Online Appendix

Media, Pulpit, and Populist Persuasion: Evidence from Father Coughlin

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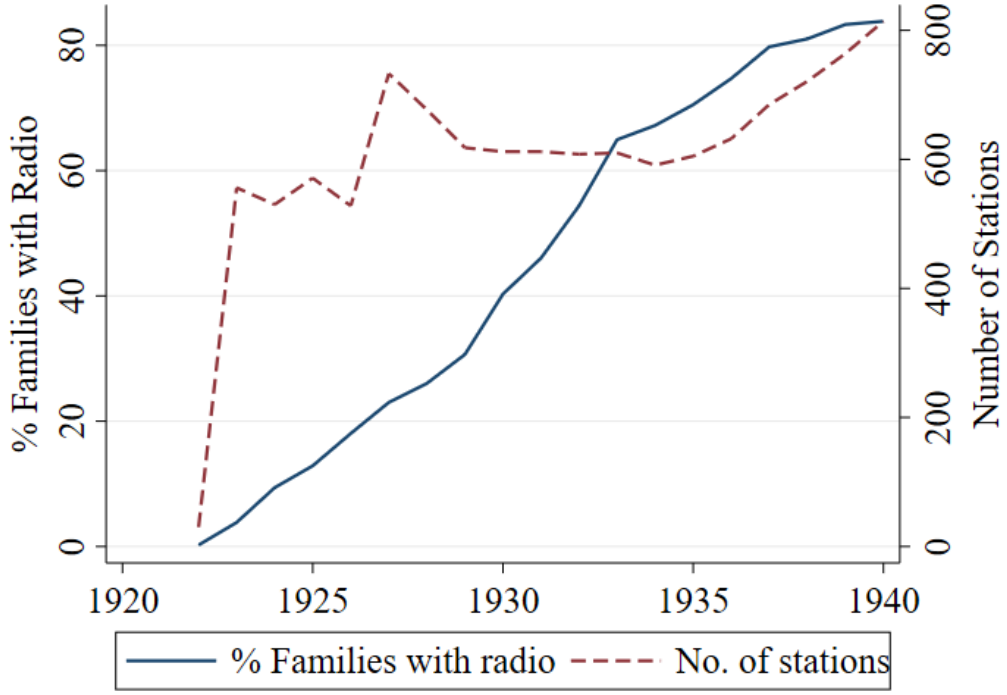
Contents

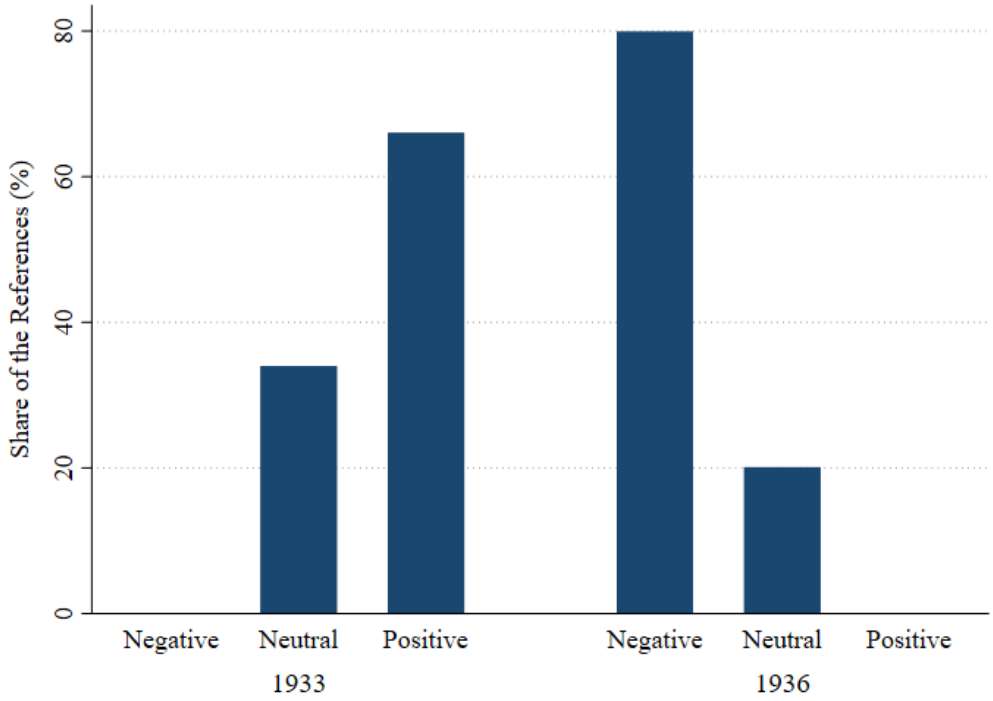
1 Appendix A: Supplemental Figures and Tables

Figure A1: Radio in America, 1920-1940



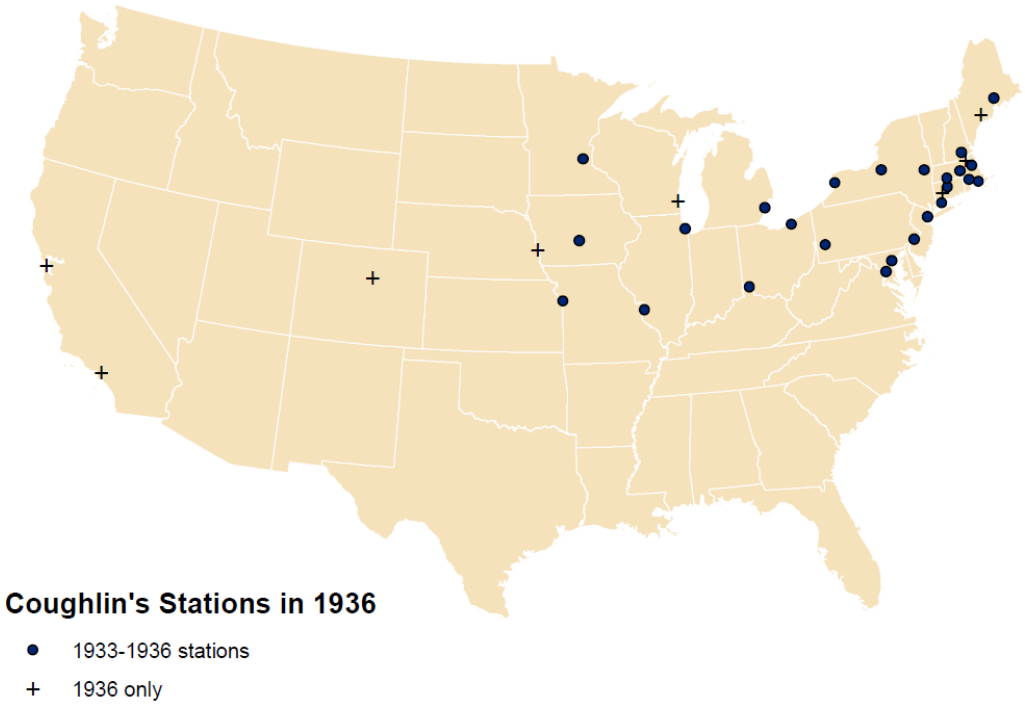
Notes - Data are drawn from the 1940 *Broadcasting Yearbook* (*Broadcasting Publications, Inc., 1940*).

Figure A2: Slant of Coughlin's References to FDR, 1933 versus 1936



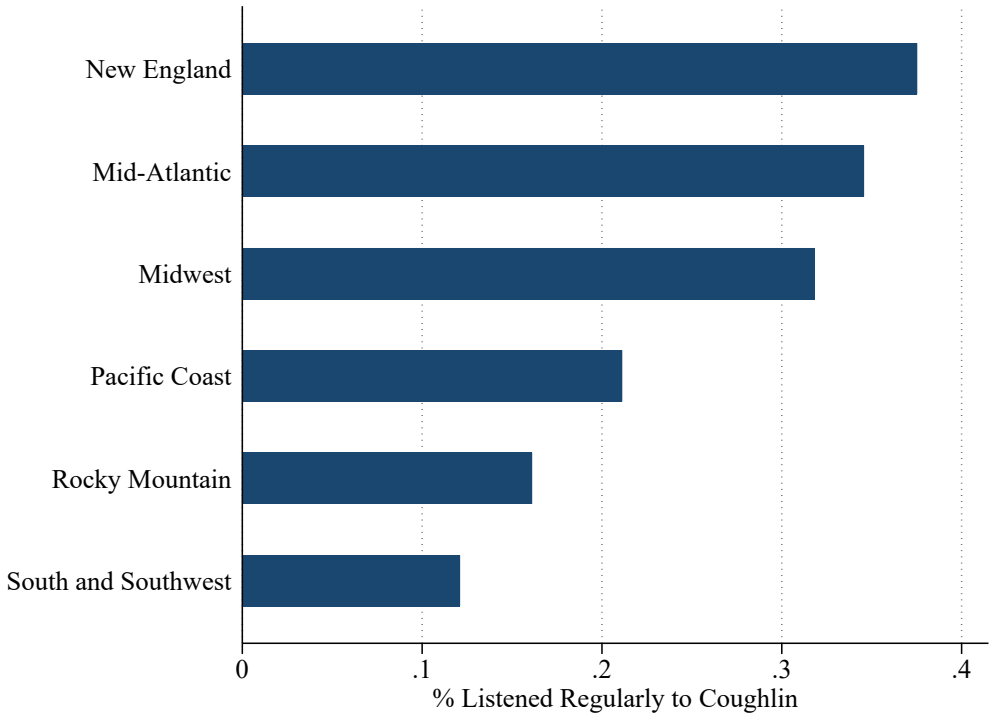
Notes - Author's own calculations based on Father Coughlin's radio transcripts in 1933 and 1936 (Coughlin, 1936a) accessed from the University of Detroit Mercy Archives.

Figure A3: Father Coughlin's Radio Stations, 1936



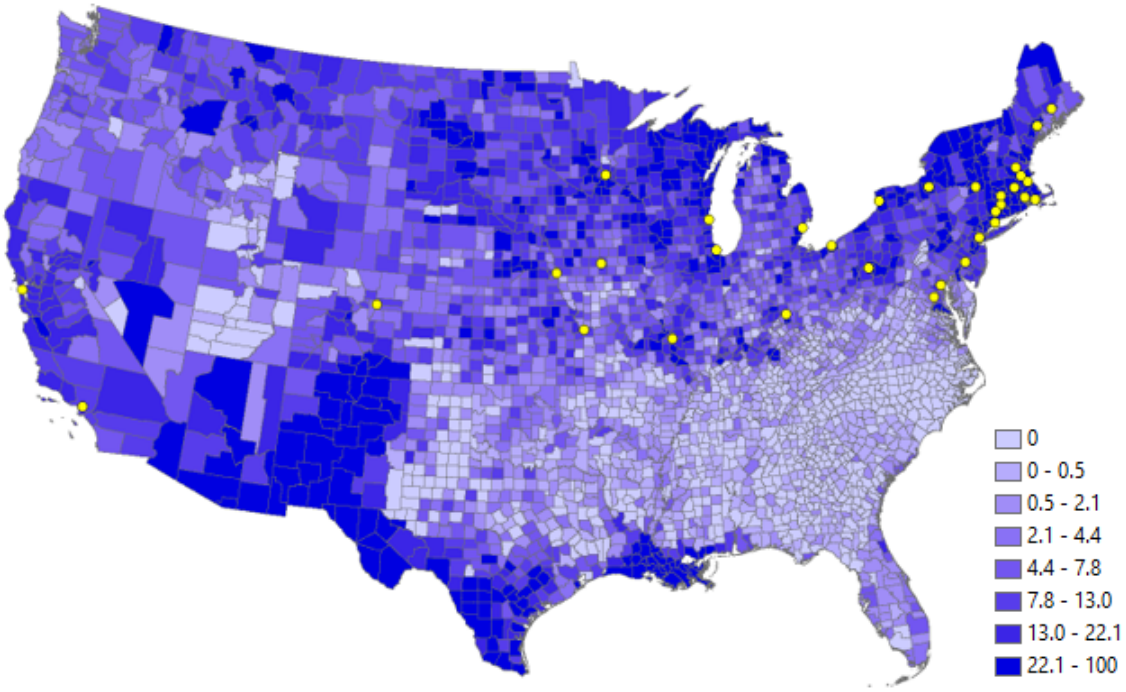
Notes - Data are drawn from the 1933 and 1936 *Broadcasting* magazines. The dots represent stations in Coughlin's network in both 1933 and 1936; the crosses represent stations that were new in 1936.

Figure A4: Regular Listeners of Coughlin's Radio Program by Region before the 1936 Election



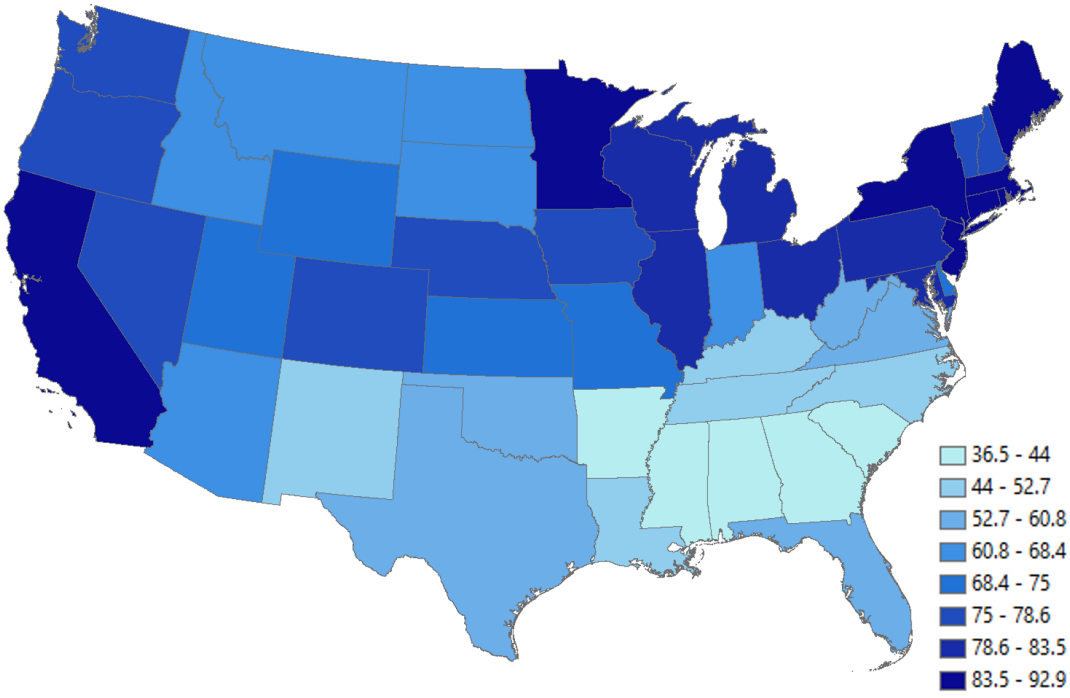
Notes - Data are drawn from the April 1938 Gallup Poll (Gallup Organization, 1938a), accessed from the Roper Center for Public Opinion Research: `https://ropercenter.cornell.edu/`

Figure A5: Percent of Catholics in Population, 1926



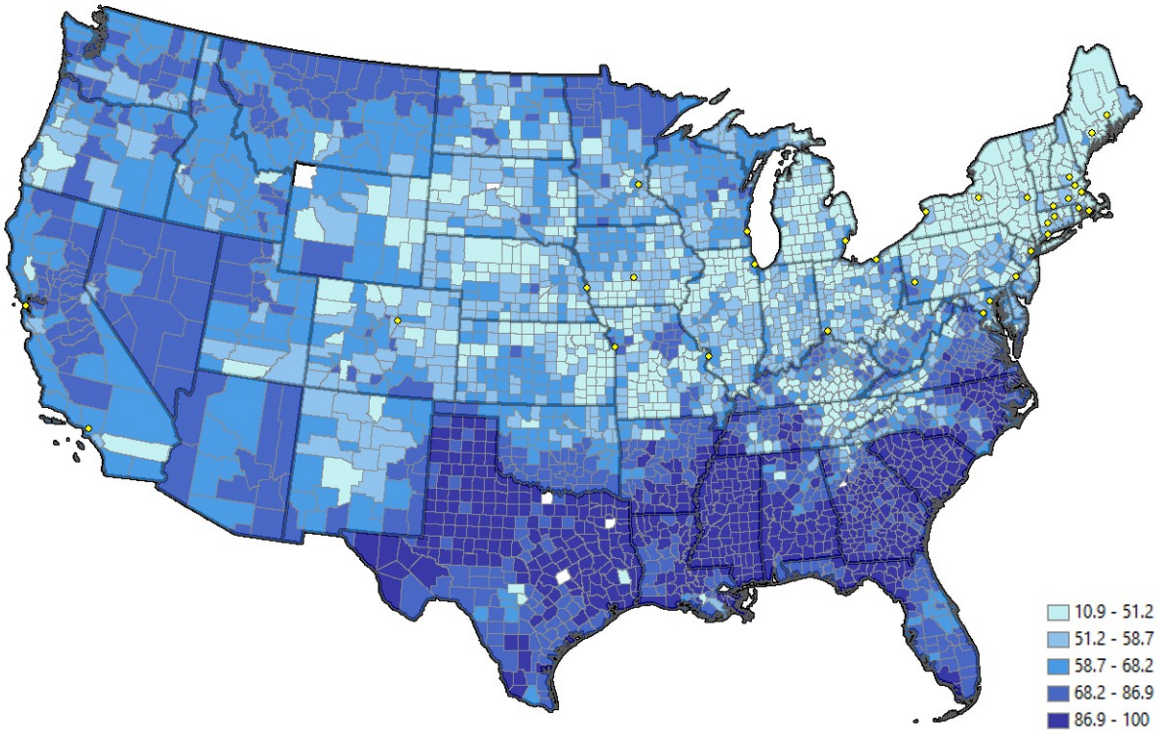
Notes - Data are drawn from the ICPSR 2896 data set (Haines and ICPSR, 2010). Darker colors represent higher shares of Catholics.

Figure A6: Percent of Families with a Radio, 1936



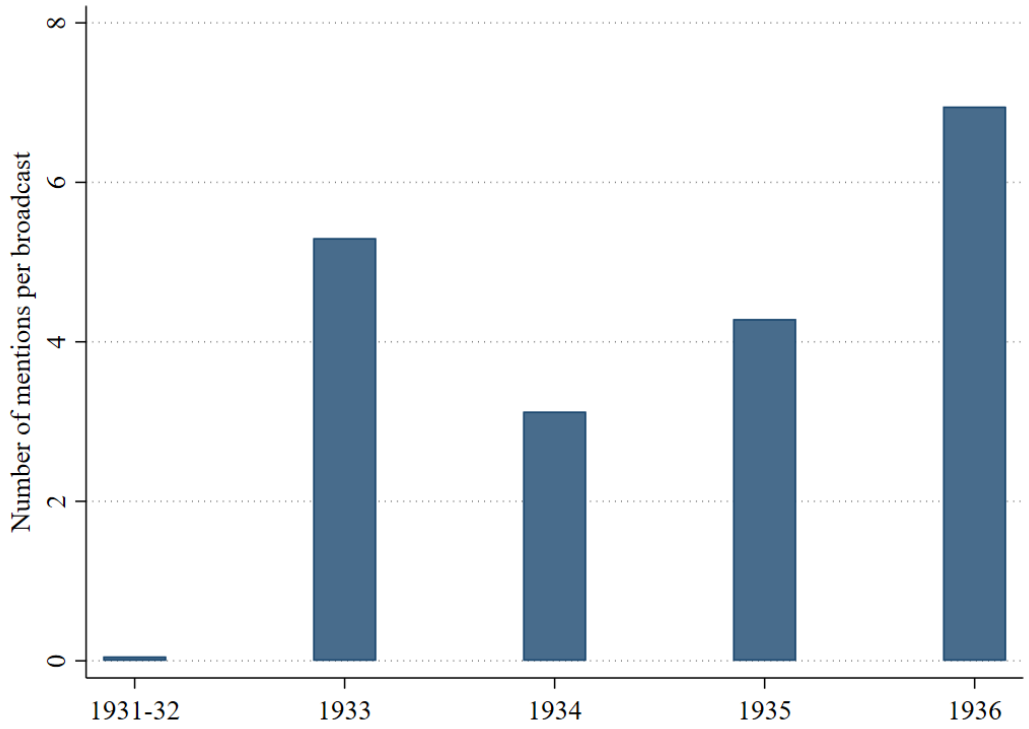
Notes - Data are drawn from the 1936 *Broadcasting Yearbook* (Broadcasting Publications, Inc., 1936).

Figure A7: FDR's Vote Shares (Percentage Points) in the 1936 Presidential Election



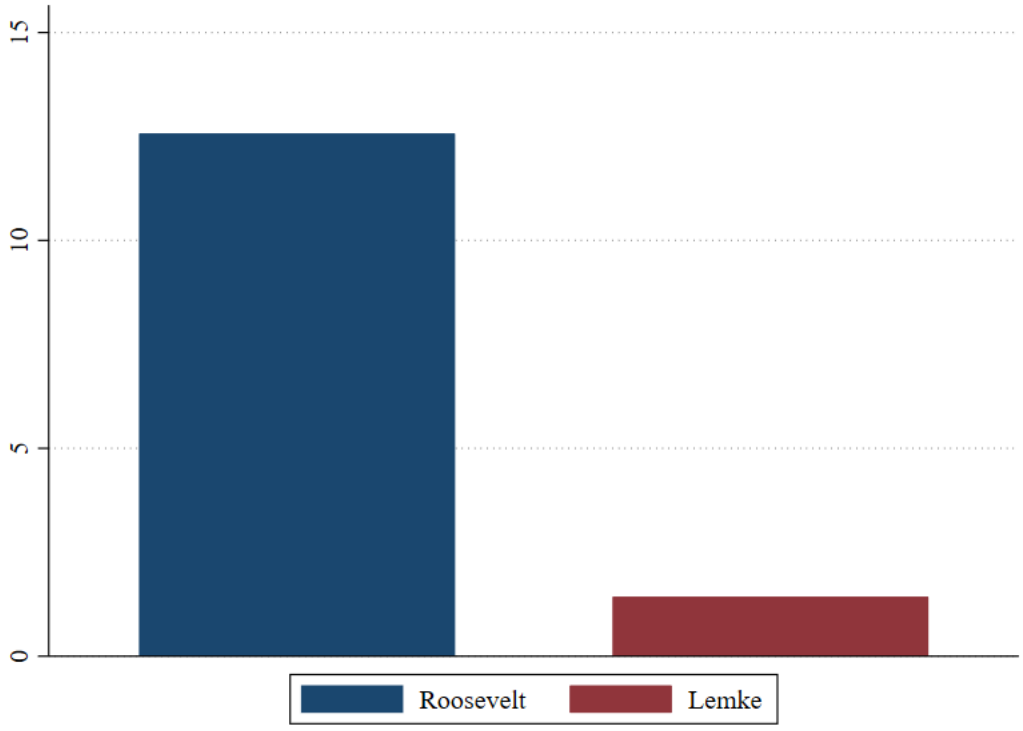
Notes - Data are drawn from the ICPSR 8611 data set (Clubb et al., 2006).

Figure A8: Mentioning of "Roosevelt" in Coughlin's Broadcasts, 1931-1936



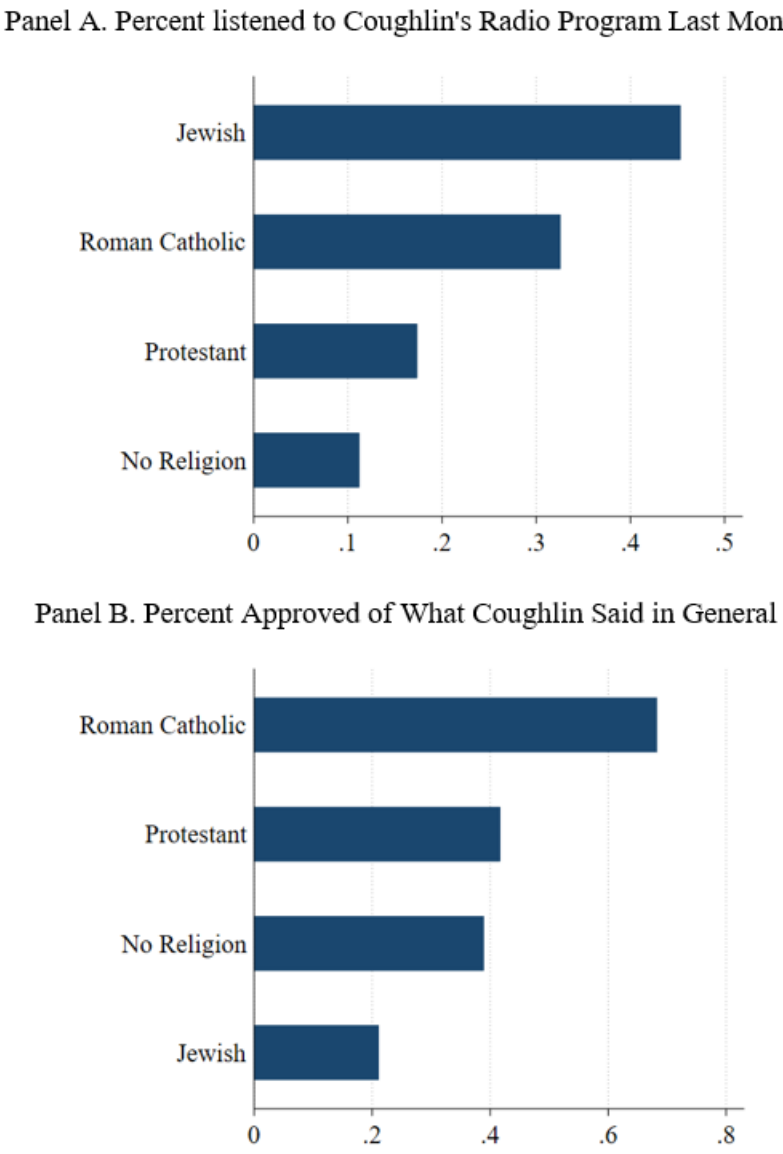
Notes - This figure shows the average number of times Coughlin mentioned the name "Roosevelt" in each broadcast during 1931-1936. Data are drawn from Father Coughlin's radio transcripts (Coughlin, 1936a) accessed from the University of Detroit Mercy Archives.

Figure A9: Mentioning of "Roosevelt" and "Lemke" in Coughlin's Broadcasts, September-October 1936



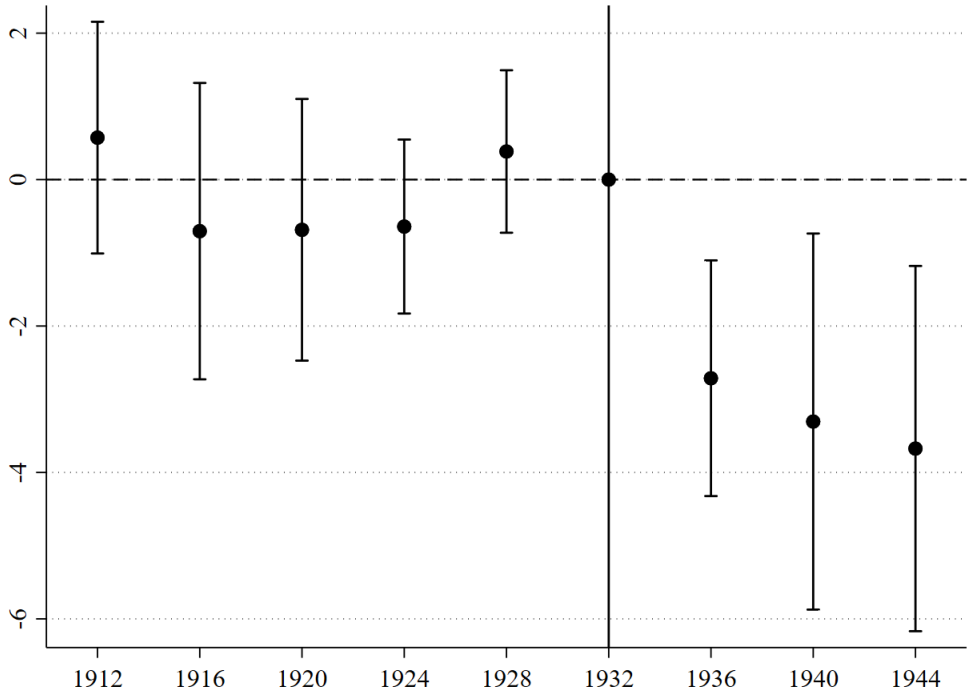
Notes - This figure shows the average number of times Coughlin mentioned the names "Roosevelt" and "Lemke" in each broadcast in the months before the 1936 presidential election. Data are drawn from Father Coughlin's radio transcripts (Coughlin, 1936b) from September 12, 1936, the first broadcast since the Union Party was formed during the summer and Lemke nominated as its candidate, to October 24, 1936, the last recorded broadcast before the 1936 election. The radio transcripts of Father Coughlin are accessed from the University of Detroit Mercy Archive.

Figure A10: Coughlin's Listenership and Approval Ratings by Religious Affiliation, December 1938



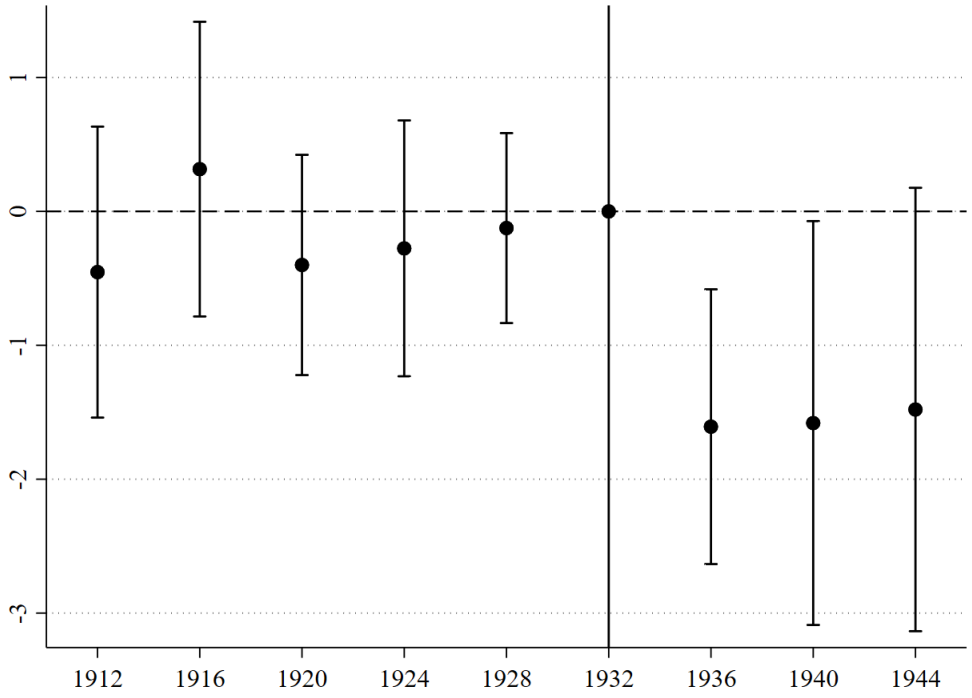
Notes - Data are drawn from the December 1938 Gallup Poll (Gallup Organization, 1938b), accessed from the Roper Center for Public Opinion Research: `https://ropercenter.cornell.edu/`. The approval ratings shown in Panel B are based on all surveyed individuals and not only those who listened to Coughlin last month.

Figure A11: Impact of Coughlin Exposure on Democratic Vote Shares (Event Study)



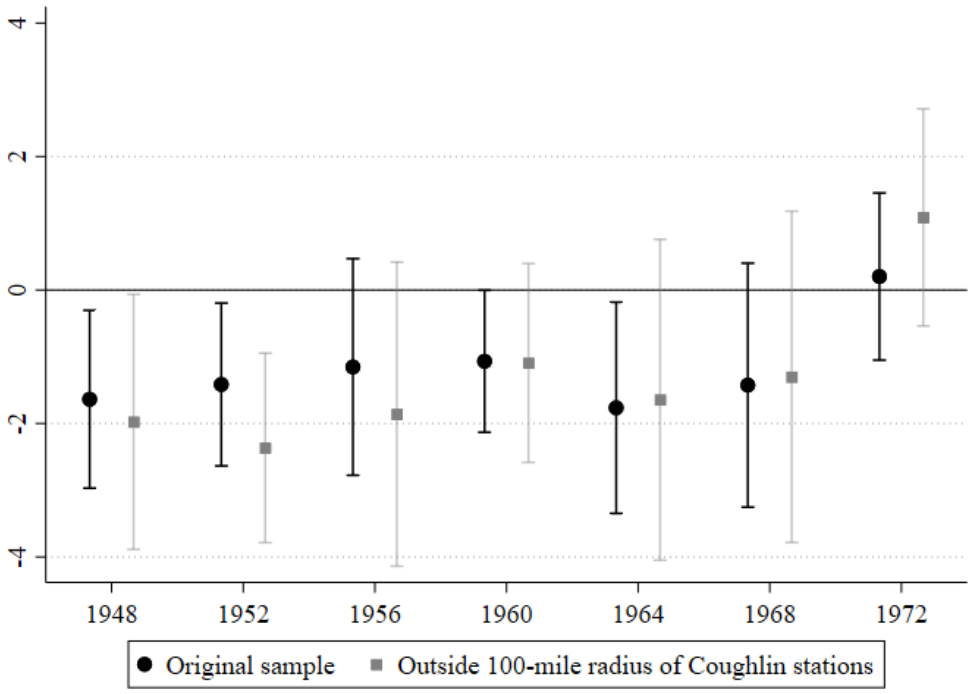
Notes - This figure plots the event study estimates of exposure to Father Coughlin's radio program in 1936 on Democratic vote shares in presidential elections during 1912-1944. The estimates come from a single OLS regression following an alternative version of equation (2), in which $Post_t$ is replaced with year dummies, with the year of 1932 as the omitted category. The sample consists of all counties outside of the geographic South. The outcome variable is the Democratic vote share in each presidential election. The explanatory variables are the signal strength of Coughlin's radio program in 1936 interacted with year dummies. Each regression controls for county fixed effects, state-by-year fixed effects, and baseline county characteristics ($SignalFree$, geographic, socioeconomic, and past voting controls) interacted with year dummies. Standard errors are corrected for clustering at the state level. The dots are the estimated coefficients and the vertical lines represent the 95% confidence intervals.

Figure A12: Impact of Coughlin Exposure on Democratic Vote Shares in Counties with More Catholics (Event Study)



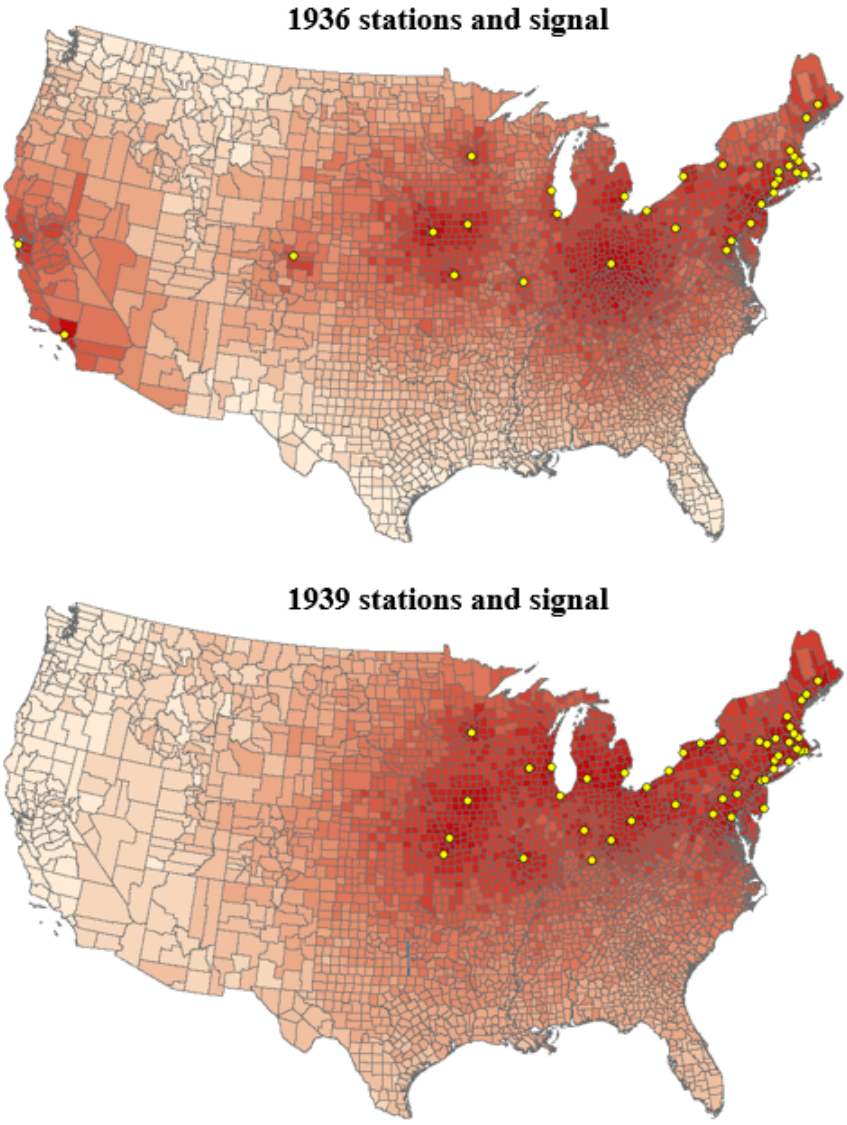
Notes - This figure plots the event study estimates corresponding to the triple-difference specification used in Table A6, where the coefficient on $Signal \times Catholic$ is allowed to vary over time. Specifically, the $Post_t$ dummy in the triple-difference specification is replaced with year dummies, with the year of 1932 as the omitted category. The sample consists of all counties outside of the geographic South. The outcome variable is the Democratic vote share in each presidential election. The explanatory variables are $Signal \times Catholic$ interacted with year dummies. Each regression controls for county fixed effects, state-by-year fixed effects, and baseline county characteristics ($SignalFree$, geographic, socioeconomic, and past voting controls) interacted with year dummies. Standard errors are corrected for clustering at the state level. The dots are the estimated coefficients and the vertical lines represent the 95% confidence intervals.

Figure A13: Long-Run Estimates from the Original Sample and the Subsample of Counties Further Away from Coughlin's Stations



Notes - This figure shows the estimated effects of exposure to Father Coughlin's broadcast in 1936 on Democratic vote shares in each presidential elections between 1948 and 1972. The estimates shown in black are for all counties outside of the geographic South (i.e., the original sample), while the estimates shown in grey are for the subsample of these counties that were more than 100 miles away from any of Coughlin's 1936 radio stations. The estimates come from separate OLS regressions following equation (1) with the Democratic vote share in each presidential election as the outcome variable. The explanatory variable is the signal strength of Coughlin's radio program in 1936. Each regression includes all baseline controls as in column 5 of Table 3. Standard errors are corrected for clustering at the state level. The dots are the estimated coefficients and the vertical lines represent the 95% confidence intervals.

Figure A14: Comparing Exposure to Coughlin in 1936 and 1939



Notes - This figure shows the predicted signal strengths of Father Coughlin's radio program in 1936 and 1939. The dots are the location of Coughlin's radio stations, and darker colors represent stronger signals. Data on Coughlin's radio network in each year are drawn from the *Broadcasting* magazines (the November 1, 1935 issue and the July 1, 1939 issue) and the *Broadcasting Yearbooks* (Broadcasting Publications, Inc., 1936, 1939). Signal strength is calculated based on the Irregular Terrain Model (ITM).

Table A1: Full Baseline Specification Adjusting for Spatial Correlation in Error Terms

	Outcome: FDR's vote share, 1936							
	Spatially-corrected standard errors (Conley, 1999)						Clustering level	
	25km	50km	100km	200km	300km	400km	state	station
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Signal	-2.399	-2.399	-2.399	-2.399	-2.399	-2.399	-2.399	-2.399
	(0.411)	(0.489)	(0.532)	(0.556)	(0.606)	(0.641)	(0.586)	(0.675)
							[0.000]	[0.003]
Number of clusters							37	29
Observations	1,978	1,978	1,978	1,978	1,978	1,978	1,978	1,978

Notes - This table shows the full baseline specification (column 5 of Table 3) with alternative ways of adjusting for spatial correlation in error terms. In columns 1-6, I allowing for spatial correlation in error terms following Conley (1999)'s approach with different distance cutoffs. Column 7 shows the baseline estimate, with the p-value calculated from the wild cluster bootstrap method based on 1,000 replications reported in bracket. Column 8 clusters the standard errors at Coughlin's station level, again with the p-value calculated from the wild cluster bootstrap method based on 1,000 replications reported in bracket.

Table A2: Coughlin Exposure Interacted with a Continuous Measure of Catholic Population

	Vote Shares in 1936 for		
	FDR (Dem.)	Landon (Rep.)	Lemke (Union)
	(1)	(2)	(3)
Signal × Catholic	-0.814	-0.046	0.924
	(0.205)	(0.164)	(0.197)
Signal	-2.223	1.986	0.225
	(0.597)	(0.607)	(0.379)
Catholic	-0.828	0.279	0.772
	(0.292)	(0.172)	(0.247)
Observations	1,978	1,978	1,646
Full baseline controls	Yes	Yes	Yes
R^2	0.820	0.854	0.672
Mean of Dep. Var.	56.95	40.34	2.70
Std. Dev. of Dep. Var.	11.45	11.77	3.71

Notes - This table shows the interactive effect between exposure to Coughlin and the population share of Roman Catholics on voting in the 1936 presidential election. The table follows the same specification as in Panel A of Table 4, except here *Catholic* is a continuous variable (share of population) and has been standardized to have a mean of 0 and a standard deviation of 1.

Table A3: Effects of Coughlin in Counties with More Radio Listeners

	Vote Shares in 1936 for		
	FDR (Dem.)	Landon (Rep.)	Lemke (Union)
	(1)	(2)	(3)
Signal × Radio	-0.923	0.416	0.484
	(0.421)	(0.465)	(0.182)
Signal	-1.845	1.726	0.135
	(0.611)	(0.607)	(0.354)
Radio	0.096	-0.088	-0.000
	(0.036)	(0.036)	(0.012)
Observations	1,978	1,978	1,646
Full baseline controls	Yes	Yes	Yes
R^2	0.819	0.854	0.645
Mean of Dep. Var.	56.95	40.34	2.70
Std. Dev. of Dep. Var.	11.45	11.77	3.71

Notes - This table shows the interactive effect between exposure to Coughlin and radio ownership on voting in the 1936 presidential election. Each column represents the results from a separate OLS regression where each observation is a county. The sample consists of all counties outside of the geographic South. The outcome variables are the 1936 vote shares for FDR (column 1), Landon (column 2), and Lemke (column 3). *Signal* is the signal strength of Coughlin's radio program in 1936. *Radio* is the share of families that owned radio in 1930 and has been standardized to have a mean of 0 and a standard deviation of 1. Each regression controls for all the baseline controls as in column 5 of Table 3. Standard errors, shown in parentheses, are corrected for clustering at the state level.

Table A4: Persuasion Rates from Previous Studies

Paper	Treatment	Outcome	Persuasion Rate
Gerber and Green (2000)	Door-to-door get-out-the-vote (GOTV) canvassing	Congressional election turnout in New Haven, 1998	15.6%*
Gentzkow (2006)	Exposure to television	Congressional election turnout in the U.S. during 1940-1970	4.4%*
DellaVigna and Kaplan (2007)	Availability of Fox News	Republican vote share in U.S. presidential elections, 1996-2000	11.6%*
Gerber et al. (2009)	10-week subscription to the Washington Post	Democratic vote share in the 2005 Virginia governor election	19.5%*
Chiang and Knight (2011)	Surprising endorsement for Al Gore for president by the *Denver Post*	Voters' stated intentions to vote for Gore in the 2000 U.S. presidential election	6.5%*
Gentzkow et al. (2011)	Entry of a newspaper to a county without one	Presidential election turnout in the U.S., 1868-1928	12.8%
Enikolopov et al. (2011)	Exposure to the independent anti-Putin TV station NTV	Vote share of Putin's party in the 1999 Russian parliamentary election	65.4%
Falck et al. (2014)	Internet access	Voter turnout in Germany during 2004-2008	10.9%
DellaVigna et al. (2014)	Exposure to cross-border nationalistic Serbian radio	Vote share of extremely nationlistic parties in the 2007 Croatian parliamentary election	3-4%
Adena et al. (2015)	Exposure to pro-Weimar government radio	Voting against extremist parties in the September 1930 German parliamentary election	36.8%
	Exposure to Nazi radio propaganda	Nazi Party's vote share in the March 1933 German parliamentary election	8.9%
Martin and Yurukoglu (2017)	Exposure to Fox News	Republican vote share in U.S. presidential elections, 2000-2008	58% (2000), 27-28% (2004-2008)
Campante et al. (2018)	Internet access	Voter turnout in national elections in Italy during 1996-2008	18%
Fujiwara et al. (2020)	Availability of Twitter	Democratic vote share in the 2016 U.S. presidential election	8.6%
Xiong (Forthcoming)	Exposure to Ronald Reagan's TV show in the 1950s	Reagan's vote share in the 1980 presidential election	11.8%

Notes - * denotes persuasion rate estimates from DellaVigna and Gentzkow (2010).

Table A5: Exposure to Coughlin and Consumption of Other Media, 1939

	Listen to news broadcasts regularly	Read daily newspapers regularly
	(1)	(2)
Signal	-0.297	-0.148
	(0.066)	(0.068)
Observations	2,460	2,493
SignalFree	Yes	Yes
Individual controls	Yes	Yes
State controls	Yes	Yes
Region FE	Yes	Yes
R^2	0.060	0.126
Mean of Dep. Var.	0.629	0.806
Std. Dev. of Dep. Var.	0.483	0.396

Notes - This table shows the estimated effects of exposure to Father Coughlin's radio program in 1939 on individual consumption of news media based on the Gallup Poll in the week of April 2, 1939. Each column represents the results from a separate OLS regression, where each observation is an individual. The sample consists of all surveyed individuals from outside of the geographic South. The outcome variables are dummy variables that equal 1 if the respondent listened to news broadcasts regularly (column 1) and read daily newspapers regularly (column 2). The explanatory variable is the signal strength of Coughlin's radio program in 1939 at the state-level (averaged across counties with 1930 county population as weights). $SignalFree$ is the "free space" signal at the state-level (averaged across counties with 1930 county population as weights). Region fixed effects are dummies for the Northeast, the Midwest, the South, and the West. Individual controls include gender, race, age and age squared, occupation (dummies for professional, white collar, labor, unemployed, and other), and an indicator for whether the respondent lived in a large city with more than 100,000 people. State controls include the natural log of population, population share of urban, share of Catholics, average elevation, and average ruggedness. Regressions are weighted by individual weights provided in the Gallup Poll data. Standard errors, shown in parentheses, are corrected for clustering at the state level.

Table A6: Estimates from a Triple-Difference Specification, 1932-1936 Panel

	Vote Shares in Presidential Elections for		
	FDR (Dem.)	Rep.	Others
	(1)	(2)	(3)
Signal × Post × Catholic	-1.608	0.356	1.252
	(0.507)	(0.373)	(0.329)
Signal × Post	-2.288	2.195	0.094
	(0.828)	(0.735)	(0.357)
Catholic × Post	-0.338	0.226	0.113
	(0.701)	(0.479)	(0.402)
Observations	3,956	3,956	3,956
County FE	Yes	Yes	Yes
State-by-Year FE	Yes	Yes	Yes
Baseline controls $\times Post$	Yes	Yes	Yes
R^2	0.949	0.965	0.834
Mean of Dep. Var.	57.66	39.85	2.49
Std. Dev. of Dep. Var.	11.36	11.49	3.04

Notes - This table shows the estimates from a triple-difference specification that builds on equation (2), where $Signal \times Post$ is allowed to vary by Catholic population share. Each column represents the results from a separate OLS regression on the 1932-1936 panel, where each observation is a county-year. The sample consists of all counties outside of the geographic South. The outcome variables are the vote shares for FDR (column 1), the Republican Party (column 2), and other parties (column 3) in each year's presidential election. *Signal* is the signal strength of Coughlin's radio program in 1936. *Post* is a dummy variable that equals 1 for the year of 1936 and 0 for the year of 1932. *Catholic* is a dummy variable that equals 1 if the county's population share of Roman Catholics was in the top quartile of the distribution and 0 otherwise. Each regression controls for county fixed effects, state-by-year fixed effects, and the interactions between each of the baseline county characterstics ($SignalFree$, socioeconomic, geographic, and past electoral outcomes) and *Post*. Standard errors, shown in parentheses, are corrected for clustering at the state level.

Table A7: Exposure to Coughlin and the 1936 House Election

	Vote shares in the 1936 House election for		
	Dem.	Rep.	Others
	(1)	(2)	(3)
Signal	-2.290	1.835	0.456
	(0.538)	(0.540)	(0.324)
Observations	1,816	1,816	1,816
Baseline county controls	Yes	Yes	Yes
Congressional district FE	Yes	Yes	Yes
Past House electoral controls	Yes	Yes	Yes
R^2	0.927	0.903	0.977
Mean of Dep. Var.	49.70	43.57	6.74
Std. Dev. of Dep. Var.	17.25	14.67	18.06

Notes - This table shows the estimated effects of exposure to Coughlin on voting in the 1936 House election. Each column represents the results from a separate OLS regression where each observation is a county. The sample consists of all counties outside of the geographic South. The outcome variables are the 1936 vote shares for the Democratic Party (column 1), the Republican Party (column 2), and other parties (column 3). The explanatory variable is the signal strength of Coughlin's radio program in 1936. Each regression controls for all the baseline county controls as in column 5 of Table 3, congressional district fixed effects, and past House election outcomes, which include the average vote shares of the Democratic Party and of the Republican Party as well as average voter turnout in House elections during 1920-1932. Standard errors, shown in parentheses, are corrected for clustering at the congressional district level.

Table A8: Robustness Checks on Baseline Results

	Outcome: FDR's Vote Share in the 1936 Election					
	Binary variable (1)	Drop counties near stations (2)	Control SignalFree flexibly (3)	Control New Deal spending (4)	Whole country (5)	Population weighted (6)
Signal		-2.360	-2.578	-2.122	-1.443	-2.156
		(0.704)	(0.605)	(0.516)	(0.869)	(0.772)
I(Signal $\geq$ median)	-1.428					
	(0.431)					
Observations	1,978	1,198	1,978	1,977	3,024	1,978
R^2	0.816	0.812	0.819	0.826	0.908	0.833
Full baseline controls	Yes	Yes	Yes	Yes	Yes	Yes
Mean of Dep. Var.	56.95	58.88	56.95	56.95	66.15	56.95
Std. Dev. of Dep. Var.	11.45	11.53	11.45	11.45	17.97	11.45

Notes - This table shows the robustness checks on the baseline results. Each column represents the results from a separate OLS regression following equation (1), where each observation is a county. The sample consists of all counties outside of the geographic South, except in column 5. The outcome variable is FDR's vote share in the 1936 presidential election. The explanatory variable is the signal strength of Coughlin's radio program in 1936. In column 1, I measure signal strength using a binary variable, which equals 1 if the signal strength is above median and 0 otherwise. In column 2, I drop counties within 100 miles of any of Coughlin's stations in 1936. In column 3, I also control for the square and the cube of the hypothetical signal strength in free space ($SignalFree$). In column 4, I add controls for county-level per capita New Deal grant, relief, and loans, all measured in natural logs. In column 5, I include counties from the geographic South in the sample. In column 6, I weight the baseline regression with county population. Each regression controls for all the baseline controls as in column 5 of Table 3. Standard errors, shown in parentheses, are corrected for clustering at the state level.

Table A9: Placebo and Robustness Tests on the Effects on Anti-Semitism

	Friends of New Germany, 1934		German-American Bund, 1940	
	(1)	(2)	(3)	(4)
Signal	0.018	0.035	0.117	0.105
	(0.027)	(0.036)	(0.044)	(0.039)
Observations	743	736	736	736
State FE & city controls	Yes	Yes	Yes	Yes
County controls		Yes	Yes	Yes
Friends of New Germany control				Yes
R^2	0.395	0.449	0.413	0.435
Mean of Dep. Var.	0.019	0.019	0.058	0.058
Std. Dev. of Dep. Var.	0.136	0.137	0.235	0.235

Notes - This table provides placebo and robustness tests on Coughlin's effects on anti-Semitism. Each column represents the results from a separate OLS regression following equation (1), where each observation is a city. The sample consists of all identifiable cities in the 1930 Census that were outside of the geographic South and had a population above 10,000. The outcome is a binary variable that equals 1 if a city had a branch of the Friends of New Germany in 1934 for columns 1-2, and it is a binary variable that equals 1 if a city had a branch of German-American Bund in 1940 for columns 3-4. The explanatory variable is the signal strength of Coughlin's radio program in 1939. Each regression controls for state fixed effects, the signal in free space, geographic, and socioeconomic controls as in column 3 of Table 7 (Panel B). County controls are the same baseline county socioeconomic and past electoral characteristics as in column 5 of Table 3. Column 4 further controls for whether a city had a local branch of the Friends of New Germany in 1934. Standard errors, shown in parentheses, are corrected for clustering at the state level.

Table A10: Signal Strength and Coughlin Listenership before the 1936 Election

	Outcome = 1 if Respondent Listened to Coughlin Regularly before 1936 Election			
	(1)	(2)	(3)	(4)
Signal	0.136	0.108	0.108	0.121
	(0.051)	(0.034)	(0.033)	(0.029)
Observations	2,447	2,447	2,447	2,447
SignalFree	Yes	Yes	Yes	Yes
Region fixed effects		Yes	Yes	Yes
Individual controls			Yes	Yes
State controls				Yes
R^2	0.017	0.029	0.065	0.069
Mean of Dep. Var.	0.305	0.305	0.305	0.305
Std. Dev. of Dep. Var.	0.461	0.461	0.461	0.461

Notes - This table shows the estimated effects of Coughlin's radio signal strength on his listenership before the 1936 election. Each column represents the results from a separate OLS regression, where each observation is an individual respondent in the Gallup Poll of April 1938. The sample consists of all respondents outside of the geographic South. The outcome is a binary variable that equals 1 if the respondent listened to Father Coughlin's radio program regularly before the 1936 election and 0 otherwise. The explanatory variable is the signal strength of Coughlin's radio program in 1936 averaged to the state-level with 1930 county population as weights. $SignalFree$ is the "free space" variable averaged to the state-level with 1930 county population as weights. Region fixed effects are dummies for the Northeast, the Midwest, the South, and the West. Individual controls include gender, race, age and age squared, occupation (dummies for professional, white collar, labor, unemployed, and other), and an indicator for whether the respondent lived in a large city with more than 100,000 people. State controls include the natural log of population, population share of urban, share of Catholics, average elevation, and average ruggedness. Regressions are weighted by individual weights provided in the Gallup Poll data. Standard errors, shown in parentheses, are corrected for clustering at the state level.

Table A11: Matching Neighboring County Pairs with Increasingly Similar *SignalFree*

	FDR's vote share in 1936		
	Matching neighbors ($q \geq 0.5$)		
	$\Delta \leq 0.5$	$\Delta \leq 0.25$	$\Delta \leq 0.1$
	(1)	(2)	(3)
Signal	-1.700	-1.532	-2.119
	(0.579)	(0.634)	(0.792)
Observations	586	488	296
Neighbor-pair FE	Yes	Yes	Yes
Geographic controls	Yes	Yes	Yes
Socioeconomic controls	Yes	Yes	Yes
Past electoral controls	Yes	Yes	Yes
R^2	0.941	0.943	0.946
Mean of Dep. Var.	58.46	59.09	59.80
Std. Dev. of Dep. Var.	11.68	11.56	10.99

Notes - This table shows the estimates from comparing pairs of neighboring counties, i and j, such that $\mid Signal_i - Signal_j \mid \geq 0.5$ and $\mid SignalFree_i - SignalFree_j \mid \leq \Delta$ for values of Δ indicated above each column. The sample consists of such neighboring county pairs from the same state outside of the geographic South. Each column represents the results from a separate OLS regression, where each observation is a county. The outcome variable is FDR's vote share in the 1936 presidential election. The explanatory variable is the signal strength of Coughlin's radio program in 1936. Each regression controls for neighbor-pair fixed effects as well as the baseline socioeconomic, geographic, and past electoral controls as in column 5 of Table 3. Standard errors, shown in parentheses, are corrected for clustering at the neighbor-pair level.

Table A12: Balance Tests for Neighboring County Pairs

	(1)	(2)	(3)	(4)
		Matching neighbors		
	Mean	$\Delta \leq 0.5$	$\Delta \leq 0.25$	$\Delta \leq 0.1$
ln(Population)	9.829	-0.132	-0.156	-0.144
	(1.137)	(0.090)	(0.100)	(0.132)
% Male	52.169	0.245	0.117	-0.007
	(2.396)	(0.200)	(0.210)	(0.264)
% Native whites	87.539	0.215	0.411	-0.026
	(11.415)	(0.748)	(0.843)	(1.109)
% Foreign-born whites	6.935	-0.416	-0.660	-1.011
	(6.328)	(0.375)	(0.405)	(0.558)
% Blacks	3.413	-0.433	-0.318	-0.132
	(8.953)	(0.217)	(0.211)	(0.302)
% Urban	24.338	-2.842	-1.861	-3.749
	(27.526)	(2.672)	(2.965)	(3.718)
% Age > 65	6.647	0.272	0.229	-0.062
	(2.139)	(0.151)	(0.159)	(0.184)
% Catholics	10.819	0.910	0.810	1.248
	(12.051)	(1.002)	(1.100)	(1.445)
% Illiterate	2.414	-0.020	0.050	0.373
	(2.804)	(0.215)	(0.231)	(0.283)
% Unemployed	6.686	-1.340	-0.928	-0.427
	(4.929)	(0.580)	(0.609)	(0.634)
Occscore	7.344	-0.032	-0.113	-0.163
	(1.825)	(0.168)	(0.188)	(0.237)
% Radio owners	34.718	1.675	0.874	-0.236
	(15.002)	(0.674)	(0.710)	(0.952)
% Manufacturing workers	12.036	-3.298	-2.879	-1.577
	(12.121)	(0.874)	(0.954)	(1.142)
% Agricultural workers	42.080	3.113	2.754	0.555
	(21.734)	(1.976)	(2.255)	(2.788)
ln(Average farm size)	7.457	0.075	0.070	-0.022
	(0.931)	(0.053)	(0.060)	(0.084)
ln(Land value per acre)	3.528	-0.044	-0.074	0.003
	(0.909)	(0.055)	(0.061)	(0.085)
% Tenant acres	27.561	-1.686	-1.283	-1.525
	(15.493)	(0.747)	(0.850)	(1.027)
% Voted Democrat (past)	33.323	0.736	0.931	0.583
	(13.014)	(0.594)	(0.665)	(0.766)
% Voted Republican (past)	58.406	-0.200	-0.420	0.546
	(10.998)	(0.714)	(0.761)	(0.843)
% Turnout (past)	62.029	0.866	0.793	0.690
	(13.606)	(0.597)	(0.672)	(0.841)

Notes - The table reports the mean of county characteristics (column 1) and their correlation with *Signal* (columns 2-4) for the sample of neighboring county pairs used in Table A11. Specifically, columns 2-4 compare variables between neighboring same-state county pairs whose *Signal* were at least 0.5 standard deviation apart but whose differences in $SignalFree$ were below 0.5, 0.25, and 0.1 standard deviations, respectively. I regress each variable on *Signal*, controlling for neighbor-pair fixed effects and the baseline county geographic characteristics (area, elevation, ruggedness, and their squared terms). Standard errors, shown in parentheses, are corrected for clustering at the neighbor-pair level.

Table A13: Matching Neighboring County Pairs with Increasingly Larger Differences in *Signal*

	FDR's vote share in 1936				
	Matching neighbors ($\Delta \leq 0.1$)				
	$q \geq 0.1$	$q \geq 0.2$	$q \geq 0.3$	$q \geq 0.4$	$q \geq 0.5$
	(1)	(2)	(3)	(4)	(5)
Signal	-1.013	-1.022	-1.107	-1.628	-2.119
	(0.471)	(0.503)	(0.569)	(0.644)	(0.792)
Observations	3,308	2,078	1,172	616	296
Neighbor-pair FE	Yes	Yes	Yes	Yes	Yes
Geographic controls	Yes	Yes	Yes	Yes	Yes
Socioeconomic controls	Yes	Yes	Yes	Yes	Yes
Past electoral controls	Yes	Yes	Yes	Yes	Yes
R^2	0.937	0.934	0.932	0.935	0.946
Mean of Dep. Var.	57.69	58.07	58.28	59.48	59.80
Std. Dev. of Dep. Var.	11.22	11.17	11.30	11.11	10.99

Notes - This table shows the estimates from comparing pairs of neighboring counties, i and j, such that $\mid SignalFree_i - SignalFree_j \mid \leq 0.1$ and $\mid Signal_i - Signal_j \mid \geq q$ for values of q indicated above each column. The sample consists of such neighboring county pairs from the same state outside of the geographic South. Each column represents the results from a separate OLS regression, where each observation is a county. The outcome variable is FDR's vote share in the 1936 presidential election. The explanatory variable is the signal strength of Coughlin's radio program in 1936. Each regression controls for neighbor-pair fixed effects as well as the baseline socioeconomic, geographic, and past electoral controls as in column 5 of Table 3. Standard errors, shown in parentheses, are corrected for clustering at the neighbor-pair level.

2 Appendix B: 16 Principles of the National Union of Social Justice

(Excerpted from Father Coughlin's broadcast on Sunday, November 11, 1934. Source: `https://www.ssa.gov/history/fcspeech.html` *)*

Establishing my principles upon this preamble, namely, that we are all creatures of a beneficent God, made to love and serve Him in this world and to enjoy Him forever in the next; and that all this world's wealth of field and forest, of mine and river has been bestowed upon us by a kind Father, therefore, I believe that wealth as we know it originates from the natural resources and from the labor which the sons of God expend upon these resources. It is all ours except for the harsh, cruel and grasping ways of wicked men who first concentrated wealth into the hands of a few, then dominated states and finally commenced to pit state against state in the frightful catastrophes of commercial warfare.

With this as a preamble, then, these following shall be the principles of social justice towards whose realization we must strive.

1. I believe in the right of liberty of conscience and liberty of education, not permitting the state to dictate either my worship to my God or my chosen avocation in life.

2. I believe that every citizen willing to work and capable of working shall receive a just and living annual wage which will enable him to maintain and educate his family according to the standards of American decency.

3. I believe in nationalizing those public necessities which by their very nature are too important to be held in the control of private individuals. By these I mean banking, credit and currency, power, light, oil and natural gas and our God-given natural resources.

4. I believe in private ownership of all other property.

5. I believe in upholding the right to private property yet in controlling it for the public good.

6. I believe in the abolition of the privately owned Federal Reserve Banking system and in the establishment of a Government-owned Central Bank.

7. I believe in rescuing from the hands of private owners the right to coin and regulate the value of money, which right must be restored to Congress where it belongs.

8. I believe that one of the chief duties of this Government-owned Central Bank is to maintain the cost of living on an even keel and the repayment of dollar debts with equal value dollars.

9. I believe in the cost of production plus a fair profit for the farmer.

10. I believe not only in the right of the laboring man to organize in unions but also in the duty of the Government which that laboring man supports to facilitate and to protect these organizations against the vested interests of wealth and of intellect.

11 . I believe in the recall of all non-productive bonds and thereby in the alleviation of taxation.

12. I believe in the abolition of tax-exempt bonds.

13. I believe in the broadening of the base of taxation founded upon the ownership of wealth and the capacity to pay.

14. I believe in the simplification of government, and the further lifting of crushing taxation from the slender revenues of the laboring class.

15. I believe that in the event of a war for the defense of our nation and its liberties, there shall be a conscription of wealth as well as a conscription of men.

16. I believe in preferring the sanctity of human rights to the sanctity of property rights. I believe that the chief concern of government shall be for the poor because, as it is witnessed, the rich have ample means of their own to care for themselves.

These are my beliefs. These are the fundamentals of the organization which I present to you under the name of the National Union for Social Justice. It is your privilege to reject or accept my beliefs; to follow me or repudiate me.

3 Appendix C: Content Analysis of Father Coughlin's Broadcasts

In this section, I conduct content analysis of Father Coughlin's broadcasts using his radio transcripts (Coughlin, 1936a) collected from the University of Detroit Mercy Archive, which to my knowledge contains the most comprehensive collection of Father Coughlin's radio transcripts. Because the radio transcripts came as scanned images, I used a professional Optical Character Recognition software (Abbyy FineReader) to convert the radio transcripts from PDF to text files to facilitate text analysis.[1]

Coughlin's Attitudes towards FDR, 1933 versus 1936

Previous historical work on Father Coughlin suggests that Coughlin strongly supported FDR during FDR's early presidency but completely switched that position by 1936. To provide supplemental evidence to the historical narratives, I compare the references that Coughlin made to FDR in his 1933 broadcasts with those in 1936. Specifically, I identify all the instances that Coughlin mentioned the name "Roosevelt" and manually classify each reference into one of three categories (positive, negative, or neutral) based on the immediate context of the reference, such as whether Coughlin was praising, criticizing, or simply stating a fact about FDR. I then calculate the share of the references that were positive, negative, and neutral in each year.

Using this approach, Figure A2 shows that in 1933 about 66% of the references that Coughlin made to FDR were positive (with 34% neutral and none negative). In contrast, in 1936, almost 80% of Coughlin's references to FDR were negative (with 20% neutral and none positive). The evidence from Coughlin's radio transcripts is therefore consistent with historical accounts about his changing attitudes towards FDR over time.

In addition, to have a better sense of what Father Coughlin said about

[1] Coughlin's radio transcripts from 1936 onwards were published in his weekly newspaper, *Social Justice*, which have also been digitized by the University of Detroit Mercy Archive. I am grateful to Andy Ferrara for sharing the OCR software.

FDR and the New Deal administration, I also present below a list of quotes from Father Coughlin from 1933 and 1936:

Coughlin's mentioning of FDR and the New Deal in 1933:

- "Therefore, your faith in our President must not be shaken [...] It is not possible to heal the wounds of a nation, to soothe its distracted soul in sixty days. Mr. Roosevelt is not a miracle man. But he is resolute and courageous. He has not forgotten his public vow which pledged him to a sound and an adequate money. He still remembers his sworn promise to drive the money-changers out of the Temple."

- "Roosevelt or ruin! Roosevelt or Morgan! Take your choice! Choose the one man behind whom we will follow to victory!"

- "If a Roosevelt therefore be condemned for seeking a financial method that will clothe the naked, feed the hungry, open the factories, weigh anchor for our ships and cultivate foreign markets, then imprison Galileo, put Columbus in chains, incarcerate Washington, lock Pasteur and Edison in padded cells—away with all the scientific experimentalists of the past and cling to the philosophy of the cave man!"

- "The eyes of the world are watching how you support the first and only President who has had the intestinal fortitude to tell Wall Street to go to the devil!"

- "March 4th, 1933! What a memorable day that was! It was the birthday of the "new deal". On that date a voice went ringing around the world announcing a new Declaration of Independence."

- "Soon, soon, shall the dawnlight of a new morning break upon us—a new morning of resurrection, when we shall rise glorious to triumph with the Prince of Peace. This is the hope of the new day and the "new deal"."

- "...this "new deal" which challenges the concentration of wealth in the hands of a few—the "new deal" which proposes to elevate human rights

above financial rights!"

Coughlin's mentioning of FDR and the New Deal in 1936:

- "Today, Mr. Roosevelt is the supreme lord of the Democratic party. In fact, he is the party."
- "Mr. Roosevelt not only accepts the open support of communists but his Democratic committees appoint them as electors in New York state!"
- "Fully cognizant of Mr. Roosevelt's excursions upon the highway of radicalism together with the communistic tendencies of those with whom he has surrounded himself, I cannot conscientiously proclaim that I am a Democrat of the present vintage."
- "I refer to those identical personages under Mr. Roosevelt's administration who are responsible for recognizing Soviet Russia, for congratulating murderous Mexico, for lending aid and comfort to communistic Spain, for utilizing American gold to sustain socialistic France—the same Roosevelt administration which, contrary to the precepts of sacred scripture, inaugurated a policy of destroy and devastate for the farmers of America, with the hope of producing prosperity therefrom."
- "The issue is not Roosevelt or Landon or Lemke; it is Christianity or chaos; America or communism."
- "The fact of the matter is this, the New Deal was the socialized Old Deal, in so far as it endeavored to bring about recovery without financial reform."
- "In other words, my friends, the new tax suggested by President Roosevelt is nothing more than Santa Claus in the disguise of the big, bad wolf bringing a premature present to his friendly bankers."
- "...I have opposed, I do oppose and I will oppose Mr. Roosevelt's unsound monetary policies and his failure to drive the moneychangers from the temple."

- "You have your choice: Follow the advice given in the editorial of the *Jewish Daily Forward* — the advice given to the socialist and bolsheviki— and vote for Roosevelt; or follow the instincts, the traditions and the precepts of your Americanism and Christianity and support the one platform which includes an annual wage, the restoration to congress of its rignt to coin and regulate the value of money, and the preservation of American democracy."

- "For the above reasons, I cannot reconcile my conscience to be silent. We must vote out of existence a New Deal administration which, pretending to be a friend of the poor, has been a friend to the bankers, professing to be a godsend to the American, has been a gold mine to the foreigner. Roosevelt or ruin has certainly proven itself to be Roosevelt and ruin to all save the international bankers."

- "But which of the presidential candidates will adopt these principles? Unfortunately, only one—the Impoverished leader of the impoverished Union Party. Not Mr. Roosevelt!"

- "George Washington, Thomas Jefferson and other true patriots have warned us against entangling foreign alliances. However, I suppose that the founding fathers of our country are as outmoded in the minds of the New Dealers as is the Constitution."

- "The Issue on November 3 is not between the Old Deal and the New Deal; not between Roosevelt and Landon; not between security for the poor and security for the rich. The real issue is between the international bankers and the American people; between peace and war."

4 Appendix D: Persuasion Rate

To calculate the persuasion rate of Father Coughlin's radio program, I follow previous studies (Enikolopov et al., 2011; DellaVigna et al., 2014; Adena et al., 2015) and use the following formula:

$$f = \frac{1}{-v_0 t_0}(t \cdot \frac{dv}{de} + v \cdot \frac{dt}{de}) = \frac{1}{-v_0 t_0} \cdot \frac{1}{\frac{de}{ds}}(t \cdot \frac{dv}{ds} + v \cdot \frac{dt}{ds}) \tag{1}$$

where v is the vote share of FDR, t is the turnout, and v_0 and t_0 are FDR's vote share and turnout in the absence of Father Coughlin's radio program. $\frac{de}{ds}$ is the effect of Coughlin's radio signal strength on his listenership. $\frac{dv}{ds}$ is the effect of Coughlin's radio signal strength on FDR's vote share (i.e., column 5 of Table 3 in the paper), and $\frac{dt}{ds}$ is the corresponding effect for turnout.

Column 8 of Table 3 suggests that exposure to Coughlin's radio program had little effect on turnout in the 1936 presidential election.[2] Therefore, I follow previous studies (DellaVigna et al., 2014; Adena et al., 2015) by taking $\frac{dt}{ds} = 0$ and setting $t_0 = t$ to calculate the persuasion rate. Hence, the persuasion rate formula is now simplified to become:

$$f = \frac{1}{-v_0 t_0} \cdot \frac{1}{\frac{de}{ds}}(t_0 \cdot \frac{dv}{ds} + v \cdot 0) = \frac{1}{-v_0} \cdot \frac{1}{\frac{de}{ds}}(\frac{dv}{ds}) \tag{2}$$

Next, to estimate $\frac{de}{ds}$, the effect of Coughlin's radio signal strength on his listenership, I combine data on signal strength with individual survey data from the Gallup Poll that measured Coughlin listenership. Specifically, the Gallup Poll of April 1938 asked each respondent whether he or she listened to Father Coughlin's radio program regularly before the 1936 election.[3] I use a binary variable that equals 1 if the respondent listened regularly to Coughlin's radio program before the 1936 election and 0 otherwise to measure listenership. While the Gallup Poll data reports the state for each respondent,

[2] Results are similar when looking at the change in turnout between 1932 and 1936.

[3] I obtain the Gallup Poll data from the Roper Center for Public Opinion Research (https://ropercenter.cornell.edu/). Specifically, the Gallup Poll of April 1938 asked its respondents "Have you listened recently to Father Coughlin's radio talks?", "Do you listen to him regularly?", and "Did you listen to him regularly before the 1936 election?".

the data unfortunately does not contain a county or city identifier, which prevents me from matching individuals to Coughlin's radio signal strength at the county-level. Therefore, to measure signal strengths, I compute them at the state-level, by taking weighted averages of county-level signal strengths (with 1930 county population as the weights). The results are similar if I do not use weight when taking the averages of signal strengths across counties.

Table A10 presents the results from individual-level regressions of Coughlin listenership on the signal strength. Column 1 of the table controls for only the "free space" variable, while in the next few columns I further control for region fixed effects, individual characteristics (gender, race, age and age squared, occupation, and whether the respondent lived in a large city with more than 100,000 people) and state characteristics (natural log of population, population share of urban, share of Catholics, average elevation, and average ruggedness). The estimates are robust and statistically significant across the different specifications. Based on column 4 of the table, which includes all the controls, a one standard deviation increase in Coughlin's radio signal strength increased his listenership by about 12.1 percentage points before the 1936 election. I therefore take $\frac{de}{ds} = 0.121$ to calculate the persuasion rate.

The last piece I need to calculate Father Coughlin's persuasion rate is v_0, which is FDR's vote share in the absence of Coughlin's radio program. To estimate v_0, I set the signal in each county to be the minimum signal strength observed in the sample and predict FDR's vote share following the baseline specification (column 5 of Table 3). Doing so returns a predicted value of $v_0 = 0.707$, suggesting that FDR would have obtained a vote share of 70.7 percent (instead of the observed 58.4 percent for my baseline sample) in 1936 in the absence of Coughlin's radio program.

Finally, combining the above information, I calculate the persuasion rate of Father Coughlin's anti-FDR broadcast in 1936 as:

$$f = \frac{1}{-v_0} \cdot \frac{1}{\frac{de}{ds}}(\frac{dv}{ds}) = \frac{1}{-0.707} \cdot \frac{1}{0.121}(-2.4) = 28.1\% \tag{3}$$

This suggests that about 28 percent of Father Coughlin's listeners were

convinced to vote against FDR in 1936 as a result of exposure to Coughlin's radio program. Moreover, I find that the standard error of the estimated persuasion rate is about 8.9 using the delta method.

Coughlin's Persuastion Rate in Places with More Catholics

While the above persuasion rate reflects Father Coughlin's persuasiveness on average, one may also be curious about his persuastion rate among Catholics. The challenge to calculate the persuasion rate among Catholics, however, is that neither the county-level voting data nor the Gallup Poll data on Coughlin's 1936 listenership contains information by religious denomination. I therefore estimate Coughlin's persuasion rate in predominantly Catholic counties as an alternative.

Specifically, consistent with Panel A of Table 4, I focus on the subset of counties in the top quartile of the distribution of Catholic population share. Similar to the baseline, I find that exposure to Coughlin also had no effect on turnout in this subset of highly Catholic counties. This suggests that I can again use the formula $f = \frac{1}{-v_0} \cdot \frac{1}{\frac{de}{ds}}(\frac{dv}{ds})$ to calculate the persuasion rate in this subset of counties. To obtain v_0, I follow the same steps as above and predict that FDR's 1936 vote share would have been 73.2 percent in this subset of highly Catholic counties had there been no exposure to Coughlin's radio program. I therefore take $v_0 = 0.732$. In addition, I estimate $\frac{de}{ds}$ using the Gallup Poll listenership data. While the listenership data does not contain each respondent's religious affiliation, I find that the effect of radio signal on Coughlin's listenership is not significantly different in states with more Catholics (i.e., by interacting *Signal* with state-level Catholic population share). I therefore use the same value of $\frac{de}{ds}$ from the above (i.e., $\frac{de}{ds} = 0.121$). Lastly, Panel A of Table 4 shows that $\frac{dv}{ds} = -1.34 - 2.05 = -3.39$. I therefore estimate Coughlin's persuasion rate in the subset of highly Catholic counties to be $f = \frac{1}{-0.732} \cdot \frac{1}{0.121}(-3.39) = 38.3\%$. Given this is Coughlin's persuasion rate in this subset of counties on average, the estimate is likely to be a lower bound of Father Coughlin's persuasion rate among Catholics.

5 Appendix E: Exploiting Spatial Discontinuity in Exposure to Father Coughlin

This section reports an empirical exercise to exploit the spatial discontinuity in exposure to Father Coughlin between neighboring county pairs. In particular, I conduct a similar exercise as in Durante et al. (2019) to match pairs of neighboring counties that were observationally similar (including having essentially the same signal strength in free space) but had larger differences in actual exposure to Father Coughlin's radio program.

Specifically, I compare voting outcomes between two neighboring counties, i and j , such that

$$\mid SignalFree_i - SignalFree_j \mid \leq \Delta \text{ and } \mid Signal_i - Signal_j \mid \geq q \quad (4)$$

for different values of Δ and q.[4] Thus, the comparison mimics an ideal experiment of exposing to Father Coughlin only one of two otherwise identical counties.

In Table A11, I focus on the sample of neighboring county pairs whose differences in $Signal$ were at least 0.5 standard deviation apart.[5] From column 1 to column 3 of the table, I gradually restrict the sample to neighboring county pairs with increasingly similar $SignalFree$ (i.e., from $\Delta \leq 0.5$ to $\Delta \leq 0.1$). Conditional on neighbor-pair fixed effects as well as the same set of baseline county geographic, socioeconomic, and pasting voting controls, I find that exposure to Father Coughlin consistently had a negative and statistically significant effect on FDR's vote share in 1936, despite the decreases in sample sizes. The effect size is of similar magnitude as in the baseline estimate, suggesting that a one standard deviation increase in exposure to Coughlin

[4]To be consistent with the rest of the empirical work, here $Signal$ and $SignalFree$ are also measured in standard deviations and the sample consists of only counties outside of the geographic South. I also focus on neighboring county pairs from the same state to make the comparison more similar, although the empirical results below are similar with or without this restriction.

[5]Results based on alternative cutoffs of q are qualitatively similar and available upon request.

reduced FDR's vote share by 1.5-2.1 percentage points.[6]

In Table A13, I instead focus on the sample of neighboring county pairs with little difference in $SignalFree$ ($\Delta \leq 0.1$) and examine the effects when the difference in actual exposure to Coughlin increases (from $q \geq 0.1$ to $q \geq 0.5$).[7] The point estimates suggest that a one standard deviation increase in exposure to Father Coughlin reduced FDR's vote share by about 1-2 percentage points; the effects are more pronounced among neighboring county pairs with larger differences in actual exposure.

Overall, the exercise exploiting spatial discontinuity in $Signal$ between neighboring county pairs provides consistent evidence that exposure to Father Coughin's radio program in 1936 reduced the electorate support for FDR.

[6]Table A12 provides balance tests and shows that the neighboring county pairs are largely balanced across the baseline county socioeconomic and past voting variables, as I restrict the sample to neighbor-pairs with increasingly similar $SignalFree$. For instance, column 4 of the table shows that for neighboring county pairs whose $SignalFree$ were less than 0.1 standard deviation apart, only 1 out of the 20 coefficients (the share of foreign-born whites) was statistically significant (at the 10 percent level), while all the other coefficients were statistically indistinguishable from zero.

[7]Results based on alternative cutoffs of Δ are qualitatively similar and available upon request.

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