} FortyEighter_{itk}. \tag{2}$$

Since we standardize our measure by the maximum exposure of $T = 11$ years, a value of 1 refers to a town where a *Forty-Eighter* settled in 1850 and stayed there until the outbreak of the war.[15]

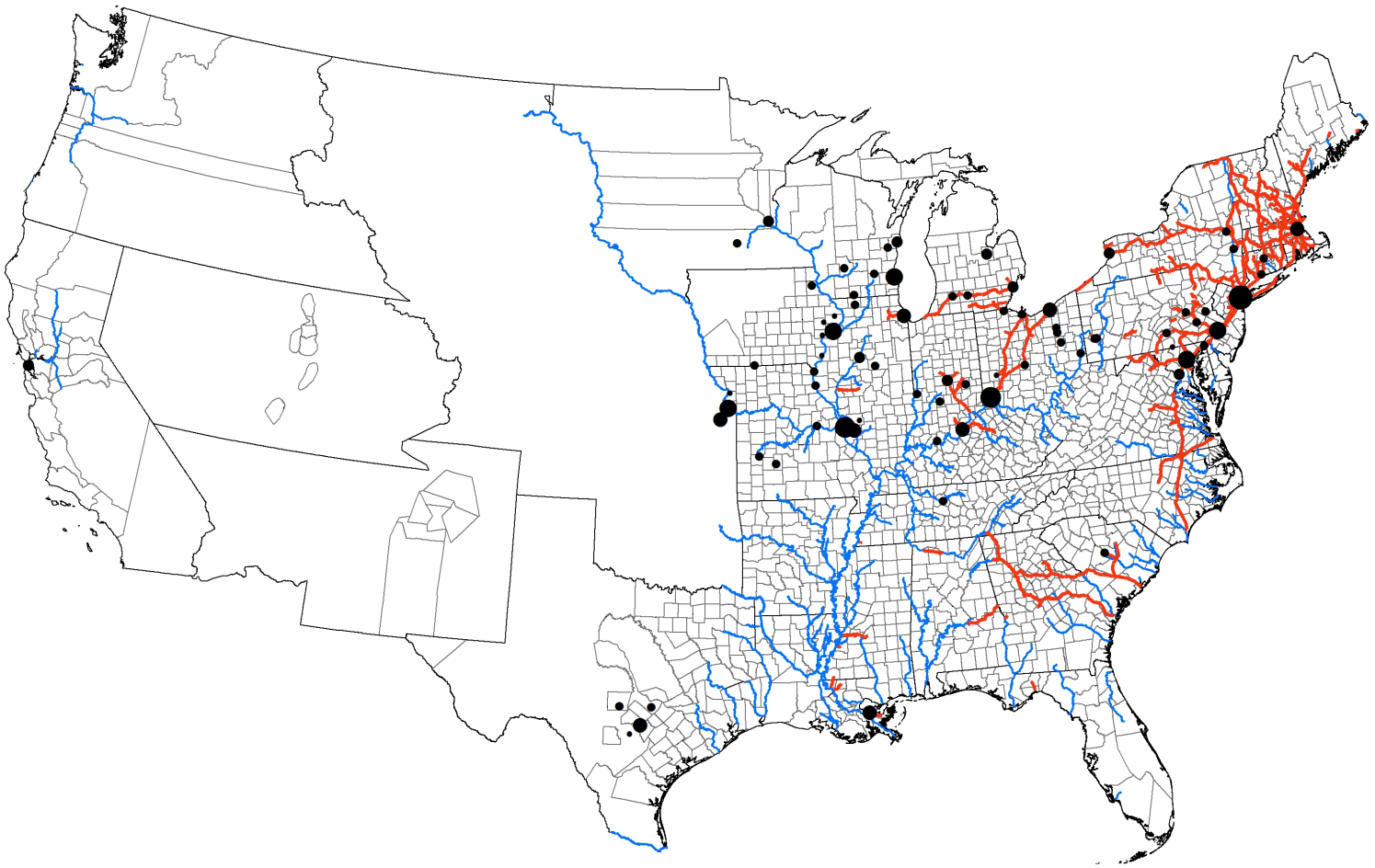
The distribution of towns which hosted a *Forty-Eighter* at any time is characterized by many zeros. Overall, we observe 87 towns where at least one *Forty-Eighters* settled for some time, nine of them located in the South or the West. Figure 1 illustrates the *Forty-Eighters*' spatial distribution in the U.S. and Table 2 shows in more detail that the distribution of settlement was also quite skewed across the 87 towns. 74 percent of the *Forty-Eighters* went to just the six large urban centers New York City, Cincinnati, Saint Louis, Philadelphia, Baltimore, and Milwaukee. Cincinnati, Saint Louis, Philadelphia and Milwaukee received larger numbers of *Forty-Eighters* relative to other similar-sized cities like Boston or Washington DC because they were the big cities with larger German communities. New York and Baltimore were not particularly German cities but were the primary arrival ports of Germans. In the *Germans to America* passenger data collection,[16] New York City and Baltimore together account for over 90 percent of the 4.1 million German arrivals from 1850–1895. New York City alone accounts for 85 percent. It is thus not surprising that roughly one-quarter of the *Forty-Eighters* permanently stayed in New York. We always disregard New York City from our analysis because there is no plausible control town for it.

The Enlistment Data: Our main outcome variable at the town level is the number of enlist-

[15] In towns where we observe more than one *Forty-Eighter*, a value of 1 may also refer to a cumulative period of 11 years which might have different implications for the individual extendedness in the local social network. We will discuss this in more detail in the results section

[16] We provide a detailed description of this data source in Appendix A.8

Table 1: The *Forty-Eighter*'s spatial distribution in the U.S.



Notes: The map shows the spatial distribution of the *Forty-Eighters* across 82 U.S. towns. Larger bubbles indicate locations with more *Forty-Eighters*. Counties in their 1850 borders are marked with light grey outlines and corresponding states with black outlines. Blue lines refer to navigable Rivers and canals in 1850; red lines indicate railroads in 1850.

Table 2: Distribution of Treatment

State	Town	#	State	Town	#
~~Alabama~~	~~Mobile~~	0.33	Missouri	Benton	1.00
~~California~~	~~San Francisco~~	3.67	Missouri	Hermann	1.00
Connecticut	Hartford	0.50	Missouri	Saint Joseph	0.08
Connecticut	New Haven	1.50	Missouri	Saint Louis	32.42
District of Columbia	Washington	5.92	New Jersey	Hoboken	1.08
Illinois	Bellville	7.83	New Jersey	Newark	7.50
Illinois	Bloomington	1.08	New York	New York City	123.33
Illinois	Chicago	13.33	New York	Brooklyn	2.67
Illinois	Freeport	0.83	New York	Buffalo	2.75
Illinois	Peoria	3.25	New York	Hudson	0.75
Illinois	Quincy	1.08	New York	Schenectady	1.00
Illinois	Springfield	0.17	New York	Yonkers	0.58
Illinois	Warsaw	1.08	Ohio	Cincinnati	36.42
Indiana	Bloomington	1.00	Ohio	Cleveland	8.92
Indiana	Indianapolis	3.58	Ohio	Columbus	2.50
Indiana	Rushville	1.00	Ohio	Danbury	0.75
Indiana	Terre Haute	1.00	Ohio	Dayton	2.00
Indiana	Troy	1.08	Ohio	Franklin	1.00
Iowa	Buffalo	0.42	Ohio	Massillon	0.33
Iowa	Burlington	0.67	Ohio	Sandusky	0.83
Iowa	Davenport	15.00	Ohio	Toledo	1.00
Iowa	Dubuque	0.08	Ohio	Zanesville	1.00
Iowa	Farmersburg	1.00	Pennsylvania	Allegheny	1.00
Iowa	Guttemburg	0.50	Pennsylvania	Allentown	1.00
Iowa	Keokuk	0.08	Pennsylvania	Carlisle	2.00
Iowa	Muscatine	0.17	Pennsylvania	Littlestown	0.08
Iowa	New Buda	2.92	Pennsylvania	Minersville	0.42
Iowa	Springfield	0.58	Pennsylvania	Philadelphia	19.00
Iowa	Waterford	0.33	Pennsylvania	Pittsburg	1.33
Kansas	Atchison	0.08	Pennsylvania	Reading	1.00
Kansas	Lawrence	6.50	~~South Carolina~~	~~Columbia~~	0.92
Kansas	Leavenworth	11.50	~~Texas~~	~~Austin~~	1.17
Kentucky	Louisville	9.92	~~Texas~~	~~Fredericksburg~~	1.50
~~Louisiana~~	~~New Orleans~~	1.25	~~Texas~~	~~New Braunfels~~	4.25
Maryland	Baltimore	16.00	~~Texas~~	~~San Antonio~~	0.92
Maryland	Elkton	0.92	~~Virginia~~	~~Wheeling~~	0.92
Massachusetts	Boston	7.17	Wisconsin	Green Bay	0.08
Michigan	Detroit	4.00	Wisconsin	Manitowoc	2.50
Michigan	Kalamazoo	0.75	Wisconsin	Milwaukee	14.92
Michigan	Lansing	0.42	Wisconsin	Monroe	0.75
Michigan	Saginaw	2.92	Wisconsin	New Holstein	0.92
Minnesota	New Ulm	2.42	Wisconsin	Sheboygan	0.58
Minnesota	St. Paul'S	3.17	Wisconsin	Watertown	1.25
			Wisconsin	Westfield	1.75

Notes: The table reports on the distribution of the *Forty-Eighters*, reporting the (rounded) average of the annualized presence of *Forty-Eighters* in a town between 1848–1860. In total, there are 87 towns. The distribution of the *Forty-Eighters*'s is skewed towards larger cities. The seven cities that received the most *Forty-Eighters* were New York City, Cincinnati, Saint Louis, Philadelphia, Baltimore, Milwaukee and Davenport. Sixty-six cities had between 1–3 *Forty-Eighters*. Hashed-out towns are in the South or West.

ments for the Union Army. The data stem from a newly digitized collection of the universe of *Union Army enlistments*, including more than two million men who served in the Union Army. The Union Army enlistment data is based on the original reports that were issued separately by each state's *Adjutant General's Office*. Some states did not systematically report soldiers' hometown information. As a result, we lack hometown information for about half the observations. In those cases, we use the observed spatial distribution of home towns in the regiment to infer missing information.[17] On average, a regiment drew soldiers from eight towns. See section Appendix A.3 for a detailed discussion.

There are two potential concerns with the way we infer missing hometown information. First, the inferred allocation induces noise. To account for this, we weight all regressions by the share of enlistments without missing information in every town. Second, the procedure implies that we only consider towns where we observe at least one enlisted soldier. This reduces our effective sample from 7,294 to 4,338. Table 9 shows the distribution of towns by state. Southern and Western states are excluded by construction. In addition, some states like Connecticut never reported soldiers' hometown in the original *Adjutant General's Reports*. See Table 9 in Appendix A.3.

4 Identification

In this section, we introduce our identification strategy. In our baseline specification, we estimate equations of the form:

$$E_k = \beta \cdot T_k + \delta \boldsymbol{X}_k + \eta_s + \epsilon_k, \tag{3}$$

where E_k is our main outcome, town k's share of the population that enlists for the Union army. T_k measures the presence of civic leaders, $\boldsymbol{X}_k$ is a vector of town-level control variables, η_s are state fixed effects and ϵ represents the error term. The key concern with this estimation is that the *Forty-Eighters* might have selectively chosen their destination location which would imply that $cov(T_k, \epsilon) \neq 0$. For example, β might be upward-biased because the *Forty-Eighters* selected into locations that were more open to their liberal ideas. The following paragraphs discuss this concern in detail and present strategies to assure the randomness of the assignment.

[17] Dropping these observations does not affect our results.

Assessing the *Forty-Eighters'* Location Decisions: The historical narrative provides strong evidence that the *Forty-Eighters'* had to leave Europe hastily to escape prosecution, which led to their very concentrated arrival in the U.S. in the space of only two years; see Figure 1. Unlike previous cohorts of German immigrants, they had no time to plan their emigration, they arrived without savings, and had no social connections in the U.S. that could have influenced their location choice. As a result, they were in much more immediate need of finding gainful employment–wherever that might be–than the average immigrant.

The example of Hermann Raster nicely illustrates this argument. Raster was a true intellectual who learnt to speak seven languages while he grew up. He studied in Leipzig and Berlin and he was part of a literature circle around Bettina von Arnim, a German writer and novelist who was known to support young talents. Raster was imprisoned because of his active role in the German Revolution but he was released from prison in 1851 under the condition that he will leave Germany. He arrived in New York City in July 1851. The only employment he could find upon his arrival was a job as a wood-chopper at a farm near Tioga, Pennsylvania. But it did not take long until newspapers learnt about his arrival and he quickly found a more suitable employment as Editor of the *Buffalo Demokrat* at the beginning of 1852 and in February 1853, he became the editor of the *New York Abendzeitung*, the most influential German-language paper in the U.S. of the time.

Raster's arrival in the U.S. is symptomatic of many other *Forty-Eighters*. They arrived penniless and without social contacts in the U.S. and typically relied on the *German Society* in their port of arrival to help them find an employment. By historical accident, the *Forty-Eighters'* arrival coincided with a time when the *German Societies* increased their effort to place German immigrants into jobs outside the arrival city. This was caused by two scandals in 1847 and 1848 when groups of paupers from Grosszimmern and Griesheim in Hesse had arrived in New York City and refused to leave the city's Poor House. Following these events, the German Society was fiercely attacked by New York officials and newspapers, accusing the 'Dutchmen' of loading this group of people onto New York (Wust, 1984, p.30). As a result, the German Society formed a *Labor Bureau* to quickly match arriving immigrants with employers across the country and make them leave New York City.[18] According to (Wust, 1984, p.32), "the employment service provided 2,200 jobs in 1846,

[18]Since the immigrants did typically not speak English very well, there was a limited pool of jobs and German employers were a preferred choice.

4,950 jobs in 1849 and 9,435 in 1853."[19] In the 1850s, job opportunities for Germans were typically located in the Mid-West and included jobs as office clerks, on the railroad, or on farms. Chapter six in Wittke describes the economic hardship of several individual *Forty-Eighters* in the early years after their arrival, and he laments the many "scholars able to quote Homer but forced to work with pick and shovel as day laborers on canals and railroads" (Wittke, 1970, p.66). Based on these historical narratives, we consider the *Forty-Eighters* first location of settlement outside of their port of arrival as being quasi-randomly assigned. To exploit this variation, we construct an alternative treatment

$$T_k = \sum_{i \in F} \frac{1861 - \tau_{ki}}{11}, \tag{4}$$

where expression (4) considers only locations k that served as *Forty-Eighters*' first residence, and τ_{ki} is the year in which individual i arrived in town k. It turns out that the correlation between expression (4) and our main treatment (2) is extremely tight, precisely because most *Forty-Eighters* stayed in the town they first settled in, at least up to the outbreak of the Civil War. It is therefore not movements between 1850–1861, but the first job allocation by the *Labor Bureau* that is critical to identification.

In summary, the historical record suggests that the *Forty-Eighters*' location in the U.S. between 1850–1861 had a strong random component, being in large part driven by economic need and work opportunities. However, there is one caveat. While their initial job assignment might have appeared random to historians, and possibly even to the *Forty-Eighters* themselves, their allocation might not be random in our econometric framework since the presence of work opportunities could have been correlated with unobserved factors that simultaneously drove political trends and social norms, and therefore the outcomes we study. In the following, we investigate this concern quantitatively.

Balancing Tests: To support our argument that the *Forty-Eighters* were quasi-randomly allocated across locations, we start with simple balancing tests where we regress different location characteristics on the *Forty-Eighters* treatment. Doing so will give us a first idea of potentially important location factors. In this exercise, we assume characteristics from the 1850 Census to

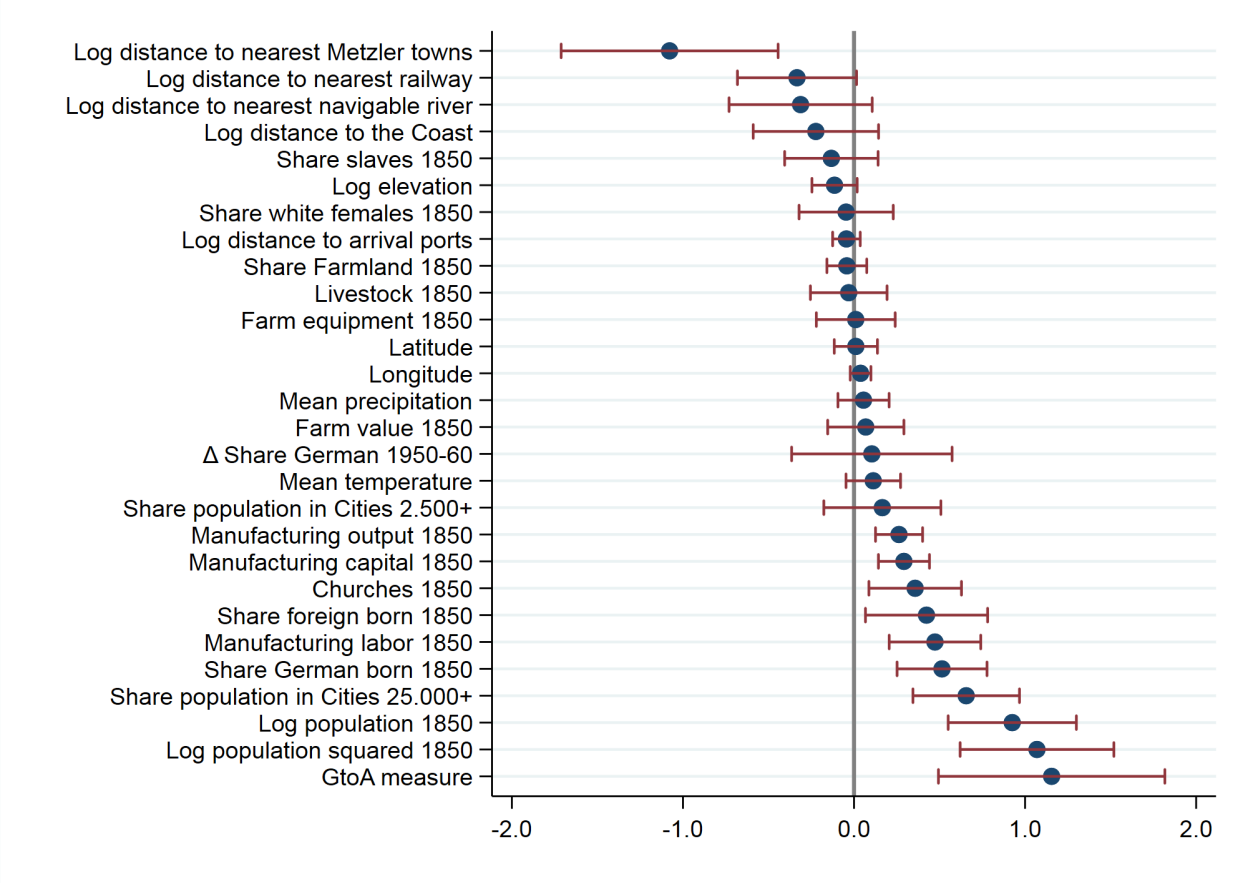
[19] Wust (1984) mentions that the archives of the *German Society of New York City* held every Annual Report from 1845 on at the time of his writing. Unfortunately, the Society today has a staff of one, no archives and no library anymore. We contacted other *German Societies* like the largest one in Philadelphia to attempt to locate this collection, but without success. The records appear to be lost.

be pre-treatment,[20] and we consider control/matching variables from the following sources: (1) From Fishman (2009) we have a set of town-level population control variables, including white, colored and total population broken down by gender. (2) We geocoded the location of all towns which allows us to calculate a rich set of geographic location factors. These include longitude and latitude, log elevation, the mean temperature and precipitation, and the following set of (log) distance variables: distance to the coast, to the next navigable river (in 1850), to the railway network (in 1850), distance to cities on Metzler's map for immigrants, shown in figure 10 in Appendix A.4, and the weighted distance to one of the four relevant arrival ports (Baltimore, New Orleans, New York and Philadelphia) where we use the share of German immigrants who arrived in the respective ports between 1848-1855 as weight. (3) In addition, we can obtain some town-level variables from the *full-count Censuses* for 1850 and 1860. The full-count Censuses are a bad way to establish the universe of towns in the U.S. because Census enumerators included lots of unincorporated areas under the 'township' label. However, with the universe of towns established through Fishman (2009), the vast majority of places in the Census can be mapped to it. The currently available full-count censuses do not include a lot of information on individuals, but they do include place of birth. in the 1850 Census, there were 570,591 individuals who report Germany as place of birth. In the 1860 Census respectively, there were 865,600. We use this place of birth information to train the machine learning algorithm that we use to predict soldiers' ancestry. Based on these, we measure a town's initial presence of German communities as well as the change in the share of German-born individuals between 1850 and 1860. (4) To additionally locate the specific arrival cohort of German immigrants that arrived with the *Forty-Eighters* (from 1849–1852), we digitized the *Germans to America* collection for those years and used the immigrants' name, age and gender to match them with individuals in the full-count 1860 Census. A detailed explanation of the matching procedure is provided in Appendix A.8. (5) Lastly, from Haines (2010) we have a rich set of *county*-level controls for 1850, including a county's population share living in larger towns, controls on the urban-rural divide, the size and value of farms, and connectedness via railways and waterways. For details on the data-source, see Appendix A.4.

We start with balancing tests where we regress the outcome variables on the on *Forty-Eighters*

[20] This is justified because the 1850 Census was enumerated in 1849 and figure 1 shows that the vast majority of *Forty-Eighters* arrived at their U.S. port of entry in 1850 or later.

Figure 2: Balancing test



Notes: The figures show estimated coefficients from regressions of one of the standardized control variables listed on the vertical axis on the *Forty-Eighters* treatment and state fixed effects in the top panel and conditional on fixed effects and six core controls in the bottom panel. All coefficients are displayed along with the 95% confidence interval and standard errors are clustered at the county level.

treatment and state fixed effects. The results are summarized in Figure 2. It is obvious that the *Forty-Eighters* were more likely to locate in urban areas, and in proximty to existing German communities. Moreover, they appear to have co-located with other Germans who arrived between 1849–1852. The presence of German-American communities is therefore an obviously important location factor which is in line with our reading that the Labor Bureau matched them with jobs in German communities. From an econometric viewpoint, it may be that German-American communities were more strongly gravitating towards an anti-slavery standpoint which could mean that we wrongly assign a civic leadership role to *Forty-Eighters* who merely settled in areas with

political pre-trends.[21] For example, if German-American communities were socially connected across space, e.g. through the nation-wide Turner organizations and through the German press, then even if the *Forty-Eighters*' influence on German-Americans was substantial it may have been quite uniform across communities. In that case, regressions that include German-American communities would over-control. To account for this potential source of bias, we define a set of core controls and we will condition the treatment on this set of controls in all subsequent specifications. The core controls include: log population and log population square in 1850; the share of German born among the population in 1850 and the change in the share of German born between 1850 and 1860; the number of immigrants according to the Germans to America data; and distance to the next town indicated on Metzler's map for immigrants.

As expected, conditioning on the set of core controls leaves us with a balanced sample. A right-hand-side balancing test (Pei, Pischke, and Schwandt, 2017) helps us formalize this. The RHS balancing test regresses the *Forty-Eighter* treatment on all control variables plus the state fixed effects and use a standard F-Test to test whether the coefficient vector on the covariates is significantly different from zero. An F-Test for the joint significance of *all* control variables gives us a highly significant Chi^2 statistic of 29.17 and we reject the hypothesis that the covariates did not affect the *Forty-Eighters*' location choice, i.e. that the location was randomly chosen. This result is in line with the balancing tests above. However, once we test for the joint significance of the non-core controls, this changes: We see an insignificant Chi^2 statistic of 1.18 and thus cannot reject the hypothesis that the remaining characteristics have no influence on the *Forty-Eighters*' location choice. Put differently, the *Forty-Eighters* location choice is not systematically related to the observed covariates once we condition on the set of core controls. Finally, we employ a matched sampling approach to improve the core control balance. Doing so can improve inference and leaves the results less sensitive to minor changes (Imbens and Rubin, 2015).

5 Results

Table 3 reports the results of estimating (3), the effect of the *Forty-Eighters* as defined in expression (2), on Union Army volunteering. Specifically, the outcome is a town's total enlistments relative

[21] The opposite concern may arise if the *Forty-Eighters*' influence was focused on German-Americans but was not spatially concentrated.

to its adult male population in 1860 and the regressor is normalized to take the value 1 if a *Forty-Eighter* had lived between 1850, the median arrival year in the data, and the outbreak of the Civil War in 1861 in this one town.

The top-panel of table 3 reports on the main outcome, the share of a town's adult men who enlisted. The bottom-panel reports the log of enlisted men as the outcome. Columns 1–4 present results for the full sample where we stepwise include sets of controls. Column 1 includes only state fixed effects. Column 2 adds the six core controls (i.e. population 1850 and its square, distance to the Metzler towns, the share of German-born inhabitants, the change in the share of German-born inhabitants between 1850-1860 and the number of German immigrants arriving between 1849-1852) to regression. Column 3 adds 1850 town-level demographic controls to the regression (share of slaves and share of white females inn). Column 4 adds geographic controls (mean temperature, mean precipitation, log distance to the coast, log distance to the next navigable river in 1850, log distance to the 1850 railway network, log distance to the four arrival ports, log elevation, latitude and longitude). Column 5 adds census controls at the county level observed in 1850 (share of manufacturing labor, the value of manufacturing output, manufacturing capital, share of population living in cities larger than 2,500, the share of people living in towns larger than 25,000, the share of foreign-born individuals, farm value, value of farm equipment, value farm livestock, improved acres of farmland and the number of churches). Column 6 adds a control for churches, which we include separately because of different religious organizations high level of involvement in the abolitionist movement

It is evident in both panels that it is only the core controls that really affect the estimated coefficients, consistent with the discussion in section 4. Our preferred estimate in column 6 of the top panel suggest that one *Forty-Eighter* who settled in a town raised the town's Union Army enlistments by between 20 men per hundred adult males over the course of the war. The corresponding estimate in the bottom panel implies that a *Forty-Eighter* increased total enlistments by 76 percent.

The location of the broader 1849–1852 arrival cohort was strongly predictive of the *Forty-Eighters*' location choice. One obvious thought is that the 493 *Forty-Eighters* who comprise our treatment are an incomplete representation of all *Forty-Eighters* and hence civic leaders. If this was the case, we would expect them to have some effect on Union army enlistment. However, when we condition on the existing German communities, this extended cohort of German arrivals has

Table 3: Effect of *Forty-Eighters* on Union Army Enlistments

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome:	*Enlisted Men / Adult Male Population* $_{1860}$ in % (0-100)					
# Fourty-Eighters	22.748***	20.778***	20.834***	20.906***	20.371***	20.407***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
log Town Population $_{1850}$		-4.264	-5.362*	-6.013*	-5.964*	-5.784*
		[0.143]	[0.050]	[0.057]	[0.055]	[0.063]
log Squared Town Population $_{1850}$		0.364*	0.429**	0.448*	0.469**	0.454*
		[0.098]	[0.038]	[0.060]	[0.045]	[0.054]
Share Germans $_{1850}$		-10.951*	-7.450	-7.368	1.510	1.669
		[0.081]	[0.230]	[0.215]	[0.776]	[0.750]
Δ Germans $_{1850\text{-}60}$		-8.395	-6.021	-4.368	0.881	1.040
		[0.179]	[0.344]	[0.462]	[0.882]	[0.859]
German Arrivals $_{1849\text{-}52}$		0.116	0.114	0.169	0.126	0.126
		[0.734]	[0.742]	[0.629]	[0.701]	[0.701]
log distance Metzler-town		-0.947**	-0.862*	-0.645	-0.821**	-0.813**
		[0.036]	[0.051]	[0.135]	[0.037]	[0.038]
Controls #	-	core	+ town	+ geographic	+ county	+ churches
fixed effects:	state	state	state	state	state	state
Observations	4,324	4,324	4,324	4,324	4,324	4,324
R-squared	0.156	0.161	0.171	0.191	0.205	0.205
PPS-Statistic		.	.049	.046	1.317	.121
p-val [PPS]		.	0.826	.830	.251	.728

	(7)	(8)	(9)	(10)	(11)	(12)
Outcome:	*log: Enlisted Men*					
# Fourty-Eighters	1.732***	0.817***	0.819***	0.802***	0.761***	0.763***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	4,324	4,324	4,324	4,324	4,324	4,324
R-squared	0.441	0.594	0.596	0.605	0.612	0.612
PPS-Statistic		.	.011	.007	1.352	.061
p-val [PPS]		.	.918	0.935	.245	0.805

Notes: (*a*) Columns 1–6 incrementally introduce additional controls. (*b*) The top-panel reports on the main outcome, the share of a town's adult men who enlisted. The bottom-panel reports the log of enlisted men as the outcome. (*c*) Standard errors are clustered at the county-level. *p-values* are in square brackets. *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Robustness Tests & Magnitude Checks

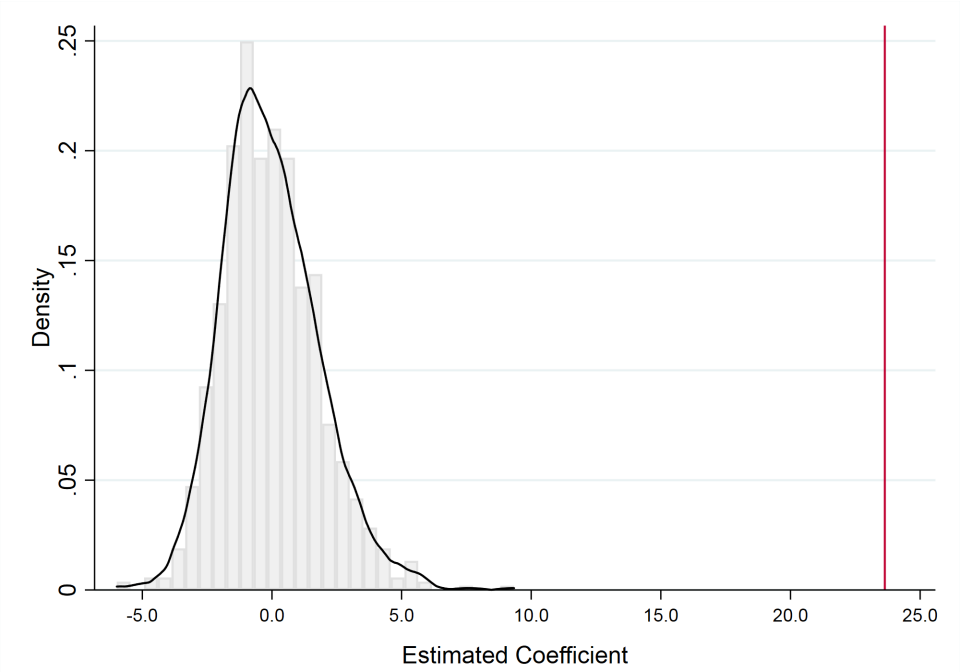
	(1)	(2)	(3)	(4)	(5)	(6)
Outcome:	*Enlisted Men / Adult Male Population* $_{1860}$				in % (0-100)	
# Fourty-Eighters	20.778***	20.778***	20.778***	40.811***	3.005***	21.282***
	[0.000]	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]
# Fourty-Eighters Squared				-7.305**		-1.232***
				[0.043]		[0.000]
Controls-Selection:	Belloni et al.	Adj R-Sq	AIC	all	all	all
Sample					+ big 7	+ big 7
fixed effects:	state	state	state	state	state	state
Observations	4,324	4,324	4,324	4,324	4,331	4,331
R-squared	0.161	0.161	0.161	0.208	0.200	0.210
	(7)	(8)	(9)	(10)	(11)	(12)
Outcome:	*log: Enlisted Men*					
# Fourty-Eighters	0.817***	0.817***	0.817***	2.109***	0.221***	0.896***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
# Fourty-Eighters Squared				-0.482***		-0.045***
				[0.000]		[0.000]
Observations	4,324	4,324	4,324	4,324	4,331	4,331
R-squared	0.594	0.594	0.594	0.613	0.614	0.615

Notes: TBA Standard errors are clustered at the county-level. *p-values* are in square brackets. *** p<0.01, ** p<0.05, * p<0.1.

no independent effect on enlistments. This suggests that the individual *Forty-Eighters* whose biographies were recorded by historians did indeed play a 'special' role in shaping public opinion, consistent with us viewing them as civic leaders. While the 1850 share of Germans on its own is highly predictive of *Forty-Eighters*'location, the sign flips in table 3 once we control for the other measures of recent German arrivals' location choices.

Robustness: While our the estimations and tests presented in Table 3 suggest that our treatment is not strongly correlated with other control variables, we acknowledge that we do not add the controls one-by-one but in blocks. Doing so might cover up some relevant relationships between the treatment and outcome variable that may point to the existence of unobserved confounding variation. To address this concern, we employ different variable selection models that choose the most relevant combination of control variables. Specifically, in table 4 we employ the doubly robust variable selection procedure proposed by Belloni, Chernozhukov, and Hansen (2014) and alternatively the R^2 and *Akaike's information* criteria suggested by Lindsey, Sheather,

Figure 3: Placebo estimations



Notes: The figure shows the distribution of 1,000 coefficients from placebo estimations where we replace the actual 36 *Forty-Eighter* locations with 36 randomly drawn locations. The red line contrasts this distribution with the magnitude of the actual coefficient.

et al. (2010) and Columns 1–3 show that these these alternative approaches to selecting control variables do not make a difference. The visual impression that the coefficient does not change substantially is also backed up by a simple Hausman test: the coefficient is not significantly different from the one with all controls or the set of core controls. We interpret this as evidence in support of our argument that the treatment is as good as randomly assigned.

Given that some towns had one *Forty-Eighters* while others had 2–5, it is natural to ask if the effect of the *Forty-Eighters* was non-linear, by including both T_k as defined in (4) and its square in the regression. Column 4 shows that there is indeed a non-linearity. Pushing on this, we include in columns 5–6 the seven towns with more than nine *Forty-Eighters*: Baltimore (16), Chicago (13), Cincinnati (35), Cleveland (9), Davenport (15), Milwaukee (15), and Philadelphia (20); while still excluding NYC with 123. Column 5 shows that the baseline effect remains highly significant but unsurprisingly shrinks a lot in magnitude when we do this. In column 6, both T_k and T_k^2 are highly significant, with *p-values* well below one percent. However, the marginal effect of one additional

Forty-Eighters does not drop off as rapidly as one may have thought. The coefficient on T_k is 21.28 and the one on its square T_k^2, is -1.232, implying that the linear effect of 3.005 estimated in column 5 applies to a town with about 14 *Forty-Eighters*. The same conclusion arises from comparing the results for the log of enlisted men.

Finally, to rule some spuriously correlated effect, we randomly choose 36 placebo locations that did not host any *Forty-Eighters* and re-estimate baseline equation 3 with this placebo treatment. We repeat this 1,000 times and compare the distribution of the estimated placebo effects to the actual treatment effect. To facilitate this exercise, we abstract from variation in the number of *Forty-Eighters* across locations and simply use a dummy that takes the value one if a location hosted at least one *Forty-Eighters* (or placebo-*Forty-Eighters* respectively). Figure 3 shows the result of this placebo exercise. The placebo distribution is centered around a mean value of -.0389 and the largest estimated coefficient is 9.339. This is in stark contrast with the actual coefficient of 23.6375. This supports our argument that it was indeed the presence of *Forty-Eighters* and not some spurious correlate that increased individuals' probability to enlist for the Civil War.

Voting for the Republican Party: There are anecdotes that the *Forty-Eighters* played an important role in generating support for the Republican Party in German American communities. Earlier German immigrants opposed the Republican Party because many Republican leaders had ties to the nativist *Know-Nothing* movement, which had been intensely hostile to immigrants during the 1850s, stressing the effect of immigration upon American wages.[22] Nevertheless, authors like Thompson and Brown (page 137-8 in Zucker, 1950) claim that the *Forty-Eighters* helped mobilize a critical mass of German-Americans who supported Lincoln's election in 1860. This opinion is echoed in an article by a correspondent for the New York Herald reporting from Springfield, Illinois, on December 9, 1860, : "In Ohio, Illinois, Indiana, Iowa, and Wisconsin, native Republicans now openly acknowledge that their victory was, if not wholly, at least to a great extent, due to the large accessions they received in the most hotly contested sections from the German ranks." Unfortunately, we can only estimate the effect of the *Forty-Eighters* on voting outcomes at the county-level.[23] See Online Appendix D Table 1 The county-level results do suggest a pronounced

[22]The *Know-Nothings* were particularly hostile to German immigrants who one pamphlet stated "were driving 'white people' out of the labor market, and, 'with their garlic sausage, sauerkraut and beer', forced Americans to accept a lower standard of living" (Wittke, 1970, p.183).

[23]We attempted collecting voting outcomes at the *state-level electoral districts* as a different unit of analysis. This is a nice alternative when state-level electoral districts are small. For example, Alsan, Eriksson, and Niemesh (2018) use

effect of the *Forty-Eighters* on republican votes. We cautiously take these estimates as supportive evidence but we caution that the county-level analysis (i) might cover up relevant town-level variation and (ii) cannot achieve as good a balance between treatment and control units.

Mechanisms: We next investigate *how* the *Forty-Eighters* affected mens' willingness to risk their lives in the Civil War. To distinguish these two leadership types, we focus our attention on two specific channels that have been emphasized in the historical narrative surrounding the *Forty-Eighters*: their involvement in (*i*) journalism and in (*ii*) 'grassroots' political organizations, particularly the so-called *Turner Societies*.[24] To establish these mechanisms, we exploit different data sources. To investigate the *Forty-Eighters*' effect on newspapers, we peruse the following three sources: The earliest survey of U.S. Newspapers that post-dates the *Forty-Eighters*' arrival is the first volume of *Rowell's Newspaper Compendium*. We digitized this first volume and located all newspaper listed in it at the town level. It is obviously critical to control for the existence of newspapers before the *Forty-Eighters*' arrival. Fortunately, Kennedy (1852) created a universal survey of the U.S. newspapers as part of the 1850 Census. This was only done once in the 19th century and it is fortunate that it was in 1850 because this gives us a survey of the U.S. newspaper landscape just before the *Forty-Eighters*' arrival. We were also interested in the German-speaking press specifically. For the German-speaking press, we perused Arndt (1965), which includes the full history of the German-American press.[25] From this source we constructed the town-level circulation of German-speaking newspapers and journals in 1850 and in 1869, to mirror the dates of Kennedy (1852) and the first volume of *Rowell's Newspaper Compendium*.[26] Data on Turner Societies stem from the U.S. *Turner Society* foundation which published a yearbook called (Metzner, 1894). We used this publication to code the history of U.S. *Turner Societies*.[27]

Table 5 investigates these mechanisms. For each outcome, we re-run the most conservative specification with all controls, i.e. columns 4 and 8 in table 3. Columns 1–2 show that in a town where a *Forty-Eighter* settled, the likelihood that a *Turner Verein* was founded sometime between

this level of analysis in Massachusetts to study the rise of the Know-Nothing Party in the 1850s. However, it turns out that in most states these districts are in fact larger than counties and , so that nothing can be gained in this way for an analysis of many states. For more details, see Appendix A.5.

[24] *Turner Societies* were American-German gymnastic clubs whose members were not only athletic, but also political. The German *Turner* movement spilled over to the United States with the arrival of the *Forty-Eighters*. The first American *Turnverein* was founded in 1849 (Metzner, 1894).

[25] Arndt lists all German-language newspapers and political journals including the dates of their first and last issue.

[26] See Appendix A.7 for additional details.

[27] See Appendix A.6 for details.

Table 5: Effect of *Forty-Eighters* on Turner Society Foundings and Newspapers

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome:	*D(Turner Soc. Found)*		*# German Newspapers* $_{1869}$		*# U.S. Newspapers* $_{1869}$	
# Fourty-Eighters	16.723**	13.778**	0.263***	0.225***	0.103	0.097
	[0.019]	[0.036]	[0.000]	[0.000]	[0.248]	[0.307]
Lagged Outcome $_{1850}$			1.033***	1.031***	0.992***	0.968***
			[0.000]	[0.000]	[0.000]	[0.000]
Controls #	-	all	-	all	-	all
fixed effects:	state	state	state	state	state	state
Observations	4,324	4,324	4,324	4,324	4,324	4,324
R-squared	0.342	0.699	0.827	0.860	0.677	0.793

Notes: TBA

1849–1861 was sixteen percent larger. Columns 3–4 show that in a town where a *Forty-Eighter* settled, the number of German-speaking newspapers increased by around 0.3. Given the *Forty-Eighters*' well-documented penchant for founding newspapers (in addition to becoming editors of existing ones), this number seems eminently reasonable. We acknowledge that the newspaper effect does not have to proxy for political involvement per se. Part of the estimated effect merely reflects the fact that publishing became many *Forty-Eighters*' occupational choice. It is noteworthy in this regard that German newspapers are also the only outcome one of our outcomes that is significantly impacted by the *1849–1852 All German Arrivals* variable. This is quite natural since newspaper circulation has both a demand and a supply side and even if the other German arrivals were politically inactive, they still provided a new readership for German newspapers.[28] Interestingly, the estimated effect on the English-language press in columns 5–6 is much smaller and consistently insignificant. This is consistent with the historical record, which suggests that while *Forty-Eighters* frequently worked for English-language newspapers, they were not likely to found new ones (Wittke, 1973).

[28] This fact is consistent with the argument in (Tóth, 2014, p.205) that "[The *Forty-Eighters*] played key roles in shaping German American public opinion. Newspapers proliferated, however, primarily, because along with new authors came a new readership. The number of German American periodicals rose not only because suddenly the number of Germans grew who were willing to edit and publish them but also because the hundreds of thousands of immigrants arriving at this time greatly increased an already existing demand for German-language newspapers. The new authors came at an opportune moment: just about the time when their potential audience was about to increase significantly." The evidence in Panel C suggests that the arrival of the *Forty-Eighters* was indeed a supply-shock to the German-American newspaper landscape and was separate from the simultaneous demand shock from the arrival of many more German immigrants at the same time.

Results by Ethnic Group: We now investigate *whom* the *Forty-Eighters* influenced to enlist in the Union Army. It seems likely that the *Forty-Eighters*' effect was most concentrated on German-American communities. Nonetheless, it is also clear that the *Forty-Eighters* were not contented with limiting their influence to German-American communities: They involved themselves into the broader political movements of the time, in particular in the Republican party and the broader American anti-slavery movement (Curti, 1949; Zucker, 1950; Wittke, 1970; Baron, 2012). Decomposing the effect of the *Forty-Eighters* by immigrant group is not straightforward because the Union army enlistment data contains no information about a soldier's country of origin or birth.

We therefore used the full 1860 U.S. Census (where we observe country of birth) to train a machine learning algorithm to predict men's country of origin. See Online Appendix C.1 for a detailed description of the machine learning algorithm. We then apply this algorithm to the Union army data to generate Army enlistments by town for the big four immigrant groups (German, Irish, Italian and Scandinavian) as well as Native Americans as residual category. We then divide the predicted group-specific enlistment numbers by a town's group-specific adult male population, which we glean from the 1860 U.S. Census.

We end up with just short of 100,000 Scandinavians and over 300,000 Germans and Irish individuals respectively. This resembles the observation that most towns have some Irish and German populations in the 1860 Census while we observe significantly less towns with native Scandinavians. Finally, we have only got about 1,000 soldiers that end up being coded as Italians and less than 200 towns have Italian populations in the 1860 Census.

Table 6 reports the results of this exercise. The top panel includes only the core controls, the bottom panel includes all controls. In addition we add the log of the ancestry-group's male adult population as an important new control. Adding all controls generally has a bigger effect on magnitudes with the ancestry-specific enlistment outcomes, than with any of the other outcomes reported, though the overall patterns across groups are unaffected by the choice controls. We limit ourselves to reporting the log results because the machine learning predictions generate too much noise in the per capita estimates where the denominator is also ancestry-specific. The main observation in Table 6 is a clear gradient: *Forty-Eighters* clearly had their biggest effect on German-Americans. They had their second-biggest effect the two large English-speaking groups: Native and Irish (both of which were present in more towns than Germans). The effect is smaller yet for

Table 6: Decomposing the Effect on Enlistments by Ancestry Group

	(1) *Germans*	(2) *Native*	(3) *Irish*	(4) *Scandin.*	(5) *Italian*
# Fourty-Eighters	0.952***	0.721***	0.720***	0.584***	0.531*
	[0.000]	[0.000]	[0.000]	[0.003]	[0.050]
Controls #	core	core	core	core	core
Observations	3,737	4,281	4,050	851	192
R-squared	0.590	0.645	0.591	0.538	0.694
	(6) *Germans*	(7) *Native*	(8) *Irish*	(9) *Scandin.*	(10) *Italian*
# Fourty-Eighters	0.850***	0.607***	0.575***	0.397**	0.381
	[0.000]	[0.000]	[0.003]	[0.028]	[0.150]
Controls #	all	all	all	all	all
Observations	3,737	4,281	4,050	851	192
R-squared	0.609	0.665	0.614	0.591	0.745

Notes: TBA

the Scandinavian men, and smallest (and least significant) for Italian men. The effects get smaller when we include all controls, but the relative magnitudes, and therefore the qualitative insight, remain stable.

One concern is that the machine learning algorithm is trained on *birthplaces* of men in the Census. This implies that in the training data-set, second-generation German immigrants (i.e. the U.S.-born children of German immigrants) are coded as American, which can blur the line between the two groups. To address this, we re-programmed the machine learning algorithm to re-label likely second-generation immigrants as being of their immigrant ancestry group. Unsurprisingly, this increased the number of men of all immigrant groups and reduced the number of Native-categorized men. However, it had no appreciable effect on the results reported in Table 6, suggesting they are not biased by training an algorithm to predict ancestry from birthplace data.

Convictions in Battle: 149 of the *Forty-Eighters* actually enlisted in the Civil War. Reference to the leadership literature suggests that conviction, resoluteness, and a 'sense of direction', combined with a willingness to 'lead by sacrifice' and 'lead by example' create persuasive leaders (Bolton et al., 2012; Dewan and Myatt, 2008; Hermalin, 1998). One may therefore expect the effect

of 'fighting' *Forty-Eighters* on enlistment to be larger. We test this hypothesis in Table 7. The evidence is mixed at best. Column 1, which focuses on per capita enlistments, suggests that 'fighting' *Forty-Eighters* had a lower effect. Column 2 does suggest a larger effect when the log of enlistments is considered but this is only marginally significant. A 'naive' prediction of 'leading by sacrifice' is probably simply off the mark in our data. The primary driver of enlistment among the *Forty-Eighters* was probably military experience and not resoluteness, given that most would have been in their late forties or early fifties in 1861, and old age by the standards of the time, and certainly old to take up arms for the first time.[29] In fact, when we break the effect on Turner Societies–our best proxy for local political involvement–by 'fighting' vs 'non-fighting' types, we find that it was those that did not enlist who had the biggest effect on the Turner Societies (column 3), which themselves were active drivers of Union Army enlistment (Levine, 1980, p.256). In combination, this evidence is most suggestive of two different leadership styles among the *Forty-Eighters*. Digging further reveals an interesting heterogeneity. While the basic fighting unit in the Civil War was a company of 100 men (led by a *captain*), the basic unit of raising the army was a regiment of 10 companies (led by a *colonel*). Regiments were typically raised locally, and they were in almost all cases led by whoever the locals designated as their leader, and not by an officer from the regular standing army. Stories abound of regiments that were led by a colonel who was the town mayor or the town's doctor or the town school principal. We know the enlistment rank of each soldier in our data, and we can identify 29 *Forty-Eighters* who enlisted as colonels, i.e. as the head of their regiment.[30] When we do this in column 4 and 5, we get a much cleaner picture: the 'fighting' *Forty-Eighters* who were at the head of successfully raising a local regiments indeed had the highest impact on local enlistment. By contrast, the other enlisted *Forty-Eighters*, some of whom enlisted in one of the 29 regiments led by a *Forty-Eighter*, had the smallest effect on enlistment.

All results reported so far suggest that the *Forty-Eighters* by their words and actions persuaded men to risk their lives in the fight against slavery. We now turn to asking if the *Forty-Eighters* also had a discernible effect on men's loyalty to the Army once enlisted. The obvious way to

[29] While we have no systematic data on their military training in Germany, we find a strong correlation between having been involved in military altercations during the 1848 revolution and enlisting in the Civil War.

[30] The two highest-ranking soldiers among the *Forty-Eighters*, Albin Schoepf, and Carl Schurz, were *brigadier generals*, lower-ranked generals that commanded collections of regiments called brigades.

Table 7: By *Forty-Eighters* Type

Outcome:	(1) *Enlisted Men / Pop*	(2) *log: Enlisted Men*	(3) *D(Turner Soc.)*	(4) *Enlisted Men / Pop*	(5) *log: Enlisted Men*	(6) *D(Turner Soc.)*
# 48ers that didn't enlist	22.983***	0.610**	15.544**	23.144***	0.814***	15.332**
	[0.000]	[0.019]	[0.031]	[0.000]	[0.001]	[0.031]
# 48ers that enlisted	17.556	1.222*	1.188			
	[0.159]	[0.091]	[0.927]			
# 48ers that raised regiments				48.063***	3.010***	-0.117
				[0.000]	[0.000]	[0.788]
# 48ers that didn't raise regiments				1.015	0.636	1.503
				[0.942]	[0.425]	[0.935]
Controls #	core	core	all	core	core	all
fixed effects:	state	state	state	state	state	state
Observations	4,324	4,324	4,324	4,324	4,324	4,324
R-squared	0.156	0.606	0.127	0.182	0.588	0.131

Notes: (*a*) TBA (*b*) Standard errors are clustered at the county-level. *p-values* are in square brackets. *** p<0.01, ** p<0.05, * p<0.1.

measure soldiers' loyalty to their convictions is to follow Costa and Kahn (2003) and look at their propensity to desert.

We focus on the 1.6 million Union Army soldiers who neither died nor were discharged from wounds, and ask whether the presence of one of the 149 'fighting' *Forty-Eighters* in their military units affected their likelihood of desertion. The alternatives to desertion is essentially to see out one's enlistment terms upon which a soldier was '*mustered out*.'[31]

The basic fighting unit in the Army was a 100-man company; e.g. Costa and Kahn (2003) used a sample of 303 randomly drawn companies, corresponding to just over 30,000 men. (McPherson, 2003, p.85) surveys the literature on combat motivation and also argues that "primary group cohesion" in the Union Army was to be found at the level of the company, not the regiment. We split the *Forty-Eighters* into three groups: *Colonels* (leaders of regiments), *Captains* (leaders of companies), and others (mostly *privates*, as well as some lower-ranking officers like *lieutenants*, *corporals*, and *sergeants*). Let soldier i belong to company c and regiment r. We label the three treatments as *Forty-Eighters*$_{ir}$ for a *Forty-Eighters colonel*, *Forty-Eighters*$_{ic}$ for a *Forty-Eighters captain*,

[31] In total, 7.5 percent of all soldiers deserted, amounting to a total of 75,365.

and *Forty-Eighters*$_{ij}$ for a *Forty-Eighters* soldier who fought in the same company. It is important to note that the 149 'fighting' *Forty-Eighters* barely overlapped regiments in our data, which is an important pre-requisite for cleanly separating the effects of the three treatments above. Precisely, the 149 were spread over 88 regiments, but there was not a single company with more than one *Forty-Eighter*.

We then regress soldier i's loyalty in the Union Army on his 'exposure' to the *Forty-Eighters* as well as a range of individual and company-level controls

$$\text{D(Desert)}_i = \beta_{ir}\textit{Forty-Eighters}_{ir} + \beta_{ic}\textit{Forty-Eighters}_{ic} + \beta_{ij}\textit{Forty-Eighters}_{ij} + +\alpha_i X_i + \alpha_c X_c + \epsilon_i, \quad (5)$$

The main individual characteristic X_i we observe is a soldier's rank, which we code as two dummies for officer and private; the omitted category includes all other ranks between the two. The second important set of individual characteristic X_i is soldiers' ancestry as predicted by the machine learning algorithm described before. Company controls X_c is the company's final share of dead soldiers and soldiers who were wounded badly enough to be discharged. We also calculated the same measures at the larger regimental unit, and found regiment characteristics to always have the same sign and similar magnitudes as X_c, but to be generally less significant. This is consistent with a general view that the company was the basic fighting unit (McPherson, 2003; Costa and Kahn, 2003).

Table 8 presents the results of estimating equation (5). In column 1, we only include a soldier's rank, with officers being 8% less likely to desert than privates ($3.72+5.14$). In column 2, we include X_c. As expected, seeing more soldiers' in one's own fighting unit be killed or severely injured lowered morale and increased the likelihood of desertion. Column 3 adds individual indicators for inferred ancestry. All immigrant groups were more likely to desert than Native men, but amongst the immigrant groups, Germans were the least likely to desert. This is consistent with other accounts: For example, Costa and Kahn (2003) also find that Germans were less likely to desert than other immigrants. Interestingly, they argue this is because "Germans who fled the revolutions of 1848 were more likely than Irish or British immigrants who migrated for economic reasons to view the United States as the best hope for the survival of a form of republican government." In column 4, we first introduce only *Forty-Eighters*$_{ir}$, with the rationale that at the point of enlistment,

Table 8: Desertion of Individual Soldiers

	(1)	(2)	(3)	(4)	(5)
Outcome:			D(Desertion)		
Regiment Led by Fourty-Eighter Colonel				-0.39	-0.12
				[0.3895]	[0.7971]
Company Led by Fourty-Eighter Captain					-2.12**
					[0.0194]
Company includes Fourty-Eighter Soldier					-1.51*
					[0.0793]
D(Officer)	-3.72***	-4.27***	-4.25***	-4.24***	-4.24***
	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]
D(Private)	5.14***	4.59***	4.49***	4.49***	4.49***
	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]
Company-Share Discharged		0.38***	0.37***	0.37***	0.37***
		[0.0000]	[0.0000]	[0.0000]	[0.0000]
Company-Share Dead		0.02	0.03**	0.03**	0.03*
		[0.1018]	[0.0415]	[0.0493]	[0.0508]
German Soldier			1.40***	1.43***	1.44***
			[0.0000]	[0.0000]	[0.0000]
Scandinavian Soldier			2.94***	2.95***	2.95***
			[0.0000]	[0.0000]	[0.0000]
Italian Soldier			4.17***	4.19***	4.19***
			[0.0000]	[0.0000]	[0.0000]
Irish Soldier			4.35***	4.36***	4.36***
			[0.0000]	[0.0000]	[0.0000]
Observations	1,632,782	1,632,782	1,632,782	1,632,782	1,632,782
R-squared	0.006	0.026	0.031	0.031	0.031

Notes: In the Union Army we can directly locate 1.005 millions soldiers, roughly half the entire number of men who served Union Army, in their towns of residence.

this was where the most pronounced effect was. However, having a *Forty-Eighter* as the leader of a regiment turns out to not significantly reduce desertion, although it is at least sign-consistent. In column 5, we introduce all three measures *Forty-Eighters*$_{ir}$, *Forty-Eighters*$_{ic}$, and *Forty-Eighters*$_{ij}$. Consistent with the literature on combat motivation, having a *Forty-Eighter* be the leader of one's 'basic fighting unit' mattered the most. Interestingly, even just having a *Forty-Eighter* as a soldier in one's company mattered more than having one a regimental leader.

6 Discussion & Conclusion

A well-established theoretical literature shows the important role that 'leaders' play in the formation and equilibrium selection of social norms, beliefs and convictions. However, while there

is a rich empirical literature documenting the importance of leadership inside organizations, e.g. companies, there is practically no empirical evidence on the importance of 'civic leaders' in society at large. In this paper fills the gap and estimates the effect of civic leadership on individual beliefs and social norms as a whole.

The absence of empirical evidence on civic leadership is likely related to the difficulty to (i) define civic leaders and (ii) to measure their effect on a meaningful and consistently measured outcome. We focus on an empirical setting that addresses both concerns: We study civic leaders who emerged from a well-defined group of U.S. immigrants who came as political refugees from the failed German Revolutions of 1848-49. These so-called *Forty-Eighters* demonstrated their leadership abilities by actively participating in the German revolutions but they did not receive credit for their effort in the U.S. If anything, Germans from earlier immigration waves considered them fanatics and dreamers. After arriving as penniless refugees, the *Forty-Eighters* would go off to whatever jobs they were assigned by the Labor Bureaus in their port of arrival. In other words, they were quasi-randomly allocation to destination regions and had to build their network from scratch. They did this successfully and soon again occupied a central position in their new communities which helped them promote their political convictions: liberty, democracy and national unity. These beliefs were defined by the aspiration of the German Revolutions, but they mapped consistently into the political battle over abolition, free soil, and secession in the U.S.

Our main outcome is voluntary enlistment for the Union Army in the U.S. Civil War. Given the enormously high death toll during the Civil War, Union Army enlistments are a powerful measure of social convictions. Our empirical analysis then asks what effect the *Forty-Eighters* had on enlistments in their local communities. Using a number of identification strategies, we show that U.S. towns where *Forty-Eighters* settled in the 1850s had sizeably larger enlistments for the Union Army .

To better understand the 'cultural gradient' of the *Forty-Eighters* influence on social norms, we use machine learning techniques to infer soldiers' nationality. We find that the *Forty-Eighters* had their biggest impact on German-Americans' enlistment rates in the Civil War, their second-biggest impact on English-language groups (Native and Irish), and their smallest (though still significant) effect on Scandinavian and Italian men.

We find evidence of two distinct leadership-styles amongst the *Forty-Eighters*: those who them-

selves enlisted had a big effect if they were successful in raising their own regiments. But those who did not fight were almost as influential, with the evidence suggesting they were the more influential leaders when it came to *grass-roots* local organization.

In summary, this paper provides the first systematic empirical investigation of the importance of 'civic leadership' in shaping social norms, beliefs and convictions. It does so using a well-defined set of 'civic leaders', a clear mapping between their objectives and society's response, and an outcome that is individually costly and thus a meaningful reflection of personal beliefs and norms.

References

Acemoglu, D. and M. O. Jackson (2015). History, expectations, and leadership in the evolution of social norms. *Review of Economic Studies 82*(2), 423–456.

Akerlof, R. and R. Holden (2016). Movers and shakers. *The Quarterly Journal of Economics 131*(4), 1849–1874.

Alsan, M., K. Eriksson, and G. T. Niemesh (2018). The causes and consequences of nativism in the united states: Evidence from the know-nothing party.

Arndt, K. J. R. (1965). *German-American newspapers and periodicals, 1732-1955: history and bibliography*, Volume 1. Johnson Reprint Corp.

Bala, V. and S. Goyal (2000). A noncooperative model of network formation. *Econometrica 68*(5), 1181–1229.

Barney, R. K. (1982). Knights of cause and exercise: German forty-eighters and turnvereine in the united states during the antebellum period. *Canadian Journal of History of Sport 13*(2), 62–79.

Baron, F. (2012). Abraham lincoln and the german immigrants: Turners and forty-eighters.

Belloni, A., V. Chernozhukov, and C. Hansen (2014). High-dimensional methods and inference on structural and treatment effects. *Journal of Economic Perspectives 28*(2), 29–50.

Bertrand, M. and A. Schoar (2003). Managing with style: The effect of managers on firm policies. *Quarterly Journal of Economics 118*(4).

Bolton, P., M. K. Brunnermeier, and L. Veldkamp (2012). Leadership, coordination, and corporate culture. *Review of Economic Studies 80*(2), 512–537.

Borjas, G. J. and K. B. Doran (2012). The collapse of the soviet union and the productivity of american mathematicians. *The Quarterly Journal of Economics 1143*, 1203.

Börnstein, H. (1881). *Fünfundsiebzig Jahre in der Alten und Neuen Welt. Memoiren eines Unbedeutenden*, Volume 2. Leipzig: Otto Wigand.

Bretting, A. (1981). *Soziale probleme deutscher einwanderer in New York city: 1800-1860*, Volume 2. Steiner-Verlag Wiesbaden.

Calvó-Armengol, A., J. Martí, and A. Prat (2015). Communication and influence. *Theoretical Economics 10*(2), 649–690.

Clubb, J. M., W. H. Flanigan, and N. H. Zingale (1987). Electoral data for counties in the united states: Presidential and congressional races, 1840-1972.

Costa, D. L. and M. E. Kahn (2003). Cowards and Heroes: Group Loyalty in the American Civil War. *The Quarterly Journal of Economics 118*(2), 519–548.

Curti, M. (1949). The impact of the revolutions of 1848 on american thought. *Proceedings of the American Philosophical Society 93*(3), 209–215.

DellaVigna, S. and M. Gentzkow (2010). Persuasion: empirical evidence. *Annu. Rev. Econ. 2*(1), 643–669.

Dewan, T. and D. Myatt (2008). The qualities of leadership: Direction, communication, and obfuscation. *American Political Science Review 102*(3), 351–368.

Feigenbaum, J. J. (2016). A machine learning approach to census record linking. Technical report, Working Paper.

Fishman, M. J. (2009). Population of counties, towns, and cities in the united states, 1850 and 1860. icpsr09424-v2. *Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor]*, 02–17.

Friedberg, R. M. and J. Hunt (1995). The impact of Immigrants on Host Country Wages, Employment and Growth. *The Journal of Economic Perspectives*, 23–44.

Galeotti, A. and S. Goyal (2010). The law of the few. *The American Economic Review 100*(4), 1468–1492.

Gentzkow, M., E. L. Glaeser, and C. Goldin (2006). The Rise of the Fourth Estate. How Newspapers Became Informative and Why It Mattered. In *Corruption and Reform: Lessons from America's Economic History*, NBER Chapters, pp. 187–230. National Bureau of Economic Research, Inc.

Gentzkow, M., J. M. Shapiro, and M. Sinkinson (2011). The Effect of Newspaper Entry and Exit on Electoral Politics. *American Economic Review 101*(7), 2980–3018.

Hacker, J. D. (2011). A census-based count of the civil war dead. *Civil War History 57*(4), 307–348.

Haines, M. R. (2010). Inter-university consortium for political and social research. historical, demographic, economic, and social data: The united states, 1790–2002. *Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor]*, 05–21.

Hall, A. B., C. Huff, and S. Kuriwaki (2017). When wealth encourages individuals to fight: Evidence from the american civil war.

Hermalin, B. E. (1998). Toward an economic theory of leadership: Leading by example. *American Economic Review*, 1188–1206.

Hofmann, A. R. (1995). The turners' loyalty for their new home country: Their engagement in the american civil war. *The International Journal of the History of Sport 12*(3), 153–168.

Hornung, E. (2014). Immigration and the Diffusion of Technology: The Huguenot Diaspora in Prussia. *The American Economic Review 104*(1), 84–122.

Imbens, G. W. and D. B. Rubin (2015). *Causal Inference for Statistics, Social, and Biomedical Sciences: An Introduction*. Cambridge University Press.

Jack, B. K. and M. P. Recalde (2015). Leadership and the voluntary provision of public goods: Field evidence from bolivia. *Journal of Public Economics 122*, 80–93.

Jackson, M. O. and A. Wolinsky (1996). A strategic model of social and economic networks. *Journal of economic theory 71*(1), 44–74.

Jones, B. F. and B. A. Olken (2005). Do leaders matter? national leadership and growth since world war ii. *The Quarterly Journal of Economics 120*(3), 835–864.

Jung, J. H. (2015). *Digitale Briefedition Alfred Escher, Launch Juli 2015 (laufend aktualisiert)*. Zürich: Alfred Escher-Stiftung.

Kennedy, J. G. (1852). Catalogue of the newspapers and periodicals published in the united states, 1850. *John Livingston's Law Register for 1852*.

Levine, B. (1980). *The Spirit of 1848*. University of Illinois Press.

Lindsey, C., S. Sheather, et al. (2010). Variable selection in linear regression. *Stata Journal 10*(4), 650.

Loeper, A., J. Steiner, and C. Stewart (2014). Influential opinion leaders. *The Economic Journal 124*(581), 1147–1167.

McPherson, J. M. (1997). *For Cause and Comrades: Why Men Fought in the Civil War*. Oxford University Press.

McPherson, J. M. (2003). *Battle Cry of Freedom: The Civil War Era*. Oxford University Press.

Metzner, H. (1890—1894). *Jahrbücher der Deutsch-Amerikanischen Turnerei*. Heinrich Metzner, New York.

Moser, P., A. Voena, and F. Waldinger (2014). German jewish émigrés and us invention. *The American Economic Review 104*(10), 3222–3255.

Murphy, K. M. and A. Shleifer (2004, May). Persuasion in politics. *American Economic Review 94*(2), 435–439.

Nagel, D. (2012a). *Von republikanischen Deutschen zu deutsch-amerikanischen Republikanern: ein Beitrag zum Identitätswandel der deutschen Achtundvierziger in den Vereinigten Staaten 1850-1861*, Volume 33. Röhrig Universitätsverlag.

Nagel, D. (2012b). *Von republikanischen Deutschen zu deutsch-amerikanischen Republikanern: ein Beitrag zum Identitätswandel der deutschen Achtundvierziger in den Vereinigten Staaten 1850-1861*. Mannheimer historische Forschungen. Röhrig Universitätsverlag.

Nunn, N., N. Qian, and S. Sequeira (2017). Migrants and the making of america: The short and long run effects of immigration during the age of mass migration.

Pei, Z., J.-S. Pischke, and H. Schwandt (2017, March). Poorly measured confounders are more useful on the left than on the right. Working Paper 23232, National Bureau of Economic Research.

Raab, H. (1998). Revolutionare in baden 1848/49. *Biographisches Inventar fur die Quellen im Generallandesarchiv Karlsruhe und im Staatsarchiv Freiburg (Veroffentlichungen der Staatl. Archiwerwaltung Baden-W., 48), Stuttgart: Kohlhammer*.

Reiter, H. (1988). Politisches asyl im 19 jahrhundert: die deutschen politischen fluechtlinge des vormaerz und der revolution von 184849 in europa und den usa.

Reiter, H. (1992). *Politisches Asyl im 19. Jahrhundert: Die deutschen politischen Flüchtlinge des Vormärz und der Revolution von 1848/49 in Europa und den USA*. Berlin: Duncker & Humblot.

Sariyar, M. and A. Borg (2010). The recordlinkage package: Detecting errors in data. *R journal 2*(2).

Spolaore, E. and R. Wacziarg (2009). The diffusion of development. *The Quarterly Journal of Economics 124*(2), 469–529.

Tóth, H. (2014). *An Exiled Generation: German and Hungarian Refugees of Revolution, 1848–1871*. Cambridge University Press.

Wasi, N., A. Flaaen, et al. (2015). Record linkage using stata: Pre-processing, linking and reviewing utilities. *Stata Journal 15*(3), 672–697.

Wittke, C. F. (1970). *Refugees of Revolution: The German Forty-Eighters in America*. Greenwood Press.

Wittke, C. F. (1973). *The German-language press in America*. Number 47. Ardent Media.

Wust, K. (1984). *Guardian on the Hudson: The German Society of the City of New York, 1784-1984*. The Society.

Young, H. P. (2009). Innovation diffusion in heterogeneous populations: Contagion, social influence, and social learning. *The American Economic Review 99*(5), 1899–1924.

Zucker, A. E. (1950). *The Forty-Eighters: Political Refugees of the German Revolution of 1848*. Columbia University Press.

Appendix A Data

Appendix A.1 The *Forty-Eighters*

We started with the 318 accounts listed in the explicitly biographical book by Zucker (1950). We complement this source with names from Wittke's (1970)'s book on the *Forty-Eighters*' influence in U.S. politics which includes over 400 individual names. Raab's (1998) index of revolutionaries in the German state of Baden gives us another 43 names. Finally, Baron's (2012) book on German immigrants' support for Lincoln includes a name index with over 300 individual *Forty-Eighters*. All three sources overlap in large part with Zucker (1950) but each also contained some new names. In total, we end up with a list of around 500 individuals and we use *Ancestry.com* to follow these individuals over their life and code their locations in Germany and the United States. We can locate 493 in the towns they settled in. In Online Appendix B we list in abbreviated form the biographies of the *Forty-Eighters*.

Appendix A.2 The Fishman (2009) Town Data

We peruse *Population of Counties, Towns, and Cities in the United States, 1850 and 1860* (Fishman, 2009). This data was coded up by Fishman (2009) as part of Bob Fogel's *Early Indicators Project*. In total, it contains 11,964 towns (excluding the South and West). However, only 7,294 of these towns are reported in the Census in both 1850 and 1860. The ones that are only reported in one of the two years are typically small towns that had disappeared by 1860 or towns that had been recently founded in 1860. We thus only retain the 7,294 towns that are reported in both years. Another important consideration to us is data quality.

Appendix A.3 Civil War Volunteering

The reports of the *Adjutant General's Office* reported each state's enlistment 'registers', which list soldier names, their residences, enlistment places, and enlistment dates. The same office published information on the 'rosters' of its regiments and companies. We thank Yannick Dupraz and Andreas Ferrara for generous data-sharing and joint efforts in collecting the Civil War soldier and regiments data. From these reports we have data on over 2 million soldiers, the entire Union Army. For each soldier we know their their enlistment date, their regiment and company, and volunteering status (95%). For the majority of individuals we also know their place of residence (city and county). For over half of these we were able to directly locate them in a town in our dataset. For 200,000 we could locate them only in a county and then assigned them to a county's towns according to population-shares. For the remainder we did not have location information, for the most part because certain states rarely reported it. But we always had regiment information for every soldier. Based on the over 1 million soldiers where we had location information we assigned each of 2,328 regiments a distribution of towns from which it drew men. (The average regiment drew men from 8 towns). We then allocated the men with no location information into space based on this regiment-distribution (in corresponding fractions). Because locating enlistee in a town purely based on their regiments known distribution of residence is far less good than directly observing a soldier's location, we always weight regressions by the share of a towns' enlisted soldiers that directly report the hometown. For a substantial subset of towns that share is zero so that these observations receive zero weight in the regressions. We therefore further prune our base sample to include only the 4,338 towns who are reported as soldiers' home towns in the data. Table 9 shows how these towns are distributed across states.

Table 9: Sample of Towns

#	States	#Towns	in %	#	States	#Towns	in %
1	Delaware	4	0.09	10	Missouri	63	1.45
2	Illinois	309	7.12	11	New Hampshire	35	0.81
3	Indiana	631	14.55	12	New Jersey	36	0.83
4	Iowa	134	3.09	13	New York	678	15.63
5	Kentucky	7	0.16	14	Ohio	836	19.27
6	Maine	46	1.06	15	Pennsylvania	805	18.56
7	Maryland	3	0.07	16	Rhode Island	10	0.23
8	Massachusetts	46	1.06	17	Vermont	45	1.04
9	Michigan	422	9.73	18	Wisconsin	228	5.26

Notes: Total number of Towns: 4,338

Appendix A.4 Historical County and City Level Controls for Initial Conditions and 1850–1860 Changes

At the city level we only have population counts by race and gender, from Fishman (2009). We thank Michael Haines for sharing his cleaned version of the 1850 and 1860 town-level data.

1850 County-Level Controls are from the *Historical, Demographic, Economic, and Social Data: The United States, 1790-2002* (Haines, 2010).

- Economic: Urbanization, Manufacturing employment and output, farmland's share of area, farm equipment value
- Geography: River and rail access, longitude, latitude
- Demographics: population size, foreign born, German-born, # churches
- Outcome-specific: 1848 Republican vote share, baseline newspaper distribution

Appendix A.5 Political Landscape

The political landscape of the U.S. was every-shifting during the 1840s and 1850s: The *Liberty Party* had emerged as an abolitionist party in 1840. In 1848, the majority of the *Liberty Party* formed a grand coalition with other factions into the *Free Soil Party*. The *Free Soil Party* was staunchly anti-slavery but supported a broader platform that included supporting a homesteading on the frontier and the transcontinental railroad with a terminus in Chicago as opposed to St. Louis. Finally, in 1854 the *Free Soil Party* formed a grand coalition with other factions into the *Republican Party*. The *Republican Party* did not become really influential until the 1856 presidential election. Table 11 reports which parties ran in each of the presidential elections between 1840 and 1872. Historical presidential and congressional election data is readily available at the county level from the *Electoral Data for Counties in the United States: Presidential and Congressional Races, 1840-1972* (Clubb, Flanigan, and Zingale, 1987).

We attempted collecting voting outcomes at the *state-level electoral districts* as a different unit of analysis, but this proved futile. One downside is that the data availability and quality varies a

Table 10: Metzler's Map for Immigrants



Notes: This depicts the second edition of *Metzler's Auswanderer Karte*, published in 1853.

Table 11: Changing Political Landscape in the 1850s United States

Years:	1840	1844	1848	1852	1856	1860	1864	1868	1872
American					X				
Constitutional Union						X			
Democrat	X	X	X	X	X	X	X	X	X
Freesoil			X	X					
Liberty		X							
Republican					X	X	X	X	X
Whig	X	X	X	X					

Note: The columns represent presidential elections. Listed in the rows are all parties listed in the ICPSR voting data in this timeframe. An 'X' denotes that a party was on the ballot in a presidential election. The Liberty Party merged into the Free-Soil Party. The anti-slavery members of the American Party joined the Republican Party after 1858, the pro-slavery wing supported the Constitutional Union Party.

lot by state. In some state we can obtain vote margins, in others the best we can get is a dummy variable for the party affiliation of the winner. A second downside is that in the larger states state-level electoral districts are not even finer than counties so that we cannot even improve on the county-data. Illinois for example had great historical voting data but has 61 electoral districts as opposed to its 96 counties, so there is no point trying to collect this data.

We report some county-level results on the effect on the *Forty-Eighters*' effect on voting for the Republican Party inside Online Appendix D

Appendix A.6 *Turner Societies*

German immigrants had a strong sense for their cultural heritage and social organizations as they knew them from home were one way to preserve this heritage. These clubs included card clubs, music societies, sharpshooter organizations, library associations, and so-called *Turnvereine* ('Turner Societies'). The latter were probably the most prominent kind of social clubs with many *Forty-Eighters* being members if not their founders. One of the first *Turnvereine* was founded in Cincinnati in 1849 by Friedrich Heckler, a prominent *Forty-Eighter* who had led the revolution in the German state of Baden (Barney, 1982). Subsequently, more Turner Societies were founded across the entire U.S., thus creating a social network with substantial political leverage.

The origin of the Turner Society goes back to Friedrich Ludwig Jahn—sometimes referred to as *Turnvater* Jahn—who defined gymnastic principles for physical fitness. He opened a first outdoor gymnasium (*Turnplatz*) in Berlin-Hasenheide in 1811 and the Turner movement spread quickly to other locations in Germany. What sounds like a leisure movement focussed on athletics was in reality highly political. Jahn was a patriot who believed that physical education would raise young gymnasts physical and moral powers and their sense for national identity. He was hoping that this would prepare them for military service and the liberation of the German lands from Napoleon and France. But Jahn was also a liberal who dreamt of overthrowing the feudal order of serfdom and reorganizing Germany into a unified nation state, a republic. While the Prussian authorities supported the first purpose, they were less impressed with the nationalist movement and banned Turnen between 1819-1842. After the ban was lifted, Turner societies became centres of political discussions and activities and it is not surprising that they were the breeding ground for the revolution with many *Forty-Eighters* being members of the Turner association.

The *Forty-Eighters* established the Turner movement in the U.S. and the Turner network that linked a significant number of Germans across the U.S. helped them spread their liberalist ideals. Among their main goals in the United States was to fight American nativism and to abolish slavery. Consequently, most Turners were active supporters of the newly founded Republican Party during the 1850s and 60s. Among others, they helped protecting anti-slavery activists during public speeches; Turners were Lincoln's bodyguards for his first inauguration (Zucker, 1950; Baron, 2012) and when the Civil War started in 1861, they formed special "Turner Regiments" (Hofmann, 1995, p.158) and Wittke (1970, 225) estimates that 60-80 percent of the Turners enlisted for the Civil War. We describe the data on the *Turner Vereine* in Appendix A.6.

Appendix A.7 Newspapers

For the German-speaking press, we separately coded up the full history of the German-American press recorded in Arndt (1965).[32]

Rowell's books have been entirely digitized and are available on the Library of Congress' website.[33] The first of Rowell's books was published for 1869. We found one earlier comparably universal survey of the U.S. newspapers which Kennedy (1852) had published as part of the 1850 Census. Describe what we did.

Our individual biographies show that a significant number of *Forty-Eighters* had a journalistic background and either took over editorial positions in existing U.S. newspapers or started their own outlets. Clearly, this was a powerful way to influence the equilibrium belief in the networks of Germans in the U.S. (Baron, 2012).

To quantify the importance of newspapers in persuading other Germans to (*i*) support the Republican Party and (*ii*) participate in the Civil War, we digitize a new newspaper census for the year 1850. In combination with the first edition of *Rowell's Newspapers Compendium* in 1869, this gives us an idea of change in the number and circulation of newspapers in regions that experienced an inflow of *Forty-Eighter*. To further assess whether German-speaking newspapers were more important than English-speaking newspapers, we collected separately a panel of all German-language newspapers recorded in Arndt (1965). See Appendix A.7 for details.

Appendix A.8 The *Germans to American* Data and Mapping it to the 1860 U.S. Towns

Here we describe the matching process which merges the Germans-to-America passenger arrival lists with Germans in the full-count 1860 Decennial U.S. Census The algorithm performs the following steps:

1. clean name and location information
2. split the sample into male and female sub-samples
3. use Stata's `reclink2` command (Wasi, Flaaen, et al., 2015) to match passenger list and Census information via bi-gram based on
    - first name [6] and last name [16]
    - age in 1860 [14]
    - first letter of first name [3] and last name [3] (blocking variables)

[32] Arndt lists newspapers and political journals by U.S. county, including the dates of their first and last issue.
[33] See http://lcweb2.loc.gov/diglib/vols/loc.gdc.sr.sn82007064/default.html.

where numbers in brackets are the relative weight with which each variable enters the matching algorithm.

4. assess match quality by computing

   - the token soundex of first and surname
   - the age difference between passenger and Census match

   and keep those matches where the token soundex of both first and surname is non-zero and the age difference is within a ± 2 years interval

Step 1 helps to improve match quality. Step 2 reduces the dimension of the matching problem. In principle, this could have been done within Stata and the options of the `reclink2` command but in practice I found that it is much more efficient to split the sample.

Step 3 matches names of individuals in the passenger lists and the Census by computing a bi-gram score.[34] The choice of matching variables was mainly dictated by whatever information was available in both data sets. However, first and surname, and age are typical quantities to match on (e.g. Feigenbaum (2016)). Note that I did not transform the names by using the soundex or NYSIIS. While transforming names into phonetic codes helps with spelling mistakes,[35] it also removes useful information. Mikail and Michael will have the same soundex code because they sound similar even though one name is clearly Russian whereas the other is not. It has been shown that matching on soundex or NYSIIS transformed names typically performs worse than on untransformed names (**?**).

The choice of weighting different variables is somewhat arbitrary. There is more variation in surnames than first names, hence the difference in information content motivates the difference in weights but there is no guidance as to what exact numbers should be put here. Wasi et al. (2015)and the `reclink2` documentation provide a discussion.

Blocking on the first letter of first and surname reduces the dimension of the matching problem but will miss individuals who have a typo in the first letter of their names.[36] Otto will match with Otho but not with Utto.

Step 4 seeks to reduce the false positive rate, i.e. matches that were made but which are not correct. Matches were dropped if the soundex of first and surname was zero, and if the matched Census observation was outside a ± 2 years interval around the age of the corresponding passenger. Hence matches of John Smith aged 31 with Henry Smith (31) or John Smith (35) would have been discarded while a match with John Smith (32) would have been kept. Such criteria are also used in the machine learning algorithm by Feigenbaum (2016) even though he applies these filters before performing the match in order to reduce the dimensionality of the matching problem.

Because of a lack of one 'gold standard method' for performing record linkage, there are several different algorithms which are often tweaked and altered by following applications. We discuss these in Online Appendix C.

[34] See the help file of Stata's `matchit` command under section *Remarks* for an overview of different matching algorithms such as bi-gram, n-gram, token, etc.

[35] Phonetic codes assign a unique code to names that sound similar. For example, the soundex code `C365` here includes Catharina, Catharine, Cathrin, Cathrine, ...

[36] Blocking means that a potential match has to agree on certain criteria to be considered as a valid match. Observations which do not agree on the chosen criteria are discarded and the dimension of the matching problem is reduced. Blocking is commonly used in record linking (see Sariyar and Borg (2010).

Online Appendix

to

"Leadership and Social Norms: Evidence from the *Forty-Eighters* in the Civil War"

Online Appendix A The 1848–1849 Revolutions in Germany

Somewhat surprised by the revolutionary movement, rulers of smaller German states—what we know as Germany today comprised 39 independent states which were part of the German Confederation— were fast to give in. Eventually, also King Frederick William IV of Prussia agreed to pass a constitution, establish a parliament, and support German unification. In March 1849, almost one year after the beginning of the revolution, the Constitutional Assembly in Frankfurt issued a first constitution. It was designed as foundation of a liberal constitutional state with a strong parliament to control the government and the Prussian king at the head. 28 of the German states passed the constitution but the Prussian king, despite his earlier agreement, refused to "pick up a crown from the gutter" and rejected the constitution on 28 April 1949. In the following counter-revolution, the absolutistic rulers fought the revolutionaries and re-established the situation before the March Revolution. After some last uprisings, most notably in Baden, Palatine, Saxony and Württemberg, the revolutionary momentum eventually abated in the summer of 1849.[37]

When the Prussian-led troops eventually quelled the last uprisings in the southwest of Germany, 10,000 German revolutionaries escaped to Switzerland. There are different reasons why Switzerland was a good choice for the revolutionaries. Importantly, it was geographically close, considered a safe country of asylum, and, following the so-called *Sonderbund War* ('Sonderbundkrieg'),[38] Switzerland had already transformed into a federal republic with a democratic constitution. However, the substantial inflow of revolutionaries from German states, Italy and France presented a serious organizational and financial challenge to Switzerland. Even worse, the refugees presence raised concerns that Prussia and Austria could use their military power to force Switzerland to expel or deliver the revolutionaries. Faced with this threat, Switzerland put pressure on regular soldiers, who had little to fear, to return their home countries. Leaders of the revolution like Gustav Struve, Lorenz Brentano or August Willich were expelled and, with the help of France, shipped to the United States. As a result, the number of German refugees in Switzerland decreased rapidly from more than 8350 at the beginning of September 1849 to roughly 2,000 in January 1850 and as little as 883 refugees in August 1850.(Jung, 2015; Nagel, 2012; Reiter, 1992) This expulsion is nicely illustrated in a cartoon (Figure 1) where Prussian soldiers led by Friedrich Wilhelm IV sweep the revolutionaries out of Europe.

While the majority of revolutionaries emigrated straight to the United States, a smaller fraction went on exile in London, hoping to spark another revolution in Europe. However, with the French coup d'état of 2 December 1851 which lead to the proclamation of the Second French Empire, they abandoned this hope and many followed their comrades to the United States (Nagel, 2012). This explains why we observe a second wave of indigent immigrates of German heritage around that time.

[37] See Dahlinger (1903), Valentin (1930) and Whitridge (1949) for seminal accounts of the revolutions of 1848–1849.

[38] The *Sonderbund War* ended the attempted succession of seven Catholic Cantons into a separate alliance ('Sonderbund') which was formed in opposition to a new Constitution for the Swiss Confederation proposed by the Protestant cantons.

Online Appendix Figure 1: Cartoon by Ferdinand Schröder on the end of the revolution in Europe in 1849



Notes: The political cartoon by Ferdinand Schröder titled "Rundgemlde von Europa im August MDCCCXLIX" shows how the absolutistic rulers force the *Forty-Eighters* to leave Europe on a boat from Le Havre. It was first published in *Düsseldorfer Monatshefte*, 1849.

Online Appendix B Individual Biographies

Here we list all *Forty-Eighters* sorted by last name and (first name). We list only location information, i.e. each individual's town, county and state of residence at each point in time.

ALMSTEDT (HEINRICH) *1849-1870: Washington, DC, District Of Columbia; 1871-1884: Saint Louis, St. Louis, Missouri.* •

AMSBERG (GEORGE VON) *1859-1864: Hoboken, Hudson, New Jersey; 1865-1876: Jersey, Hudson, New Jersey.* •

ANGELRODT (ERNST) *1850-1869: Hermann, Gasconade, Missouri.* •

ANNEKE (EMIL P.) *1849-1850: New York, New York, New York; 1851-1855: Minersville, Schuylkill, Pennsylvania; 1856-1856: Detroit, Wayne, Michigan; 1857-1866: Lansing, Ingham, Michigan; 1867-1870: Grand Rapids, Kent, Michigan; 1871-1888: East Saginaw, Saginaw, Michigan.* •

ANNEKE (FRITZ) *1850-1872: Milwaukee, Milwaukee, Wisconsin.* •

ANNEKE (MATHILDE FRANZISKA GIESLER-) *1850-1884: Milwaukee, Milwaukee, Wisconsin; 1853-1865: Newark, Essex, New Jersey.* •

ANSCHUETZ (CARL) *1858-1870: New York, New York, New York.* •

ANSELM (ALBERT) *1852-1878: Davenport, Scott, Iowa; 1879-1902: Saint Louis, St. Louis, Missouri.* •

ARNOLD (FRANZ) *1850-1885: Chicago, Cook, Illinois.* •

AULENBACH (KARL) *1850-1881: Zanesville, Muskingum, Ohio.* •

BACKHOFF (FRANZ) *1852-1863: Saint Louis, St. Louis, Missouri.* •

BALATKA (HANS) *1861-1899: Chicago, Cook, Illinois.* •

BARUS (KARL) *1857-1902: Cincinnati, Hamilton, Ohio.* •

BAUER (CARL FRIEDRICH) *1850-1885: Pittsburg, Allegheny, Pennsylvania; 1886-1888: Milwaukee, Milwaukee, Wisconsin.* •

BAUER (LOUIS) *1850-1902: Saint Louis, St. Louis, Missouri.* •

BAUMBACH (LUDWIG VON) *1858-1883: Milwaukee, Milwaukee, Wisconsin.* •

BAYRHOFFER (KARL THEODOR) *1853-1888: Monroe, Green, Wisconsin.* •

BECKER (AUGUST) *1854-1860: Baltimore, Ind. City: Baltimore, Maryland; 1861-1871: Cincinnati, Hamilton, Ohio.* •

BECKER (GOTTFRIED) *1861-1867: Chicago, Cook, Illinois.* •

BEHLENDORF (FREDERICK) *1861-1869: Saint Louis, St. Louis, Missouri; 1870-1872: Chicago, Cook, Illinois; 1873-1889: Grand Rapids, Kent, Michigan.* •

BEHR (ALFRED VON) *1861-1863: Saint Louis, St. Louis, Missouri.* •

BEHR (HANS HERMANN) *1851-1904: San Francisco, San Francisco, California.* •

BEHRENDT (KARL HERMANN) *1852-1878: New York, New York, New York.* •

BERENDS (JULIUS) *1854-1875: San Antonio, Bexar, Texas; 1876-1891: Cincinnati, Hamilton, Ohio.* •

BERGER (HEINRICH) *1849-1902: New York, New York, New York.* •

BERGMANN (CARL) *1850-1876: New York, New York, New York.* •

BERNAYS (CARL L.) *1849-1861: Saint Louis, St. Louis, Missouri; 1862-1879: Washington, DC, District Of Columbia.* •

BEST (ADAM) *1849-1880: Cincinnati, Hamilton, Ohio.* •

BEST (MICHAEL) *1853-1865: Saint Louis, St. Louis, Missouri; 1862-1906: Saint Louis, Ind. City: St. Louis, Missouri.* •

BETZ (PHILIPP) *1853-1902: Davenport, Scott, Iowa.* •

BEYSCHLAG (CARL) *1852-1866: Indianapolis, Marion, Indiana; 1867-1902: Saint Louis, St. Louis, Missouri.* •

BIEBUSCH (HENRY) *1850-1882: Lawrence, Douglas, Kansas.* •

BIELING (JOHANN H.) *1850-1902: New York, New York, New York.* •

BIEN (JULIUS) *1850-1909: New York, New York, New York.* •

BINDER (HEINRICH) *1853-1865: Chicago, Cook, Illinois; 1866-1870: Saint Louis, St. Louis, Missouri; 1871-1888: Detroit, Wayne, Michigan; 1889-1901: New York, New York, New York.* •

BISKY (FRIEDRICH LUDWIG) *1851-1860: Columbus, Franklin, Ohio; 1861-1863: New York, New York, New York.* •

BLANDWOSKI (CONSTANTIN) *1851-1861: New York, New York, New York.* •

BLENKER (LUDWIG) *1851-1863: New York, New York, New York.* •

BLESCH (PHILIP) *1850-1907: Columbus, Franklin, Ohio.* •

BLOEDE (GUSTAV) *1851-1902: New York, New York, New York.* •

BLUME (ERNST CHRISTIAN FRIEDRICH) *1850-1902: Baltimore, Ind. City: Baltimore, Maryland.* •

BOEBEL (HANS) *1866-1902: Milwaukee, Milwaukee, Wisconsin.* •

BOERNSTEIN (HEINRICH) *1850-1892: Saint Louis, St. Louis, Missouri.* •

BOGEN (LUDWIG) *1865-1886: New Ulm, Brown, Minnesota.* •

BOLLMANN (LOUIS) *1850-1902: Bloomington, Monroe, Indiana.* •

BONDI (AUGUST) *1849-1856: Saint Louis, St. Louis, Missouri; 1857-1870: Walker, Ellis, Kansas; 1871-1880: Walnut, Crawford, Kansas; 1881-1907: Salina, Saline, Kansas.* •

BRAND (FR.) *1850-1902: Boston, Suffolk, Massachussetts.* •

BRAUSE (CARL VON) *1850-1902: Manitowoc, Manitowoc, Wisconsin.* •

BRENDEL (FRIEDRICH) *1851-1852: Saint Louis, St. Louis, Missouri; 1853-1912: Peoria, Peoria, Illinois.* •

BRENTANO (LORENZ) *1851-1859: Kalamazoo, Kalamazoo, Michigan; 1860-1891: Chicago, Cook, Illinois.* •

BRETHAUER (OTTO) *1849-1882: New York, New York, New York.* •

BRICKEL (ANDREW) *1850-1898: New York, New York, New York; 1899-1902: Buffalo, Erie, New York.* •

BRODBECK (CONRAD) *1850-1902: Dayton, Montgomery, Ohio.* •

BROOKMAN (ANTON) *1850-1903: Newark, Essex, New Jersey.* •

BRUHL (GUSTAV) *1850-1902: Cincinnati, Hamilton, Ohio.* •

BUSH (ISIDOR) *1850-1898: Saint Louis, St. Louis, Missouri.* •

BUTZ (CASPAR) *1850-1854: Detroit, Wayne, Michigan; 1855-1885: Chicago, Cook, Illinois.* •

CALBE (WILHELM LOEWE) *1850-1902: New York, New York, New York.* •

CANISIUS (THEODORE) *1859-1859: Marine, Madison, Illinois; 1860-1885: Springfield, Sangamon, Illinois.* •

CLAUSSEN (HANS REIMER) *1851-1894: Davenport, Scott, Iowa.* •

CONHEIM (MAX) *1850-1902: New York, New York, New York.* •

CONRAD (CONSTANTIN) *1850-1850: New Orleans, Orleans, Louisiana; 1851-1858: Cincinnati, Hamilton, Ohio; 1859-1905: Pittsburg, Allegheny, Pennsylvania.* •

D'UTASSY (FREDERICK GEORGE) *1849-1892: New York, New York, New York.* •

DAENZER (CARL) *1855-1872: Saint Louis, St. Louis, Missouri.* •

DECKELMAN (HENRY) *1850-1902: Leavenworth, Leavenworth, Kansas.* •

DEGENER (EDUARD) *1851-1877: New Braunfels, Comal, Texas; 1878-1890: San Antonio, Bexar, Texas.* •

DEMBITZ (LOUIS) *1850-1902: Louisville, Jefferson, Kentucky.* •

DENGLER (ADOLF) *1849-1884: Bellville, St. Clair, Illinois.* •

DENZLER (FRIEDRICH) *1849-1902: Leavenworth, Leavenworth, Kansas.* •

DERLETH (ALOIS) *1850-1860: Saint Louis, Ind. City: St. Louis, Missouri.* •

DESHAUER (JOSEPH) *1850-1902: Chicago, Cook, Illinois.* •

DETTWEILER (HERMANN) *1850-1878: Louisville, Jefferson, Kentucky.* •

DIEPENBECK (RUDOLF) *1851-1875: Detroit, Wayne, Michigan.* •

DIETRICH (HEINRICH) *1849-1902: New York, New York, New York.* •

DIETSCH (THEODOR) *1850-1857: Louisville, Jefferson, Kentucky.* •

DIETZ (JOHANN W.) *1855-1855: New York, New York, New York; 1856-1870: Burlington, Des Moines, Iowa; 1871-1902: Chicago, Cook, Illinois.* •

DIETZSCH (EMIL) *1854-1890: Chicago, Cook, Illinois.* •

DOEHN (RUDOLF) *1849-1895: Saint Louis, St. Louis, Missouri.* •

DOLLMATSCH (R.) *1850-1902: Saint Louis, St. Louis, Missouri.* •

DOMSCHKE (BERNARD) *1851-1854: Boston, Suffolk, Massachussetts; 1855-1869: Milwaukee, Milwaukee, Wisconsin.* •

DORSCH (EDUARD) *1850-1870: New York, New York, New York; 1871-1887: Monroe, Monroe, Michigan.* •

DOUAI (CARL DANIEL ADOLF) *1853-1853: New Braunfels, Comal, Texas; 1854-1856: San Antonio, Bexar, Texas; 1857-1860: Boston, Suffolk, Massachussetts; 1861-1888: New York, New York, New York.* •

DREIHAUS (GEORG) *1849-1870: Philadelphia, Philadelphia, Pennsylvania.* •

DRESEL (JULIUS) *1849-1861: New Braunfels, Comal, Texas; 1862-1869: San Antonio, Bexar, Texas; 1870-1891: Sonoma, Sonoma, California.* •

DRESEL ([FRIEDRICH] OTTO) *1850-1853: Massillon, Stark, Ohio; 1854-1881: Columbus, Franklin, Ohio.* •

DULON (RUDOLF) *1854-1877: New York, New York, New York.* •

ECKSTEIN (FRIEDRICH) *1852-1902: Cincinnati, Hamilton, Ohio.* •

EHRHART (LORENZ) *1850-1908: Allegheny, Allegheny, Pennsylvania.* •

EICKEMEYER (RUDOLF) *1851-1854: New York, New York, New York; 1855-1895: Yonkers, Westchester, New York.* •

EICKHOFF (ANTON) *1849-1850: New Orleans, Orleans, Louisiana; 1851-1861: Saint Louis, St. Louis, Missouri; 1862-1901: New York, New York, New York.* •

EIFLER (KARL) *1850-1888: New York, New York, New York.* •

EISENLOHR (GUSTAV WILHELM) *1851-1860: New Braunfels, Comal, Texas; 1861-1880: Cincinnati, Hamilton, Ohio; 1881-1881: Dallas, Dallas, Texas.* •

ELSNER (HUGO VON) *1849-1896: Bloomington, Mclean, Illinois.* •

ENGELHARDT (LUDWIG) *1850-1902: New York, New York, New York.* •

ENGELMANN (ADOLF) *1849-1890: Bellville, St. Clair, Illinois.* •

ENGELMANN (PETER) *1851-1902: Milwaukee, Milwaukee, Wisconsin.* •

ESSELEN (CHRISTIAN) *1853-1853: New York, New York, New York; 1854-1859: Detroit, Wayne, Michigan.* •

FABER (PAUL) *1849-1891: St. Paul'S, Ramsey, Minnesota.* •

FAEHTZ (ERNST F.) *1851-1865: Elkton, Cecil, Maryland; 1866-1882: Baltimore, Ind. City: Baltimore, Maryland.* •

FALLER (ALOYS) *1849-1870: Warsaw, Hancock, Illinois; 1871-1882: New York, New York, New York.* •

FEIGEL () *1850-1902: Newark, Essex, New Jersey.* •

FEIN (GEORG) *1846-1860: Baltimore, Ind. City: Baltimore, Maryland; 1861-1869: Bellville, St. Clair, Illinois.* •

FEJERVARY (NICHOLAS) *1850-1895: Davenport, Scott, Iowa.* •

FIALA (JOHANN T.) *1853-1873: Saint Louis, St. Louis, Missouri; 1874-1911: San Francisco, San Francisco, California.* •

FIEDLER (ANTON B.) *1853-1897: Chicago, Cook, Illinois.* •

FINK (ALBERT) *1850-1857: Baltimore, Ind. City: Baltimore, Maryland; 1858-1897: Louisville, Jefferson, Kentucky.* •

FISHER (ADAM) *1850-1902: Leavenworth, Leavenworth, Kansas.* •

FLAD (HENRY) *1850-1865: New York, New York, New York; 1866-1898: Saint Louis, St. Louis, Missouri.* •

FOERSCH (J. A.) *1850-1902: New York, New York, New York.* •

FORSCH (LOUIS) *1850-1902: New York, New York, New York.* •

FRAHM (MATHIAS) *1850-1899: Davenport, Scott, Iowa.* •

FRANK (Aaron) *1850-1902: New York, New York, New York.* •

FRANKFURTH (WILHELM) *1849-1885: Milwaukee, Milwaukee, Wisconsin.* •

FRATNY (FRIEDRICH) *1850-1902: Milwaukee, Milwaukee, Wisconsin.* •

FREUDENBERG (CARL GOTTFRIED) *1849-1885: New York, New York, New York.* •

FRICKE (HEINRICH C.) *1854-1880: Chicago, Cook, Illinois.* •

FUESTER (ANTON) *1850-1881: New York, New York, New York.* •

GAMBS (JOHANNES) *1858-1879: New York, New York, New York.* •

GAYLORD (L. F.) *1850-1902: Leavenworth, Leavenworth, Kansas.* •

GEBRAETZ (GEORG) *1876-1881: Newark, Essex, New Jersey.* •

GEHM (CARL) *1850-1902: Bellville, St. Clair, Illinois.* •

GEIWITZ (GEORG) *1849-1890: Baltimore, Ind. City: Baltimore, Maryland.* •

GERHARD (FRIEDRICH) *1850-1902: New York, New York, New York.* •

GERHARDT (JOSEPH) *1852-1881: Washington, DC, District Of Columbia.* •

GERNSBACH (WEIL VON) *1850-1902: San Francisco, San Francisco, California.* •

GERWIG (ADOLF) *1850-1862: Cincinnati, Hamilton, Ohio.* •

GIESLER (E.) *1850-1902: New York, New York, New York.* •

GILLIG (KARL EMIL) *1851-1861: Milwaukee, Milwaukee, Wisconsin; 1862-1883: Peoria, Peoria, Illinois.* •

GILSA (LEOPOLD VON) *1853-1870: New York, New York, New York.* •

GINDELE (JOHN G.) *1853-1872: Chicago, Cook, Illinois.* •

GIRSCH (FREDERICK) *1850-1870: New York, New York, New York; 1871-1891: East Chester, Westchester, New York; 1892-1895: Pelham, Westchester, New York.* •

GOEHLMANN (MARTIN G.) *1858-1885: Waterford, Clinton, Iowa.* •

GOEPPER (WILHELM) *1849-1879: Louisville, Jefferson, Kentucky.* •

GOHRINGER (KARL) *1867-1902: Pittsburg, Allegheny, Pennsylvania.* •

GOLDMARK (JOSEPH) *1851-1881: New York, New York, New York.* •

GRAF (KARL) *1850-1885: Cincinnati, Hamilton, Ohio.* •

GREINER (THEODOR LUDWIG) *1850-1902: Newark, Essex, New Jersey.* •

GROSCHEL () *1850-1902: New York, New York, New York.* •

GRUBER (HEINRICH) *1850-1902: Brooklyn, Kings, New York.* •

GUELICH (THEODOR) *1852-1861: Davenport, Scott, Iowa; 1862-1893: Burlington, Des Moines, Iowa.* •

GUENTHER (JOHANN GEORG) *1849-1872: Milwaukee, Milwaukee, Wisconsin.* •

HAAS (HEINRICH C.) *1850-1902: Leavenworth, Leavenworth, Kansas.* •

HACKELMANN (P. A.) *1850-1902: Rushville, Rush, Indiana.* •

HAGEN (THEODOR) *1855-1871: New York, New York, New York.* •

HAIMBACH (PHILIPP) *1852-1904: Philadelphia, Philadelphia, Pennsylvania.* •

HAMM (THEODOR) *1855-1903: St. Paul'S, Ramsey, Minnesota.* •

HAMMER (ADAM VON) *1849-1878: Saint Louis, St. Louis, Missouri.* •

HAMMERMEISTER (HEINRICH) *1850-1860: New York, New York, New York.* •

HARTMANN (KARL) *1849-1863: Cleveland, Cuyahoga, Ohio.* •

HARTMANN (MORITZ) *1856-1902: Lawrence, Douglas, Kansas.* •

HARTUNG (ADOLPH VON) *1876-1902: Baltimore, Ind. City: Baltimore, Maryland.* •

HASSAUREK (FRIEDRICH) *1850-1885: Cincinnati, Hamilton, Ohio.* •

HATTERSCHEIDT (JOHN P.) *1850-1902: Cincinnati, Hamilton, Ohio; 1858-1859: Leavenworth, Leavenworth, Kansas.* •

HAUSSNER (CHARLES FREDERICK) *1856-1866: Chicago, Cook, Illinois; 1867-1911: Chicago, Hamilton, Illinois.* •

HECKER (FRIEDRICH) *1850-1881: Bellville, St. Clair, Illinois.* •

HEDDE (FRITZ) *1855-1857: Davenport, Scott, Iowa; 1858-1908: Grand Island, Hall, Nebraska.* •

HEILPRIN (MICHAEL) *1857-1902: New York, New York, New York.* •

HEINZEN (KARL PETER) *1851-1853: New York, New York, New York; 1854-1859: Louisville, Jefferson, Kentucky; 1860-1880: Boston, Suffolk, Massachussetts.* •

HELFENSTEIN (J.) *1850-1902: New York, New York, New York.* •

HENNE (ROBERT) *1852-1885: Davenport, Scott, Iowa.* •

HEXAMER (ADOLF) *1849-1859: New York, New York, New York.* •

HEXAMER (ALEXANDER) *1850-1902: New York, New York, New York.* •

HEXAMER (ERNST) *1849-1856: New York, New York, New York; 1857-1912: Philadelphia, Philadelphia, Pennsylvania.* •

HEXAMER (FRITZ M.) *1849-1895: New York, New York, New York; 1896-1910: Stamford, Fairfield, Connecticut.* •

HEXAMER (WILHELM) *1849-1859: New York, New York, New York; 1860-1870: Hoboken, Hudson, New Jersey.* •

HIELSCHER (THEODOR) *1852-1864: Indianapolis, Marion, Indiana; 1865-1870: Chicago, Cook, Illinois; 1871-1873: New Ulm, Brown, Minnesota; 1874-1900: Minneapolis, Hennepin, Minnesota; 1901-1907: Eagle Pass, Maverick, Texas.* •

HILLGAERTNER (GEORG) *1854-1862: Chicago, Cook, Illinois; 1863-1865: Saint Louis, St. Louis, Missouri.* •

HIRSCHFIELD (JOSEPH) *1850-1902: New York, New York, New York.* •

HOBELMANN (FRIEDRICH AUGUST) *1850-1902: Cincinnati, Hamilton, Ohio.* •

HOCHHEINER (HENRY) *1850-1912: Baltimore, Ind. City: Baltimore, Maryland.* •

HOFF (HEINRICH) *1850-1852: New York, New York, New York.* •

HOFFBAUER (WILHELM) *1851-1860: Saint Louis, St. Louis, Missouri; 1861-1875: Guttemburg, Clayton, Iowa; 1876-1892: Dubuque, Dubuque, Iowa.* •

HOFFMANN (ERNST F.) *1849-1876: New York, New York, New York; 1877-1902: Davenport, Scott, Iowa.* •

HOFFMANN (FRANCIS) *1850-1902: Chicago, Cook, Illinois.* •

HOFFMANN (GEORG RICHARD) *1850-1902: Louisville, Jefferson, Kentucky.* •

HOHLFELD (JOHANN F.) *1849-1861: Saint Louis, St. Louis, Missouri.* •

HOMBURG (CONRADIN) *1850-1902: Indianapolis, Marion, Indiana.* •

HOTTINGER (ANTON) *1852-1852: Pittsburg, Allegheny, Pennsylvania; 1853-1856: Cincinnati, Hamilton, Ohio; 1857-1862: Guttemburg, Clayton, Iowa; 1863-1911: Chicago, Cook, Illinois.* •

HUHN (HEINRICH) *1863-1865: Saint Louis, St. Louis, Missouri; 1866-1902: Washington, Franklin, Missouri.* •

HUTH () *1850-1902: Boston, Suffolk, Massachussetts.* •

JACOBI (ABRAHAM) *1854-1919: New York, New York, New York.* •

JACOBI (FRITZ) *1850-1902: New York, New York, New York.* •

JACOBS (WILHELM HEINRICH) *1851-1882: Milwaukee, Milwaukee, Wisconsin.* •

JAZELLA (APPOLONIA) *1850-1902: New York, New York, New York.* •

JERZMANOWSKI (JOSEPH) *1850-1902: New York, New York, New York.* •

KAEMMERLING (GUSTAV) *1849-1902: Troy, Perry, Indiana.* •

KAHN () *1850-1902: New York, New York, New York.* •

KAHRMANN (J. S.) *1850-1902: Davenport, Scott, Iowa.* •

KALISCH (ISIDOR) *1850-1880: New York, New York, New York; 1881-1886: Newark, Essex, New Jersey.* •

KAMM (FRIEDRICH) *1850-1902: New York, New York, New York.* •

KAPFF (EDUARD) *1849-1902: New York, New York, New York.* •

KAPFF (SIXTUS) *1849-1877: New York, New York, New York.* •

KAPP (FRIEDRICH) *1851-1884: New York, New York, New York.* •

KAUFMANN (SIGISMUND) *1849-1889: New York, New York, New York.* •

KAUFMANN (THEODOR) *1851-1864: New York, New York, New York; 1865-1866: Saint Louis,*

St. Louis, Missouri; 1867-1896: Boston, Suffolk, Massachussetts. •

KELLNER (GOTTLIEB THEODOR) *1852-1856: New Ulm, Brown, Minnesota; 1857-1898: Philadelphia, Philadelphia, Pennsylvania.* •

KIEFER (CHRISTIAN FRIEDRICH) *1850-1878: Philadelphia, Philadelphia, Pennsylvania.* •

KIEFER (HERMANN) *1850-1889: Detroit, Wayne, Michigan; 1890-1911: Ann Arbor, Washtenaw, Michigan.* •

KILLIAN (JOSEPH) *1850-1902: Allentown, Lehigh, Pennsylvania.* •

KLEINER (MEINRAD) *1850-1873: Cincinnati, Hamilton, Ohio.* •

KLIPPART (J. H.) *1850-1878: Cleveland, Cuyahoga, Ohio.* •

KNODERER (Carl August) *1850-1863: Reading, Berks, Pennsylvania.* •

KOB (CHARLES FRIEDRICH) *1850-1855: Hartford, Hartford, Connecticut; 1856-1857: Boston, Suffolk, Massachussetts; 1858-1858: Atchison, Atchison, Kansas; 1859-1861: Leavenworth, Leavenworth, Kansas.* •

KOCH (EDMUND IGNATZ) *1851-1902: New York, New York, New York.* •

KOCH (RUDOLF) *1850-1902: New York, New York, New York.* •

KOENIG (F. C.) *1856-1877: Peoria, Peoria, Illinois.* •

KOERNER (GUSTAV) *1834-1834: Saint Louis, St. Louis, Missouri; 1835-1896: Bellville, St. Clair, Illinois.* •

KOERNER (JOSEPH ALOYS) *1851-1882: New York, New York, New York.* •

KORNER (HERMANN JOSEPH ALOYS) *1852-1902: New York, New York, New York.* •

KOVEN (WILHELM) *1850-1902: New York, New York, New York.* •

KOZLEY (EUGEN ARTHUR) *1849-1883: New York, New York, New York.* •

KRACKOWITZER (ERNST) *1850-1857: Brooklyn, Kings, New York; 1858-1875: New York, New York, New York.* •

KRAUS (ALBERT) *1850-1902: Benton, Dallas, Missouri.* •

KREISMAN (HERMANN) *1850-1902: Chicago, Cook, Illinois.* •

KREZ (KONRAD) *1852-1854: New York, New York, New York; 1855-1885: Sheboygan, Sheboygan, Wisconsin; 1886-1897: Milwaukee, Milwaukee, Wisconsin.* •

KRIEGE (HERMANN) *1850-1850: New York, New York, New York.* •

KROEGER (JACOB) *1849-1885: Davenport, Scott, Iowa.* •

KRUER (A.) *1850-1902: New York, New York, New York.* •

KRYZANOWSKI (WLADIMIR) *1849-1878: Washington, DC, District Of Columbia; 1879-1887: New York, New York, New York.* •

KUDLICH (HANS) *1854-1917: Hoboken, Hudson, New Jersey.* •

LAMBACH (HEINRICH) *1849-1899: Davenport, Scott, Iowa.* •

LANGE (ALBERT) *1850-1869: Terre Haute, Vigo, Indiana.* •

LANGE (JOHANN FRIEDRICH GOTTLOB LANGE) *1850-1879: New York, New York, New York.* •

LAUENSTEIN (KARL) *1850-1902: Cincinnati, Hamilton, Ohio.* •

LEHLBACH (FRIEDRICH AUGUST) *1850-1875: Newark, Essex, New Jersey.* •

LEIST (FRIEDRICH) *1849-1902: Baltimore, Ind. City: Baltimore, Maryland.* •

LESER (FRITZ) *1854-1880: Saint Louis, St. Louis, Missouri; 1881-1902: Philadelphia, Philadelphia, Pennsylvania.* •

LEUCHTWEISS (AUGUST) *1849-1902: Cincinnati, Hamilton, Ohio.* •

LEUSSLER (ROBERT) *1849-1873: Saint Louis, St. Louis, Missouri.* •

LEXOW (FRIEDRICH) *1853-1861: New York, New York, New York; 1862-1870: Jersey, Hudson, New Jersey; 1871-1872: North Bergen, Hudson, New Jersey.* •

LEXOW (RUDOLF) *1852-1902: New York, New York, New York.* •

LIEBER (OSCAR MONTGOMERY) *1851-1862: Columbia, Richland, South Carolina.* •

LIEVRE (EUGENE) *1850-1902: New York, New York, New York.* •

LINDEMAN (GEORGE) *1850-1902: Cincinnati, Hamilton, Ohio.* •

LINDEMANN (HERMANN VON) *1850-1893: Saint Louis, Ind. City: St. Louis, Missouri.* •

LOEHR (FERDINAND VON) *1853-1877: San Francisco, San Francisco, California.* •

LOES (FRANZ E.) *1853-1883: Philadelphia, Philadelphia, Pennsylvania.* •

LOEWE AUS CALBE (WILHELM) *1854-1886: New York, New York, New York.* •

LOHMANN (HEINRICH) *1850-1889: Baltimore, Ind. City: Baltimore, Maryland.* •

LOOS (ALEXANDER) *1853-1870: Hudson, Columbia, New York; 1871-1877: Philadelphia, Philadelphia, Pennsylvania.* •

LOOSE (HEINRICH) *1849-1882: New York, New York, New York.* •

LOWENBERG (FRANZ SCHMIDT VON) *1850-1853: Saint Louis, St. Louis, Missouri.* •

LUCAS (JACOB) *1852-1861: Saint Louis, St. Louis, Missouri; 1862-1870: Peoria, Peoria, Illinois; 1871-1902: Pekin, Tazewell, Illinois.* •

LUDVIGH (SAMUEL) *1850-1869: Baltimore, Ind. City: Baltimore, Maryland.* •

LUEDEKING (CARL) *1852-1885: Saint Louis, St. Louis, Missouri.* •

LUNGKWITZ (HERMANN) *1851-1891: Fredericksburg, Gillespie, Texas.* •

MAAS (BENJAMIN) *1850-1850: New York, New York, New York; 1851-1891: New Orleans, Orleans, Louisiana.* •

MAERKLIN (EDUARD) *1849-1892: Milwaukee, Milwaukee, Wisconsin.* •

MAISCH (JOHN MICHAEL) *1851-1893: Philadelphia, Philadelphia, Pennsylvania.* •

MARX (JOSEPH E.) *1850-1902: Toledo, Lucas, Ohio.* •

MATZKA (GEORG) *1854-1883: New York, New York, New York.* •

MAYERHOEFER (WILHELM) *1849-1877: New York, New York, New York; 1878-1880: Louisville, Jefferson, Kentucky.* •

MEHL (JOHN) *1850-1902: New York, New York, New York.* •

MEHL (MARTIN) *1850-1902: New York, New York, New York.* •

MEINIGER (KARL) *1849-1883: Cincinnati, Hamilton, Ohio.* •

MELOSCH () *1850-1902: New York, New York, New York.* •

MENNINGER (JOHN) *1850-1902: New York, New York, New York.* •

MERSEY (AUGUST) *1856-1866: Bellville, St. Clair, Illinois.* •

METTERNICH (GERMAIN) *1852-1862: New York, New York, New York.* •

MEYER (HERMANN) *1853-1902: New York, New York, New York.* •

MIEDING (KARL) *1850-1902: Milwaukee, Milwaukee, Wisconsin.* •

MILLER (HEINRICH) *1850-1896: Louisville, Jefferson, Kentucky.* •

MINDING (JULIUS) *1850-1902: New York, New York, New York.* •

MOHR (CHARLES THEODOR) *1853-1857: Louisville, Jefferson, Kentucky; 1858-1900: Mobile, Mobile, Alabama; 1901-1901: Ashville, Buncombe, North Carolina.* •

MOLITOR (STEPHAN) *1850-1873: Cincinnati, Hamilton, Ohio.* •

MORDES (FLORIAN) *1850-1850: New Braunfels, Comal, Texas.* •

MORWITZ (EDWARD) *1851-1893: Philadelphia, Philadelphia, Pennsylvania.* •

MOSCHZISKER (FRANZ A. VON) *1853-1863: Baltimore, Ind. City: Baltimore, Maryland; 1864-1867: Washington, DC, District Of Columbia; 1868-1871: Philadelphia, Philadelphia, Pennsylvania; 1872-1876: Rochester, Monroe, New York; 1877-1880: Utica, Oneida, New York.* •

MUELLER (CHRISTIAN L. H.) *1850-1902: Davenport, Scott, Iowa.* •

MUELLER (EDUARD) *1850-1871: New York, New York, New York; 1872-1886: Rochester, Monroe, New York.* •

MUELLER (JACOB) *1850-1905: Cleveland, Cuyahoga, Ohio.* •

MUELLER (NIKOLAUS) *1849-1875: New York, New York, New York.* •

MUELLER (WILHELM) *1849-1902: Baltimore, Ind. City: Baltimore, Maryland.* •

MUHLCBACH (JOSEPH) *1850-1858: New York, New York, New York.* •

MULD (L.) *1850-1902: New York, New York, New York.* •

MURER (JOHN) *1855-1856: New York, New York, New York; 1857-1902: Buffalo, Scott, Iowa.* •

NAST (THOMAS) *1851-1857: New York, New York, New York.* •

NEUBERT (KARL) *1850-1902: Bellville, St. Clair, Illinois.* •

NEUSTAEDTER (JOHANN ALBERT) *1852-1885: Saint Louis, St. Louis, Missouri.* •

NIX (JACOB) *1849-1897: New Ulm, Brown, Minnesota.* •

OBERMANN (KARL) *1852-1901: Cincinnati, Hamilton, Ohio.* •

OELS (ADOLPH ROSIER VON) *1851-1852: New York, New York, New York.* •

OLSHAUSEN (THEODOR) *1852-1856: Davenport, Scott, Iowa; 1857-1869: Saint Louis, St. Louis, Missouri.* •

OSTERHAUS (PETER JOSEPH) *1850-1861: Bellville, St. Clair, Illinois; 1862-1917: Saint Louis, St. Louis, Missouri.* •

OSWALD (MICHAEL) *1850-1902: Lawrence, Douglas, Kansas.* •

OTTENDORFER (OSWALD) *1851-1900: New York, New York, New York.* •

PABISCH (FRANZ JOSEPH) *1863-1879: Cincinnati, Hamilton, Ohio.* •

PEISSNER (ELIAS) *1850-1863: Schenectady, Schenectady, New York.* •

PELZ (EDUARD) *1851-1876: New York, New York, New York.* •

PETERS (CHRISTIAN H. F.) *1868-1890: Kirkland, Oneida, New York.* •

PETERSEN (LORENZ) *1855-1880: Springfield, Cedar, Iowa.* •

PETRI (RICHARD) *1851-1857: Fredericksburg, Gillespie, Texas.* •

PETZ () *1850-1902: Leavenworth, Leavenworth, Kansas.* •

PEYER (JOHANNES) *1850-1902: Cincinnati, Hamilton, Ohio.* •

PFAENDER (WILHELM) *1849-1850: Cincinnati, Hamilton, Ohio; 1851-1905: New Ulm, Brown, Minnesota.* •

PFEIFFER (P.) *1850-1902: Boston, Suffolk, Massachussetts.* •

PFEIFLFER (ALEXANDER) *1852-1902: Cincinnati, Hamilton, Ohio.* •

PILAT (IGNAZ ANTON) *1852-1870: New York, New York, New York.* •

PLESSNER (MICHAEL CARL THEODOR) *1850-1894: Saginaw, Saginaw, Michigan.* •

POESCHE (THEODOR) *1854-1858: Philadelphia, Philadelphia, Pennsylvania; 1859-1863: Saint Louis, Ind. City: St. Louis, Missouri; 1864-1899: Washington, DC, District Of Columbia.* •

POHLE (CARL ADOLF JULIUS) *1849-1859: New York, New York, New York.* •

POMUTZ (GEORGE) *1850-1882: New Buda, Decatur, Iowa.* •

POSCHNER (FRIEDRICH) *1849-1873: Cincinnati, Hamilton, Ohio.* •

PRAGER (DAVID) *1850-1902: Lawrence, Douglas, Kansas.* •

PRAHL (CHARLES) *1854-1900: New York, New York, New York; 1901-1904: Clinton, Hunterdon, New Jersey.* •

PRANG (LOUIS) *1851-1909: Boston, Suffolk, Massachussetts.* •

PREETORIUS (EMIL) *1855-1905: Saint Louis, St. Louis, Missouri.* •

PREISER () *1850-1902: Cincinnati, Hamilton, Ohio.* •

PREUSSNER (CARL) *1850-1902: Milwaukee, Milwaukee, Wisconsin.* •

PUCHNER (RUDOLF) *1851-1913: New Holstein, Calumet, Wisconsin.* •

QUERNER (EMIL) *1853-1886: Philadelphia, Philadelphia, Pennsylvania.* •

RAMMING (HEINRICH) *1852-1856: New York, New York, New York; 1857-1902: Davenport, Scott, Iowa.* •

RANST () *1850-1902: Leavenworth, Leavenworth, Kansas.* •

RAPP (WILHELM) *1853-1891: Baltimore, Ind. City: Baltimore, Maryland; 1892-1907: Chicago, Cook, Illinois.* •

RASTER (HERMANN) *1852-1867: New York, New York, New York; 1853-1853: Buffalo, Erie, New York; 1868-1891: Chicago, Cook, Illinois.* •

RAU (GOTTLIEB) *1850-1902: New York, New York, New York.* •

RAUCH (CHARLES) *1853-1902: St. Paul'S, Ramsey, Minnesota.* •

REIBETANTZ (CARL JULIUS) *1849-1894: Baltimore, Ind. City: Baltimore, Maryland.* •

REICHARD (JOSEPH MARTIN) *1850-1872: Philadelphia, Philadelphia, Pennsylvania.* •

REICHARDT (FRIEDRICH) *1850-1876: Cincinnati, Hamilton, Ohio.* •

REICHMANN (RUDOLPH) *1881-1908: Toledo, Tama, Iowa.* •

REIFSCHNEIDER (FELIX) *1850-1902: New York, New York, New York.* •

REITER (PHILIPP) *1850-1902: Philadelphia, Philadelphia, Pennsylvania.* •

RESCH (KARL) *1850-1902: Louisville, Jefferson, Kentucky.* •

RICHTER (ERHARD) *1850-1902: New York, New York, New York.* •

RIEPE (WILHELM) *1850-1902: Davenport, Scott, Iowa.* •

RIETZ (CARL) *1850-1877: Saginaw, Saginaw, Michigan; 1878-1902: Chicago, Cook, Illinois.* •

RITTER (LOUIS) *1855-1902: Cleveland, Cuyahoga, Ohio.* •

RITTIG (JOHANN) *1853-1857: Cincinnati, Hamilton, Ohio; 1858-1885: New York, New York, New York.* •

RITTLER (A. W.) *1850-1872: New York, New York, New York.* •

ROCHOTTE (HEINRICH) *1850-1902: Cleveland, Cuyahoga, Ohio.* •

ROESER (CARL) *1854-1873: Manitowoc, Manitowoc, Wisconsin; 1874-1897: Washington, DC, District Of Columbia.* •

ROESER (OTTO) *1851-1885: Saginaw, Saginaw, Michigan.* •

ROESLER (GUSTAV ADOLF) *1851-1855: New York, New York, New York.* •

ROESSLER (FRIEDRICH) *1854-1870: New York, New York, New York.* •

ROGGENBUCKE (OSKAR VON) *1855-1860: New Braunfels, Comal, Texas; 1861-1883: Comfort, Kendall, Texas.* •

ROMBAUER (ROBERT J.) *1849-1902: Saint Louis, St. Louis, Missouri.* •

ROMBAUER (THEODORE) *1850-1855: Davenport, Scott, Iowa.* •

ROSA (RUDOLF VON) *1851-1865: Washington, DC, District Of Columbia; 1866-1902: New York, New York, New York.* •

ROSER (KARL) *1854-1902: Milwaukee, Milwaukee, Wisconsin.* •

ROSKOTEN (ROBERT) *1850-1897: Peoria, Peoria, Illinois.* •

ROSSWOG (CONSTANTIN) *1849-1902: New York, New York, New York.* •

ROTHACKER (WILHELM) *1851-1859: Wheeling, Ohio, West Virginia.* •

ROTHE (EMIL) *1850-1852: New York, New York, New York; 1853-1869: Watertown, Jefferson, Wisconsin; 1870-1895: Cincinnati, Hamilton, Ohio.* •

ROTTECK (CARL) *1858-1859: Muscatine, Muscatine, Iowa; 1860-1860: Burlington, Des Moines, Iowa; 1861-1902: Keokuk, Lee, Iowa.* •

RUDOLPH (JOSEPH) *1850-1853: Cincinnati, Hamilton, Ohio; 1854-1854: Saint Louis, St. Louis, Missouri; 1855-1855: Dubuque, Dubuque, Iowa; 1856-1902: Chicago, Cook, Illinois.* •

RUHL (KARL) *1850-1852: New York, New York, New York; 1853-1902: Philadelphia, Philadelphia, Pennsylvania.* •

RUPPIUS (OTTO) *1853-1864: Milwaukee, Milwaukee, Wisconsin.* •

RUSCH (NICHOLAS) *1848-1863: Davenport, Scott, Iowa; 1864-1864: New York, New York, New York.* •

RUTHS (PHILIPP) *1850-1874: Cincinnati, Hamilton, Ohio.* •

SAHM (KARL) *1854-1883: New York, New York, New York.* •

SALOMON (CARL EBERHARD) *1850-1881: Saint Louis, St. Louis, Missouri.* •

SALOMON (EDWARD) *1856-1869: Milwaukee, Milwaukee, Wisconsin; 1870-1908: New York, New York, New York.* •

SALOMON (FRIEDRICH S.) *1851-1860: Manitowoc, Manitowoc, Wisconsin; 1861-1880: Saint Louis, St. Louis, Missouri; 1881-1897: Salt Lake City, Salt Lake, Utah.* •

SANDER (ENNO) *1854-1912: Saint Louis, St. Louis, Missouri.* •

SCHADE (LOUIS) *1852-1903: Washington, DC, District Of Columbia; 1857-1858: Chicago, Cook, Illinois; 1859-1859: Burlington, Des Moines, Iowa.* •

SCHADT (OTTO) *1849-1902: Saint Louis, Ind. City: St. Louis, Missouri.* •

SCHEFFELT (MICHAEL) *1850-1853: Buffalo, Erie, New York.* •

SCHEIBEL (G.) *1850-1902: New York, New York, New York.* •

SCHEM (ALEXANDER JAKOB) *1850-1881: Carlisle, Cumberland, Pennsylvania.* •

SCHIEFERDECKER (JULIUS) *1872-1881: Milwaukee, Milwaukee, Wisconsin.* •

SCHIEREN (JOHN NIKOLAUS) *1857-1863: New York, New York, New York.* •

SCHIMMELPFENNIG (ALEXANDER) *1854-1865: Philadelphia, Philadelphia, Pennsylvania.* •

SCHLAEGER (EDUARD) *1853-1854: Wheeling, Ohio, West Virginia; 1855-1902: Chicago, Cook, Illinois.* •

SCHLEICHER (KARL) *1849-1882: Westfield, Sauk, Wisconsin.* •

SCHLUND (FIDEL) *1849-1867: Chicago, Cook, Illinois; 1868-1882: Newark, Essex, New Jersey.* •

SCHMIDT (CARL WILHELM) *1852-1887: Cleveland, Cuyahoga, Ohio.* •

SCHMIDT (ERNST) *1858-1900: Chicago, Cook, Illinois; 1864-1870: Saint Louis, St. Louis, Missouri.* •

SCHMITT (FRANZ) *1850-1902: New York, New York, New York.* •

SCHMITT (NIKOLAUS) *1849-1869: Philadelphia, Philadelphia, Pennsylvania.* •

SCHMOLZE (KARL HEINRICH) *1849-1859: Philadelphia, Philadelphia, Pennsylvania.* •

SCHNAUFFER (CARL HEINRICH) *1852-1854: Baltimore, Ind. City: Baltimore, Maryland.* •

SCHNEIDER (GEORG) *1850-1851: Saint Louis, St. Louis, Missouri; 1852-1905: Chicago, Cook, Illinois.* •

SCHNEIDER (JOHANN) *1850-1858: New Braunfels, Comal, Texas; 1859-1862: Austin, Travis, Texas.* •

SCHNEIDER () *1850-1902: New York, New York, New York.* •

SCHOEPF (ALBIN FRANCIS) *1859-1902: Washington, DC, District Of Columbia.* •

SCHOLER (JACOB) *1855-1860: New York, New York, New York; 1861-1885: Littlestown, Adams, Pennsylvania.* •

SCHOTT (CHARLES ANTHONY) *1849-1901: Washington, DC, District Of Columbia.* •

SCHRAIDT (KASPAR) *1853-1886: Danbury, Ottawa, Ohio.* •

SCHRAMM (KARL) *1850-1902: New York, New York, New York.* •

SCHROEDER (FREDERICK A.) *1850-1899: Brooklyn, Kings, New York.* •

SCHROETER (EDUARD) *1851-1853: Milwaukee, Milwaukee, Wisconsin; 1854-1902: Westfield, Sauk, Wisconsin.* •

SCHUENEMANN-POTT (FRIEDRICH) *1855-1881: Philadelphia, Philadelphia, Pennsylvania.* •

SCHUETTNER (NIKOLAUS) *1849-1870: Saint Louis, St. Louis, Missouri.* •

SCHULTZ (EDUARD) *1849-1902: Milwaukee, Milwaukee, Wisconsin.* •

SCHULTZ (HERMANN THEODORE) *1851-1902: Austin, Travis, Texas.* •

SCHURZ (CARL) *1853-1855: Philadelphia, Philadelphia, Pennsylvania; 1856-1866: Watertown, Jefferson, Wisconsin; 1867-1867: Detroit, Wayne, Michigan; 1868-1877: Saint Louis, St. Louis, Missouri; 1878-1881: Washington, DC, District Of Columbia; 1882-1906: New York, New York, New York.* •

SCHUSSELE (CHRISTIAN) *1849-1879: Philadelphia, Philadelphia, Pennsylvania.* •

SCHUSTER (CHRISTIAN F.) *1849-1870: New York, New York, New York; 1871-1904: Brattleborough, Windham, Vermont.* •

SCHWAN (HEINRICH) *1850-1905: Cleveland, Cuyahoga, Ohio.* •

SEEGER () *1850-1902: Cincinnati, Hamilton, Ohio.* •

SEELAND () *1850-1902: Leavenworth, Leavenworth, Kansas.* •

SEIFFERT (KARL) *1851-1881: Newark, Essex, New Jersey.* •

SEILER (SEBASTIAN) *1861-1890: New Orleans, Orleans, Louisiana.* •

SENGES (ADAM) *1854-1902: New York, New York, New York.* •

SERENBETZ (FRANCIS) *1850-1902: Humboldt, Allen, Kansas.* •

SERODINO (HERMANN FRANZ) *1850-1879: Cincinnati, Hamilton, Ohio.* •

SIBER (EDUARD) *1871-1902: Cincinnati, Hamilton, Ohio.* •

SIGEL (FRANZ) *1853-1860: New York, New York, New York; 1861-1865: Saint Louis, St. Louis, Missouri; 1866-1870: Baltimore, Ind. City: Baltimore, Maryland; 1871-1902: Morrisania, Bronx, New York.* •

SOHNER (KARL) *1851-1902: Indianapolis, Marion, Indiana.* •

SOLGER (REINHOLD) *1854-1863: Boston, Suffolk, Massachussetts; 1864-1866: Washington, DC, District Of Columbia.* •

SORGE (FRIEDRICH ADOLPH) *1853-1862: New York, New York, New York; 1863-1906: Jersey, Hudson, New Jersey.* •

STADLER (WILHELM) *1850-1902: New York, New York, New York.* •

STAHEL-SZAMWALD (JULIUS) *1860-1912: New York, New York, New York.* •

STARKLOFE (HUGO) *1850-1902: Saint Louis, St. Louis, Missouri.* •

STEINBERG (T. J.) *1850-1902: Lawrence, Douglas, Kansas.* •

STEINWEDEL (WILHELM) *1849-1902: Quincy, Adams, Illinois.* •

STENGEL (WILHELM) *1851-1879: Louisville, Jefferson, Kentucky.* •

STIFEL (CHARLES G.) *1850-1900: Saint Louis, St. Louis, Missouri.* •

STIGER (JOSEPH LEOPOLD) *1850-1902: Cleveland, Cuyahoga, Ohio.* •

STILL (GEORGE W.) *1850-1902: Leavenworth, Leavenworth, Kansas.* •

STOCKMANN (C. O.) *1856-1873: New Haven, New Haven, Connecticut.* •

STOECKEL (GUSTAVE) *1850-1907: New Haven, New Haven, Connecticut.* •

STRAUBENMUELLER (JOHANN) *1855-1863: Baltimore, Ind. City: Baltimore, Maryland; 1864-1897: New York, New York, New York.* •

STRAUCH (ADOLPH) *1853-1883: Cincinnati, Hamilton, Ohio.* •

STRUVE (AMALIA) *1852-1862: New York, New York, New York.* •

STRUVE (GUSTAV) *1852-1870: New York, New York, New York.* •

SZOLD (BENJAMIN) *1860-1902: Baltimore, Ind. City: Baltimore, Maryland.* •

TAFEL (ALBERT) *1850-1902: Cincinnati, Hamilton, Ohio.* •

TAFEL (GUSTAV) *1849-1908: Cincinnati, Hamilton, Ohio.* •

TAFEL (HUGO) *1850-1902: Cincinnati, Hamilton, Ohio.* •

TAFEL (KARL) *1850-1851: Cincinnati, Hamilton, Ohio; 1852-1902: Sandusky, Erie, Ohio.* •

TAFEL (LEONHARD) *1873-1902: New York, New York, New York.* •

TAFEL (RICHARD) *1850-1902: Cincinnati, Hamilton, Ohio.* •

TAFEL (RUDOLPH) *1850-1902: Cincinnati, Hamilton, Ohio.* •

TAUSSIG (JAMES) *1849-1902: Saint Louis, St. Louis, Missouri.* •

TESOR (AUGUST) *1850-1902: New York, New York, New York.* •

THALMESSINGER (MEYER) *1849-1906: New York, New York, New York.* •

THELEN () *1850-1902: Leavenworth, Leavenworth, Kansas.* •

THIEME (AUGUST) *1850-1879: Cleveland, Cuyahoga, Ohio.* •

TIEDEMANN (HEINRICH) *1849-1902: Philadelphia, Philadelphia, Pennsylvania.* •

TRAU (JOHANN PHILIPP) *1851-1883: Philadelphia, Philadelphia, Pennsylvania.* •

TUERCKE (KARL AUGUST) *1859-1886: Cincinnati, Hamilton, Ohio.* •

TYSSOWSKI (IVAN) *1850-1902: New York, New York, New York.* •

TZSCHIRNER (HERMANN) *1850-1902: New York, New York, New York.* •

UHL (JAKOB) *1850-1902: New York, New York, New York.* •

UJHAZY (LASZLO) *1850-1850: New York, New York, New York; 1851-1870: New Buda, Decatur, Iowa.* •

ULFFERS (HERMANN) *1875-1879: Detroit, Wayne, Michigan.* •

ULKE (HENRY) *1853-1860: New York, New*

York, New York; 1861-1910: Washington, DC, District Of Columbia. •

UMBSCHEIDEN (FRANZ) *1853-1874: Newark, Essex, New Jersey.* •

UNGER (PETER) *1849-1902: Baltimore, Ind. City: Baltimore, Maryland.* •

VALENTINY (KARL HEINRICH) *1851-1882: New York, New York, New York.* •

VARGA (FRANK) *1850-1902: New Buda, Decatur, Iowa.* •

VETTE (WILHELM) *1849-1871: Detroit, Wayne, Michigan; 1872-1885: Milwaukee, Milwaukee, Wisconsin.* •

VILLARD (HENRY) *1854-1900: Cincinnati, Hamilton, Ohio.* •

VILTER (ERNEST) *1850-1902: Lawrence, Douglas, Kansas.* •

VIOLAND (ERNST) *1850-1875: Peoria, Peoria, Illinois.* •

VOGT (WILHELM) *1850-1871: Louisville, Jefferson, Kentucky.* •

VOLCK (ADELBERT JOHN) *1850-1880: Dayton, Montgomery, Ohio; 1881-1912: Baltimore, Ind. City: Baltimore, Maryland.* •

VORTRIEDE (HEINRICH KARL JULIUS) *1858-1899: Buffalo, Erie, New York.* •

WAGNER (HEINRICH WALDEMAR) *1860-1902: New York, New York, New York.* •

WAGNER (PHILIPP) *1850-1895: Boston, Suffolk, Massachussetts.* •

WAGNER (WILHELM) *1852-1877: Freeport, Stephenson, Illinois.* •

WANNER (GOTTLIEB) *1851-1879: Cincinnati, Hamilton, Ohio.* •

WAPPICH (LEOPOLD) *1849-1902: Buffalo, Erie, New York.* •

WEBBER (J. B.) *1850-1902: Farmersburg, Clayton, Iowa.* •

WEBER (GUSTAV CARL ERICH) *1850-1853: Saint Louis, St. Louis, Missouri; 1854-1856: New York, New York, New York; 1857-1912: Cleveland, Cuyahoga, Ohio.* •

WEBER (JACOB) *1850-1902: New York, New York, New York.* •

WEBER (MAX) *1851-1901: New York, New York, New York.* •

WEDEKIND (FRIEDRICH WILHELM) *1850-1865: San Francisco, San Francisco, California; 1866-1888: New York, New York, New York.* •

WEDISWEILER () *1850-1902: New York, New York, New York.* •

WEIGEL (PHILIPP F.) *1851-1881: Saint Louis, St. Louis, Missouri; 1882-1902: Denver, Denver, Colorado.* •

WEIL (L.) *1850-1902: Leavenworth, Leavenworth, Kansas.* •

WEILER (HENRY) *1850-1902: Lawrence, Douglas, Kansas.* •

WEITLING (WILHELM) *1847-1871: New York, New York, New York.* •

WERMERSKIRCH (WM. M.) *1850-1902: New York, New York, New York.* •

WERNERT (J. B.) *1850-1902: Cincinnati, Hamilton, Ohio.* •

WESENDONCK (HUGO) *1850-1860: Philadelphia, Philadelphia, Pennsylvania; 1861-1900: New York, New York, New York.* •

WEYDEMEYER (JOSEPH) *1852-1865: New York, New York, New York; 1856-1858: Milwaukee, Milwaukee, Wisconsin; 1859-1860: Chicago, Cook, Illinois; 1866-1866: Saint Louis, St. Louis, Missouri.* •

WIEDINGER (BERNHARD MARIA) *1852-1860: Philadelphia, Philadelphia, Pennsylvania; 1861-1861: Saint Joseph, Buchanan, Missouri; 1862-1894: Chicago, Cook, Illinois.* •

WIEDRICH (MICHAEL) *1851-1899: Buffalo, Erie, New York.* •

WIESNER (ADOLPH) *1851-1860: Baltimore, Ind. City: Baltimore, Maryland.* •

WILHELMI (FRANZ) *1850-1868: Saint Louis, St. Louis, Missouri; 1869-1870: Saint John'S, Franklin, Missouri; 1871-1883: Washington, Franklin, Missouri.* •

WILLICH (AUGUST) *1854-1858: New York, New York, New York; 1859-1878: Cincinnati, Hamilton, Ohio.* •

WILLLMAN (ANDREAS) *1850-1902: New York, New York, New York.* •

WILSON (B.) *1850-1902: New York, New York, New York.* •

WISS (GEORGE EDWARD) *1850-1902: Baltimore, Ind. City: Baltimore, Maryland.* •

WISSERT (JOSEPH) *1850-1902: New York, New York, New York.* •

WITTICH (ALBERT) *1849-1877: Cincinnati, Hamilton, Ohio.* •

WOHLGEMUTH (F.) *1850-1902: New York, New York, New York.* •

WOLFF (ALBERT) *1853-1902: St. Paul'S, Ramsey, Minnesota.* •

WRATISLAW (EDWARD C.) *1849-1867: New York, New York, New York; 1868-1871: Bridgeport, Fairfield, Connecticut; 1872-1902: New Haven, New Haven, Connecticut.* •

WUTSCHEL (FRANZ) *1849-1902: New York, New York, New York.* •

ZENTMAYER (JOSEPH) *1856-1888: Philadelphia, Philadelphia, Pennsylvania.* •

ZERRAHN (CARL) *1855-1909: Boston, Suffolk, Massachussetts.* •

ZIEGLER (KARL T.) *1849-1882: Newark, Essex, New Jersey.* •

ZIMMERMANN (JOHANN) *1849-1884: Cincinnati, Hamilton, Ohio.* •

ZIPPERLEN (ADOLPH) *1850-1905: Franklin, Summit, Ohio.* •

ZITZ (FRANZ H.) *1856-1861: New York, New York, New York; 1862-1877: Jersey, Hudson, New Jersey.* •

ZITZER (JOHANN) *1850-1865: Carlisle, Cumberland, Pennsylvania; 1866-1883: Baltimore, Ind. City: Baltimore, Maryland.* •

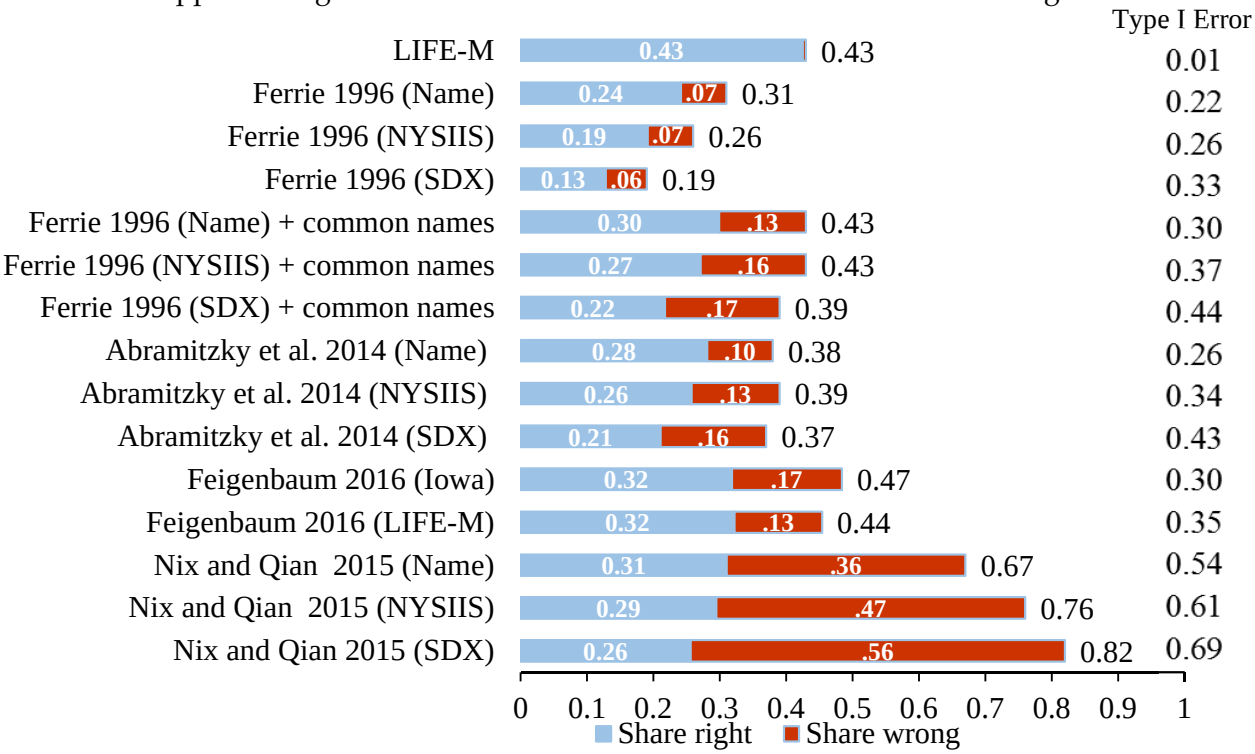
ZUNDT (ERNST ANTON) *1858-1858: Green Bay, Brown, Wisconsin; 1859-1864: Milwaukee, Milwaukee, Wisconsin; 1865-1868: Saint Louis, Ind. City: St. Louis, Missouri; 1869-1902: Jefferson, Cole, Missouri.* •

Online Appendix C Alternative Linkage Methods for Robustness Checks

One problem with record linkage methods is that we do not yet have a commonly agreed method for performing the matching process. This has led to the development of several different algorithms which are often tweaked and altered by following applications. Bailey, Cole, Henderson and Massey (2017) review several of these methods and show that no algorithm can consistently produces samples that are representative of the underlying population. This includes linking records by hand. Secondly, most methods produce high rates of false links and these linking errors are not random but related to baseline characteristics of individuals. Figure 2 from Bailey et al. (2017) summarizes the performance of different record linkage algorithms by plotting their share of correct and incorrect matches, and the type I error rate.

The lowest error rate is achieved by Ferrie (1996) who links only individuals with uncommon names. This reduces the dimensionality problem, issues of name ties, and produces fairly accurate matches. A natural robustness check is thus to re-link the passenger lists and Census data using his approach. The downside is the reduction in sample size and an arbitrary choice of what defines an *uncommon* name. The robustness check in this section follows the spirit of Ferrie (1996) by selecting uncommon names from the passenger lists which are the top 10 and 20% of uncommon names in the frequency distribution of surnames. After this selection has been made, the steps from the previous matching algorithm are followed.

Online Appendix Figure 2: Match Rates and False Links across Record Linkage Methods



Notes: Comparison of different record linkage algorithms using the ground truth data from the LIFE-M survey. Type I errors are the false match rate over the total match rate and measure the chance of false positives, i.e. matches that were made when they should not. Methods are compared using original names, and names that were transformed via phonetic score using NYSIIS or soundex (SDX). The algorithms are described in detail in Bailey et al. (2017).

Online Appendix C.1 Inferring Soldiers' Nationality Using a Machine Learning Algorithm

This section describes how we trained a Machine Learning Algorithm on the 1860 Full Count U.S. Census discussed in Appendix A.2 (where we observe place of birth) and then applied to Algorithm to the Union Army Enlistment Data discussed in Appendix A.4 (where we do not).

A vast corpus of computer science and statistical learning literature is devoted to the question if characters of a word can be used to investigate how words are classified. In comparison to proper nouns of other types (such as company names), personal names have many more conventional structures than others. For example, German names tend to include "berg" or "mann", while Mexican names often have "guez" or "arro". At the same time, naming conventions become less stable and much more difficult to identify when a model predicts a specific nationality given a specific individual name.

Despite the availability and simplicity of name data, few studies utilize personal names to predict individual nationality or ethnicity. Using decision trees, Ambekar, Ward, Mohammed, Male and Skiena (2009) and Treeratpituk and Giles (2012) classify ethnic groups on a corpus of news data. Chang, Rosenn, Backstrom and Marlow (2010) develop a Bayesian classifier with name data from U.S. Census. Harris (2015) predicts ethnicity based on proportions of each unique name within ethnic groups.

One of the key challenges with predicting nationality while using name information is that important patterns (i.e., combinations of n specific name characters, n-grams) are not known a priori. The standard way developed in statistics and econometrics to approach this problem usually includes two-steps. At the first step, all potential combinations of characters of a given length n, n-grams, are extracted from the corpus of names and are used as binary covariates. At the next step, a statistical model (e.g., logistic regression, ridge-regression, random forest, etc) is applied to a processed data for calculating predictions. This approach, however, requires a significant computation capacity and often fails even on industrial supercomputers.

Mikolov, Karafiát, Burget, Cernock and Khudanpur (2010) and Bahdanau, Cho and Bengio (2014) show that recurrent neural networks is cost-effective alternative to other approaches to language modeling. Recurrent neural networks iteratively introduce additional n-grams as covariates and keep, update the prediction and keep them only if the quality of prediction increased higher than a certain threshold. Thus, they effectively keep and operate over important patterns only. Bahdanau et al. (2014) show that recurrent neural networks outperform most of the standard models of statistical learning on a large-size data-sets for tasks such as machine translation while not suffering from over-fitting (see also, Hochreiter and Schmidhuber (1997)). Kim, Jernite, Sontag and Rush (2016) , Chiu and Nichols (2015), and **?** use character level embedding with a recurrent neural network for a set of classification tasks, including personal name classification.

We build on the results from Hochreiter and Schmidhuber (1997), Chiu and Nichols (2015), and **?** to develop a recurrent neural network based model which predicts nationality using an individual's first name and last name. Using character embedding, our model automatically extracts character-level features for the fistname and lastname to predict the propensity with which a person belongs to a specific nationality (Germany, Scandinavia, Italy, Ireland, or 'Other/USA'). We trained our model with back-propagation through time (Werbos, 1990).

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Online Appendix Table 1: County-Level Voting Results

	Δ Republican VoteShare (1848-1860)			Δ Democratic VoteShare (1848-1860)		
	(1)	(2)	(3)	(4)	(5)	(6)
# FourtyEighters	1.040***	0.819**	0.594**	-0.177	-0.294	-0.229
	(3.312)	(2.174)	(1.987)	(-1.191)	(-1.290)	(-1.029)
Controls	-	#:11 (Akaike's)	#:14 (Adjust R-sq)	-	#:11 (Akaike's)	#:14 (Adjust R-sq)
N:	1,014	1,014	1,014	1,014	1,014	1,014
R^2	0.007	0.421	0.619	0.001	0.241	0.266

Notes: TBA

Online Appendix D Additional Results

References

Ambekar, Anurag, Charles Ward, Jahangir Mohammed, Swapna Male, and Steven Skiena, "Name-ethnicity classification from open sources," in "Proceedings of the 15th ACM SIGKDD international conference on Knowledge Discovery and Data Mining" ACM 2009, pp. 49–58.

Bahdanau, Dzmitry, Kyunghyun Cho, and Yoshua Bengio, "Neural machine translation by jointly learning to align and translate," *arXiv preprint arXiv:1409.0473*, 2014.

Chang, Jonathan, Itamar Rosenn, Lars Backstrom, and Cameron Marlow, "ePluribus: Ethnicity on Social Networks.," *ICWSM*, 2010, *10*, 18–25.

Chiu, Jason PC and Eric Nichols, "Named entity recognition with bidirectional LSTM-CNNs," *arXiv preprint arXiv:1511.08308*, 2015.

Dahlinger, Charles William, *The German Revolution of 1849: Being an Account of the Final Struggle, in Baden, for the Maintenance of Germany's First National Representative Government*, Putman's, 1903.

Ferrie, Joseph P, "A new sample of males linked from the public use microdata sample of the 1850 US federal census of population to the 1860 US federal census manuscript schedules," *Historical Methods: A Journal of Quantitative and Interdisciplinary History*, 1996, *29* (4), 141–156.

Harris, J Andrew, "What's in a name? A method for extracting information about ethnicity from names," *Political Analysis*, 2015, *23* (2), 212–224.

Hochreiter, Sepp and Jürgen Schmidhuber, "Long short-term memory," *Neural computation*, 1997, *9* (8), 1735–1780.

Jung, Joseph (Hrsg.), *Digitale Briefedition Alfred Escher, Launch Juli 2015 (laufend aktualisiert)*, Zürich: Alfred Escher-Stiftung, 2015.

Kim, Yoon, Yacine Jernite, David Sontag, and Alexander M Rush, "Character-Aware Neural Language Models.," in "AAAI" 2016, pp. 2741–2749.

Mikolov, Tomas, Martin Karafiát, Lukas Burget, Jan Cernock, and Sanjeev Khudanpur, "Recurrent neural network based language model.," in "Interspeech," Vol. 2 2010, p. 3.

Nagel, Daniel, *Von republikanischen Deutschen zu deutsch-amerikanischen Republikanern: ein Beitrag zum Identitätswandel der deutschen Achtundvierziger in den Vereinigten Staaten 1850-1861* Mannheimer historische Forschungen, Röhrig Universitätsverlag, 2012.

Reiter, Herbert, *Politisches Asyl im 19. Jahrhundert: Die deutschen politischen Flüchtlinge des Vormärz und der Revolution von 1848/49 in Europa und den USA*, Berlin: Duncker & Humblot, 1992.

Treeratpituk, Pucktada and C Lee Giles, "Name-Ethnicity Classification and Ethnicity-Sensitive Name Matching.," in "AAAI" 2012.

Valentin, Veit, *Geschichte der deutschen Revolution von 1848-1849. 1. Bis zum Zusammentritt des Frankfurter Parlaments*, Ullstein, 1930.

Werbos, Paul J, "Backpropagation through time: what it does and how to do it," *Proceedings of the IEEE*, 1990, *78* (10), 1550–1560.

Whitridge, Arnold, *Men in Crisis: The Revolutions of 1848*, C. Scribner's Sons, 1949.