

Contextual Effects of Immigrant Presence on Populist Radical Right Support: Testing the “Halo Effect” on Front National Voting in France

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Abstract

This paper examines the relationship between immigration and populist radical right (PRR) support, based on an analysis of the contextual effects of immigrant presence on Front National vote in France in 2017. Using a unique set of survey data geolocalising respondents at the subcommunal level, it finds evidence for the existence of a curvilinear “halo effect,” with substantial increases in the probability of PRR vote in areas surrounding communities with significantly higher-than-average immigrant populations, and independent of other socio-economic context, as well as individual socio-demographic characteristics. Most importantly, a path analysis confirms the presence of individual attitudinal mediators of this halo effect on PRR vote, thus testing the foundation of the halo, namely that the contextual effects of immigrant presence act on attitudes which drive PRR support. These findings provide a significant step forward in understanding the mechanisms linking subjective experience of immigration with voting for the populist radical right.

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immigration, socioeconomic context, radical right vote, France, halo effect

Introduction

Research into the populist radical right (PRR) in Europe identifies immigration as a key issue for such parties (Mudde, 2007). While the relationship between immigration and the radical right vote has been firmly established at the level of individual attitudes (e.g., van der Brug et al., 2000; Van der Brug & Van Spanje, 2009), there is still a need for a better understanding of how the presence of immigrants may shape support for the radical right spatially. The first ecological models looking at socio-economic conditions of PRR support using a variety of operationalizations across countries found a strong association between immigration and PRR vote (e.g., Jackman & Volpert, 1996). More recent work confirms that immigration has a significant and robust effect on voting for the radical right at the meso-level (Georgiadou et al., 2018). Multi-level tests have tended to confirm these findings (e.g., Berning, 2016).

The link between ecological and individual explanations of immigration on PRR support implies causal links between immigrant presence, ethnocentric attitudes, and PRR vote. Explanations of such links are generally based upon the two principal social psychological theories of prejudice, namely ethnic competition and intergroup contact (Allport, 1954; Quillian, 1995). According to ethnic competition theory, symbolic perceptions of immigration-related threats may increase anti-immigrant sentiments, thus fuelling support for the radical right. Contact theory postulates that, under conditions of high-quality contact, intergroup contact with immigrants may reduce prejudice, and by extension, the contemporary literature expects that this will decrease support for PRR parties. Empirically, however, the recent literature on the relationship between immigrant presence, immigration attitudes and voting for the PRR illustrates the complexity of the mechanisms at play, showing mixed results according to scale of measurement and/or immigration proxy, and notably failing to account fully for why high levels of support for the PRR may be found in local areas with low or virtually no immigrant presence.

Combining insights from both contact and ethnic competition theories, this paper seeks to examine further the link between immigration and the radical right, and to resolve somewhat the puzzle of PRR support in areas of low immigrant presence. Specifically, we build on the concept of “halo effect” developed by earlier contextual studies of the PRR vote to account spatially for the phenomenon of higher levels of PRR electoral support in areas adjacent to and at further distance from zones of high immigrant

population, but lower in those “migrant” areas themselves (Bon & Cheylan, 1988; Bowyer, 2008; Rydgren & Ruth, 2013).

In its original formulation, the halo theory postulates that individuals living adjacent to ethnically diverse areas experience sporadic contact with immigrants through daily commuting and retail activities, but lack quality contact and therefore will be more likely to perceive those groups as a threat, resulting in higher support for the PRR. In contrast, individuals living in areas with high immigrant presence experience quality intergroup contact which reduces their prejudice and in turn their propensity to vote for the PRR (Perrineau, 1998). By linking context with attitudes and behavior, the concept of halo potentially provides new insights into the mechanisms underpinning the contextual effects of immigration on voting for the PRR. However, the majority of tests of the halo effect to date have relied exclusively upon qualitative accounts and/or ecological inference, mapping areas of migrant population and PRR support. A link to individual behavior, let alone to individual attitudes, has only been tested recently (David et al., 2018; Janssen et al., 2019; Klinger et al., 2017; Savelkoul et al., 2017), not yet in the French case, and not systematically in terms of halo effect.

This paper fills this empirical gap by focusing on individual behavior, and the effect of local context on this, to understand better the presence of a mechanism between immigrant presence and PRR support. Drawing on a unique set of geocoded data from a survey of French voters, we present a first test of the halo effect at both the ecological and individual level, using a series of multi-level models to test for evidence of such an effect on the vote for the Front National (FN) in the first-round of the 2017 French presidential election. The first section discusses the concept of halo in relation to existing theories of ethnic contact and competition. We then turn to describing the survey and methodology, before we present our main findings. We find evidence for a significant curvilinear halo effect at the individual level, among voters living around and at further distance from areas with significantly higher-than-average immigrant populations. A series of alternative specifications confirm that this effect is robust to different model specifications and as far as these can be tested, to competing theories such as ethnic change and residential segregation, as well as the regional composition of the immigrant population in respondents’ neighborhoods. Moreover, the halo is independent of the general socio-economic context in which voters live, tested by unemployment and education levels, as well as socio-demographic voter attributes. Most importantly, a path analysis confirms the presence of halo effects on associated individual attitudes related to PRR voting, thus providing a significant step forward in understanding the mechanisms linking subjective experience of immigration with radical right vote.

Immigration and the Populist Radical Right Vote

The voluminous body of research on the PRR vote has established a strong link between immigration and support for the radical right. Typically, PRR parties formulate a nativist platform framing immigration as a threat to the welfare and cultural fabric of Western societies (Mudde, 2007). In individual vote choice models, opposition to immigration has been identified over time as one of the main attitudinal drivers of support common to these parties' otherwise diverse voters (Ivarsflaten, 2008; Oesch & Rennwald, 2018; van der Brug et al., 2000; Van der Brug & Van Spanje, 2009; Zhirkov, 2014). Earlier ecological studies have found a strong relationship between immigration and PRR voting (Georgiadou et al., 2018; Golder, 2003; Jackman & Volpert, 1996; Knigge, 1998). Multi-level tests have confirmed the role of anti-immigration attitudes as one of the main drivers of the PRR vote (Arzheimer, 2009; Berning, 2016; Edo et al., 2019; Lubbers et al., 2002).

Explanations of such links between immigrant presence, ethnocentric attitudes, and PRR vote are generally based upon mechanisms derived from social psychological theories of prejudice, most notably conflicting theories of intergroup contact, on the one hand, and ethnic competition, on the other hand. The former draws upon Allport's contact theory (1954) which hypothesizes that, under certain specific conditions, the existence of significant cooperative interactions with minority groups will produce a reduction in ethnic prejudice and stereotyping of members of these groups, and therefore a decrease in support for the PRR. Similar research stresses the importance of such personalized interactions, intergroup friendships (Pettigrew, 1998) and "acquaintance potential" (Cook, 1962).

According to theories of ethnic competition, majority ethnic groups are held to be in direct competition with immigrant groups, and other minority populations, over both materialist—that is, economic—and symbolic—that is, social and cultural—resources, and from this perceive a need to defend their own interests and identities (Tajfel et al., 1971). Other things being equal, they will therefore be more likely to support nativist parties that defend the principles of exclusive access to national assets—in other words, a welfare-chauvinist ideology (Mewes & Mau, 2013)—and of the promotion of ethno-cultural homogeneity of the majority group (Rydgren, 2007).

Contextual Effects of Immigrant Presence

Earlier studies found that the local context is an important determinant of individual attitudes towards immigrants (e.g., Middleton, 1976). Empirically, recent studies illustrate, however, the complexity of the relationship between

immigrant presence, immigration attitudes, and voting for the PRR, showing mixed results, and notably failing to account fully for high PRR support in areas with low immigrant presence. Using a large-scale individual-level data set with geocodes, Savelkoul et al. (2017) examine the effect of neighborhood ethnic composition on individual voting for the radical right in the Netherlands, and find that ethnic minority density is positively related to the likelihood to vote for the Party for Freedom (PVV). Kaufmann (2017) shows on the other hand that support for the United Kingdom Independence Party is negatively correlated with ethnic diversity, but underlines the role of change in immigration, specifically increases in immigration population producing higher individual PRR support. In their recent meta-analysis of ethnic context and immigration attitudes, Kaufmann and Goodwin (2018) emphasize the role of ethnic change and report a significant association between increase in ethnic diversity and elevated threat. Other studies such as Halla et al. (2017) and Patana (2020) also emphasize the role of immigration change and find that the inflow of immigrants into a local community significantly increases the vote share for the radical right.

In the Dutch case, Janssen et al. (2019) find that, at the local level, the effect of ethnic minority presence on the intention to vote for the PVV is curvilinear and is higher in areas with intermediate levels of immigration, compared with low or very high percentages of non-western minorities where support for the radical right is lower. On the other hand, van Wijk et al. (2019) find no effect for local ethnic composition and local economic conditions on voting for the PVV after controlling for individual characteristics. Earlier ecological studies such as Biggs and Knauss (2012) report a significant relationship between minority group size and support for the radical right, while emphasizing the effect of residential segregation. The authors note that support for the radical right is higher in cities where minorities are sufficiently numerous to be perceived as a threat, and where they are highly segregated (2012, p. 643).

One reason for these mixed findings is methodological and may relate to the immigration indicators that are used. A recent meta-analysis of structural factors of radical right voting in Western Europe suggests that the significance and direction of the relationship for immigration is highly dependent on the type of proxy used (Amengay & Stockemer, 2019). More importantly, research indicates that contact and threat theories operate differently at different levels of aggregation. The comparative study by Weber (2015) illustrates such a “modifiable areal unit problem” and demonstrates that the effect size and statistical significance of immigrant presence vary with the delimitation of the spatial units of analysis. The meta-analysis of studies of ethnic context and immigration attitudes by Kaufmann and Goodwin (2018) finds a non-linear

relationship between ethnic context and threat, with higher diversity predicting threat responses at the smallest and largest scales, whereas in medium-size units such as neighborhoods, diversity is associated with reduced threat. Schlueter and Scheepers suggest that, at local level, the “primary impact of minority group size will be an enhancement of opportunities for intergroup contact” while in larger spatial contexts, “outgroup size [is] associated with an enhancement of threat perceptions” (2010, p. 293). Similarly, Biggs and Knauss (2012) posit that different mechanisms may be at play at different geographical scales. Empirically, David et al. (2018) show that the size and significance of the impact of immigration on extreme right voting and anti-immigrant attitudes vary by different scales of measurement. The work by Dinesen and Sønderskov (2015) suggests that negative correlations tend to be higher at smaller scales. Typically, studies of contextual factors of the FN vote in France identify a positive correlation between immigrant presence and FN vote at higher levels of aggregation, while the correlation becomes negative at the municipality level (della Posta, 2013; Rojon, 2013).

Hypothesizing a “Halo” Effect

We still lack a better explanation, then, of how the presence of immigrants may shape support for the radical right, and we need more solid empirical evidence of the mechanisms that link the presence of immigrants to immigration attitudes and ultimately to the PRR vote. Contextual studies of PRR vote and immigrant presence have developed the concept of a “halo effect” to account for the phenomenon of higher levels of PRR electoral support neighboring, but not entering, areas of immigrant presence. The first implicit statement of the phenomenon comes from Bon and Cheylan’s study of FN support in the French city of Marseille in 1986, where they noted FN support “not in areas of strong migrant population or economically marginalized areas, but on their margins” (1988, pp. 270–271, authors’ translation). Perrineau hypothesized that majority populations living close enough to immigrant populations to be aware of their presence, through sporadic contact, but lacking quality contact or information regarding such groups, will be more likely to perceive these latter as a greater threat and therefore vote for the radical right, and that such an effect may continue to operate in areas which are further away from areas with high concentration of immigrants (1998, p. 148).

Such accounts of socio-spatial redistribution and their political impact implicitly invoke and combine theories of ethnic prejudice as an explanatory mechanism. In areas of high immigrant presence, the existence of interaction and significant, high-quality contact between groups should reduce negative

attitudes towards immigrants, and posterior to this, support for the radical right. In the ethnically more homogeneous periphery, on the other hand, perception of neighboring immigrant presence, but without high-quality contact which would diminish feelings of competition, should produce instead increased levels of prejudice conducive to PRR support. Beyond that periphery, the distance reduces immigrant contact to the extent that there is a null effect on prejudice and PRR support. Consequently, the functional form of the halo effect on PRR support is expected to be curvilinear, peaking at intermediate distance, peripheral areas, and declining again beyond those zones, other things being equal.

In terms of the French FN vote, this halo has never been tested robustly, however. Beyond cartographical mapping of FN vote and immigrant population, the issue has generally been addressed indirectly, by considering the level of urbanization, identifying growing support for the party as the distance from the main urban centers increases (Bussi et al., 2012). Outside France, a small number of ecological studies have attempted to unpick empirically the halo effect beyond a descriptive analysis of relative proportions of PRR vote and immigrant population. Bowyer (2008) examined the link between ethnic composition and British National Party vote in the 2002 and 2003 local elections, using ecological data to identify a diverging contextual effect across two spatial levels—increased PRR support in homogeneously white wards located within ethnically diverse local authorities, thus supporting the halo effect hypothesis. In Sweden, Rydgren and Ruth (2013) explicitly test for the presence of a halo effect across national electoral districts, and find evidence that those districts with lower immigrant populations situated next to districts with high concentrations have the highest propensity to support the Sweden Democrats. Using aggregate data at the level of Swiss municipalities, Martig and Bernauer (2018) find evidence of both direct negative effects of minority populations on the share of the SVP, and of halo effects.

Within these accounts of the halo, there are two clear omissions. First, from a spatial perspective, there is no specification of the distance from the center of an immigrant population to the borders of the area affected by the halo. In its original formulation, the halo is a qualitative construct, applied to both sub-communal (within-city) and inter-communal (across-city) levels, rendering definitions of those areas which are peripheral or central largely subjective. Second, for most of them, tests of such halo have remained at the ecological level, thereby only testing by implication a consistent link between individual behavior and social context within aggregate measures, let alone demonstrating an attitudinal mechanism.

Only a few studies have looked explicitly at the individual level. In the US, using field experiments and small-scale interactions, Enos (2017) identifies the interaction between size of community, distance between ethnic populations and levels of segregation in the effect on intercommunal relations and perceptions of the other. In Germany, Klinger et al. (2017) use geocoded data from the 2014 ALLBUS General Social Survey to look for a halo effect at the individual level, but find no evidence of this. The multilevel path analysis by Green et al. (2016) suggests a positive association between the presence of immigrants and individual PRR voting in Switzerland, indirectly through threat perceptions. In Belgium, David et al. (2018), while not specifically testing a halo effect, use geolocalised voter data and find that the presence of immigrants has a greater impact on attitudes towards immigration and extreme right voting in the surrounding areas than within the immediate vicinity of voter residence.

A French Empirical Case Study of the “Halo”

In this article, we suggest a possible spatial operationalization of the halo effect which we test on the Front National (FN)¹ vote and attitudes in France. The FN is generally considered a typical instance of the West European PRR (Mudde, 2007) and the perceived importance of immigration is underlined by the vast literature dedicated to the party (Crépon et al., 2015; Edo et al., 2019; Lewis-Beck & Mitchell, 1993; Mayer, 2002; Mayer & Perrineau, 1992, 1996). Anti-immigration attitudes represent a distinct individual predictor for FN vote over time (Mayer, 2013, 2017; Perrineau, 1998).

Using data from the “Sub-national context and radical right support in Europe” (SCoRE) project survey collected after the 2017 presidential elections in France which included sub-communal geocoding of its respondents (see Supplemental Appendix A1 for data information), we test a series of multilevel models to look at the halo effect on FN vote both directly and mediated by immigration attitudes. Using a multilevel model with high spatial resolution allows us to answer important questions linked to immigrant presence, ethnic prejudice and the FN vote, as well as testing more broadly for a halo effect at the individual level, thus surmounting some of the traditional hurdles of contextual analysis of immigration effects.

First, the design allows us to test the effect of distance from areas of high immigrant presence—the operating term we use to designate the spatial centers of the halo effect—whilst controlling for other individual and contextual effects. Attitudes concerning ethno-cultural diversity, which are core to PRR vote, are strongly determined by individuals’ cultural capital and their socio-economic position (Hainmueller & Hopkins, 2014), and it is therefore crucial

to control for such individual characteristics. Second, the design of the survey allows us to look at the contextual effects of immigrant presence at different scales, and how these operate independently—if indeed they do—of the halo, along with other important socio-economic drivers of the FN vote, including level of urbanization and unemployment. Standard models of PRR vote would lead us to expect, ecologically, a positive association between vote for these parties and immigrant levels. However, the halo effect predicts a negative association in the local area, positive association at increasing distances, and a null effect at the greatest distances. This then allows us to understand if there also exists an independent effect, proxying for media effects or other behavioral drivers, of immigration beyond the halo. Additionally, we look at contextual effects of education and local socio-economic conditions. This follows recent research such as Van Wijk et al. (2019), which demonstrates that support for the PRR tends to be much lower in areas with higher shares of highly educated residents. The recent study by Hoxhaj and Zuccotti shows that the relationship between attitudes towards immigration and presence of immigrants is conditioned by the socioeconomic characteristics of the area of residence, and that “the positive relationship between immigrant concentration and (positive) attitudes decreases as the socioeconomic condition of areas worsens” (2021, p. 16).

Finally, and most notably, our research design allows us to look for evidence of the halo effect on attitudes as well as voting behavior. Recent studies have underlined the importance of perceptions of individuals in the understanding of the ethnic make-up of their environment (Laméris et al., 2018; Laurence et al., 2019). In line with this research, we test one important foundational assumption of the halo that the contextual effects of immigrant presence on support for the FN are mediated by immigration attitudes, in particular voter perception of both symbolic and instrumental ethnic threats.

Data and Method

The SCoRE survey provided a nationally representative sample of 19,454 respondents who had agreed to geocoding of their location, recorded at street level, to allow matching on contextual socio-economic and demographic data at the neighborhood (IRIS)² level. IRIS are statistically aggregated areas of c. 2,000 inhabitants produced by the French national statistical and economic agency (INSEE) which provide a cluster of individuals spatially arrayed in an approximation of a *quartier* (neighborhood). There are a total of 50,153 IRIS in metropolitan France, which are nested in 36,529 *communes* (municipalities) themselves nested in 96 *départements*. We do not include *communes* because these vary substantially in size, from tiny rural *communes* with fewer

than 100 inhabitants, to the largest metropolitan cities such as Paris. The voter geocoding allows the calculation of the straight-line distance of respondents from areas of high immigrant population, using street-level location for the former and the relevant IRIS's geographic centroid for the latter. The main models use first-round vote for Marine Le Pen in the 2017 presidential election as the dependent variable, measured as a binary variable between Le Pen vote and votes for all other candidates, and therefore employing a logit function. To avoid possible compositional effects linked to respondents in the survey who themselves are immigrants, we take out any who were not born in France. Studies show that perceived ethnic threat is generally more salient among majority populations (Oliver & Wong, 2003), so it is important that we control for immigrant background. As an additional check, we also run models excluding respondents with at least one foreign-born parent, to eliminate further second-generation effects (Supplemental Appendix A6). As we are primarily interested in vote choice, we also remove non-responses, those who abstained, or cast blank or spoiled ballots. Together with missing values across the set of predictor variables, the main unweighted analytical sample is 12,414. A comparison of the full sample and analytical sample on outcome and predictor variables revealed no evidence of bias through this loss of cases (Supplemental Appendix A1, Table 1).

Areas of high immigrant presence were identified at the IRIS level using the proportion of immigrants on the total population. We use immigrant—which includes French of foreign origin—rather than foreign measures as this reflects the implied ethnic diversity relevant to PRR vote. Let us recall here that the French census does not collect information about individuals' religion or ethnicity. Objective measures based on the countries of birth of the respondent and their antecedents cannot take into account later-generation descendants of immigrants (Simon, 2010). While this limitation should be noted, recent research suggests nonetheless that second-generation immigrant residential mobility is generally low in France, showing persistent patterns of ethnic clustering (McAvay, 2018), whereby shares of first-generation immigrants may more generally be seen as a good proxy for ethnic diversity across local areas.

In order to identify areas that are the most ethnically diverse, we tag those IRIS with large immigrant population. Previous research into ethnic threat and anti-immigrant prejudice (Quillian, 1995; Schneider, 2008) tends to use continuous predictors such as proportion of immigrant population, rather than identifying a cut-off for group size. Biggs and Knauss find on the other hand that contact operates only in local areas where the minority proportion exceeds a certain threshold (one-tenth to one-quarter) (2012, p. 642). Recent studies such as Savelkoul et al. (2017) also suggest that the effect of neighborhood

ethnic composition on voting for the radical right may be conditional on the size of the immigrant population, identifying an empirical threshold of 15 per cent of the total neighborhood population. In their analysis of residential mobility, Lancee and Schaeffer (2015) use an arbitrary cut point, defining the 15% most diverse neighborhoods in Germany as high-diversity areas, while taking diversity levels below the median (50%) to reflect more homogeneous neighborhoods.

In this paper, areas with a strong immigrant presence are identified from all 50,153 IRIS in metropolitan France, as those with an immigrant population one standard deviation higher than the national average. As with most cut-offs, this is an ad hoc decision—in practice, meaning an immigrant population proportion of just under 17.5%. A test of a range of other cut-offs found that this provided the best model fit among different specifications (Supplemental Appendix A2, Figure 1, and Table 1). Following Lancee and Schaeffer, we use the nationwide average for our calculations, bearing in mind that there are large disparities in immigrant populations across regions, in particular the Île-de-France that is, Paris and its region, where immigrants represent over 18% of the total population, against 9% for the rest of the country. As will be discussed below, our models include higher-level controls of immigrant presence for *départements*, which help account for regional variance as well as for the Île-de-France idiosyncrasy. In total, 4,089 areas of high immigration were identified in mainland France, including Corsica, at the IRIS level, representing just over 8% of the total number of IRIS. For each respondent in the survey, the straight-line distance between the nearest area and their location was measured using the street-level geocoded location of the respondent and the centroid of this nearest area of high immigrant presence.

The expectation from the halo effect is that, as this distance initially increases, the probability of voting for Le Pen increases, then drops away as the distance increases further. We test this first in an individual level model, including random IRIS and *département* intercepts to allow comparison with subsequent models, to check that a basic halo effect is visible in a naïve specification. Distance is measured in kilometers, included as a main term and a quadratic term, to pick up non-linearity, and is reported in the model by 10 km increments, to allow visibility of the quadratic term parameter estimates at lower decimal places. We include three demographic controls—gender, coded for women; age (continuous coding, including a quadratic term to test for possible curvilinearity) and level of education, recoded into four categories—lower and no education, intermediate, secondary, and tertiary (the reference). These three controls are standard demographic predictors of PRR vote in France (Mayer, 2013). Additionally, the PRR literature suggests that

feelings of deprivation rather than actual objective economic conditions are stronger predictors of voting for those parties (eg. Im et al., 2019; Mughan et al., 2003) and we therefore include a measure of subjective deprivation—a four-point measure ranging from low deprivation (“our household is well off”) to high deprivation (“our household really cannot get by”).

Given the importance of the periurban/rural geographical account of FN support, it is important to control for this as a competing explanation to the halo: immigrants in France tend to cluster in urban centers and suburban areas (*banlieues*), much less in the more distant outskirts and rural areas.³ We therefore include a dummy variable controlling for urban v periurban/rural profile of respondents’ locations, derived from the INSEE zoning, and grouping metropolitan, suburban and so-called “multipolar” areas, in contrast to medium-sized and small towns together with rural *communes*.⁴

Secondly, we bring context in and test a multi-level logit model of Le Pen vote on the previous Level 1 variables, as well as fixed contextual Level 2 IRIS variables, and Level 3 *département* variables, with random intercepts. As indicated earlier, Level 2 nests hierarchically within Level 3. This model incorporates immigrant population and proportion of unemployed at both Level 2 and Level 3, as measured by the 2015 census.⁵ We also add the share of residents with a university degree in the respondent’s home IRIS. This allows us to control for possible contextual effects which have been linked in the previous literature to radical right support, such as unemployment (Sipma & Lubbers, 2020) and education (Van Wijk et al., 2019). More specifically, it also allows us to check if—in addition to the halo effect—there is evidence of independent contextual effects from immigration.

As a next step, we include a set of attitudinal predictors following standard accounts of FN support in France to test for evidence of the halo mechanism. We include measures of cultural threat (“French culture is threatened or enriched by immigration [seven-point Likert scale]”; economic threat (“immigrants are good or bad for the French economy [seven-point scale]”; authoritarianism (“the country needs a good dose of law and order” [seven-point scale]); Euroscepticism (“has France’s membership of the EU been a good, neutral, or bad thing?” [three-point scale]); populism (“the most important political decisions should be taken by the people, not politicians” [five-point scale]); moral conservatism (“same-sex marriage should be equal in the eyes of the law to marriage between people of the opposite sex” [seven-point scale]), and economic interventionism (“the government should take steps to reduce economic inequality” [seven-point scale]). All attitudes are coded to associate positively with Le Pen vote, and in the full model, we expect all of them to be significant.

Fourth, we explore the possible role of intergroup contact in the model and ask to what extent this covaries with halo distance. Let us note here that the set of necessary conditions are not available in the survey to fully test contact. We must consider possible endogeneity with attitudes and therefore restrict this to a conservative control to test against the halo hypothesis. Simply put, are we in fact picking up the effect of contact with ethnic minorities through the use of a spuriously inflected test of neighboring perceptions? We use an item asking respondents to estimate the frequency of contact with people of a different ethnic origin, ranging from “never” to “every day,” coded by predominant time period (day, week, month). We expect that greater frequency of contact would be associated with lower ethnic prejudice and consequently a direct effect on Le Pen vote, however not affecting the halo.⁶ We then suggest a more complex specification to test the independent and conditioned effect of intergroup contact on the halo, by addressing both quantity and quality of contact.

Next, we look at the role of attitudes as mediators of the contextual effects of immigrant presence on support for the FN. To that end, we use a structural equation model, with paths from halo to each of the attitude items, as depicted in Figure 4 in the next section. The model specifies a set of random intercept models to the mediating attitudes, all with a Gaussian identity family/link function, with the direct attitudinal effects leading to the dependent vote variable, under Bernouilli logit—identical to the parameter estimates from the full model. Because of the inclusion of both metric and binary outcomes, we use a generalized structural equation model (GSEM), fitted using the gsem package in Stata. If the halo effect influences individual perceptions of immigrants, and therefore alters political behavior, we would expect attitudes related to immigrants to mediate the halo effect on vote, but attitudes unrelated to the halo—but still related to Le Pen support—not to include this indirect effect. Given research into the effect of perceived threat on ethnic prejudice and authoritarianism (Cohrs & Ibler, 2009; Feldman, 2003; Feldman & Stenner, 1997), we would expect related attitudes, such as the need for law and order, to be affected similarly to the cultural and economic threat variables (Koslowski, 2012), as should also be the case for Euroscepticism which is conceptually linked to migration, free movement of labor and Schengen (Gajewska, 2006). However, we would expect small or no effects on irrelevant attitudes such as economic interventionism and moral conservatism.

As a final step, we carry out a series of robustness checks. For robustness checks where null findings, or findings in line with our main specifications, are found, we include information on these in the Supplemental Appendix. First, we check for the quality of fit of the quadratic distance terms to pick up

the halo effect. We apply a fractional polynomial transformation (Royston & Sauerbrei, 2008) to identify the best fitting curve from the distance effect. Second, we replace the vote variable with a propensity to vote (PtV) measure, to check that the model is not inadvertently confounding party support effects with personality effects for Marine Le Pen. Similarly, we test the halo using the second-round runoff of the 2017 presidential, where Le Pen increased her first-round support from 21.3 to 33.9 per cent of the vote. All three alternative specifications are reported in Supplemental Appendix A3.

As regards immigration, we test our model for compositional effects associated with second-generation immigrants in our survey (Supplemental Appendix A6). At contextual level, we use an alternative dataset at a higher level of aggregation to control more specifically for the presence of non-European immigrants (Supplemental Appendix A7). While the PRR may target immigration from Eastern European countries, the nativism of those parties is most consistently directed at non-European immigrants (Mudde, 2007, p. 70). Therefore, it is important to test our model according to shares of “non-white” immigration across local areas. We discuss the data limitations of this test in the supporting Supplemental Appendix. Lastly, we move to two competing theories of the halo. First, following literature emphasizing the central role of ethnic change rather than static proportions in anti-immigration attitudes and the PRR vote (Kaufmann & Goodwin, 2018), we control for increase in ethnic diversity over time (Supplemental Appendix A8). Second, we try to look at the effect of ethnic segregation in the area of residence. Here, we follow ecological studies such as Biggs and Knauss (2012), which show that PRR support increases with residential segregation between whites and non-whites, rather than with the actual proportion of non-whites. Again here, the methods and limitations from available data are explained in Supplemental Appendix A9.

Findings

We start with an illustrative example of a possible halo effect at the ecological level. The map shows the geographic distribution of the 2017 first-round Le Pen vote in *communes* (vote share not being available by IRIS) surrounding the town of Montauban in the Tarn-et-Garonne *département* in the South-West of France (Figure 1). The stars identify areas of high immigrant presence, at the IRIS level. These two areas—the *Coulée Verte* district of Montauban and the town center of Moissac—have particularly high proportions of immigrant population, with 33.9% and 29.6% of the total population, respectively.

Following previous descriptive accounts of the halo effect, the map shows the negative association between immigrant presence and FN vote—the districts where Marine Le Pen’s support is highest lie outside the immediate

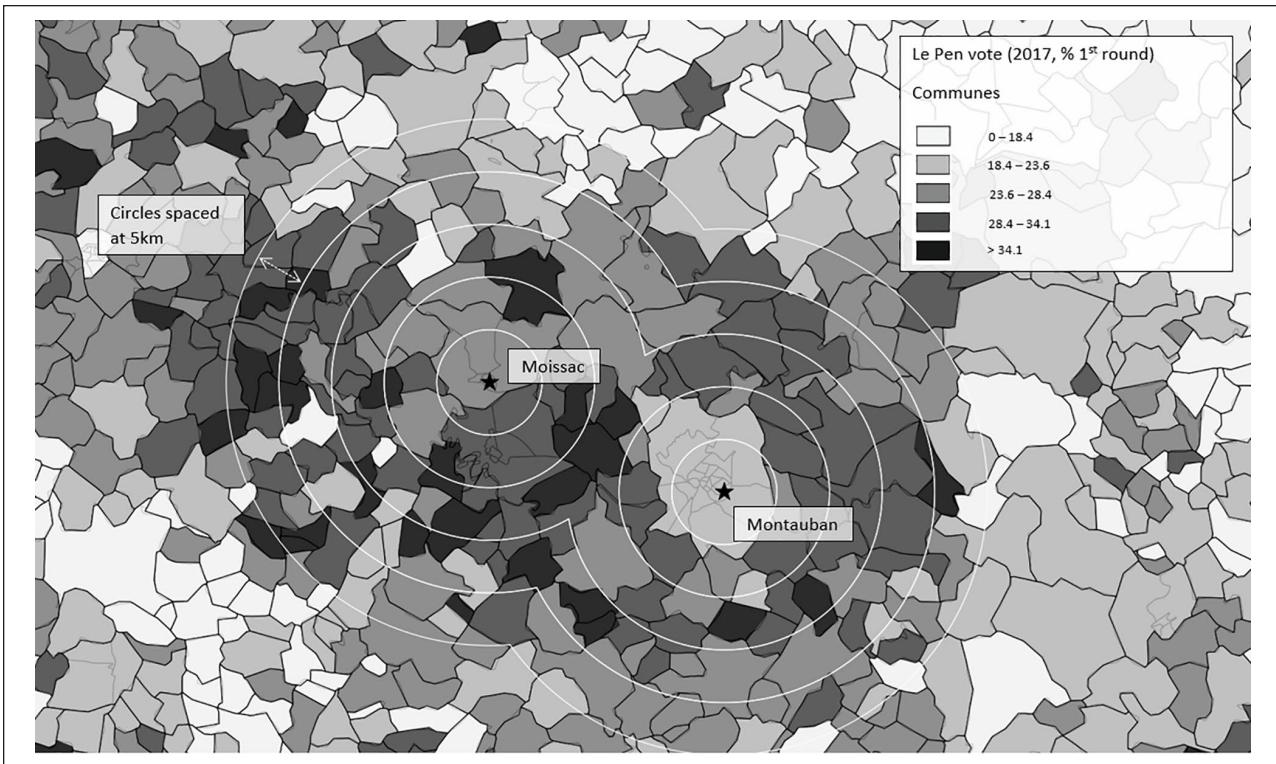


Figure 1. Example of halo distance—5 km concentric circles around areas of high immigrant population mapped on PRR vote, French presidential elections, 1st round.

vicinity of the immigrant loci. The concentric circles, positioned at 5 km increments, indicate that *communes* between 5 and 20 km from the immigrant loci are where the FN candidate performs best electorally. As distance increases further, however, support tends to drop off. Such a dynamic would correspond to what the halo effect predicts.

Do we find evidence of this aggregate-level, descriptive association in individual behavior? The baseline model (Table 1, 1—base) including just individual level indicators conforms largely to expectations. Demographic predictors follow the pattern found in other research into the first-round vote for Marine Le Pen, namely an absence of the gender gap historically found in PRR vote (Amengay et al., 2017) and a lower probability of Le Pen vote among the more highly educated (Ivarsflaten & Stubager, 2013). A quadratic effect can be observed for age, with a significant increase in support for Le Pen among younger voters and a decrease in the older age bands, which is line with previous literature such as Arzheimer (2009). Feelings of economic deprivation have a significant and positive effect, increasing the probability to vote Le Pen. Furthermore, the distance effect conforms to the halo hypothesis, with a positive linear term and negative quadratic.

Model 2 (2—context) depicts the multi-level model including immigrant and unemployment measures at Level 2 (IRIS) and Level 3 (*département*). There remains significant variance between *départements* and between IRIS which is not explained by the fixed part of the model. Looking at the fixed effects at Level 1, the same effects as in the baseline individual model are present. There is no significant effect for urbanization. Looking at Level 3, the model confirms the presence of macro effects linked to unemployment, positively associated at departmental level with Le Pen vote, suggesting that feelings of deprivation may be compounded in the case of areas of economic hardship in which they are nested. Unemployment at Level 2 does not reach significance, however this is in part due to covariance with the Level 1 deprivation measure, removal of which sees a positive coefficient, significant at the 95% level, for the IRIS unemployment rate. This follows a stable finding from previous research into ecological predictors of Le Pen/FN vote (Arzheimer & Evans, 2010; Evans & Ivaldi, 2012), and it is in line with research showing a recent consolidation of the FN vote among the most precarious and vulnerable sectors of the electorate (Mayer, 2017). We also find that the Level 2 and Level 3 immigration effect mirrors that found by Rojon (2013) and della Posta (2013)—a negative coefficient at the IRIS level, but a positive coefficient at the departmental level. This is nonetheless inflected by a negative quadratic term, reflecting the lower probability of Le Pen vote in departments with the highest levels of immigrants. Local conditions see

Table I. Multi-Level Logit Models of Halo Effect for (1) Baseline Demographic; (2) Contextual; (3) Education, and (4) Full Model Specifications.

First-round Le Pen vote, 2017	1—Base	2—Context	3—Education	4—Full
Female	-0.029 (0.055)	-0.026 (0.054)	-0.034 (0.054)	-0.058 (0.070)
Age	0.065*** (0.011)	0.066*** (0.011)	0.063*** (0.011)	0.028 (0.014)
Age ²	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Education—secondary	0.899*** (0.074)	0.902*** (0.074)	0.870*** (0.074)	0.596*** (0.094)
Education—intermediate	1.364*** (0.079)	1.371*** (0.079)	1.329*** (0.078)	0.814*** (0.098)
Education—technical/none	1.466*** (0.102)	1.474*** (0.103)	1.423*** (0.102)	0.918*** (0.128)
Subjective deprivation	0.440*** (0.036)	0.436*** (0.036)	0.425*** (0.036)	0.076 (0.046)
Distance (10 kms)	0.422*** (0.072)	0.396*** (0.077)	0.268*** (0.078)	0.294*** (0.099)
Distance ² (10 kms)	-0.078*** (0.015)	-0.066*** (0.016)	-0.045** (0.016)	-0.044* (0.020)
Urban	-0.014 (0.069)	-0.013 (0.071)	0.078 (0.072)	0.157 (0.091)
Immigrant % IRIS (level 2)	-0.014* (0.007)	-0.020** (0.007)	-0.013 (0.009)	
Unemployed % IRIS (level 2)	0.007 (0.006)	-0.006 (0.007)	-0.002 (0.008)	
Immigrant % dép. (level 3)	0.152*** (0.028)	0.167*** (0.026)	0.145*** (0.029)	
Immigrant % dép. ² (level 3)	-0.005*** (0.001)	-0.006*** (0.001)	-0.005*** (0.001)	
Unemployed % dép. (level 3)	0.084*** (0.018)	0.079*** (0.017)	0.059** (0.019)	
University educated % IRIS (level 2)		-0.026*** (0.004)	-0.019*** (0.005)	
Cultural threat			0.332*** (0.026)	
Economic threat			0.301*** (0.026)	
Law and order			0.275*** (0.024)	

(continued)

Table 1. (continued)

First-round Le Pen vote, 2017	1—Base	2—Context	3—Education	4—Full
Same-sex marriage				0.054*** (0.016)
Govt. reduces inequality				0.029 (0.024)
Populism				0.211*** (0.037)
Euroscepticism				1.192*** (0.063)
Constant	-4.295*** (0.305)	-6.137*** (0.428)	-5.288*** (0.431)	-8.673*** (0.612)
Département (level 3) σ^2	0.118*** (0.030)	0.052** (0.018)	0.034* (0.015)	0.021 (0.018)
IRIS (level 2) σ^2	0.690*** (0.167)	0.691*** (0.166)	0.670*** (0.165)	0.902*** (0.254)
AIC	11,292.278	11,257.770	11,224.959	7,571.814
Observations—all models	Level 1: 12,414; Level 2: 9,484; Level 3: 96			

Standard errors in parentheses; * $p < .05$, ** $p < .01$, *** $p < .001$.

higher immigrant presence reducing PRR support, as predicted by contact theory, but higher levels in less local parts of the surrounding higher spatial unit motivating PRR support. Running the contextual model without the distance terms for the halo increases the model AIC from 11,257.77 to 11,283.66: added complexity from including the halo effect increases its explanatory power.

For a more concrete sense of the halo effect, the curvilinear effect is plotted in Figure 2 as a fitted probability, using average fitted values based on average marginal effects (AMEs).⁷ The distribution of distances to high immigrant area across respondents is underlaid as a histogram. At initial increases in distance from nearest area of high immigrant presence, the probability of a Le Pen vote increases, until around 20 km where the curve flattens and 95% confidence intervals begin to overlap substantially. Beyond 30 to 35 km, the curve drops, with widening confidence intervals as the number of observations drops for individuals living a relatively large distance from an area of high immigration. These findings first confirm the radius to the halo effect of immigration on PRR vote within commuting or retail range in areas where voters are most likely to interact with immigrants daily, in line with the general premises of the halo.

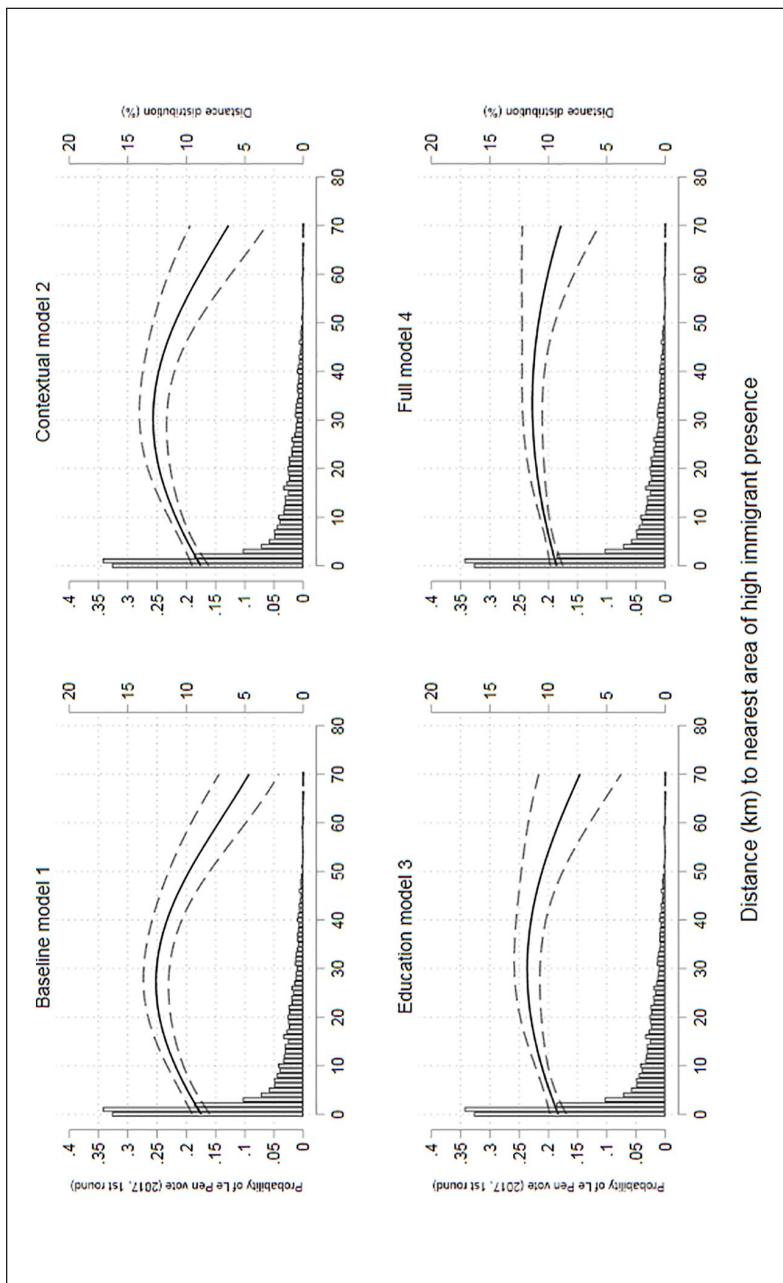


Figure 2. Fitted probability of halo effect across model specifications (cf Table 1) with 95% confidence intervals.

In model 3 (3—education), we test the halo distance against the added contextual effect of proportion of university education. In line with previous research (Van Wijk et al., 2019), we find a strong negative association between support for Le Pen and shares of university degree holders in the local area, which corroborates that support for the PRR tends to be much lower in areas with higher shares of highly educated residents. This does reduce the coefficient size of the distance effect, and the range of the probability differential in Le Pen vote (Figure 2, model 3). Nonetheless, these remain significant, which suggests that there is a halo effect independent of education levels in the home IRIS.

In model 4 (4—full), we introduce the seven attitudinal predictors, tapping economic and cultural threat, authoritarianism, Euroscepticism, populism, moral conservatism, and economic interventionism. Here, inter-*département* variance is accounted for, but there remains significant variance between IRISs within *départements*. At this stage we do not look at the relative impact of each attitudinal variable on the halo's independent effect. The key expectation here is that the halo effect should wash out, if the attitudes entirely mediate its effect on vote. This is clearly not the case. In all but one case—government reduction of inequality—the attitudes go in the expected PRR direction, with positive and significant coefficients. However, the halo effect remains stable, suggesting either that the halo may also act as a proxy for other contextual effects of the FN vote which may not necessarily be mediated by PRR attitudes, or that there are further mediators (analyzed below) which are not specified in our model.

As a final step, we introduce the concept of contact into the modelling, based upon respondents' stated frequency of contact with different ethnicities. The models so far have implied contact levels from the distance measure. We cannot test contact robustly, given its possible endogeneity with the attitudinal items. Here we simply wish to ascertain if, first, there is a clear contact effect, and second, whether this covaries strongly with the halo. To explore this further, following Voci and Hewstone (2003), we introduce the notion of *quality* of contact as an additional and independent dimension to *quantity* of contact with different minorities. We then look at a more complex specification of inter-ethnic contact, to check if there is any impact on the distance variable (Supplemental Appendix A4, Table 1). To what extent is PRR vote motivated by the independent, and multiplicative effects of these two aspects to contact? Again, the test is not robust to endogeneity, and we therefore remove the attitudinal variables to avoid issues of collinearity. We include simplified versions of the quality and quantity contact variables (see details in Supplemental Appendix A4). We also include an interaction term, with the expectation that frequent negative contact will operate differentially on PRR vote than frequent positive contact. Alongside this test, we run a

separate model including those respondents reporting no contact (and therefore with no quality measure). Here we interact this variable with the halo itself, to understand further the inter-relationship, if any, between the halo and contact. Full models are reported in Supplemental Appendix A4, for reasons of space; Figure 3 reports the key findings through the predicted probabilities from these models.

The findings in Figure 3a are in line with the expectations of the halo, namely that the average reduction in support for the radical right through greater contact is only true of those with a broadly positive stated experience, while those who view such contact as negative are in fact more likely to vote Le Pen at higher levels of frequency of self-reported intergroup contact. Figure 3b and c map the conditional effect of contact quantity across the halo. As would again be anticipated from theory, the curvilinear effect of halo is most visible for respondents who report the most frequent contacts with immigrants, showing a significant increase in radical right support for those in the peripheries surrounding areas of strong immigrant presence. Less expected is the greater differentiation among the monthly and greater than monthly group, with a similar curve to the daily group, contrasting with the absence of an effect for the weekly group. We do not have an explanation for this contrast. Also of note is the high level of support for Le Pen among those reporting no contact living within the halo effect radius. While the size of the CIs suggests greater heterogeneity, this is suggestive of segregation, with no contact despite relative proximity of ethnic groups, which we explore under the robustness test section following. While the nature of our measure of contact does not allow to examine this further, these findings confirm the crucial role of intergroup contact in the structuration of immigration attitudes and voting for the radical right, however differently operating along the halo distance.

Finally, we use the GSEM (Supplemental Appendix A5, Table 1) to look at the mediation model, to understand which, if any, of the seven attitudinal predictors mediate the halo effect. Theoretically, we would expect only those attitudes linked to migrant threat to be substantially affected by the halo. Those variables linked to PRR support in France that are less connected, or unconnected to immigration, should see weaker or null effects. The indirect paths from halo distance to attitudes are presented in Figure 4. (For clarity, we omit the direct effect of distance, the quadratic distance term, and the socio-demographic and higher level terms, which are specified as in model 2.) The mediation paths generally correspond to expectations. Both economic and cultural threat of migrants are strongly determined by the halo effect. As anticipated, there is a weaker but significant effect for law and order, Euroscepticism, and populism.⁸ Conversely, there is no significant effect on

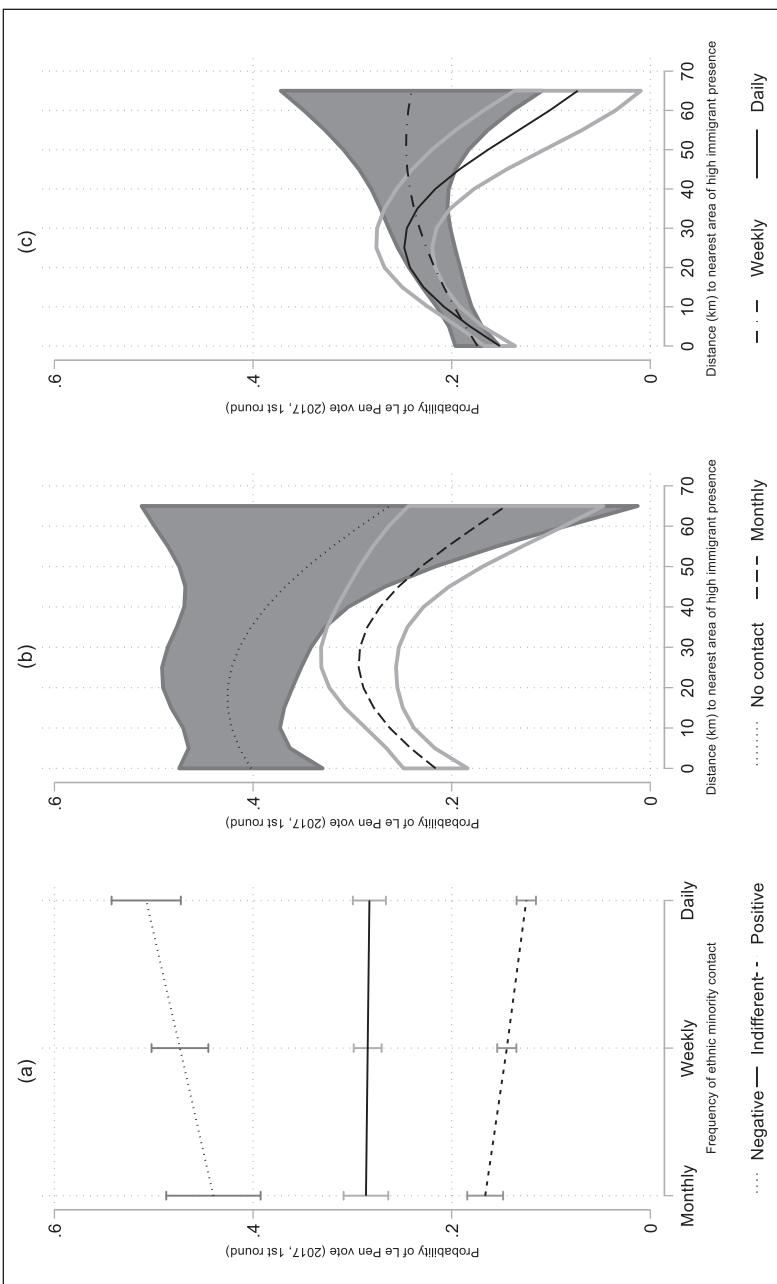


Figure 3. Measures of (a) ethnic minority contact (quantity and quality), (b) and (c) distance measure, and predicted probabilities of Le Pen vote with 95% confidence intervals.

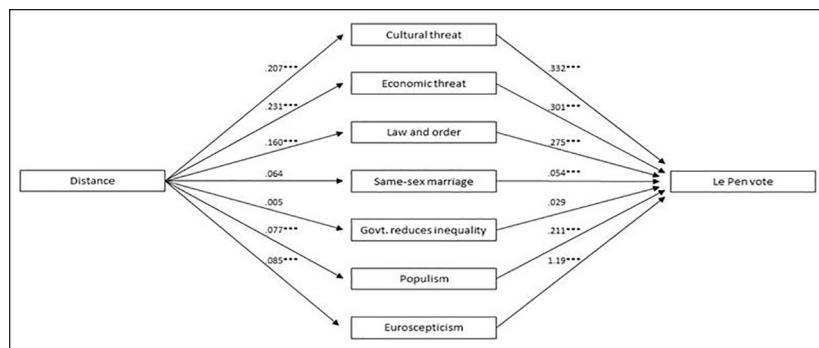


Figure 4. Mediation model of halo distance on attitudes.

Distance² omitted for clarity—follows significance of linear term. Direct distance effect, demographic controls and level 2/3 fixed effects also omitted.

* $p < .05$, ** $p < .01$, *** $p < .001$.

moral conservatism and economic interventionism, with both effects independent of halo.

This confirms the role of attitudes mediating between halo and the PRR vote. However, there remains the independent effect of the halo distance to account for. A series of additional predictors were tested, to address possible under-specification, both at the ecological and individual levels. There was no evidence of contextual or compositional effects from the socio-economic profile of IRIS, beyond unemployment, education, and immigration. At the individual level, the greatest reduction in the halo effect—but still only partial—came from the inclusion of FN party identification (itself strongly determined by the halo). This suggests that, in addition to the attitudinal effects of the halo, there may also be an identity effect in those communities adjacent to areas with high presence of immigrants, as well as additional mediators unanticipated by our specification.

Robustness Tests

Lastly, we move to our robustness tests. Full models and specifications for each of these tests can be found in the Supplemental Appendix. With regard first to the quadratic distance term, a fractional polynomial regression (Royston, 2013; Royston & Sauerbrei, 2008) using the baseline model for simplicity, confirms that this is the best-fitting approximation of the halo's distance effect on Le Pen vote (Supplemental Appendix A3, Figure 1, and Table 1). Second, we test the baseline model, but control for possible Le Pen personality effects by using respondents' self-assessed propensity to vote

(PtV) for the FN. The same curvilinear fit is visible. The respective dependent variable scales are not directly comparable, but there is no evidence that any confounding personality effects are biasing findings in the first-round presidential vote model. Furthermore, in the more fully specified models, including the mediation model, the independent effects of the individual and contextual predictors are very similar to the presidential model. Third, we run our model using the second-round runoff of the 2017 presidential, and find no significant change to the halo, suggesting an attitudinal effect on voters beyond simple PRR political affiliation.

Looking at immigration variables, we test further for compositional effects and run the model excluding second-generation immigrants, that is, respondents with at least one foreign-born parent, and find no substantive change to the halo (Supplemental Appendix A6). We then address the composition of immigrant populations, delineating between the presence of European and non-European immigrants at contextual level, and find no significant change to our distance effect according to shares of European and non-European immigration across local areas (Supplemental Appendix A7). Finally, we assess two competing theories of the halo. We look at a dynamic measure of change in ethnic diversity over time, rather than our main static measures, but find no significant effect, and no change to the halo (Supplemental Appendix A8). Looking at the effect of ethnic segregation at the local level, within the bounds of what available data permit, similarly shows no significant change to the halo effect (Supplemental Appendix A9). Overall, the halo effect in France is robust to complementary and competing specifications of drivers of PRR vote.

Discussion

This article has provided the first robust test of the existence of a halo effect at the individual level in France, controlling for contextual determinants of PRR vote, and exploring the attitudinal mechanism by which such an effect should work. Our findings show a significant curvilinear halo effect at the individual level, among voters living around and at further distance of areas with significantly higher-than-average immigrant populations. This effect is robust to different model specifications and independent of the general socio-economic context in which voters live, as well as socio-demographic voter attributes.

The use of the distance measure to an area of high immigrant presence defined by migrant threshold allows the estimation of scale—that is, the distance between community and migrant population which reflects the tenets of the contact and competition theories, while addressing some issues associated

with assessing the relationship between immigrant presence and PRR voting at different scales of measurement—that is, local versus departmental. As surmised in these theories, areas with direct, daily contact with dense migrant communities are not the areas where individuals will be more predisposed to vote for a PRR candidate such as Marine Le Pen—and given the nature of our test, this is not a compositional artefact. Nor is there a consistent pattern of PRR support in areas far from areas of high immigrant presence, where contact with migrant populations of those specific zones is likely to be minimal, but where more diffuse migrant populations may or may not be present.

Our findings confirm and expand on the older French literature on the halo effect which posited an extensive radius to the migrant effect on PRR vote, emphasizing important aspects of the political geography of intergroup contact, and how perceptions of immigration may be shaped by where voters live and interact with immigrants daily. As the distances in our halo suggest, only in areas corresponding to zones within travelling distance of an area of high immigration, for commuting or retail reasons, for example, do we find a significant increase in the likelihood of PRR vote.

Most importantly, this paper confirms the presence of individual attitudinal drivers from the halo on voting for the radical right. Building on previous work on contextual effects of immigrant presence at the aggregate level, the path analysis in this paper helps underline some of the attitudinal mechanisms through which contextual factors act to shape subjective experiences of immigration, and how these are reflected in voting for the PRR.

There are some limitations to this research, however. First, our test does temper any over-statement of the halo effect. Whilst there is a statistically significant, non-linear effect, the change in vote probability for Le Pen is moderate, pointing to the role of the halo as conditioning effect rather than principal driver of PRR vote. Second is the articulation between halo and intergroup contact. While the link between the two can be established conceptually, our research design has not permitted to explore further the role of contact, beyond checking the robustness of the halo effect to its inclusion. Research has recognized that intergroup contact does not emulate “real world” interactions (Dixon et al., 2005). Given our contact measurement in this paper, we cannot be sure of the relative non-recursive effects with attitudes—how perceptions of migrants condition perception of contact—so this finding requires further confirmation.

Finally, whilst the link between halo, attitudes, and vote is evident, the mechanisms leading to these attitudinal positions needs to be understood. Previous research has shown that choice of residential location can be partly driven by political attitudes (e.g., Hui, 2013). Our data being cross-sectional,

we cannot say to what extent attitudes have changed *in situ*, and to what extent individuals with such attitudes have co-located. Theories of “white flight,” and in the French case, the shift of FN support precisely from areas characterized here as areas of high immigrant presence—in particular, ethnically diverse *banlieues*—in the 1980s and early 1990s, to the periurban, ethnically more homogeneous areas since the early 2000s (Andrieu & Lévy, 2007; Girard & Rivière, 2013; Guilluy, 2014), would support the latter hypothesis. Without extensive panel data, however, this remains impossible to test. Similarly, our research design does not allow to explore further other contextual effects that may be reflected in the halo. To some extent, the geography of the halo in this paper corresponds with France’s peripheries where FN voters cluster. As the mediation of halo by populism suggests, future research should look into feelings of socio-territorial segregation and discontent associated with such peripheries. In relation to “white flight” and possible “friends-and-neighbors” effect, another possible avenue would be to look at FN attitudes in social context taking a social identity perspective on how group membership may prescribe such attitudes.

Notwithstanding these caveats, this paper makes a significant contribution to the literature on the relationship between immigration and the PRR, helping disentangle contact and threat by providing robust empirical evidence of how these mechanisms may interact to shape immigration attitudes and the PRR vote across different spatial scales as well as different levels of ethnic diversity. In particular, our results shed light on some of the current issues discussed in the growing literature on the urban/rural cleavage which increasingly structures the PRR vote in France and Europe, and which may be regarded as a second-order manifestation of deeper demographic and cultural divides (Maxwell, 2019). As the “space between us” (Enos, 2017) continues to grow, the halo provides a key to understanding the ever more complex relationship between growing spatial ethnic polarization, attitudes towards ethnic diversity, and eventually, support for the PRR.

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Supplemental Material

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Notes

1. The party was renamed *Rassemblement national* in June 2018. To avoid ambiguity, we use its former label which has been used in the literature to date, and was correct for the time-period of the analysis.
2. *Ilots Regroupés pour l'Information Statistique* (IRIS), <https://www.insee.fr/en/metadonnees/definition/c1523>. We used the 2015 geography (COG2015) which was the latest available for socio-demographic data.
3. “La localisation géographique des immigrés,” <https://insee.fr/fr/statistiques/2121524>
4. “Le nouveau zonage en aires urbaines de 2010,” <https://www.insee.fr/fr/statistiques/1281191>
5. We also tested the inclusion of the Level 2 IRIS immigrant measure with a quadratic term, to provide an additional test for composition—lower support for Le Pen in areas of very high and very low immigrant presence; higher support in other areas. However, no statistically significant effect was found.
6. Let us note here that our subjective measures of contact denote “ethnic minorities” while our contextual variables use shares of “immigrants” as a proxy for such diversity. This difference in subject is a product of the different measures in survey and census data, the “ethnic minority” measure not being present in the census.
7. All plots use the plotplain Stata scheme (Bischof, 2017).
8. With regard to the populist item, we would simply note that this item, along with all the others, except economic inequality, link to the latent dimension of authoritarianism, and we might therefore expect some small shift through attitudinal constraint (Converse, 1964; Zaller, 1992).

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