

Populist politics and vaccine hesitancy in Western Europe: an analysis of national-level data

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Background: Parents' reluctance to vaccinate their children undermines the effectiveness of vaccination programmes in Western Europe. There is anecdotal evidence suggesting a connection between the rise of political populism and vaccine hesitancy. **Methods:** This paper analyses national-level data to examine the link between political populism and vaccine hesitancy in Western Europe. Political populism is operationalised as the percentage of people in a country who voted for populist parties in the 2014 European Parliament elections. Vaccine hesitancy is operationalised as the percentage of people in a country who believe that vaccines are not important, safe and effective according to data from the Vaccine Confidence Project (2015). **Results:** There is a highly significant positive association between the percentage of people in a country who voted for populist parties and who believe that vaccines are not important ($R=0.7923$, $P=0.007$) and effective ($R=0.7222$, $P=0.0035$). The percentage of people who think vaccines are unsafe just misses being significant at the 5% level ($R=0.5027$, $P=0.0669$). **Conclusions:** Vaccine hesitancy and political populism are driven by similar dynamics: a profound distrust in elites and experts. It is necessary for public health scholars and actors to work to build trust with parents that are reluctant to vaccinate their children, but there are limits to this strategy. The more general popular distrust of elites and experts which informs vaccine hesitancy will be difficult to resolve unless its underlying causes—the political disenfranchisement and economic marginalisation of large parts of the Western European population—are also addressed.

Introduction

Vaccination programmes have eradicated or vastly reduced the prevalence of once common and devastating diseases, producing enormous benefits for individuals and societies. The World Health Organization (WHO) estimates that vaccinations prevent between 2 and 3 million deaths each year but a further 1.5 million deaths could be avoided if coverage was improved.¹ Historically, the biggest obstacle to improving coverage was access in low-income countries, but in the last two decades 'vaccine hesitancy'—parents' reluctance to vaccinate their children—has become an increasingly important public health issue.^{2,3} Europe is the region with the highest level of vaccine hesitancy according to the Vaccine Confidence Project.²

Modern vaccine hesitancy is usually traced to Andrew Wakefield's now discredited 1998 *Lancet* article, which claimed there is a link between the measles, mumps and rubella (MMR) vaccine and autism.^{4–6} These ideas had an impact on public health: MMR vaccination rates in the UK fell from 92% in 1995 to a low of 79% in 2003, well below the 95% rate needed to achieve herd immunity according to the WHO.^{5,6} Confirmed cases of measles in England and Wales rose from 56 in 1998 to 1370 in 2008.⁷ Wakefield was struck off the UK medical register and the *Lancet* study retracted.^{4–6} Nevertheless, his ideas remain influential and are cited as a reason why MMR vaccine coverage has fallen and measles cases have increased in Europe over the past few years.⁸ Vaccine hesitancy is also driven by other controversies—for example the purported links between the Hepatitis B vaccine and multiple sclerosis, and the Human papilloma virus (HPV) vaccine and Postural Orthostatic Tachycardia Syndrome.³

It is common to portray vaccination hesitancy as beyond rational explanation. The following quote from the *New England Journal of Medicine* neatly encapsulates this view:

the spectrum of antivaccinationists ranges from people who are simply ignorant about science (or "innumerate"—unable to

understand and incorporate concepts of risk and probability into science-grounded decision making) to a radical fringe element who use deliberate mistruths, intimidation, falsified data, and threats of violence in efforts to prevent the use of vaccines and to silence critics.⁴

Consequently, public health scholars have rarely attempted to explain the underlying determinants of vaccine hesitancy.

There is, however, anecdotal evidence suggesting a connection between the rise of populist politicians and political movements in Western Europe and increasing levels of vaccine hesitancy.⁹ The most prominent example is Italy. In 2017, a *New York Times* editorial entitled 'Populism, Politics and Measles' noted that The Five Star Movement (5SM) have raised concerns about vaccine safety and the link between MMR and autism.¹⁰ It is argued that these concerns caused MMR vaccination coverage to fall from 90% in 2013 to 85% in 2016, and resulted in an increase in measles cases from 840 in 2016 to 5000 in 2017.¹¹ Despite this, the upper house of the Italian Parliament—bolstered by newly elected representatives from 5SM and League—recently passed a law to repeal legislation that makes vaccines compulsory for children enrolling in state schools.¹²

There is anecdotal evidence of a similar link between populism and vaccine hesitancy elsewhere in Europe. In France, the right-wing Front National have raised concerns about vaccine safety and laws that make childhood vaccinations mandatory.¹³ In Greece, the left-wing SYRIZA government proposed that parents should be able to opt out of vaccinating their children.¹⁴ While UKIP has not expressed similar concerns, a poll conducted by Mori showed UKIP voters were almost five times more likely than the general population to believe that MMR was unsafe (28% vs. 6%).¹⁵ Further afield, Donald Trump has met well-known anti-vaccination campaigners, including Wakefield, and expressed sympathy with their ideas—e.g. in 2014 he tweeted: 'Healthy young child goes to doctor, gets pumped with massive shot of many vaccines, doesn't feel good and changes—AUTISM. Many such cases!'.¹⁶

Anti-establishment politics and vaccine hesitancy

For most of the post-World War Two era, Western European parliaments were dominated by parties from the centre-left and centre-right. In the last few years, however, a number of new or newly popular parties have come to prominence: SYRIZA won power in Greece in 2015; in the same year Podemos became the third largest party in the Spanish parliament; UKIP played a crucial role in the UK's decision to leave the EU; Marine le Pen was second in the 2017 French Presidential elections; in the same year Alternative für Deutschland (AfD) won seats in the Bundestag for the first time; and the 5SM was the largest party in Italy's 2018 general election.

While these parties do not share an ideology, they are collectively referred to as populists. In Europe, populist parties predominantly come from the right (e.g. Front National, AfD, UKIP), but they can also be left-wing (e.g. SYRIZA, Podemos) or reject the right-left distinction (e.g. 5SM).^{17,18} The distinguishing characteristic of populist parties is their anti-establishment message.^{17,18} Populists divide the world into masses and elites, and claim to represent the interests of the former while being antagonistic to the latter. The definition of masses depends on the particular host ideology: for right-wing populists it is an ethnic group, whereas for left-wing populists it is a class. The meaning of elite also varies. It can refer to political, economic, cultural, media and legal elites, as well as credentialed experts.^{17,18}

In Western Europe, support for populist parties comes from large parts of the population who feel that their culture is threatened by immigration, they are economically marginalised by advanced capitalism, and they have been abandoned by mainstream political parties.^{19–21} The 2008 Financial Crisis and subsequent recession caused discontent with elites and experts, profoundly changing the party systems in countries that were particularly badly affected.^{19,20} Nevertheless, the rise of populism is a much longer term process. It is related to established political parties' failure to confront rising inequality and in particular the anxieties of unskilled workers whose wages and job security has been undermined by technological change and international trade.^{19,20} It is also the result of mainstream parties' reluctance to address popular discontent about immigration, coupled with right-wing populist parties' willingness to exploit and incite these concerns.^{17,20,21}

Insights from a variety of social theorists can help to explain the purported link between anti-establishment politics and vaccine hesitancy. Anthony Giddens points out that modern societies rely on 'expert systems' that are understood by a small number of specialists.²² Most people must trust such systems without understanding how they function. For example, although the majority of patients have little knowledge of physiology and medicine, they have little choice but to believe their doctor's diagnosis and follow the suggested treatment. This pragmatic faith is not in the individual physician, but 'the authenticity of the expert knowledge which they apply'.²² Until the mid-20th century, science was seen as the ultimate form of knowledge, but in recent decades social scientists have challenged natural scientists' claims to epistemological supremacy.^{23,24} This is based on a valid critique of the scientific method and its inability to uncover objective truth. Nevertheless, it helped to create a situation in which many laypeople distrust scientific expertise.^{23,24} Harry Collins refers to this phenomenon as technological or scientific populism.²⁴ Climate change denial is one manifestation, vaccine hesitancy is another.

Is scientific populism, and vaccine hesitancy in particular, beyond rational explanation? In order to answer this question, it is useful to look at anthropological studies of resistance to public health interventions in postcolonial societies. Jeremy Youde, in his research on HIV/AIDS denialism in South Africa,²⁵ and Amy Kaler, in her work on rumours that vaccines cause sterility in sub-Saharan Africa, argue that it is problematic to see such scepticism as simply a manifestation of ignorance and irrationality.²⁶ For Youde, HIV/AIDS denialism should be understood in the context of the colonial and

apartheid states that used infectious disease outbreaks to justify their policies of racial segregation.²⁵ Kaler argues that sterility rumours are a protest by formerly colonised 'poor and globally marginal communities' against a neocolonial 'globally dominant medical establishment' that promotes public health campaigns including vaccination programmes.²⁶ Although HIV/AIDS denialism and sterility rumours contradict medical science, they make sense when understood in their historical context.

Similarly, vaccine hesitancy in Western Europe must be analysed in its political and economic context. Although this topic requires further empirical investigation, it seems likely that scientific populism is driven by similar feelings to political populism—i.e. profound distrust of elites and experts by disenfranchised and marginalised parts of the population. Beatrice Lorenzin, the erstwhile Italian Health Minister, made this point when she stated that populist parties 'have replaced their anti-state revolt with an anti-science approach'.²⁷ As Kaler points out, public health programmes are one of the main ways in which states exert what Foucault terms 'biopolitical control' over subjects or citizens.²⁶ Consequently, even where such programmes objectively improve the health of targeted populations, they can be viewed with suspicion by communities that do not trust elites and experts. In the case of vaccine hesitancy, distrust is focused on public health experts and pharmaceutical companies that advocate vaccines. For example, Andrew Wakefield recently argued that he felt obliged 'to stand out (sic) to GlaxoSmithKline and to Merck and not to be steamrolled by public health officials that think they know better'.²⁸

This section began by presenting anecdotal evidence that indicates there might be a link between anti-establishment politics and vaccine hesitancy in Western Europe. It went on to theorise the way in which political and scientific populism are related to one another. To the best of my knowledge, there has been no systematic empirical examination of this topic. This paper analyses national-level data in order to examine whether there is quantitative support for such a link.

Methods

Sample

The analysis focuses on Europe, the region with the highest levels of vaccine hesitancy.² Fourteen Western European countries—i.e. the European Union prior to the pre-2004 enlargement—are included in the sample. Central and Eastern European countries are excluded because post-communist countries have not yet produced stable mainstream parties and institutionalised party systems, and populism is a more general feature of their political systems.²⁹ Malta, Cyprus and Luxembourg, are omitted because the Vaccine Confidence Project does not collect data on vaccine hesitancy for these countries.²

Data

The list of populist parties used in this paper is based on the lists in van Kessel's 2015 book *Populist Parties in Europe* and an article by van Hauwaert and van Kessel's that was published in *European Journal of Political Research* in 2018.^{18,21} In both cases, the authors use the same definition. Populist parties are those that (i) portray "the people" as virtuous and essentially homogeneous; (ii) advocate popular sovereignty, as opposed to elitist rule; and (iii) define themselves against the political establishment, which is alleged to act against the interest of "the people".^{18,21} The parties included in these lists vary slightly because of the different dates of publication and because they cover different groups of countries. The results of the 2014 European Parliament elections are used to provide comparable national-level electoral data on the popularity of populist political parties. Only parties that won at least one seat in these elections are included in the list (see table 1).

Table 1 Populist political parties in Western Europe

Austria: Freiheitliche Partei Österreichs/Austrian Freedom Party (19.7%, R)
Belgium: Vlaams Belang/Flemish Interest (4.3%, R)
Denmark: Dansk Folkeparti/Danish People's Party (26.6%, R)
Finland: Perussuomalaiset/True Finns (12.9%, R)
France: Front National/National Front (24.9%, R)
Germany: Die Linke/The Left (7.4%, L), Alternative für Deutschland/Alternative for Germany (7.1%, R)
Greece: SYRIZA/Coalition of the Radical Left (26.6%, L), ANEL/Independent Greeks (3.5%, R), LAOS/Popular Orthodox Rally (2.7%, R)
Ireland: Sinn Féin (19.5% L)
Italy: Movimento Cinque Stelle/Five Star Movement (21.2%, L/R), Forza Italia (16.8%, R), Lega Nord/Northern League (6.2%, R)
Netherlands: Partij voor de Vrijheid/Freedom Party (13.3%, R)
Portugal: NA
Spain: Podemos (8.0%, L)
Sweden: Sverigedemokraterna/Sweden Democrats (9.7%, R)
United Kingdom: UKIP (26.8%, R), British National Party (1.1%, R)

Notes: The figures in parentheses are the percentage of votes received in the 2014 European Parliament elections. The letters in parentheses denote the parties' ideology: 'R' indicates right-wing, 'L' indicates left-wing.

Data for vaccine hesitancy come from the Vaccine Confidence Project, which is led by researchers at LSHTM.² It carried out a survey of 65 819 individuals across 67 countries in 2015. Approximately 500 men and 500 women were interviewed in each country. Respondents were asked the extent to which they agreed—i.e. 'strongly agree', 'tend to agree', 'do not know', 'tend to disagree', 'strongly disagree'—with statements including: 'Vaccines are important for children to have'; 'Overall I think vaccines are effective'; 'Overall I think vaccines are safe'. The percentage of respondents from each country that reply 'Tend to disagree' or 'Strongly disagree' to each statement are added together to create each variable.

Results

Figures 1–3 are scatterplots that show the association between the percentage of people in a country who voted for populist parties in the 2014 European Parliament elections and the percentage of people in a country who believe, respectively, that vaccines are not important, effective and safe in 2015 according to the Vaccine Confidence Project. Pearson's correlation coefficients and the *P*-values are reported.

Figure 1 shows a highly significant positive correlation between the proportion of the electorate voting for populist parties and the percentage of people who disagree with the statement 'Vaccines are important for children to have' ($R = 0.7923$, $P = 0.0007$). The higher the level of populist votes in a country, the greater the proportion of the population that believe vaccines are not important. Looking at figure 1, there are no remarkable outliers, but the UK and Denmark display a relatively high number of populist votes compared with the proportion of the population who believe that vaccines are unimportant. This might be because populist parties in the UK and Denmark did exceptionally well in the 2014 European Parliament elections compared with the preceding national elections. UKIP and BNP received 5.0% of votes in the 2010 general election compared with 27.9% in 2014, while Danish People's Party received 12.3% in the 2011 general election compared with 26.6% in 2014. They are the only countries in which populist parties received more than twice the percentage of votes in European Parliament elections compared with the previous national elections.

Figure 2 shows a highly significant positive correlation between the percentage of the electorate voting for populist parties and the percentage of people who disagree with the statement 'Overall I think vaccines are effective' ($R = 0.7222$, $P = 0.0035$). The higher the level of populist votes in a country, the greater the proportion

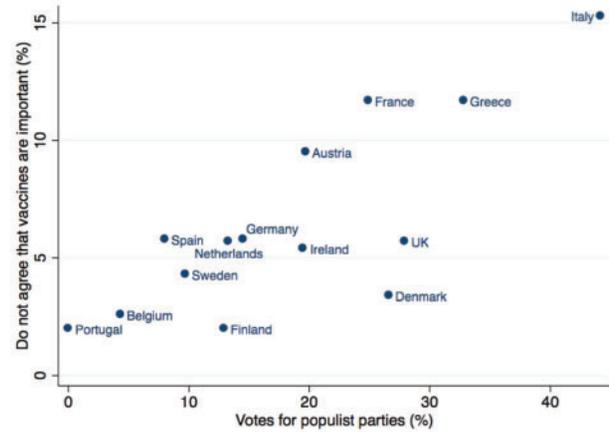


Figure 1 Populist votes and perceived vaccine importance. *Source:* European Parliament and Vaccine Confidence Project. *Notes:* $R=0.7923$, $P=0.0007$

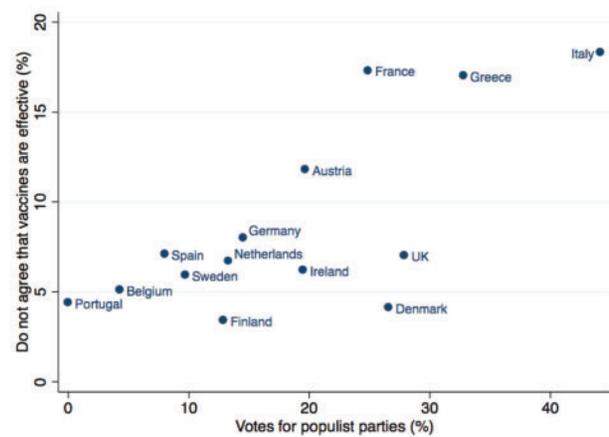


Figure 2 Populist votes and perceived vaccine effectiveness. *Source:* European Parliament and Vaccine Confidence Project. *Notes:* $R=0.7222$, $P=0.0035$

of the population that believe vaccines are not effective. As in figure 1, the UK and Denmark have a disproportionately high number of populist votes compared with the percentage of people who believe that vaccines are ineffective.

Although not as clear as in figures 1 and 2, figure 3 shows a similar pattern: the higher the proportion of the electorate voting for populist parties, the greater the percentage of people who disagree with the statement that 'Overall I think vaccines are safe'. The association just misses being significant at the 5% level ($R = 0.5027$, $P = 0.0669$).

Limitations and robustness tests

There is no commonly agreed definition or list of populist parties.^{18,21} It is therefore important to check whether the findings are robust to alternative operationalizations. The analysis was re-run with a list that includes all parties that are not in mainstream (i.e. centre-left or centre-right) European Parliament political groupings. When this alternative operationalization of anti-establishment parties is used, vaccine importance and vaccine effectiveness remain highly significant and vaccine safety becomes significant at the 5% level.

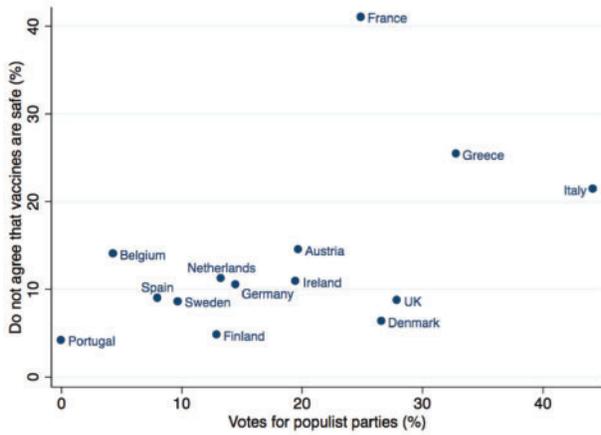


Figure 3 Populist votes and perceived vaccine safety. *Source:* European Parliament and Vaccine Confidence Project. *Notes:* $R=0.5027$, $P=0.0669$

Voting data from the 2014 European Parliament elections are potentially problematic because such so-called ‘second-order’ elections might not reflect the political beliefs of the population due to low turnout and protest voting, for e.g. The analysis was re-run using voting figures from the ‘first-order’ parliamentary or presidential national election that immediately preceded the 2014 European Parliament elections. When these alternative data are used, the correlation coefficients increase and P -values fall.

It is controversial to combine left- and right-wing populist parties into one category. This paper has outlined anecdotal evidence and theoretical justification to support the approach. Moreover, the associations between populist votes and various operationalisations of vaccine scepticism are markedly stronger and more significant when left- and right-wing populist parties are combined into one category.

As there are only 14 observations, it is not possible to use statistical techniques that allow us to control for other possible explanatory variables—e.g. by running regressions. It is, however, possible to consider whether there are correlations between measures of vaccine hesitancy and variables related to educational attainment, economic development and religiosity, which the literature suggests could be confounders. The only significant correlation is between the proportion of Muslims in a country and vaccine safety. Muslim populations are not, however, large enough to drive anti-vaccine sentiment. For example, France has the highest values for both variables, but its Muslim population (7.5%) is far smaller than the percentage of people with concerns over vaccine safety (41.0%). It is likely that fears over Muslim immigration drive support for populist parties,^{17,21} which foment and exploit concerns about vaccine safety.

The robustness tests set out above strengthen our confidence in the finding that there is link between votes for populist parties and various measures of vaccine hesitancy. See the Supplementary appendix for more details about the robustness tests undertaken.

Conclusion

While it is necessary to collect more and better qualitative and quantitative data to understand the drivers of contemporary vaccine hesitancy in Western Europe in more detail, the analysis in this paper indicates that there is a link between populism and vaccine hesitancy. The paper began by setting out anecdotes that indicate there might be a connection between support for anti-establishment political parties and vaccine hesitancy, went on to theorise the mechanism that links these two variables, and then presented cross-national data that demonstrated a significant positive association between votes for populist parties and anti-vaccine sentiment.

This finding has two important policy implications. First, academics and global health actors have noted that there is a public health need to monitor vaccine confidence because increasing hesitancy leads to falls in coverage and often precedes an infectious disease outbreak.^{2,30} But at present, surveys of attitudes to vaccines are not systematically undertaken. In the absence of such monitoring, it is possible to analyse political opinion polls, which are regularly carried out. Support for populist parties could be used as a proxy for vaccine hesitancy, at least in the Western European context, with an increase in support being a signal for public health actors to be vigilant.

Second, it is axiomatic for public health scholars and actors to see vaccine hesitancy as ignorant or irrational. This is understandable: vaccine hesitancy contradicts medical science and has significant negative effects on public health. Notwithstanding, vaccine hesitancy in Western Europe must be understood within its specific socio-political context. It seems to be driven by similar dynamics to those of political populists—i.e. a profound distrust in elites and experts among disenfranchised and marginalised people. It is necessary for public health scholars and actors to work to rebuild trust with parents who are reluctant to vaccinate their children, but there are limits to this strategy. The more general popular distrust of elites and experts that seems to inform vaccine hesitancy will be difficult to resolve unless its underlying causes—an iniquitous economic system and unrepresentative political system—are addressed.

Ethical approval

Ethics approval was not required according to QMUL regulations.

Supplementary data

Supplementary data are available at *EURPUB* online.

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Key points

- There is anecdotal evidence suggesting a connection between the rise of populist political parties and increasing vaccine hesitancy in Western Europe.
- There is a very significant positive association between the percentage of people in a country who vote for populist parties and those who believe that vaccines are unimportant and ineffective.
- Both vaccine hesitancy and political populism are driven by a profound distrust in elites and experts among disenfranchised and marginalised people.
- The distrust of elites and experts will only be resolved by addressing its underlying causes: an iniquitous economic system and unrepresentative political system.
- In the absence of monitoring of attitudes to vaccines, an increase in support for populist parties can be seen as a signal for public health actors to be vigilant about vaccine hesitancy.

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