

Supplementary Materials

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Appendix A: Replication Sources

Homola, Pereira and Tavits (2020) use three different data sources to construct the dependent variables in their empirical analysis: the European Values Survey, the 2017 Bundestag elections, and the German general population survey (ALLBUS). The first two of these data sources are available with HPT's replication materials, but the ALLBUS data are only available at the GESIS data center, and so are not available to us.

We announced our intention to replicate this analysis on March 2, 2020, and pre-registered our analysis plans and code with the Open Science Foundation (<http://osf.io/prereg>) on March 3, 2020. However, the COVID-19 pandemic has prevented us from accessing these data. We are fully committed to analyzing the ALLBUS data following the specified statistical protocols as soon as we are able to access it, but we nevertheless view the decisive results for the EVS and election data to be sufficient to establish that the main results in HPT are overturned when including state fixed effects.

Appendix B: The Origins of Contemporary *Länder*

A systematic qualitative review of the origins of contemporary Germany *Länder* shows that they largely follow either pre-existing borders between Weimar-era administrative units or borders between postwar occupation zones, with additional territorial exchanges to eliminate any remaining small territorial exclaves. The case of Prussia is similar but a bit more complex as it represented a federal structure in itself. The Prussian government contained three administrative levels: *Provinzen* (provinces), *Regierungsbezirke* (regions), and *Kreise* (districts). Provinces were comparable to the other *Länder* of Germany, and served as source of identification for their residents (Renzsch 1989). Most provinces corresponded to territories that outdate Prussian expansions in the 18th and 19th century, and have been directly incorporated in the creation of contemporary *Länder* (e.g., Brandenburg, Pomerania, Westphalia, Rhine province, and Schleswig-Holstein). In contrast to provinces and their governmental scope of action (e.g., in the area of cultural and health policies), *Regierungsbezirke* and *Kreise* predominantly had administrative functions. *Regierungsbezirke* represented intermediate administrative bodies with responsibilities in the area of taxation, church and schools, and interior affairs. As there has been a considerable overlap with responsibilities of *Kreise* and *Provinzen*, debates arose on simplifying or dissolving the administrative role of *Regierungsbezirke* (Wagner 1982). *Kreise* were originally shaped in the way that residents were able to reach the place of the administration in a one-day ride in a horse-driven carriage. Larger cities became their own *Kreis*. In terms of responsibilities, *Kreise* mainly reflected their function of bridging Prussian state government and the local government of communities.

The administrative structure of Prussia had been adopted by other *Länder* in a comprehensive way. While the federal and state government are dominant in terms of

governance and policy development, communities play a key role in policy implementation. In comparison, the political and administrative leeway of (as well as citizens identification with) *Regierungsbezirke* and *Kreise* has traditionally been minor (Nicholls 2002). *Länder* in the German context (compared to other administrative levels) exhibit a wide range of regional disparities in socio-economic and political factors (Benz 1999; Auel 2010; Jeffery et al. 2014)¹ leading to a variety in living conditions, which likely extends to differences in political attitudes such as intolerance.

Regarding the five former East German *Länder*, additional small changes occurred between 1952 and 1990. Below, we describe the formation of each contemporary *Land*. Our sources are Sante (1971); Bracher and Eschenburg (1981); Gunlicks (2003). Additional map details were obtained from Wikipedia.

The point is essential: an exhaustive overview of state border origins establishes that they either had pre-Third Reich roots and/or were shaped by the myriad and often non-overlapping interests of occupying powers. While the argument of historical continuity is more convincing for some *Länder* than for others, none were created according to the location of Nazi concentration camps. We nevertheless provide an additional test below (Table A4) on using Weimar-era administrative boundaries which further corroborates the findings from the main models.

Baden-Württemberg

Baden-Württemberg was created in 1952 out of territories that had formerly comprised Württemberg, Baden, and Hohenzollern.

¹ When it comes to post-WWII factors that might altered the demographic, economic or political setup of *Länder* (e.g., immigration), contemporary *Länder* should be a more accurate control strategy compared to historical boundaries as these developments occurred subsequently to the re-establishment of *Länder* and thus better reflects contemporary variation in living conditions that might impact people's intolerance.

Hohenzollern was a province of Prussia, established in 1850. It was a Prussian exclave surrounded by Baden and Württemberg.

The Grand Duchy of Baden was established in 1806, and became a state within the German Empire and thereafter the Republic of Baden under the Weimar Government.

The Kingdom of Württemberg was established in 1805, and became a state within the German Empire and thereafter the Republic of Württemberg under the Weimar Government.

Under the postwar occupation, the northern parts of the Republic of Baden and the Republic of Württemberg fell under American control, and the southern parts (together with the territories of Hohenzollern) fell under French control. The Americans created a state of Württemberg-Baden out of their two territories, whereas the French merged Württemberg with Hohenzollern to create Württemberg-Hohenzollern, keeping Baden separate (for a time under the name South Baden). Upon French and American withdrawal, the three states voted to join to create the present state of Baden-Württemberg within the Federal Republic of Germany.

Bavaria

The general territory of Bavaria emerged under the Electorate of Bavaria under the Holy Roman Empire. Subsequently became an independent kingdom, and joined the German Empire in 1870. Its territory included a portion of the Palatinate region known as the Rheinkreis. After WWII the majority of Bavaria (except for the Rheinkreis region) was under American occupation, and subsequently became a state within the Federal Republic of Germany.

The Rheinkreis region was occupied, along with the rest of the Palatinate, by the French. It was separated from Bavaria in 1947, to become a component part of Rheinland-Pfalz. The city of Ostheim (an exclave of Thuringia) was transferred to Bavaria in 1947.

Berlin

Berlin emerged as a city as part of the Margraviate of Brandenburg—which has mainly been a province of Prussia. It became a separate administrative unit from Brandenburg in 1881, and its borders expanded in 1920. Greater Berlin was divided among the four occupying powers following WWII; the American, British, and French sectors subsequently were united as West Berlin. After the fall of the German Democratic Republic, the East and West sectors were reunited to form the present state of Berlin within the Federal Republic of Germany.

Brandenburg

The Margraviate of Brandenburg dates to the 12th century. Brandenburg was the core of the Prussian Empire, and subsequently became the Province of Brandenburg within Prussia and later the Free State of Prussia under Weimar. In 1881 Berlin was separated from Brandenburg to become an independent city, and in 1920 additional territory was ceded to Berlin.

Brandenburg east of the Oder–Neisse line was ceded to Poland after the German defeat in 1945.

As a state within the unitary German Democratic Republic, it was formally abolished in 1952 along with all other East German states. It was reestablished after German reunification as a state within the Federal Republic of Germany.

Bremen

Bremen was a free city under the Holy Roman Empire, and remained a separate entity through and after the Congress of Vienna. It was incorporated into the Prussian and German Empire and remained sovereign under the Weimar Republic. After WWII it was occupied by American forces, and subsequently became a state within the Federal Republic of Germany.

Bremen's exclave of Bremerhaven was purchased from the Kingdom of Hanover in 1827. The borders of Bremen proper changed under the Nazi regime, which expanded the city's borders to include several neighboring villages. Under Nazi rule, Bremerhaven was transferred to Prussian Hanover; Bremerhaven was restored to Bremen in 1947.

Hamburg

Hamburg was a free city under the Holy Roman Empire, and subsequently became the Free and Hanseatic City of Hamburg. It retained sovereign status through the Prussian and German Empire and the Weimar Republic. After the WWII it was occupied by British forces, and subsequently became a state within the Federal Republic of Germany.

Hamburg's borders changed under the Nazi regime, specifically through the Greater Hamburg Act under which Prussia and Hamburg exchanged small amounts of territory (Hamburg surrendered its exclaves to Prussia, and gained territory in the form of small towns ringing Hamburg). The resulting borders left Hamburg geographically contiguous.

Hesse

Modern Hesse was created out of several administrative units with a complex history. Its direct predecessors were the portion of the People's State of Hesse east of the Rhine, and the province of Hesse-Nassau. Both of these entities trace their history to the Landgraviate of Hesse, dating to the 13th century.

Hesse-Nassau was first established after the Austro-Prussian war, and was a province within Prussia under both the German Empire and the Weimar Republic. It was divided into two provinces under Nazi rule, but these were merged again in 1945.

The People's State of Hesse was the successor to the Grand Duchy of Hesse, which was part of the German Empire and later the Weimar Republic.

Nearly all of Hesse-Nassau fell under American control during the postwar occupation, as did the territories of the People's State of Hesse east of the Rhine. These were the territories merged under American authority into Greater Hesse, now Hesse. The new state of Hesse also incorporated Wetzlar, an exclave of the former Rhine Province completely surrounded by the new Hesse.

The portion the People's State of Hesse west of the Rhine fell under French control, and subsequently became part of Rheinland-Pfalz. A small portion of Hesse-Nassau which fell under French control, Montabaur, likewise became part of Rheinland-Pfalz.

An exclave of Hesse-Nassau, Schmalkalden, was transferred to the province of Saxony under Nazi rule, and from there assigned to Thuringia. Under the American occupation, Bad

Wimpfen, an exclave of the People's State of Hesse completely surrounded by Württemberg-Baden, was transferred to the latter.

Mecklenburg-Vorpommern

Mecklenburg-Vorpommern was established in 1945 through the merger of the portion of Pomerania west of the Oder–Neisse line and Mecklenburg.

Mecklenburg dates to the 13th century. By 1918, its territory was divided between the Free State of Mecklenburg-Schwerin and the Free State of Mecklenburg-Strelitz, both states within the Weimar Republic. The two were amalgamated under Nazi rule in 1934 to form the state of Mecklenburg.

Pomerania dates to the 12th century. It became a province of Prussia when the latter was established in 1815, and remained a province a Prussia as part of both the German Empire and later the Weimar Republic. The territory east of the the Oder–Neisse line was ceded to Poland after WWII. The occupying Soviet forces merged the small remaining portion of Vorpommern with Mecklenburg to create Mecklenburg-Vorpommern.

As a state within the unitary German Democratic Republic, Mecklenburg-Vorpommern was formally abolished in 1952 along with all other East German states. It was reestablished after German reunification as a state within the Federal Republic of Germany.

The small municipalities of Neuhaus and Wendischthun joined Niedersachsen after reunification. Their territory had been part of the Kingdom of Hannover and subsequently part of Prussian Hannover, but as they are located on the right bank of the Elbe River they were occupied by the Soviets and fell under the control of the German Democratic Republic.

Niedersachsen

Niedersachsen (“Lower Saxony”) was established in 1946 under British occupation, amalgamating the Prussian province of Hanover with the Free States of Brunswick, Oldenburg, and Schaumburg-Lippe.

The Kingdom of Hanover was established after the Congress of Vienna, and became a province of Prussia in 1866.

The Free State of Brunswick was established after the Congress of Vienna, and became a state within the Weimar Republic.

The Grand Duchy of Oldenburg was established after the Congress of Vienna. The Free State of Oldenburg was established in 1918 as a state within the Weimar Republic.

Schaumburg-Lippe became a principality in 1807. The Free State of Schaumburg-Lippe was established in 1918 as a state within the Weimar Republic.

The British occupying authority first established a State of Hanover in 1946, and then moved to include the remaining three Free States as part of the new state of Niedersachsen.

Under Nazi rule, two exclaves of Oldenburg were transferred to the states surrounding them: Birkenfeld to Prussia, and Eutin to Schleswig-Holstein. Eutin remained within Schleswig-Holstein when the latter was established as a state by the British occupying authority, and Birkenfeld, as part of the French zone, became part of Rheinland-Pfalz when the latter was established in 1946.

During the postwar occupation, several of Brunswick's exclaves fell under Soviet occupation, and were amalgamated into Sachsen-Anhalt.

After reunification, the municipalities of Neuhaus and Wendischthun voted to join Niedersachsen, returning them to their historic position as part of the successor state to Hannover.

Nordrhein-Westfalen

Nordrhein-Westfalen was established under the British occupation as an amalgamation of Lippe, Westphalia, and portions of Rhine Province.

Lippe dates to the 16th century. The Principality of Lippe became a state within the German Empire in 1871, and the Free State of Lippe in 1918 became a state within the Weimar Republic.

Westphalia was established after the Congress of Vienna, and was incorporated into Prussia. It remained a province through the German Empire and the Weimar Republic.

Rhine Province was a province within Prussia under both the German Empire and the Weimar Republic. In the postwar period, the northern portion of Rhine Province fell under British occupation and the southern portion under French occupation. An exclave of Rhine Province, Wetzlar, fell under American occupation.

Under “Operation Marriage,” British authorities merged Westphalia with the portions of Rhine Province that they held to create Nordrhein-Westfalen (“North-Rhine Westphalia”) in 1946. The Free State of Lippe was incorporated as well in 1947. Of the remaining territories of the former Rhine Province, Wetzlar was transferred to Hesse, and the southern portions under French authority became part of Rheinland-Pfalz.

Rheinland-Pfalz

Rheinland-Pfalz was established as a state within the Federal Republic of Germany under French occupying authority as an amalgamation of the French-controlled portions of the People’s State of Hesse and the former Prussian Rhine Province with the French-controlled Bavarian exclave of Rheinkreis.

During this period there were small exchanges of territory between the new Rheinland-Pfalz and the Saar Protectorate, also under French authority.

Saarland

The territory of contemporary Saarland was incorporated into the German Empire in 1871 after the Franco-Prussian war. After WWI, Saarland was placed under a League of Nations mandate, and hence Saarland was not a component part of the Weimar Republic. It was incorporated into Nazi Germany in 1935.

After WWII, Saarland fell under French authority as the Saar Protectorate. Unlike the other French-occupied territories, Saarland was not transferred to the Federal Republic of Germany, but rather remained under French administration. During this period there were small exchanges of territory between the Saar Protectorate and the new Rheinland-Pfalz.

Saarland’s population rejected an independence referendum in 1956, and thereafter the Saar Treaty provided for the 1957 unification of Saarland with the Federal Republic of Germany as the present state of Saarland.

Sachsen

The Kingdom of Saxony was established after the Congress of Vienna. It joined the German Empire, and subsequently became the Free State of Saxony within the Weimar Republic.

After WWII, Saxony fell under Soviet occupation. Its territory east of the Oder–Neisse line was ceded to Poland. It was amalgamated with the small portion of territory west of the Oder–Neisse line that was previously part of the Prussian province of Lower Silesia, the remainder of which was ceded to Poland.

As a state within the unitary German Democratic Republic, Sachsen was formally abolished in 1952 along with all other East German states. It was reestablished after German reunification as a state within the Federal Republic of Germany. To its territory was added the town of Torgau, formerly within the state of Sachsen-Anhalt.

Sachsen-Anhalt

Sachsen-Anhalt was established under Soviet authority in 1945 as an amalgamation of the Free State of Anhalt, Halle-Merseburg, and Soviet-occupied exclaves of Brunswick.

The Free State of Anhalt, successor to the Grand Duchy of Anhalt, was established in 1918 as part of the Weimar Republic.

Halle-Merseburg was a province of Prussia established under Nazi rule in 1944.

As a state within the unitary German Democratic Republic, Sachsen-Anhalt was formally abolished in 1952 along with all other East German states. It was reestablished after German reunification as a state within the Federal Republic of Germany. The town of Torgau, administered as part of Leipzig under the GDR, was transferred to Sachsen.

Schleswig-Holstein

Schleswig-Holstein was a province of Prussia beginning in 1867, and hence was part of the German Empire and subsequently the Weimar Republic.

Under Nazi rule, the Greater Hamburg Act ceded to Hamburg some neighboring towns within the province of Schleswig-Holstein. Schleswig-Holstein also gained the town of Lübeck.

After WWII, Schleswig-Holstein fell under British authority. It was established as a state within the Federal Republic of Germany

Thüringen

The Landgraviate of Thuringia dates to the 12th century. The Free State of Thuringia within the Weimar Republic was established in 1920 out of the Gotha, Saxe-Altenburg, Saxe-Meiningen, Saxe-Weimar-Eisenach, Schwarzburg-Rudolstadt, Schwarzburg-Sondershausen and the People's State of Reuss.

After WWII, Thuringia fell under Soviet occupation. The Soviets transferred several territories from the former province of Saxony to Thuringia. Ostheim, an exclave under American occupation, was transferred to Bavaria in 1947.

As a state within the unitary German Democratic Republic, Thuringia was formally abolished in 1952 along with all other East German states. It was reestablished after German reunification as a state within the Federal Republic of Germany.

Comparing East German Länder, 1952-1990

The German Democratic Republic abolished *Länder* in 1952, replacing them with administrative districts (*Bezirke*). After reunification, the five original East German *Länder* were reestablished with borders that largely but not exactly follow the borders of 1952. Figure A1 compares the borders of the five *Länder* in 1952 (in purple) with those of 1990 (in red).

Figure A1: East German *Länder*, 1952 and 1990



Source:

https://en.wikipedia.org/wiki/Administrative_divisions_of_East_Germany#/media/File:Germany_Laender_1947_1990_DDR.png. Licensed under GNU Free Documentation License, version 1.3 <https://www.gnu.org/licenses/fdl-1.3.en.html>.

Appendix C: Fixed Effects Results

In Table A1, we show the estimates for the state fixed effects from Models 2, 4, and 6 in Table 1 in the main text.

Table A1: Fixed Effects Results

PANEL A: Intolerance			
	(2)	(4)	(6)
Distance to camp	0.004 (0.004)	0.001 (0.004)	0.005 (0.005)
% Jews (1925)		-2.233 (4.089)	8.478 (5.757)
% Unemployed (1933)		1.365* (0.618)	1.235 (0.921)
Population (1925)		-0.030* (0.013)	-0.018 (0.017)
Nazi party share (1933)		-0.791** (0.227)	-0.743** (0.251)
Brandenburg	-0.100 (0.103)	-0.083 (0.403)	0.982 (0.553)
Mecklenburg-Vorpommern	-0.209 (0.115)	-0.227 (0.403)	0.543 (0.551)
Saxony	-0.089 (0.106)	-0.112 (0.412)	0.757 (0.560)
Saxony-Anhalt	0.073 (0.101)	0.066 (0.409)	1.090 (0.568)
Thuringia	-0.189 (0.106)	-0.248 (0.403)	0.822 (0.558)
Baden-Wuerttemberg	-0.280* (0.117)	-0.269 (0.395)	0.492 (0.556)
Bavaria	0.097 (0.103)	0.094 (0.396)	0.858 (0.546)
Bremen	-0.413* (0.188)	-0.568 (0.453)	0.303 (0.597)
Hamburg	-0.181 (0.152)	0.06 (0.481)	0.738 (0.668)
Hessen	-0.311* (0.121)	-0.235 (0.355)	0.47 (0.499)
Lower Saxony	-0.154 (0.107)	-0.157 (0.402)	0.71 (0.556)
North Rhine-Westphalia	-0.323** (0.113)	-0.397 (0.405)	0.341 (0.567)
Rhineland Palatinate	-0.28 (0.146)	-0.399 (0.401)	0.6 (0.557)
Saarland	-0.028 (0.176)	-0.103 (0.399)	-0.002 (0.623)
Schleswig-Holstein	-0.302* (0.134)	-0.243 (0.415)	0.631
Constant	0.246** (0.090)	0.593 (0.428)	0.068 (0.601)

Method	OLS	OLS	G-est
Observations	2,075	2,075	1,376
Adjusted R^2	0.031	0.041	0.093

PANEL B: Resentment

	(2)	(4)	(6)
Distance to camp	-0.029 (0.025)	-0.041 (0.025)	-0.018 (0.028)
% Jews (1925)		-42.879 (23.733)	-3.866 (46.528)
% Unemployed (1933)		0.607 (3.586)	1.913 (5.395)
Population (1925)		-0.205** (0.077)	-0.114 (0.101)
Nazi party share (1933)		-3.515** (1.318)	-4.947** (1.740)
Brandenburg	-1.116 (0.598)	-5.129* (2.339)	-2.135 (4.322)
Mecklenburg-Vorpommern	-1.597* (0.665)	-5.911* (2.339)	-3.148 (4.352)
Saxony	-0.639 (0.615)	-4.41 (2.390)	-1.792 (4.379)
Saxony-Anhalt	-0.144 (0.588)	-4.218 (2.374)	-0.98 (4.368)
Thuringia	-1.967** (0.617)	-6.248** (2.340)	-2.86 (4.400)
Baden-Wuerttemberg	-3.296** (0.681)	-7.408** (2.290)	-5.594 (4.384)
Bavaria	0.629 (0.600)	-3.482 (2.300)	-1.451 (4.309)
Bremen	-4.076** (1.092)	-8.548** (2.631)	-4.855 (4.979)
Hamburg	-1.41 (0.883)	-2.673 (2.790)	-1.665 (4.596)
Hessen	-2.695** (0.702)	-5.942** (2.061)	-5.099 (4.130)
Lower Saxony	-2.696** (0.619)	-6.772** (2.333)	-4.614 (4.424)
North Rhine-Westphalia	-2.274** (0.657)	-6.482** (2.349)	-4.222 (4.400)
Rhineland Palatinate	-0.267 (0.848)	-4.661* (2.325)	-0.481 (4.403)
Saarland	1.285 (1.019)	-2.706 (2.317)	2.532 (4.807)
Schleswig-Holstein	-0.557 (0.775)	-4.477 (2.411)	-1.792
Constant	1.638** (0.521)	7.908** (2.484)	9.272* (4.343)
Method	OLS	OLS	G-est
Observations	2,075	2,075	1,376
Adjusted R^2	0.09	0.099	0.15

PANEL C: Far-Right Support

	(2)	(4)	(6)
Distance to camp	0.001 (0.001)	0.0004 (0.001)	-0.001 (0.001)

% Jews (1925)		0.39	2.316
		(0.928)	(1.218)
% Unemployed (1933)		-0.055	0.21
		(0.140)	(0.200)
Population (1925)		-0.004	-0.006
		(0.003)	(0.004)
Nazi party share (1933)		-0.091	-0.191**
		(0.052)	(0.065)
Brandenburg	-0.006	0.035	0.227
	(0.023)	(0.091)	(0.125)
Mecklenburg-Vorpommern	-0.046	-0.012	0.147
	(0.026)	(0.091)	(0.130)
Saxony	-0.035	0.011	0.184
	(0.024)	(0.093)	(0.127)
Saxony-Anhalt	-0.007	0.034	0.217
	(0.023)	(0.093)	(0.130)
Thuringia	-0.045	-0.009	0.187
	(0.024)	(0.092)	(0.126)
Baden-Wuerttemberg	-0.054*	-0.022	0.163
	(0.026)	(0.090)	(0.126)
Bavaria	-0.033	0.002	0.179
	(0.023)	(0.090)	(0.123)
Bremen	-0.055	-0.021	0.151
	(0.042)	(0.103)	(0.140)
Hamburg	0.016	0.101	0.281
	(0.034)	(0.109)	(0.148)
Hessen	-0.057*	-0.017	0.164
	(0.027)	(0.081)	(0.113)
Lower Saxony	-0.031	0.011	0.18
	(0.024)	(0.091)	(0.123)
North Rhine-Westphalia	-0.053*	-0.021	0.139
	(0.026)	(0.092)	(0.126)
Rhineland Palatinate	-0.029	-0.003	0.178
	(0.033)	(0.091)	(0.128)
Saarland	0.047	0.083	0.22
	(0.040)	(0.091)	(0.125)
Schleswig-Holstein	0.003	0.05	0.235
	(0.030)	(0.094)	
Constant	0.050*	0.065	-0.236
	(0.020)	(0.097)	(0.140)
Method	OLS	OLS	G-est
Observations	2,075	2,075	1,376
Adjusted R^2	0.009	0.009	0.026

Cells contain regression coefficients with standard errors in parentheses. * $p < .05$, ** $p < .01$.

Appendix D: Hausman Tests

In Table A2 we replicate our bivariate and interwar models using HPT's pooled specification, our fixed effects specification, and a random effects specification that assumes that the *Länder* effects are normally distributed with mean and standard deviations estimated from the data. Replacing the state fixed effects with state random effects $\phi_s = \alpha_0 + \delta_{0s}$, we write the random effects specification as

$$Y_{is} = \beta \text{Distance}_{is} + \gamma X_{is} + \alpha_0 + \delta_{0s} + \varepsilon_{is}, \text{ where} \quad (1) \\ \varepsilon_{is} \sim N(0, \sigma_\varepsilon^2) \text{ and } \delta_{0s} \sim N(\alpha_0, \sigma_\delta^2)$$

We then conduct three Hausman tests for each model and dependent variable, comparing the random effects to the pooled specification, the fixed effects to the pooled specification, and the fixed effects to the random effects.²

The Hausman tests are important because German states vary substantially in size. Three German federal states are cities (Berlin, Bremen, and Hamburg) and one is geographically very small (Saarland). There is no variation in distance to camps among any of the respondents in Berlin or Hamburg. Bremen is geographically split between Bremen proper and the port city of Bremerhaven, and so there is very little variation in distance to camps; the same is true of Saarland, which has only six districts whose distance to camps varies little relative to the variation found across Germany as a whole. A statistical argument against including *Länder* fixed effects is that they wipe away any variation in distance to camps in these units, preventing them from contributing to our estimate the causal effect of distance to camps on out-group

² HPT (Footnote 29) describe a random effects specification in which they include random intercepts for either *Closest Camp* or *Closest Camp* and state (*Länder*). Random effects models make the assumptions that the random effects follow a probability distribution and are essentially a selection from some defined set (e.g., a population of regional units) (Gelman 2005). While this assumption holds for *Länder*, the variable *Closest Camp* represents an individual-level attribute rather than a random effect. Hence, *Closest Camp* cannot be nested in or cross-classified with a random effects-structure such as regions.

intolerance and decreasing statistical efficiency. The Hausman test is a formal statistical procedure for weighing the inconsistency that results from omitting *Länder* fixed effects against the inefficiency that might be caused by including them.

We present the p -values for each Hausman test; rejecting the null hypothesis that the specifications are equivalent comprises evidence that we should prefer the consistent model (e.g., the fixed effects) to the potentially more efficient one (e.g. the pooled specification).

Table A2: Hausman Tests

PANEL A: Bivariate Model									
	Intolerance			Resentment			Far-Right Support		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Distance	-0.009** (0.003)	-0.0005 (0.004)	0.004 (0.004)	-0.106** (0.016)	-0.042 (0.024)	-0.029 (0.025)	-0.001* (0.001)	-0.001 (0.001)	0.001 (0.001)
Method	Pooled	RE	FE	Pooled	RE	FE	Pooled	RE	FE
RE v Pooled		0.002			<0.001			0.261	
FE v Pooled		<0.001			<0.001			0.014	
FE v RE		0.044			0.107			0.028	
Observations		2,075			2,075			2,075	
Adjusted R ²	0.005	-0.0005	-0.007	0.021	0.001	-0.007	0.002	0.001	-0.008

PANEL B: Interwar Model									
	Intolerance			Resentment			Far-Right Support		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Distance	-0.011** (0.003)	-0.002 (0.004)	0.001 (0.004)	-0.116** (0.017)	-0.053* (0.024)	-0.041 (0.025)	-0.001* (0.001)	-0.001 (0.001)	0.0004 (0.001)
% Jews (1925)	-1.402 (1.026)	-0.916 (1.686)	-2.233 (4.089)	-3.696 (6.104)	-6.995 (13.282)	-42.879 (23.733)	0.055 (0.230)	0.102 (0.277)	0.39 (0.928)
% Unemployed (1933)	1.119* (0.481)	1.261* (0.583)	1.365* (0.618)	4.161 (2.864)	0.324 (3.494)	0.607 (3.586)	0.064 (0.108)	0.037 (0.123)	-0.055 (0.140)
Population (1925)	-0.017* (0.008)	-0.025** (0.009)	-0.030* (0.013)	-0.107* (0.046)	-0.216** (0.062)	-0.205** (0.077)	-0.0004 (0.002)	-0.001 (0.002)	-0.004 (0.003)
Nazi party share (1933)	-0.444* (0.182)	-0.674** (0.214)	-0.791** (0.227)	-1.728 (1.080)	-2.928* (1.285)	-3.515** (1.318)	-0.005 (0.041)	-0.032 (0.045)	-0.091 (0.052)
Constant	0.397** (0.113)	0.385** (0.139)		1.830** (0.674)	2.419** (0.878)		0.034 (0.025)	0.045 (0.029)	
Method	Pooled	RE	FE	Pooled	RE	FE	Pooled	RE	FE
RE v Pooled		0.001			<0.001			0.575	
FE v Pooled		<0.001			<0.001			0.020	
FE v RE		0.2			0.091			0.074	
Observations		2,075			2,075			2,075	
Adjusted R ²	0.009	0.008	0.003	0.022	0.008	0.003	0.0004	-0.00003	-0.007

Cells contain regression coefficients with standard errors in parentheses. * $p < .05$, ** $p < .01$. For Hausman tests, cells contain p -values testing the null that the two models are consistent. FE = Fixed Effects, RE = Random Effects, Pooled = ordinary least squares regressions. RE and FE models are estimated using the `plm` package in R, which does not produce separate estimates for state fixed or random effects.

These results, collectively, are strong evidence that fixed effects specifications are preferred relative to a pooled model: each Hausman test decisively rejects the null that they are equivalent.

It is also important to note that the fixed and random effects specifications generally do not affect our inferences about other theoretically plausible control variables, such as Nazi vote share in 1933 or district population.

Appendix E: Reweighted Estimates

Following Gibbons, Suárez Serrato and Urbancic (2019), we use two reweighting approaches estimate the overall average effect of *Distance* as a weighted average of the state-level effects of *Distance*, thereby allowing for variation in the effects of *Distance* across states.³ We present the results in Table A3, comparing HPT's baseline prewar results (Model 1) and our fixed effects results (Model 2) with the two reweighted results (Models 3 and 4). Note that the two reweighting estimators do not produce separate coefficient estimates for control variables or fixed effects.

Table A3: Reweighted Estimates

PANEL A: Intolerance				
	(1)	(2)	(3)	(4)
Distance to camp	-0.011** (0.003)	0.001 (0.004)	0.010 (0.005)	0.011 (0.006)
% Jews (1925)	-1.402 (1.026)	-2.233 (4.089)		
% Unemployed (1933)	1.119* (0.481)	1.365* (0.618)		
Population (1925)	-0.017* (0.008)	-0.030* (0.013)		
Nazi party share (1933)	-0.444* (0.182)	-0.791** (0.227)		
Brandenburg		-0.083 (0.403)		
Mecklenburg-Vorpommern		-0.227 (0.403)		
Saxony		-0.112 (0.412)		
Saxony-Anhalt		0.066 (0.409)		
Thuringia		-0.248 (0.403)		
Baden-Wuerttemberg		-0.269 (0.395)		
Bavaria		0.094 (0.396)		

³ Because the state-level effect of *Distance* cannot be estimated when there is no variation in *Distance* within the state, observations Berlin and Hamburg drop from the analysis.

Bremen		-0.568		
		(0.453)		
Hamburg		0.06		
		(0.481)		
Hessen		-0.235		
		(0.355)		
Lower Saxony		-0.157		
		(0.402)		
North Rhine-Westphalia		-0.397		
		(0.405)		
Rhineland Palatinate		-0.399		
		(0.401)		
Saarland		-0.103		
		(0.399)		
Schleswig-Holstein		-0.243		
		(0.415)		
Constant	0.397**	0.593		
	(0.113)	(0.428)		
Method	Pooled	FE	IWE	RWE
Observations	2075	2075	1987	1987
Adjusted R ²	0.009	0.041	0.056	0.056

PANEL B: Resentment

	(1)	(2)	(3)	(4)
Distance to camp	-0.116**	-0.041	0.003	0.021
	(0.017)	(0.025)	(0.028)	(0.033)
% Jews (1925)	-3.696	-42.879		
	(6.104)	(23.733)		
% Unemployed (1933)	4.161	0.607		
	(2.864)	(3.586)		
Population (1925)	-0.107*	-0.205**		
	(0.046)	(0.077)		
Nazi party share (1933)	-1.728	-3.515**		
	(1.080)	(1.318)		
Brandenburg		-5.129*		
		(2.339)		
Mecklenburg-Vorpommern		-5.911*		
		(2.339)		
Saxony		-4.41		
		(2.390)		
Saxony-Anhalt		-4.218		
		(2.374)		
Thuringia		-6.248**		
		(2.340)		
Baden-Wuerttemberg		-7.408**		
		(2.290)		
Bavaria		-3.482		
		(2.300)		

Bremen		-8.548**		
		(2.631)		
Hamburg		-2.673		
		(2.790)		
Hessen		-5.942**		
		(2.061)		
Lower Saxony		-6.772**		
		(2.333)		
North Rhine-Westphalia		-6.482**		
		(2.349)		
Rhineland Palatinate		-4.661*		
		(2.325)		
Saarland		-2.706		
		(2.317)		
Schleswig-Holstein		-4.477		
		(2.411)		
Constant	1.830**	7.908**		
	(0.674)	(2.484)		
Method	Pooled	FE	IWE	RWE
Observations	2075	2075	1987	1987
Adjusted R ²	0.022	0.099	0.112	0.112

PANEL C: Far-Right Support

	(1)	(2)	(3)	(4)
Distance to camp	-0.001*	0.0004	0.003*	0.003*
	(0.001)	(0.001)	(0.001)	(0.002)
% Jews (1925)	0.055	0.390		
	(0.230)	(0.928)		
% Unemployed (1933)	0.064	-0.055		
	(0.108)	(0.140)		
Population (1925)	-0.0004	-0.004		
	(0.002)	(0.003)		
Nazi party share (1933)	-0.005	-0.091		
	(0.041)	(0.052)		
Brandenburg		0.035		
		(0.091)		
Mecklenburg-Vorpommern		-0.012		
		(0.091)		
Saxony		0.011		
		(0.093)		
Saxony-Anhalt		0.034		
		(0.093)		
Thuringia		-0.009		
		(0.092)		
Baden-Wuerttemberg		-0.022		
		(0.090)		
Bavaria		0.002		
		(0.090)		

Bremen		-0.021		
		(0.103)		
Hamburg		0.101		
		(0.109)		
Hessen		-0.017		
		(0.081)		
Lower Saxony		0.011		
		(0.091)		
North Rhine-Westphalia		-0.021		
		(0.092)		
Rhineland Palatinate		-0.003		
		(0.091)		
Saarland		0.083		
		(0.091)		
Schleswig-Holstein		0.05		
		(0.094)		
Constant	0.034	0.065		
	(0.025)	(0.097)		
Method	Pooled	FE	IWE	RWE
Observations	2075	2075	1987	1987
Adjusted R ²	0.0004	0.009	0.029	0.029

Cells contain regression coefficients with standard errors in parentheses. * $p < .05$, ** $p < .01$. FE = Fixed Effects, Pooled = ordinary least squares, IWE = Interaction Weighted, RWE = Regression Weighted. The IWE and RWE estimators do not produce separate coefficient estimates for control variables or fixed effects. The Adjusted R² statistics from the IWE and RWE estimators were extracted from the interacted fixed effects models prior to reweighting.

The results are revealing. When allowing for state-level heterogeneity in the effect of *Distance* in a fixed-effects specification, our point estimates of the average effect of *Distance* are positive rather than negative, and in some cases they are statistically significant.

Appendix F: Weimar-Era Administrative Boundaries

In this section, we confirm that our results are robust to replacing *Länder*-fixed effects with fixed effects that correspond to the Weimar-era administrative boundaries (states and Prussian provinces) that we have argued are the historical antecedents of contemporary *Länder*. We present the results of this analysis in Table A4; note that our sample size changes slightly because the contemporary German state of Saarland was not part of Weimar Germany.

Table A4: Results using Weimar-Era Administrative Boundaries

PANEL A: Intolerance						
	(1)	(2)	(3)	(4)	(5)	(6)
Distance to camp	-0.009** (0.003)	-0.0005 (0.004)	-0.011** (0.003)	-0.002 (0.005)	-0.017** (0.004)	0.001 (0.005)
% Jews (1925)			-1.391 (1.027)	-1.4 (4.323)	-1.01 (1.478)	8.927 (6.636)
% Unemployed (1933)			1.053* (0.489)	0.372 (0.791)	2.764** (0.850)	-0.228 (1.046)
Population (1925)			-0.016* (0.008)	-0.025 (0.014)	-0.013 (0.012)	0.002 (0.018)
Nazi party share (1933)			-0.467* (0.182)	-0.866** (0.235)	-0.223 (0.238)	-0.824** (0.288)
<i>Länder</i> Fixed Effects	No	Yes	No	Yes	No	Yes
Method	OLS	OLS	OLS	OLS	G-est	G-est
Observations	2,052	2,052	2,052	2,052	1,374	1,374
Adjusted R ²	0.004	0.057	0.009	0.064	0.033	0.113
PANEL B: Resentment						
	(1)	(2)	(3)	(4)	(5)	(6)
Distance to camp	-0.103** (0.016)	-0.034 (0.027)	-0.114** (0.017)	-0.038 (0.027)	-0.106** (0.020)	-0.043 (0.030)
% Jews (1925)			-2.973 (6.122)	-9.257 (25.492)	11.97 (10.251)	41.697 (51.438)
% Unemployed (1933)			2.993 (2.913)	-6.299 (4.666)	12.090* (5.011)	3.768 (6.167)
Population (1925)			-0.092* (0.047)	-0.239** (0.082)	-0.017 (0.069)	-0.124 (0.107)
Nazi party share (1933)			-1.881 (1.085)	-3.880** (1.385)	-5.144** (1.553)	-5.257** (1.707)
<i>Länder</i> Fixed Effects	No	Yes	No	Yes	No	Yes
Method	OLS	OLS	OLS	OLS	G-est	G-est
Observations	2,052	2,052	2,052	2,052	1,374	1,374
Adjusted R ²	0.019	0.085	0.021	0.095	0.06	0.136
PANEL C: Far-Right Support						
	(1)	(2)	(3)	(4)	(5)	(6)

Distance to camp	-0.001*	-0.0004	-0.001	-0.001	-0.003**	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
% Jews (1925)			0.081	-0.397	0.304	1.725
			(0.227)	(0.977)	(0.475)	(1.402)
% Unemployed (1933)			0.013	-0.178	0.37	0.172
			(0.108)	(0.179)	(0.197)	(0.244)
Population (1925)			0.0002	-0.0004	-0.0004	-0.002
			(0.002)	(0.003)	(0.003)	(0.004)
Nazi party share (1933)			-0.014	-0.115*	-0.072	-0.183**
			(0.040)	(0.053)	(0.060)	(0.065)
<i>Länder</i> Fixed Effects	No	Yes	No	Yes	No	Yes
Method	OLS	OLS	OLS	OLS	G-est	G-est
Observations	2,052	2,052	2,052	2,052	1,374	1,374
Adjusted R^2	0.002	0.014	-0.00005	0.014	0.019	0.047

Cells contain regression coefficients with standard errors in parentheses. * $p < .05$, ** $p < .01$.

Appendix G: Full Results for Electoral Analysis

In Table A5, we show the full results for Table 2 in the main text. Note that the two reweighting estimators do not produce separate coefficient estimates for control variables or fixed effects, and that our implementation of the fixed effects estimator uses a standard within-group transformation which accordingly does not produce separate estimates for the state fixed effects.

Table A5: Full Results for Electoral Results

Panel A: AfD Share				
	(1)	(2)	(3)	(4)
Distance to camp	-0.055** (0.014)	0.036** (0.011)	0.072** (0.012)	0.068** (0.013)
Nazi party share (1933)	0.031** (0.006)	0.045** (0.004)		
% Unemployed (1933)	0.205** (0.013)	0.054** (0.008)		
Population (1925)	0.00001* (0.000)	0.00000 (0.000)		
% Jews (1925)	-3.319** (0.148)	-0.678** (0.106)		
Constant	13.229** (0.352)			
Method	Pooled	FE	IWE	RWE
FE v Pooled	<0.001			
Observations	10,870	10,870	10,869	10,869
Adjusted R ²	0.070	0.020	0.728	0.728
Panel B: AfD and NPD Share				
	(1)	(2)	(3)	(4)
Distance to camp	-0.067** (0.015)	0.038** (0.011)	0.071** (0.012)	0.066** (0.013)
Nazi party share (1933)	0.037** (0.006)	0.049** (0.004)		
% Unemployed (1933)	0.219** (0.014)	0.053** (0.008)		
Population (1925)	0.00001* (0.000)	-0.00000* (0.000)		
% Jews (1925)	-3.543** (0.158)	-0.655** (0.110)		
Constant	13.602** (0.374)			
Method	Pooled	FE	IWE	RWE
FE v Pooled	<0.001			
Observations	10,870	10,870	10,869	10,869
Adjusted R ²	0.072	0.017	0.738	0.738

Cells contain regression coefficients with standard errors in parentheses. * $p < .05$, ** $p < .01$. FE = Fixed Effects, Pooled = ordinary least squares, IWE = Interaction Weighted, RWE = Regression Weighted. FE v Pooled displays p -values from Hausman tests. FE models are estimated using the `plm` package in R that does not produce separate estimates for state fixed effects. The

IWE and RWE estimators do not produce separate coefficient estimates for control variables or fixed effects. The Adjusted R^2 statistics from the IWE and RWE estimators were extracted from the interacted fixed effects models prior to reweighting.

Once again, we also see that employing fixed effects does not affect our inferences about other theoretically plausible control variables, such as Nazi vote share in 1933 or Jewish population share in 1925.

Appendix H: Fixed Effects with Surveys

HPT (2021) observe that surveys are not designed to be representative within states. They also observe that the number of observations within states is sometimes rather small. From this, HPT imply that the inclusion of fixed effects is problematic for estimating the effect of spatial historical variables on contemporary outcomes. However, HPT's argument against fixed effects with survey data is not compelling, for three reasons.

1. First and most importantly, we also replicate their analysis of election data, which are immune from any such concerns because they are not survey data at all. That we also find the same results when using non-survey data is reassuring evidence that the nature of the data (survey versus administrative) being analyzed is not generating our results.
2. Second, HPT's observation that surveys are not designed to be representative within states is irrelevant. Our concern is with estimating the causal effect of a geographic variable, and the sample's representativeness within geographic units has no bearing on our inferences.
3. Third, it is reasonable to hypothesize that limited variation in Distance within Länder would mean that the Länder fixed effects are nearly colinear with Distance, making it difficult to estimate the effect of Distance independently from the fixed effects. But we adopt a formal statistical procedure to evaluate the tradeoffs involved in adding fixed effects (the Hausman test), and for all states except for the city-states of Hamburg and Berlin there is abundant variation in Distance within Länder.

In sum, we believe that HPT have provided no compelling argument against using fixed effects when estimating causal effects in surveys.

References

- Auel, Katrin. 2010. "Between Reformstau and Länder Strangulation? German Co-Operative Federalism Re-Considered." *Regional & Federal Studies* 20: 229-49.
- Benz, Arthur. 1999. "From Unitary to Asymmetric Federalism in Germany: Taking Stock after 50 Years." *Publius: The Journal of Federalism* 29: 55-78.
- Bracher, Karl Dietrich, and Theodor Eschenburg, eds. 1981. *Geschichte Der Bundesrepublik Deutschland in Fünf Bänden*. Vol. 1: Jahre der Besatzung, 1945-1949. Stuttgart: Deutsche Verlags-Anstalt.
- Gelman, Andrew. 2005. "Analysis of Variance: Why It Is More Important Than Ever." *Annals of Statistics* 33: 1-31.
- Gibbons, Charles E., Juan Carlos Suárez Serrato, and Michael B. Urbancic. 2019. "Broken or Fixed Effects?". *Journal of Econometric Methods* 8.
- Gunlicks, Arthur. 2003. *The Länder and German Federalism*. Manchester: Manchester University Press.
- Homola, Jonathan, Miguel M. Pereira, and Margit Tavits. 2020. "Legacies of the Third Reich: Concentration Camps and out-Group Intolerance." *American Political Science Review* 114: 573-90.
- Jeffery, Charlie, Niccole M. Pamphilis, Carolyn Rowe, and Ed Turner. 2014. "Regional Policy Variation in Germany: The Diversity of Living Conditions in a 'Unitary Federal State'." *Journal of European Public Policy* 21: 1350-66.
- Nicholls, A.J. 2002. "German Federalism in History: Some Afterthoughts." In *German Federalism. New Perspectives in German Studies*, ed. M. Umbach. London: Palgrave Macmillan.
- Renzsch, Wolfgang. 1989. "German Federalism in Historical Perspective: Federalism as a Substitute for a National State." *Publius: The Journal of Federalism* 19: 17-33.
- Sante, Georg Wilhelm, ed. 1971. *Geschichte Der Deutschen Länder — "Territorien-Ploetz"*. Vol. 2: Die deutschen Länder vom Wiener Kongreß bis zur Gegenwart. Würzburg: A. G. Ploetz Verlag.
- Wagner, Frido. 1982. "Die Regierungspräsidenten Im Gesamtaufbau Der Verwaltung." *Verwaltungsarchiv*.