

Can Television Reduce Xenophobia?
The Case of East Germany

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Abstract

Can television have a mitigating effect on xenophobia? To examine this question, we exploit the fact that individuals in some areas of East Germany – due to their geographic location – could not receive West German television until 1989. We conjecture that individuals who received West German television were exposed more frequently to foreigners and thus have developed less xenophobia than people who were not exposed to those programs. Our results show that regions that could receive West German television were less likely to vote for right-wing parties during the national elections from 1998 to 2013. Only recently, the same regions were also more likely to vote for left-wing parties. Moreover, while counties that hosted more foreigners in 1989 were also more likely to vote for right-wing parties in most elections, we find counties that recently hosted more foreign visitors showed less xenophobia, which is in line with intergroup contact theory.

Keywords: Mass media; Television; Xenophobia; Attitudes towards foreigners; East Germany; Natural experiment

JEL classification: D72, L82, P30

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1 Introduction

The question we want to answer in this article is: Can television have a mitigating influence on xenophobia? Xenophobia is hereby defined as a negative attitude towards foreigners in general. This negative attitude becomes visible in a democratic system by votes for parties that have such negative attitudes incorporated in their party program, in particular right-extreme or general right-wing parties.

Previous academic literature has already identified effects of television consumption on political attitudes: In an early article, Gentzkow & Shapiro (2004) find evidence that attitudes towards the United States in Muslim countries are correlated with television consumption. Gentzkow (2006) reveals that the introduction of television broadcasting in the United States correlates with a reduced consumption of newspapers and radio as well as a decline in political knowledge. DellaVigna & Kaplan (2007) investigate the effect of Fox News on election outcomes in the United States. They show that the Republican party gained support in regions where Fox News entered the cable market. Furthermore, DellaVigna, Enikolopov, Mironova, Petrova & Zhuravskaya (2014) show that nationalistic Serbian radio broadcasting triggered hatred towards Serbs in Croatia. They further show that the election outcome for extremist parties is higher in regions that receive Serbian radio. Finally, Enikolopov, Petrova & Zhuravskaya (2011) provide evidence that access to independent television stations in Russia reduced the election outcome for the government party by 8.9 percentage points and increased the votes for the opposition party by 6.3 percentage points.

The effect of mass media consumption on voting outcomes in these papers strongly suggests that media might also reduce xenophobia and thus the election results for right-wing parties. It turns out that the East Germany provides us with suitable data to analyze this question.

Over the last decade, economists and political scientists have used the historical division of East and West Germany as a natural experiment to explain, for example, policy preferences for state intervention and redistribution (Alesina & Fuchs-Schündeln 2007) or individuals' attitudes towards social trust, risk, perceived fairness and cooperativeness (Heineck & Suessmuth 2013). More recently, scholars have also exploited the variation in the availability of West German television *within* the former German Democratic Republic. In a first article, Kern and Hainmueller (2009) investigate whether West German television broadcasting undermined the authoritarian regime of the German Democratic Republic. Using a survey that was conducted by the Central Institute for Youth Research (*Zentralinstitut für Jugendforschung*), they find that West German television increased the life

satisfaction of East Germans, who seemed to perceive television broadcasting mostly as source of personal entertainment. In line with this finding, Hyll & Schneider (2013) find evidence that West German television exposure is positively correlated with material aspirations, which were previously shown to be associated with happiness and personal well-being (Easterlin 2001).

Henninghausen (2015) has recently shown that West German television exposure affected East Germans' beliefs about what drives success in life. Using data from the German Socio-Economic Panel she finds a long lasting effect that West German television exposure made East Germans believe that effort rather than luck is a crucial determinant of success in life. Crabtree, Darmofal & Kern (2015) investigate whether West German television exposure spurred protest events in the year 1989, which ultimately led to the collapse of the German Democratic Republic. In their study, they do not find evidence that exposure to West Germany broadcasting had an effect on protest events. Furthermore, Bursztyń & Cantoni (2016) find that West German television exposure affected the composition of consumption after the German reunification, with East Germans who were exposed to West German television buying more products that were advertised with a higher intensity.

In this paper, we are interested in the effect West German television exposure had on xenophobia and election outcomes of nationalist parties in East Germany. Although right-wing attitudes are not identical with negative attitudes towards foreigners, the extreme right-wing political agenda is strongly correlated with negative attitudes towards foreigners (Bursztyń & Cantoni (2016); Schneider & Hyll (2016); Frindte, Geschke, Haußecker & Schmidtke (2016)). In the following analysis we utilize the fact that West German channels exposed their audience more frequently to foreigners and foreign countries than East German channels. Intergroup contact theory suggests that intergroup contact typically reduces racial and ethnic intergroup prejudice (see Pettigrew & Tropp (2006) for an excellent meta study). The exposure to West German television consequently might have reduced xenophobia of East Germans, since a lack of exposure to foreigners is frequently seen as a source of xenophobia.

This difference in exposure to foreigners should also become visible in the election results of extreme right-wing parties. Given that an estimated 98 % of the households in East Germany had a television set by 1989 (Müller 2000), citizens from the German Democratic Republic could in principle easily consume West German television if the signal was strong enough. Although West German television reception was generally widespread in the former GDR there were some areas with poor or no television signal. This is the variation we exploit in our study. It allows us to show empirically that West

German television indeed reduced xenophobia and the effect persists until today. This proves that media can indeed have surprisingly broad effects that are generally seen as beneficial for the society.

The remainder of the paper is structured as follows. The next section outlines briefly the history of the divided Germany, the role of East and West German television, as well as the role foreigners have played in the respective broadcasting programs. The subsequent section discusses xenophobia and the nationalist parties in Germany. Thereafter, we present our hypotheses, data and empirical results. The final section concludes.

2 The Impact of West German Television on East German Election Outcomes

2.1 A brief history of the divided Germany

After World War II, in 1945, the former German Reich was occupied by Allied forces who divided the country for administrative purposes into four occupation zones lead by the US, Great Britain, France and the Sowjet Union. The Sowjet occupation zone consisted of the Eastern parts, besides the city of Berlin that was divided between all four occupation powers, so that the Western zones of Berlin became an “island” within the Sowjet occupation zone. A larger part of the Sowjet occupation zone became Polish territory, some part territory of the Sowjet Union itself. The remainder formed in 1949 the “German Democratic Republic” (GDR, East Germany), while the parts of Germany occupied by the US, Great Britain and France formed the “Federal Republic of Germany” (FRG, West Germany), see Fig. 1.

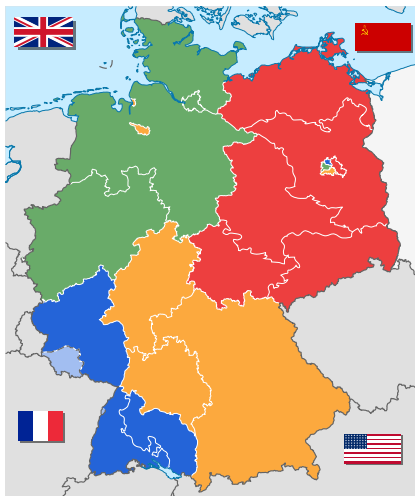


Figure 1: Division of Germany in occupation zones following World War II. The Sowjet occupation zone (red) became in 1949 the German Democratic Republic (GDR, East Germany). The other parts of Germany including the Western parts of Berlin formed the Federal Republic of Germany (FRG, West Germany). Nowadays, Germany consists of both parts. (Source of map: Wikipedia.)

West Germany developed with political and economic support from the US and the other Western countries astonishingly fast into a market economy and free democracy. East Germany became a communist state with one-party rule, strict censorship of all media and under supervision of the Sowjet Union. In 1953, after an uprising in East Germany, the Sowjet Union even suppressed it militarily.

Since more and more people fled the GDR, its border control increasingly tightened, leading to the construction of a fortified wall along the whole border between the GDR and FRG (including West Berlin) in 1961 – the famous “Berlin Wall”.

After the onset of political reforms in the Sowjet Union in the late 1980s, demonstrations for political freedom begun in many Eastern European countries, including the GDR. They succeeded at the end of 1989 and led to the fall of the Berlin Wall (November 9, 1989), democratic elections in East Germany (March 18, 1990) and ultimately to the reunification of Germany (October 3, 1990).

2.2 The role of West German television in East Germany

For citizens of the GDR, learning about the world was not easy. Traveling to the West was practically impossible except for very special cases, but even traveling to other “socialist countries” was restricted and at the end without visa only possible to one country, former Czechoslovakia.

The government of the GDR imposed a tight control on all media. Books or newspapers were not allowed to enter the country from the West and this was enforced strictly with detailed border controls, so that their impact on the flow of information was indeed insubstantial. Since the Internet did not exist yet for the general public¹, the only ways to obtain information from the West were therefore radio and television – both crossing the border easily over the air. In particular the West German television was considered by many East Germans as their only “window to the West” (see, e.g., Hömberg (2002), p. 12) and simply more informative and attractive (Wolff 2002, p. 123). West German television has been said to be a main reason for “preserving the cultural unity of the German nation during the 45 years of separation” (Wolle 1998).

While initially the government of the GDR tried to enforce a ban on

¹Only in 1991, the World Wide Web started publicly. The top level domain for the GDR (.dd) was therefore only used internally at two East German universities, but never for international communication.

watching West German television, this turned out to be too difficult on the long run. Already in the 1970s the majority of East Germans was following West German programs and in 1987, 85% of the population were using West German radio or television regularly.²

In fact, in the 1970s and 1980s the only limitation for watching West German television was physics, i.e., the limited reach of television signals: close to the border everybody could easily watch West German television programs, but as the distance increased, this would become more and more difficult or even impossible. Since the programs were also broadcasted from West Berlin, the “island” in the middle of the GDR, most parts of the GDR had a good or at least reasonable West German television reception. There were, however, differences in quality and two parts of the GDR, the North Eastern and South Eastern parts, were not able to watch West German television at all. Due to their relative lack of information, these regions were made fun of by East Germans. Particularly, the South Eastern region that included the third largest East German city, Dresden, was nicknamed “the valley of the clueless”³, see Fig. 2.

2.3 Foreigners on East and West German television

The difference between West and East German television was not restricted to politics and ideology. While in West Germany, the audience was expecting to see the world on their television screens – with reports from other countries, but also with traveling magazines, foreign movies or shows – East German television programs broadcasted much less foreign content, but more domestic programs. The type of foreign programs also differed. Traveling reports were fewer in East Germany (understandable, given that traveling was restricted anyway) and political reports from other countries tended to contain more political propaganda than general information.

All in all, West German television exposed its audience frequently to foreign countries and generally to foreigners from Europe, America, but also from all around the world. How big this difference was, can be seen by comparing the program of the two main public television stations in the West (ARD and ZDF)⁴ with the two East German television stations (DDR1 and

²These numbers result from surveys conducted by GDR researchers, which could only be published after reunification (Förster 1995).

³In German: “Tal der Ahnungslosen”.

⁴Prior to the advent of private television in West Germany (in 1984), there were only these two nation-wide stations. They were still the most frequently watched stations throughout the 1980s.

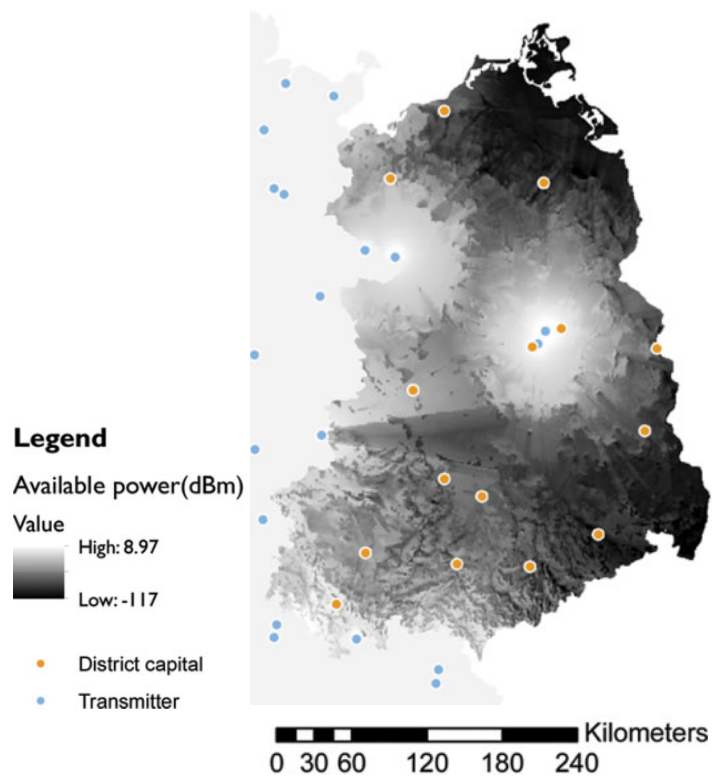


Figure 2: Reception of West German television in the German Democratic Republic: bright areas had better reception, dark areas little or none. This map is reproduced and slightly modified from Crabtree et al. (2015).

DDR2).

To quantify this difference, we analyzed the television program of two arbitrary weeks in the years 1981 and 1988 (i.e., prior and after the introduction of private television in West Germany). While in the West German programs in 1981 we found 73 broadcastings with foreign content, we only found 33 on the East German stations. In 1988, the results were similar: 42 in the West versus 16 in the East.⁵ The content of the broadcastings of course also differed markedly. While foreign content in East German television could mean watching a Sowjet union propaganda movie or a report about the visit of a GDR politician in a “friendly socialist country”⁶, in the West, this part of the program was much more diverse. For instance, on Sunday, August 16, 1981, the program of the ZDF included broadcastings about the US, Italy, Africa, Russia and Slovakia, starting at noon with the “Sunday Concert” from New Orleans, followed by a report about “Our neighbors, the Italians”, and later in the evening even including a documentary about movies and cinemas in sub-Saharan Africa. All in all nine broadcastings had foreign content. On the same day *both* East German television stations *together* only had three. As can be seen from this example, the amount of exposure to foreign countries and foreign people on West German television was large and diverse. On average more than one third of the program had foreign content.

Given the differences in the exposure to West German television in the GDR depending on the geographic location, this provides us with an ideal set-up to study the long-term effects of exposure to foreigners on television on the attitudes towards foreigners in general.

3 Xenophobia and nationalist parties in Germany

3.1 Xenophobia in East and West Germany

Like in most countries, there is also in Germany a certain number of people with xenophobic tendencies. While before reunification this problem was frequently discussed in public in West Germany and, especially given the German history, a lot of political and educational efforts were made to reduce xenophobia, the problem was officially non-existent in East Germany. The communist state was considered by definition to be “anti-fascist”. Practically, however, xenophobia was a built-in feature in the GDR: “the Ger-

⁵We excluded news from the analysis, since their foreign content could not be determined in retrospective from the television program.

⁶Although, to be fair, some Hollywood movies were also included.

man Democratic Republic was a [...] system where foreignness didn't have space" (Clier 1994). In fact, very few foreigners were allowed to live (usually temporarily) in the GDR and their rights were highly restricted. Exchange students from African countries, e.g., were only allowed to eat out in *one* designated restaurant of their city of residence; female workers from Vietnam and Mocambique who became pregnant during their stay in the GDR were forced to have an abortion and were generally not permitted to marry Germans (Clier 1994). Due to these manifold restrictions, the already smaller number of foreigners (around 1% of the GDR population in 1989) was much less integrated and therefore much less visible than in West Germany.

This situation also gave rise for xenophobia in the East and there are reports of hostility and occasional violence against foreigners (Clier 1994). Of course, this was officially hushed up and not known to most people at that time – neither in the East nor in the West.

In West Germany, the situation for foreigners was very different. There was a large influx of foreigners to West Germany, particularly in the 1960s and 1970s. There was also a closer interaction with the occupying foreign armies, an important difference particularly in the first years after the war, and (later) a much larger number of foreign tourists and exchange students.⁷ This meant that foreigners were a real-life experience for every West German. Even though contacts were at first often restricted to culinary adventures into Yugoslavian, Italian, Greek, Turkish or Chinese restaurants, on the long run, most West Germans had personal contacts with foreigners and particularly larger cities became quite international. According to data by the Federal Statistical Office of Germany, in 1989, 8% of the West German population were foreigners, not counting immigrants with German citizenship.⁸

Indeed, surveys show that the number of contacts between West Germans and foreigners was even in 1994, four years after the reunification, much larger than the number of contacts between East Germans and foreigners (Schmidt

⁷In 1989, there were 92,000 foreign students studying in West Germany (according to the Federal Statistics Bureau of Germany), but only 13,000 in East Germany (Deutsches Historisches Museum Berlin 2016). Numbers of foreign visitors to East Germany are difficult to find. The Statistics Bureau of the GDR only recorded the numbers for the most popular tourist region on the Baltic Sea (Bezirk Rostock). In 1987, there were less than 200,000 foreign visitors in this region. The number for the whole GDR can therefore be estimated as less than 2 million, many of them will have been West Germans (counting as foreigners at that time), thus leaving an even smaller number as “real” foreigners. In the same year in West Germany this number was 14 million (according to the Federal Statistics Bureau of Germany). The difference is in both cases (students and visitors) *much* larger than the difference in size between West and East Germany would suggest.

⁸This is a significant number to be added. There are no statistics for the 1980s, but in 2016, they account for around half of all immigrants in Germany.

& Weick 1998), see Fig. 3.

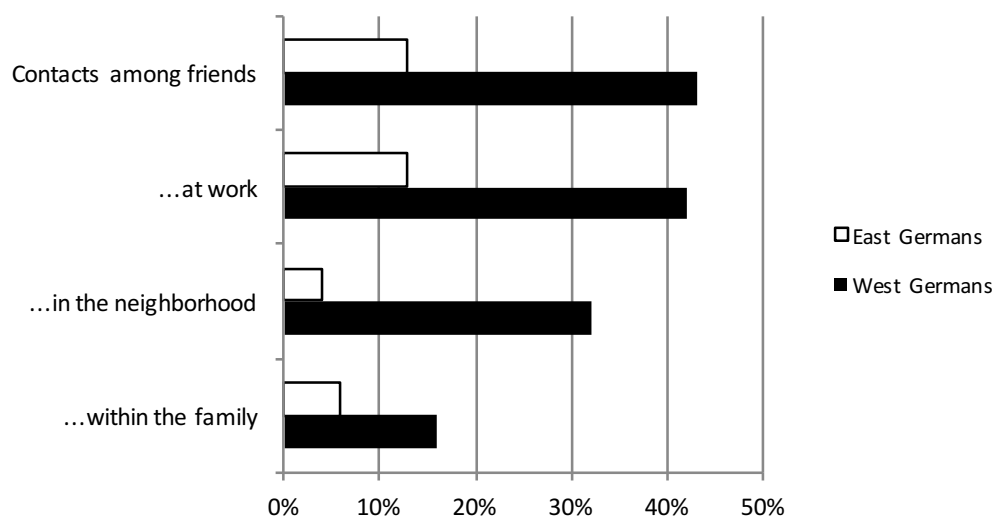


Figure 3: Contacts with foreigners were rarer in East Germany – even four years after reunification (the earliest data point). This data has been taken from Schmidt et al. (1998).

Although the relation with foreigners and their situation was substantially better in West Germany than in the East, some degree of xenophobia existed also in the West and there were also political parties that fed on xenophobia. Their success, however, was limited to regional elections and was only moderate. At nation-wide elections, they never won more than 4.3% of the votes.

With the reunification the situation changed dramatically, particularly in East Germany. The economic breakdown during the transition into a market economy led to a sudden rise in unemployment rates (up to 20% on average and even higher in some regions). At the same time more foreigners started to come to East Germany, particularly, since refugees and asylum seekers to Germany were now also distributed to the Eastern parts of the country. The situation led to violence against foreigners and a moderate success of right wing parties. The situation improved significantly in the middle of the 1990s, but worsened again in 2015 with a sudden advent of a big wave of refugees, particularly from Syria and North Africa.

3.2 Right-wing parties in Germany

The political spectrum in Germany is usually reflected by a number of parties. Following elections, some of those will collaborate to form a government. This multi-party system is possible since seats are allocated according to voters shares. Only parties that do not reach 5% are excluded from this distribution. This leads usually to two-, sometimes three-party coalitions. It also means that extreme opinions are more likely to be reflected by extreme parties, different from the US where they are usually integrated into one of the two major parties.

The most notable right-wing parties in Germany were the “National Party of Germany” (*Nationaldemokratische Partei Deutschlands*, NPD) that had some success in the 1960s and then again from the 1990s onward, the “The Republicans” (*Die Republikaner*, REP) that had most success in the early 1990s, and the “German People’s Union” (*Deutsche Volksunion*, DVU), most successful from the 1990s until they joined the NPD in 2011.

While The Republicans were usually considered to be the most moderate among the right-wing parties, DVU and NPD were considered to be the most extreme, even including neo-Nazis in their ranks.

In 2013, a new party, the “Alternative for Germany” (*Alternative für Deutschland*, AfD) appeared on the stage that started out as a moderate Euro-critical movement, but later heavily criticized immigration, particularly in the Eastern part of Germany where it had already some success in the 2013 elections. In our study, we also consider the AfD as a right-wing party.

3.3 Xenophobia versus general dissatisfaction

In this paper, we use election results of these parties as a benchmark for xenophobia in East Germany. It is important, however, to disentangle this from another motivation to vote for these parties: simple anger on the current political system.

There is, however, another alternative for voters to show their disagreement with current politics and the state of Germany as such: the communist party. While in the FRG communist parties had never been successful, this changed after reunification. The former East German communist party that had ruled the GDR under the “Socialist Unity Party of Germany” (*Sozialistische Einheitspartei Deutschlands*, SED) survived the reunification, changed names twice (first to (*Partei des Demokratischen Sozialismus*, PDS and then to *Die Linke*) and managed to have some moderate success also in West Germany. In East Germany, however, its success was much larger, and it managed to enter several times regional governments and in 2014 even won

a governor position in Thuringia.

Xenophobia should not motivate people to vote for *Die Linke*, but to vote for right-wing parties. General dissatisfaction with “those politicians” or the German democratic system should lead to a success of both radical left and radical right.⁹ Thus, voting results will enable us to some extent to distinguish both motivations.

4 West German television and election outcomes

4.1 Hypotheses

In line with intergroup contact theory (Williams 1947) and our findings in Section 2.3, we expect people who received West German television programs and were thus exposed more frequently to foreigners to have developed less xenophobia than people who were not exposed to those television programs. We therefore hypothesize that people from electoral districts that did receive West German television programs should have voted less frequently for right-wing parties.

Hypothesis: *Reception of West German television programs in the former GDR reduced xenophobia and therefore leads to a lower voting outcome for right-wing parties.*

An alternative explanation of such an election outcome could be that West German television broadcasting conveyed a more realistic picture of the West German system. People in East Germany could have had different expectations about the new system they were confronted with in the early 1990s. Those East Germans that received West German television were consequently less disappointed with the system that replaced the former GDR. If disappointment with the new political system was the main motivation behind the election results, one would again expect East Germans that did not receive West German television programs to have voted not only for the right-wing parties but also for the PDS/Die Linke, as explained in Section 3.3. Therefore we will test for this effect as well.

Other factors resulting from the pre- and post-communist area have been suggested to influence voting behavior today. First, there is ample empirical

⁹In fact, it is a frequent phenomena that *some* voters switch back and forth between the Linke and right-wing parties, as surveys have shown, so this motif indeed exists.

evidence that regions with largely unskilled individuals that suffer from unemployment and low income are associated with anti-immigration preferences (Scheve & Slaughter (2001); Mayda (2006); Faccini & Mayda (2009)).¹⁰

Second, according to intergroup contact theory, regular encounters with foreigners, who are visiting the region (as tourists or on business trips) and might potentially also strengthen the local economy, should lead to a reduction in xenophobia. A reduction of xenophobia should consequently lead to a lower election turnout for right-wing parties. This is in line with previous research that has shown that a higher GDP per capita improves attitudes towards immigrants (Brenner & Fertig 2006) and that welfare concerns are an even more important driver of attitudes towards foreigners than labour market concerns (Dustmann & Preston 2007).

Third, not every contact with foreigners will reduce xenophobia. We have already pointed out in Section 3.1 that in the former GDR, contact with foreigners was often restricted and lacked the chance for personal and thus positive experiences. After reunification, many new foreigners who came to the East were refugees, living in large refugee accommodations. Again, contacts were rare, this time due to language and cultural barriers (Schmidt & Weick 1998). Instead, their arrival increased concerns about the already difficult job market situation. This was discussed already very early (Stone 1990). The threat of unemployment might trigger xenophobia under low skilled workers. The encounter of unemployed foreigners might make the lack of jobs and the burden to the welfare state, however, also obvious to average citizens. Thus, while intergroup contact theory suggests that having contact with foreigners reduces xenophobia, we are skeptical whether the forms of encounter that were typical in East Germany result in such an outcome.

Fourth, there is empirical evidence that certain cultural traits are persistent over long periods of time. Using data from anti-semitism in Germany, Voigtländer & Voth (2012) show that medieval pogroms predict violence against Jews in the 1920s and election outcomes for the NSDAP – both several centuries later. They find persistence to be lower in areas that had a high level of immigration and trade. Nevertheless, it seems possible that certain regions might have a long-term preference for extreme right-wing parties. Counties that had voted for Hitler’s National Socialist German Workers’ Party (*Nationalsozialistische Deutsche Arbeiterpartei*, NSDAP) in 1933 might also be more inclined to vote for the AfD, DVU, NPD or Republikaner today.

¹⁰A recent paper by Hainmueller, Hiscox & Margalit (2015) contradicts these findings, as it finds no evidence that fears about unemployment and wage reductions drive anti-immigration attitudes.

Finally, we also consider that cities might be *per se* more cosmopolitan and open minded. Voters from a more densely populated region or from the country side should thus suffer less strongly from xenophobia.

4.2 Data

Today, the former area of the GDR in the reunified Germany consists of 217 counties or electoral districts. We make use of the fact that only in some counties the population could previously receive West German television. Data for the over-the-air signal strength was retrieved from Crabtree et al. (2015). In their paper, a Longley-Rice electromagnetic signal propagation model, terrain data as well as data on the location and technical characteristics of West German television transmitters are used to model signal strength. They discretize the continuous measure of West German television signal strength and generate three different categories: -85 dBm, -82.5 dBm, and -80 dBm. We use the ranking of the signal strength and constructed an ordinal variable that receives the value 3 if the signal strength was -85 dBm down to the value of 0 if the signal strength was less than -80 dBm. County level data for the national elections to the Bundestag were retrieved from the electoral management body (*Bundeswahlleiter*) for the elections from 1994 to 2013. As there were various right-wing parties running for the elections, we consolidated the votes of the AfD, DVU, NPD, and REP under the label "Right Parties."

In addition to our variable of interest, we consider a range of control variables. First, to account for differences in the voting behavior of the urban and rural population, we include the population density of the respective electoral districts for each election year. The data was retrieved from the electoral management body and the regional statistical offices (*Statistische Landesämter*). To account for the historical voting heritage of the districts, we consider the votes for the NSDAP in 1933 in the respective county. The data was retrieved from www.wahlen-in-deutschland.de and were available for the historical electoral districts and were subsequently matched to the current electoral districts. Furthermore, we consider the unemployment rate of the respective electoral districts for each election year as well as the percentage of unemployed foreigners in the electoral districts in 2009 and 2013. The data comes again from the regional statistical offices. We also consider the percentage of foreigners living in the electoral district. For the year 1989, the data was available on the district level (*DDR Bezirke*) and comes from the last (and latest) Statistical Yearbook of the former GDR. For the respective election years, it was collected from the electoral management body. To account for the potential contact with foreigners visiting the respective elec-

toral districts during the year of the election, we also consider foreign visitors for the respective election year. The data was retrieved from the electoral management body. Furthermore, we use the number of available hotel rooms in 1989 as a proxy for contacts with foreign visitors, which was available on the district level from the last Statistical Yearbook of the former GDR. A definition of the variables is provided in Appendix Table 1. Except for the election results from 1933, data was available for all of these counties.

4.3 Descriptive statistics

On the election side, the right-wing parties have generally been on the rise in East Germany. While these parties received merely 1.3 % of the votes in 1994, the share of the people voting for them increased to almost 9 % in 2013. However, relative to the left-wing party PDS, which later renamed itself to Die Linke, right-wing parties were less popular. With on average around 20.0 % the unemployment rate during the 1990s was generally high in East Germany, although the situation has strongly improved over the last decade, with on average around half as many people being unemployed. In the election year 2013, the unemployment rate of foreigners was almost twice as high. By contrast, the rate of foreigners living in the respective regions was generally low, with the exception of Berlin, where on average 17 % of the population had a foreign passport. The number of foreigners visiting East Germany has steadily been increasing, with by far the most people visiting Berlin and the fewest Artern in Thuringia. Furthermore, while most hotels during the GDR period were found in East Berlin and the district of Rostock, the fewest were available in Potsdam. The historical support for the NSDAP varied greatly in the electoral districts, with the lowest turnout in Berlin and the highest in Neubrandenburg and Rostock in the northeast of the former GDR.

Tabelle 1 around here

Table 2 shows a correlation table, which includes our explanatory variables. Not surprisingly, we find variables that were measured at multiple points in time to be highly correlated, which is why we restricted the table to observations from the year 2013 unless we explicitly state the year the variable refers to.

Tabelle 2 around here

4.4 Main results

Results from mixed effect models are reported in Table 3. In all models we ran a regression with our explanatory variables (television quality, population density, unemployment rate, foreigners living in the county, foreigners who lived there in 1989, foreigners visiting the county, number of hotel rooms in 1989, and votes for NSDAP in 1933) entered as fixed effects and the election results for the right-wing party as the dependent variable. To account for non-independent election results nested within the larger districts, we entered them as random variables. We find that the exposure to West German television during the GDR period had a positive and significant effect on election outcomes for the right-wing parties (except for the election year 1994), which is in line with the hypothesis stated above. The regressions further show negative and significant results for population density. Only in the election year 2009 the overall unemployment rate had a significant effect on right-wing votes, while the unemployment rate of foreigners did not show a significant effect. Furthermore, we find that the percentage of foreigners living in the former GDR had a positive and significant effect on the election results for right-wing parties. This finding runs against intergroup contact theory and might be due to the way foreigners were officially treated and perceived in the former GDR. In line with this conjecture, we do not find that the percentage of foreigners living in the respective region had a consistent and significant effect on election outcomes (except for the election years 2002 and 2009). Yet, for most of the elections of the 2000s the number of foreign visitors reduced the election outcome for right-wing parties. Finally, we find that electoral districts that voted more for the NSDAP in 1933 also voted more for the right-wing parties in 1994 and 2013.

Tabelle 3 around here

The regressions in Table 4 are identical to those in Table 3 except that the dependent variable is the election outcome of the left-wing party PDS/Die Linke. This time, we find a positive and significant effect for West German television exposure on the left-wing party election outcomes for the election year 2009 and 2013. Except from these two election year, we find no positive effect on election outcomes, which supports the hypothesis that xenophobia rather than general dissatisfaction with the political system explains our results for right-wing parties.

Looking at other explanatory variables for the election outcomes of the PDS/Die Linke, in recent years we find a positive and significant effect for the general unemployment rate and no effect for the unemployment rate of foreigners. Furthermore, in the 1990s and in 2009 the election outcome of

the PDS/Die Linke was negatively related to the number of foreigners living in the respective county during the GDR period. By contrast, current foreign visitors, the share of foreigners living in the respective county and the number of hotel rooms during the GDR period had no consistent effect on the election outcome of the PDS/Die Linke.

Tabelle 4 around here

4.5 Robustness

In Table 5, we present alternative specifications where we make use of the panel nature of our data. This allows us to control for time invariant factors that we were not able to capture in our previous specifications. We again find that the television quality variable is negative and statistically significant for the right-wing parties election outcome, but is not significant for the left-wing parties. Arguably, the random effects estimator is the only estimator that allows us to identify non time varying factors such as television quality, but it might be inconsistent. Although the results of this model provide additional support for our hypothesis, running a Hausman test makes us wary that this estimator produces consistent estimates.

Tabelle 5 around here

5 Conclusions

Using the natural experiment of the differences in access to Western television that the separation of Germany provided, we have found strong empirical evidence for a mitigating impact of media on xenophobia. The effect is robust and even 25 years after reunification still visible. The differences between areas with and without Western television cannot be explained by economic situation, differences between city and countryside or by some inherent “right-wing tradition”, as we have demonstrated by using various control variables. Given these results, one might conjecture that it wasn’t by chance that the xenophobic “Pegida” movement in 2015 started in Dresden, right in the “the valley of the clueless”. Indeed, given our findings, this might be a strange and belated side effect of the media censorship in the GDR.

Future work might investigate more precise insights into the channels through which this effect works. Is it a familiarity effect (foreigners becoming “normal” by seeing them so often on the TV screen)? Or was a positive image of foreigners established (although a negative bias in the depiction of

foreigners in movies and shows has often be suspected)? And how was this difference preserved since reunification? Is this a case of intergenerational transfer of attitudes? Did the initial success of right-wing parties lead to more visibility, easier recruiting and mobilizing and thus to a stable development?

To answer such questions, a more in-depth look at surveys regarding attitudes towards foreigners and their demographic distribution would be optimal. Such data, however, does not seem to be available in a high geographical and temporal resolution. In any case, these questions lead to many ideas for future work.

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Variable descriptions

Right Parties

The variable measures the percentage of votes right-wing parties received in the national elections to the German Federal Parliament (*Bundestag*) during the years from 1994 to 2013. The data is measured at the county level (*Kreisebene*). We consider as right-wing parties the “Alternative for Germany” (*Alternative für Deutschland*, AfD), the “German People’s Union” (*Deutsche Volksunion*, DVU), the “National Party of Germany” (*Nationaldemokratische Partei Deutschlands*, NPD), and “The Republicans” (*Die Republikaner*, REP). The variable is measured at the county level and was retrieved from the electoral management body (*Bundeswahlleiter*).

Left Parties

The variable measures the percentage of votes the left-wing party “Party of Democratic Socialism” (*Partei des Demokratischen Sozialismus*, PDS) – which was in 2007 renamed to “Party of Democratic Socialism” (*Die Linke*) – received in the national elections to the German Federal Parliament (*Bundestag*) in the years from 1994 to 2013. The data is measured at the county level (*Kreisebene*). The variable is measured at the county level and was retrieved from the electoral management body (*Bundeswahlleiter*).

TV quality

TV quality measures West German television signal strength and was measured at the county level (*Kreisebene*). The variable has an ordinal scale and runs from 0 to 3. It received the value 0 if the signal strength was less than -80 dBm, 1 if it was at least -80 dBm, 2 if it was at least -82.5 dBm, and 3 if it was at least -85 dBm. Information about the over-the-air signal strength is measured at the county level (*Kreisebene*) and was retrieved from Crabtree et al. (2015).

Population density

Population density measures the population per km² living in a certain region in the respective election year and was measured at the county level (*Kreisebene*). The data source are various Statistical Yearbooks (*Statistische Jahrbücher*) and Departments for Statistics (*Amt für Statistik*) at the federal state (*Bundesland*) level.

Unemployment rate total

The unemployment rate is the percentage of the labor force that was jobless in the respective election year and was measured at the county level (*Kreisebene*). The data source are various Statistical Yearbooks (*Statistische Jahrbücher*) and Departments for Statistics (*Amt für Statistik*) at the federal state (*Bundesland*) level.

Unemployment rate foreigners

The unemployment rate of foreigners is the percentage of the labor force that are foreigners and jobless and was measured at the county level (*Kreisebene*). The data was available for the election years 2009 and 2013 only. The data source are various Statistical Yearbooks (*Statistische Jahrbücher*) and Departments for Statistics (*Amt für Statistik*) at the federal state (*Bundesland*) level.

Foreigners (%)

The variable measures the share of the population that were foreigners in the respective election year and was measured at the county level (*Kreisebene*). The data source are various Statistical Yearbooks (*Statistische Jahrbücher*) and Departments for Statistics (*Amt für Statistik*) at the federal state (*Bundesland*) level.

Foreigners in 1989 (%)

The variable measures the share of the population that were foreigners in 1989 and was available at the district level (*DDR Bezirke*). The data source is the Statistical Yearbook of the GDR from 1990.

Foreign visitors (%)

The variable measures the number of overnight stays by foreigners in the respective election year and was measured at the county level (*Kreisebene*).

The data source are various Statistical Yearbooks (*Statistische Jahrbücher*) and Departments for Statistics (*Amt für Statistik*) at the federal state (*Bundesland*) level.

Hotels rooms

The variable measures the number of hotels rooms at the district level (*DDR Bezirke*) in 1989 and is taken from the Statistical Yearbook of the GDR 1990.

Votes for NSDAP in 1933

The variable measures the percentage of people that voted for the “National Socialist German Workers’ Party” (*Nationalsozialistische Deutsche Arbeiterpartei*, NSDAP) in 1933. The data was retrieved from www.wahlen-in-deutschland.de and was available for the historical electoral districts and subsequently matched to the current electoral districts.

Table 1: Summary statistics

Voting behaviour	Mean	Overall	Between	Within	Min	Max	N
Right parties	3.78%	2.70%	0.82%	2.57%	0.68%	12.96%	217
NPD	2.05%	1.57%	0.59%	1.45%	0.00%	3.85%	217
REP	0.73%	0.67%	0.25%	0.62%	0.00%	2.74%	217
DVU	1.57%	1.40%	0.35%	1.36%	0.00%	4.79%	217
AfD	5.83%	1.17%	-	-	3.60%	8.22%	217
Left party	20.04%	6.37%	1.95%	6.07%	2.56%	34.90%	217
Explanatory variables							
In Population density	4.93	0.90	0.90	0.10	3.58	9.32	217
TV quality	2.55	1.02	-	-	0.00	3.00	217
Votes for NSDAP in 1933	47.58%	4.14%	-	-	30.70%	56.30%	211
Unemployment rate total	11.00%	8.41%	1.58%	8.26%	4.50%	26.80%	217
Unemployment rate foreigners 2013	19.70%	4.00%	-	-	9.50%	26.90%	217
Foreigners in 1989 (%)	1.07%	0.36%	-	-	0.41%	1.62%	217
Foreigners (%)	0.42%	1.32%	1.18%	0.58%	0.01%	33.75%	217
Foreign visitors (%)	5.17%	28.61%	20.99%	19.49%	0.11%	9.04%	217
Hotels per 1000 inhabitant	2.09	0.91	-	-	0.99	4.84	217

Table 2: Correlation table

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
[1] TV quality in 1989								
[2] log Population density	0.1384							
[3] Unemployment rate total	-0.3686	-0.1581						
[4] Unemployment rate foreigners	-0.2206	-0.0969	0.4728					
[5] Foreigners 1989 (%)	0.0052	0.3647	-0.1597	0.0780				
[6] Foreigners (%)	-0.0289	0.3424	0.0654	0.0604	0.0557			
[7] Foreign visitors (%)	-0.0228	0.2950	0.0494	0.0347	0.0777	0.9856		
[8] Hotels per 1000 inhabitant in 1989	-0.3391	0.0992	-0.0186	-0.0978	0.0498	0.2214	0.2476	
[9] Votes for NSDAP in 1933	-0.3786	-0.1772	0.2131	0.1873	-0.0361	-0.2511	-0.2585	-0.0047

Table 3a: Results of linear mixed effects model: Right-wing parties (1994–2002)

	Model 1		Model 2		Model 3	
	Right Parties 1994		Right Parties 1998		Right Parties 2002	
	b	p	b	p	b	p
Fixed Effects						
(intercept)	0.006+	0.056	0.050**	0.000	0.015*	0.035
TV quality	-0.000	0.355	-0.002**	0.008	-0.002**	0.000
Population density	-0.001**	0.000	-0.003**	0.000	-0.001**	0.004
Unemployment rate total	0.000	0.722	-0.015	0.391	0.000	0.261
Unemployment rate foreigners						
Foreigners (%)	-0.105	0.272	-0.043	0.888	0.240*	0.025
Foreigners in 1989 (%)	0.153	0.329	1.614**	0.000	0.973**	0.002
Foreign visitors (%)	0.007	0.495	-0.023	0.390	-0.035**	0.003
Hotel rooms	0.001	0.321	-0.001	0.664	0.001	0.617
Votes for NSDAP in 1933	0.016**	0.000	0.017	0.233	-0.006	0.570
Random Effects	sigma		sigma		sigma	
District	-6.086**	0.000	-5.331**	0.000	-5.465**	0.000
Residual	-6.513**	0.000	-5.233**	0.000	-5.594**	0.000
Log-likelihood	1044.85		783.06		859.62	
N	210		210		211	

Table 3b: Results of linear mixed effects model: Right-wing parties (2005–2013)

	Model 4		Model 5		Model 6	
	Right Parties 2005		Right Parties 2009		Right Parties 2013	
	b	p	b	p	b	p
Fixed Effects						
(intercept)	0.044**	0.000	0.027**	0.006	0.064**	0.000
TV quality	-0.003**	0.000	-0.001*	0.017	-0.004**	0.000
Population density	-0.004**	0.000	-0.003**	0.000	-0.003**	0.001
Unemployment rate total	0.000+	0.082	0.001**	0.001	-0.000	0.995
Unemployment rate foreigners			-0.000	0.120	-0.022	0.266
Foreigners (%)	0.311	0.157	0.464*	0.011	0.284	0.468
Foreigners in 1989 (%)	1.596**	0.003	1.067**	0.009	1.938**	0.010
Foreign visitors (%)	-0.038*	0.018	-0.026**	0.001	-0.008	0.281
Hotel rooms	0.004	0.107	0.002	0.220	0.003	0.321
Votes for NSDAP in 1933	-0.013	0.448	0.017	0.202	0.056*	0.014
Random Effects	sigma		sigma		sigma	
District	-4.897**	0.000	-5.169**	0.000	-4.551**	0.000
Residual	-5.045**	0.000	-5.310**	0.000	-4.770**	0.000
Log-likelihood	743.48		799.63		684.55	
N	211		211		211	

Table 4a: Results of linear mixed effects model: Left-wing parties (1994–2002)

	Model 1		Model 2		Model 3	
	PDS 1994		PDS 1998		PDS 2002	
	b	p	b	p	b	p
Fixed Effects						
(intercept)	0.146**	0.000	0.200**	0.000	0.107**	0.000
TV quality	-0.005*	0.029	-0.003+	0.093	0.000	0.820
Population density	0.016**	0.000	0.010**	0.000	0.006**	0.000
Unemployment rate total	-0.001	0.190	-0.005	0.908	0.001**	0.004
Unemployment rate foreigners						
Foreigners (%)	1.292	0.269	1.800*	0.020	-0.247	0.422
Foreigners in 1989 (%)	-4.441**	0.002	-3.337**	0.000	-0.197	0.843
Foreign visitors (%)	0.180	0.171	-0.069	0.323	0.053	0.114
Hotel rooms	0.003	0.607	0.003	0.239	0.001	0.869
Votes for NSDAP in 1933	0.039	0.424	-0.021	0.560	0.019	0.491
Random Effects	sigma		sigma		sigma	
District	-3.950**	0.000	-4.888**	0.000	-4.255**	0.000
Residual	-3.998**	0.000	-4.251**	0.000	-4.568**	0.000
Log-likelihood	521.72		583.43		640.52	
N	210		210		211	

Table 4b: Results of linear mixed effects model: Left-wing parties (2005–2013)

	Model 4		Model 5		Model 6	
	PDS 2005		Die Linke 2009		Die Linke 2013	
	b	p	b	p	b	p
Fixed Effects						
(intercept)	0.207**	0.000	0.240**	0.000	0.221**	0.000
TV quality	0.004+	0.058	0.005**	0.001	0.004**	0.005
Population density	-0.004*	0.029	0.000	0.776	0.000	0.983
Unemployment rate total	0.002*	0.015	0.003**	0.000	0.137**	0.010
Unemployment rate foreigners			0.000	0.754	-0.025	0.327
Foreigners (%)	-1.255+	0.056	0.030	0.957	0.517	0.316
Foreigners in 1989 (%)	0.102	0.945	-3.430*	0.013	-1.638	0.123
Foreign visitors (%)	0.099*	0.041	0.011	0.644	-0.002	0.831
Hotel rooms	-0.006	0.342	-0.005	0.415	-0.004	0.368
Votes for NSDAP in 1933	0.095+	0.064	0.071+	0.075	0.018	0.556
Random Effects	sigma		sigma		sigma	
District	-3.914**	0.000	-3.928**	0.000	-4.189**	0.000
Residual	-3.941**	0.000	-4.218**	0.000	-4.498**	0.000
Log-likelihood	512.27		566.99		625.79	
N	211		211		211	

Table 5: Results of panel data model

	Model 1		Model 2	
	Right Parties		Left Parties	
	b	p	b	p
Fixed Effects				
(intercept)	0.083**	0.000	0.197**	0.000
TV quality	-0.004**	0.000	0.002	0.213
Population density	-0.004**	0.000	0.001	0.683
Unemployment rate total	-0.003**	0.000	-0.001**	0.000
Foreigners (%)	-0.017	0.843	0.548*	0.026
Foreigners in 1989 (%)	1.630**	0.000	-2.884**	0.000
Foreign visitors (%)	0.002	0.464	0.002	0.793
Hotel rooms	0.001	0.253	-0.003+	0.093
Votes for NSDAP in 1933	-0.008	0.551	0.126**	0.001
R^2	0.674		0.099	
N	211		211	